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II

(Non-legislative acts)

REGULATIONS

COMMISSION DELEGATED REGULATION (EU) 2023/1768

of 14 July 2023

laying down detailed rules for the certification and declaration of air traffic management/air navigation services systems and air traffic management/air navigation services constituents

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 ⁽¹⁾, and in particular Articles 47(1) and 62(13),

Whereas:

- (1) Regulation (EU) 2018/1139 establishes common essential requirements to provide for a high uniform level of civil aviation safety in the Union and to ensure that the integrity and safety-related performance of systems and constituents are fit for their intended purpose. The interoperability of the air traffic management/air navigation service (ATM/ANS) systems and ATM/ANS constituents should ensure the seamless operation of the European air traffic management network (EATMN).
- (2) Detailed specifications should be established to ensure compliance with the essential requirements; those detailed specifications should whenever possible rely on recognised industry standards from Standards Developing Organisations (SDOs) that reflect the state of the art and best design practices. The design and production of ATM/ANS systems and ATM/ANS constituents should be carried out with consideration given to requirements to issue certification and declarations of design compliance and in line with detailed specifications issued by the European Union Aviation Safety Agency ('the Agency').
- (3) It is appropriate to establish different attestation methods for assessing conformity with the requirements set out in an Annex to this Regulation and detailed specifications of ATM/ANS systems and ATM/ANS constituents. More stringent attestation methods should be used as regards the safe operation of aircraft, and as regards equipment that is critical in terms of the interoperability and security of the EATMN.
- (4) Within the ATM/ANS, the air traffic control (ATC) services are the most important as regards the safety risks related to navigation of aircraft, in particular due to issuing instructions to ensure aircraft separation and collision avoidance. Providers of ATC have the most complete view regarding the safety of the airspace. Therefore, the most critical ATM/ANS equipment, namely the equipment supporting ATC should be subject to more stringent attestation methods, namely certification.

⁽¹⁾ OJ L 212, 22.8.2018, p. 1.

- (5) ATM/ANS equipment that supports air-to-ground communications delivers direct instructions to aircraft and should be subject to certification too.
- (6) The Communication, Surveillance, and Navigation services are used directly by the ATS to ensure safe navigation of aircraft, but the three services referred to do not have a complete view of traffic and do not play an active control over aircraft separation. Consequently, they play a less critical role. The ATM/ANS systems and ATM/ANS constituents that support them should be subject to a less stringent attestation method, namely declaration of design compliance.
- (7) Lastly, other less critical ATM/ANS systems and equipment that support meteorological services, aeronautical information services, airspace management services and air traffic flow management services should be subject to the least stringent attestation method, namely statement of compliance.
- (8) Additional criteria are possible to decide on criticality of ATM/ANS systems and ATM/ANS constituents in addition to the managerial control over safety risks of the services and functions that they support.
- (9) Therefore, three different levels of requirements and detailed specifications should be established, namely: (i) certification by the Agency, the most stringent level; (ii) declaration by an approved organisation involved in the design or production of ATM/ANS equipment, the medium level; and (iii) statement of compliance by the ATM/ANS provider that integrates the ATM/ANS equipment into its functional system, as defined in Commission Implementing Regulation (EU) 2017/373 ⁽²⁾, or, upon ATM/ANS provider's request, by an approved organisation involved in the design or production of ATM/ANS equipment.
- (10) In accordance with Article 29(2), point (a), of Regulation (EU) 2021/696 of the European Parliament and of the Council ⁽³⁾, the European Union Agency for the Space Programme (EUSPA) has been entrusted with managing the European Geostationary Navigation Overlay Service (EGNOS), including the exploitation of EGNOS that covers, amongst other actions, support to certification and standardisation efforts.
- (11) Under Regulation (EU) 2021/696 both EUSPA and the European Space Agency (ESA) are responsible for the design of the EGNOS system and its equipment. The Agency should oversee the declarations of design compliance of the equipment of EGNOS in accordance with specific arrangements to be concluded with EUSPA. Those arrangements are to address technical, administrative, and financial aspects such as a requirement to consult EUSPA as regards the development of detailed specifications; the oversight by EASA of the declarations of design compliance of the EGNOS system; and the exchange of data between both agencies regarding the relevant International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPS) compliance. Those arrangements are to ensure a level of safety and interoperability equivalent to the requirements of this Regulation.

⁽²⁾ Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1).

⁽³⁾ Regulation (EU) 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU (OJ L 170, 12.5.2021, p. 69).

- (12) In certain remote territories, outside the ICAO European (EUR) region as defined in the European (EUR) Air Navigation Plan Volume I (Doc 7754) of ICAO, with low traffic volume and where that airspace borders only with airspace under the responsibility of third-country ATM/ANS providers, the application of the attestation methods of certification and declaration of design compliance of ATM/ANS equipment may be challenging or even unfeasible, due to their specific safety and interoperability needs. In such cases, for ATM/ANS equipment that is used by ATM/ANS providers in remote areas outside of the ICAO EUR region, it is deemed appropriate to provide derogations from the certification or declaration requirements applicable to such ATM/ANS equipment. Instead, in order to provide for safe and interoperable provision of ATM/ANS, the ATM/ANS provider in that region needs to ensure that applicable specifications are being met by issuing a statement of compliance.
- (13) It is necessary to ensure a smooth transition to the new regulatory framework established by this Regulation and to ensure that a high and uniform level of civil aviation safety in the Union is maintained. It is therefore necessary to provide sufficient time for the design and manufacturing industry of the ATM/ANS systems and ATM/ANS constituents, and for the Agency and Member States' administrations to adapt to this new framework. It is appropriate that the ATM/ANS equipment that is in operation and that was attested under the previous framework is considered as if it had been issued with certificates or declarations issued under the new framework during a transition period, unless the Agency states that such equipment does not ensure the level of safety and interoperability required by Regulation (EU) 2018/1139.
- (14) During the transition period, as regards any new ATM/ANS system and ATM/ANS constituent put into operation, a statement of compliance, issued by the ATM/ANS provider that integrates it in its functional system, or, upon request, by the design and production organisation that designs and manufactures it, should be submitted to the competent authority of the referred ATM/ANS provider defined in Article 4(1) of Implementing Regulation (EU) 2017/373.
- (15) After the transition period the Agency should be solely responsible for certification and for receiving declarations concerning certain ATM/ANS equipment; it is therefore appropriate for the Agency to evaluate the compliance information submitted to national authorities under the previous framework, before such ATM/ANS equipment comes under the remit of the Agency. Therefore, national authorities should make this information available to the Agency. After the evaluation by the Agency, the ATM/ANS equipment should be deemed to have been issued with a certificate or declaration of compliance. The evaluation needs to be made public by decision of the Agency's executive director.
- (16) The measures provided for in this Regulation are based on Opinion No 01/2023, issued by the European Union Aviation Safety Agency in accordance with Article 75(2), points (b) and (c), and Article 76(1) of Regulation (EU) 2018/1139,

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

This Regulation lays down common technical requirements and administrative procedures for the certification and declaration of design compliance of ATM/ANS systems and ATM/ANS constituents. This Regulation lays down the rules on:

- (a) identifying ATM/ANS systems and ATM/ANS constituents which are either subject to certification, declaration, or a statement of compliance;
- (b) issuing certificates for ATM/ANS systems and ATM/ANS constituents;

- (c) issuing declarations of design compliance of ATM/ANS systems and ATM/ANS constituents by organisations involved in the design or production of ATM/ANS systems and ATM/ANS constituents and which were approved in accordance with Commission Implementing Regulation (EU) 2023/1769 ⁽⁴⁾ to have the privileges to issue such declarations of compliance;
- (d) issuing statements of compliance of ATM/ANS systems and ATM/ANS constituents by ATM/ANS providers certified in accordance with Implementing Regulation (EU) 2017/373 or by organisations involved in the design or production thereof approved in accordance with Implementing Regulation (EU) 2023/1769;
- (e) issuing ATM/ANS equipment directives by the Agency.

Article 2

Definitions

For the purpose of this Regulation, the following definitions apply:

- (1) 'ATM/ANS equipment' means ATM/ANS constituents as defined by Article 3(6) of Regulation (EU) 2018/1139 and ATM/ANS systems as defined by Article 3(7) of that Regulation, excluding airborne constituents, which are subject to Commission Regulation (EU) No 748/2012 ⁽⁵⁾;
- (2) 'ATM/ANS equipment directive' means a document issued by the Agency which mandates actions to be performed by ATM/ANS providers on ATM/ANS equipment to address an unsafe and/or insecure condition that has been identified and restore the performance and interoperability of that ATM/ANS equipment when evidence shows that the safety, security, performance or interoperability of that particular equipment may otherwise be compromised;
- (3) 'European air traffic management network' (EATMN) means the collection of systems, listed in point 3.1 of Annex VIII to Regulation (EU) 2018/1139, enabling air navigation services in the Union to be provided, including the interfaces at boundaries with third countries;
- (4) 'functional system' means a combination of procedures, human resources and equipment, including hardware and software, organised to perform a function within the context of ATM/ANS and other ATM network functions.

Article 3

Competent authority

- 1. The competent authority responsible for issuing certificates for ATM/ANS equipment in accordance with Article 4, for accepting declarations of design compliance of ATM/ANS equipment issued in accordance with Article 5, and for the oversight of certificate and declarations, shall be the Agency. For that purpose, the Agency shall comply with the requirements laid down in Annex I.
- 2. The competent authority responsible for the oversight of the statement of compliance issued by an ATM/ANS provider in accordance with Article 6 shall be the same competent authority as the authority responsible for the certification and oversight of that ATM/ANS provider.

⁽⁴⁾ Commission Implementing Regulation (EU) 2023/1769 of 12 September 2023 laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203 (see page 19 of this Official Journal).

⁽⁵⁾ Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1).

*Article 4***Certification of ATM/ANS equipment**

1. The following ATM/ANS equipment shall be issued with a certificate as set out in Annex II:
 - (a) equipment supporting controller–pilot communications;
 - (b) equipment supporting air traffic control (ATC) services when enabling the separation of aircraft or the prevention of collisions.
2. The certificate referred to in paragraph 1 shall be issued by the Agency.
3. The certificate referred to in paragraph 1 shall be issued for an unlimited duration. It shall remain valid indefinitely except where:
 - (a) the certificate holder no longer complies with the requirements of this Regulation; or
 - (b) as regards ATM/ANS equipment, there is no valid organisation approval issued by the Agency in accordance with Implementing Regulation (EU) 2023/1769; or
 - (c) the ATM/ANS equipment no longer complies with its certification basis in accordance with point ATM/ANS.EQMT.CERT.025 of Annex II; or
 - (d) the certificate has been surrendered by its holder or revoked by the Agency.

Upon surrender or revocation of the certificate, if issued in a paper format, it shall be returned to the Agency without delay.

4. By way of derogation from paragraph 1, ATM/ANS equipment that is solely being used in a limited part of airspace outside of the ICAO EUR region with low traffic volume, and where that part of the airspace borders only with airspace under the responsibility of a third country, shall not be required to be issued with a certificate. In such a case, the ATM/ANS equipment shall be issued with a statement of compliance in accordance with Article 6.

*Article 5***Declaration of design compliance of the ATM/ANS equipment**

1. The following ATM/ANS equipment when it generates, receives, and transmits data and/or signals in space for the purpose of ensuring safe and interoperable air navigation shall be issued with a declaration of design compliance as set out in Annex III:
 - (a) equipment supporting ground-to-ground communications;
 - (b) equipment supporting navigation or surveillance.
2. Declarations of design compliance shall be issued by organisations involved in the design or production of ATM/ANS equipment and which are approved in accordance with Implementing Regulation (EU) 2023/1769.
3. Declarations of design compliance of the ATM/ANS equipment shall be issued for an unlimited duration. Declarations shall remain valid unless they have been deregistered in accordance with point DPO.AR.C.015(g)(6) of Annex I to Implementing Regulation (EU) 2023/1769 as a result of one of the following:
 - (a) the ATM/ANS equipment no longer complies with the detailed specifications which enabled the declaration to be issued;
 - (b) the issuer of the declaration no longer complies with the applicable requirements of Implementing Regulation (EU) 2023/1769 or its approval has been surrendered, suspended or revoked;
 - (c) the ATM/ANS equipment has proved to give rise to unacceptable risk or unacceptable performance in service;
 - (d) the organisation has withdrawn the declaration of design compliance.

4. By way of derogation from paragraph 1, ATM/ANS equipment that is solely being used in a limited part of airspace outside of the ICAO EUR region with low traffic volume, and where that part of the airspace borders only with airspace under the responsibility of a third country, shall not be required to be issued with a declaration of design compliance. In such a case, the ATM/ANS equipment shall be issued with a statement of compliance in accordance with Article 6.

5. As regards the ATM/ANS equipment of the European Geostationary Navigation Overlay Service (EGNOS) system, the declaration of design compliance as set out in Annex III to this Regulation shall be issued by the European Union Agency for the Space Programme (EUSPA) established by Regulation (EU) 2021/696, which shall be considered as an organisation involved in the design or production of EGNOS equipment.

6. Points ATM/ANS.EQMT.DEC.005 and ATM/ANS.EQMT.DEC.045 of Annex III shall not be applicable to EUSPA. EUSPA shall ensure that the Agency is given access to evidence from the different entities involved in the design and production of the ATM/ANS equipment of the EGNOS system, in order to determine continued compliance with the applicable technical specifications against which the ATM/ANS equipment declaration was made in accordance with Annex III.

Article 6

Statement of compliance

1. The following ATM/ANS equipment shall be issued with a statement of compliance:

- (a) equipment that is neither subject to certification in accordance with Article 4 nor to a declaration of compliance in accordance with Article 5; and
- (b) it supports air traffic services, communication, navigation or surveillance services, airspace management, air traffic flow management, aeronautical information services or meteorological services.

The statement of compliance shall confirm that the ATM/ANS equipment complies with the detailed specifications issued by the Agency in accordance with Article 76(3) of Regulation (EU) 2018/1139.

2. A statement of compliance for ATM/ANS equipment shall be issued by the ATM/ANS provider that integrates such ATM/ANS equipment in its functional system or, upon request of the ATM/ANS provider, by an organisation involved in the design or production of such ATM/ANS equipment approved in accordance with Implementing Regulation (EU) 2023/1769.

3. A statement of compliance for ATM/ANS equipment shall be issued for an unlimited duration. It shall remain valid unless any of the following applies:

- (a) the ATM/ANS equipment no longer complies with the essential requirements set out in Annex VIII and, if applicable, in Annex VII to Regulation (EU) 2018/1139;
- (b) the ATM/ANS provider no longer complies with the applicable requirements of Implementing Regulation (EU) 2017/373 or it has surrendered the certificate issued in accordance with Article 6 of Implementing Regulation (EU) 2017/373, or the certificate has been suspended or revoked;
- (c) the ATM/ANS provider has withdrawn the statement of compliance or enforcement measures have been taken in accordance with point ATM/ANS.AR.C.050(e) of Annex II to Implementing Regulation (EU) 2017/373.

*Article 7***Transitional provisions**

1. The following transitional provisions shall apply to ATM/ANS equipment holding EC declarations issued in accordance with Articles 5 or 6 of Regulation (EC) No 552/2004 of the European Parliament and of the Council ⁽⁹⁾ and that has been put into operation before the date of entry into force of this Regulation:

- (a) ATM/ANS equipment which falls within the category of ATM/ANS equipment that requires certification in accordance with Article 4 shall be deemed to have been issued with a certificate in accordance with Article 4 unless the Agency determines, following the evaluation referred to in paragraph 2, that such ATM/ANS equipment does not ensure a level of safety, security, performance and interoperability equivalent to that required by Regulation (EU) 2018/1139 and this Regulation;
- (b) ATM/ANS equipment which falls within the category of ATM/ANS equipment that is required to be declared in accordance with Article 5 shall be deemed to have been issued with a declaration of design compliance in accordance with Article 5 unless the Agency determines, following the evaluation referred to in paragraph 2, that such ATM/ANS equipment does not ensure a level of safety, security, performance and interoperability equivalent to that required by Regulation (EU) 2018/1139 and this Regulation;
- (c) as regards ATM/ANS equipment which is subject to a statement of compliance in accordance with Article 6, the EC declarations of verification of systems that have been issued or recognised in accordance with Article 6 of Regulation (EC) No 552/2004 shall continue to be valid for an unlimited duration and shall be deemed to have a statement of compliance pursuant to Article 6.

2. The Agency shall evaluate the ATM/ANS equipment referred to in paragraph 1, points (a) and (b), within 5 years from the date of entry into force of this Regulation and shall publish the results of that evaluation. For that purpose, the competent authorities responsible for the certification and oversight of the ATM/ANS providers referred to in Article 4(1) of Implementing Regulation (EU) 2017/373 shall provide the Agency with the relevant information to facilitate this evaluation. The objective of that evaluation shall be to determine whether the relevant ATM/ANS equipment ensures a level of safety, security, performance and interoperability equivalent to that required by Regulation (EU) 2018/1139 and this Regulation. The result of the evaluation shall be published and any measure to change the ATM/ANS equipment identified by the evaluation shall be applied after 5 years from the date of entry into force of this Regulation, regardless of the actual date when the evaluation takes place, unless the evaluation reveals a deficiency that may have a detrimental effect on safety. In the case a deficiency that may have a detrimental effect is detected, any measure to change the ATM/ANS equipment revealed by the evaluation shall be applied immediately. After 5 years from the date of entry into force of this Regulation, the ATM/ANS equipment referred to in paragraph 1, points (a) to (b), shall be deemed to comply with the requirements of this Regulation.

3. ATM/ANS equipment that is subject to certification in accordance with Article 4 or a declaration in accordance with Article 5 may be put into operation from the date of entry into force of this Regulation until 12 September 2028 on the basis of a statement of compliance made in accordance with Article 6. As from 13 September 2028, the following provisions shall apply to such ATM/ANS equipment:

- (a) ATM/ANS equipment which falls within the category of ATM/ANS equipment that requires certification in accordance with Article 4 and for which a statement of compliance was issued by the ATM/ANS provider shall be deemed to have been issued with a certificate in accordance with Article 4 unless the Agency determines, following the evaluation referred to in paragraph 4, that such ATM/ANS equipment does not ensure a level of safety, security, performance and interoperability equivalent to that required by Regulation (EU) 2018/1139 and this Regulation;

⁽⁹⁾ Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (OJ L 96, 31.3.2004, p. 26).

(b) ATM/ANS equipment which falls within the category of ATM/ANS equipment that requires a declaration of design compliance in accordance with Article 5 and for which a statement of compliance was issued by the ATM/ANS provider shall be deemed to have been issued with a declaration of design compliance in accordance with Article 5 unless the Agency determines, following the evaluation referred to in paragraph 4 that such ATM/ANS equipment does not ensure a level of safety, security, performance and interoperability equivalent to that required by Regulation (EU) 2018/1139 and this Regulation.

4. The Agency shall evaluate the ATM/ANS equipment referred to in paragraph 3 not later than 12 September 2030. For that purpose, the competent authorities responsible for the certification and oversight of the ATM/ANS providers referred to in Article 4(1) of Implementing Regulation (EU) 2017/373 shall provide the Agency with the relevant information to facilitate this evaluation. The objective of that evaluation shall be to determine whether the particular ATM/ANS equipment meets a level of safety, security, performance and interoperability equivalent to that required by Regulation (EU) 2018/1139 and this Regulation.

Article 8

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 14 July 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX I

REQUIREMENTS FOR THE AGENCY**(Part-ATM/ANS.EQMT.AR)**

SUBPART A

GENERAL REQUIREMENTS (ATM/ANS.EQMT.AR.A)

ATM/ANS.EQMT.AR.A.001 Scope

This Annex establishes the requirements for the Agency concerning the conditions for conducting certification and other necessary activities to ensure effective oversight of ATM/ANS equipment and the conditions and procedures for the accreditation of qualified entities by the Agency.

ATM/ANS.EQMT.AR.A.020 Allocation of tasks to qualified entities

- (a) When the Agency decides to allocate tasks related to the certification of ATM/ANS equipment subject to this Regulation, the approval or the continuing oversight of organisations subject to Implementing Regulation (EU) 2023/1769 to qualified entities, it shall ensure that it has established and documented an agreement with the qualified entity(ies), approved by both parties to that agreement at the appropriate management level, which clearly defines:
 - (1) the tasks to be performed;
 - (2) the declarations, reports and records to be provided;
 - (3) the technical conditions to be met when performing the tasks;
 - (4) the related liability coverage;
 - (5) the protection given to information acquired when carrying out the tasks.
- (b) The Agency shall ensure that the internal audit process and the safety risk management process required by point DPO.AR.B.001 (a)(5) of Implementing Regulation (EU) 2023/1769 cover all the tasks performed on its behalf by the qualified entity(ies).
- (c) With regard to the approval and oversight of the organisation's compliance with point DPO.OR.B.001 (d) of Implementing Regulation (EU) 2023/1769, the Agency may allocate tasks to qualified entities in accordance with point (a), or to any relevant authority responsible for information security or cybersecurity within the Union. When allocating tasks, the Agency shall ensure that:
 - (1) all aspects related to aviation safety are coordinated and taken into account by the qualified entity or relevant authority;
 - (2) the results of the approval and oversight activities performed by the qualified entity or relevant authority are integrated in the overall certification and oversight files of the organisation;
 - (3) its own information security management system established in accordance with point DPO.AR.B.001 (d) of Implementing Regulation (EU) 2023/1769 covers all the certification and continuing oversight tasks performed on its behalf.

ATM/ANS.EQMT.AR.A.030 ATM/ANS equipment directives

- (a) The Agency shall issue an ATM/ANS equipment directive when:
 - (1) an unsafe, insecure, underperformance or non-interoperability condition has been determined by the Agency to exist in the equipment as a result of a deficiency in the equipment; and
 - (2) that condition is likely to exist or develop in other ATM/ANS equipment.

- (b) An ATM/ANS equipment directive shall contain at least the following information:
- (1) identification of the unsafe, insecure, underperformance or non-interoperability condition;
 - (2) the affected ATM/ANS equipment;
 - (3) the required action(s) and the rationale;
 - (4) the accomplishment time for the required action(s);
 - (5) the date of entry into force.

ATM/ANS.EQMT.AR.A.035 Detailed specifications for the equipment design compliance

- (a) The Agency shall establish and make available detailed specifications which organisations may use to demonstrate compliance with the relevant essential requirements set out in Annex VIII and, if applicable, Annex VII to Regulation (EU) 2018/1139 when they:
- (1) apply for the certification of ATM/ANS equipment in accordance with Article 4;
 - (2) declare design compliance of ATM/ANS equipment in accordance with Article 5;
 - (3) make a statement of compliance in accordance with Article 6.
- (b) The detailed specifications referred to in point (a) shall indicate design standards which reflect the state of the art and best design practices, and which build on valuable experience gained and scientific and technical progress, and on the best available evidence and analyses as regards ATM/ANS equipment.

SUBPART B

CERTIFICATION, OVERSIGHT, AND ENFORCEMENT (ATM/ANS.EQMT.AR.B)

ATM/ANS.EQMT.AR.B.001 ATM/ANS equipment certification basis

- (a) The Agency shall establish the ATM/ANS equipment certification basis and notify it to the applicant for an ATM/ANS equipment certificate. The certification basis shall consist of the following:
- (1) detailed certification specifications issued by the Agency in accordance with point ATM/ANS.EQMT.AR.A.035 that are applicable to the ATM/ANS equipment on the date of submission of the application for that certificate, unless:
 - (i) the applicant chooses to comply, or is required to comply in accordance with point ATM/ANS.EQMT.CERT.015(e), with detailed certification specifications that became applicable after the date of the submission of the application, in which case the Agency shall include in the ATM/ANS equipment certification basis any other certification specifications that are directly related; or
 - (ii) the Agency accepts any alternative to a determined detailed certification specification that cannot be complied with, for which compensating factors have been found that provide an equivalent level of safety or to ensure equivalence with the applicable certification specifications; and
 - (2) any special conditions prescribed by the Agency in accordance with point ATM/ANS.EQMT.AR.B.005.
- (b) The possible inclusion of additional features, characteristics or functions not initially included in the certification basis shall be agreed by the Agency.

ATM/ANS.EQMT.AR.B.005 Special conditions

- (a) The Agency shall establish additional requirements, named 'special conditions', for ATM/ANS equipment if the related applicable detailed specifications are not deemed adequate because of one of the following:
- (1) the ATM/ANS equipment has novel or unusual design features relative to the design practices on which the applicable detailed specifications are based;
 - (2) the intended use of the ATM/ANS equipment is unconventional;
 - (3) experience with other similar ATM/ANS equipment in service having similar design features or newly identified risks has shown that unwanted conditions may develop;
 - (4) the environment at the location of installation physically prevents the fulfilment of certain requirements of the applicable detailed specifications.
- (b) Special conditions contain safety, performance, security, and interoperability standards that the Agency finds necessary to ensure that the appropriate level of performance of the ATM/ANS equipment is equivalent to that required by the applicable detailed specifications.

ATM/ANS.EQMT.AR.B.010 Level of involvement

- (a) The Agency shall determine its level of involvement in the verification of compliance-demonstration activities and data related to an application for the issue of a certificate or for changes to it. It shall determine this based on the assessment of subjective groups of compliance-demonstration activities and data from the certification programme.

The assessment shall address all of the following:

- (1) the likelihood of an unidentified non-compliance with the certification basis;
- (2) the potential impact of that non-compliance on safety, security, service specifications and functioning of the ATM/ANS equipment.

It shall consider at least the following elements:

- (i) novel or unusual features of the certification project, including operational, organisational and knowledge-management aspects;
 - (ii) complexity of the design and/or the demonstration of compliance;
 - (iii) criticality of the design or the technology, the related safety, security or service-compliance risks and the functioning of the ATM/ANS equipment, including those identified on similar designs;
 - (iv) performance and experience of the applicant in the domain concerned.
- (b) The Agency shall notify its level of involvement to the applicant and shall update its level of involvement when this is warranted by information which has an appreciable impact on the risk previously assessed in accordance with point (a). The Agency shall notify the applicant about any change to the level of involvement.

ATM/ANS.EQMT.AR.B.015 Issue of an ATM/ANS equipment certificate

- (a) The Agency shall issue a certificate for ATM/ANS equipment, provided the following:
- (1) the applicant has demonstrated compliance with point ATM/ANS.EQMT.CERT.015;
 - (2) the Agency has not identified any non-compliance with the ATM/ANS equipment certification basis through the verification of the compliance-demonstration activities determined in accordance with point ATM/ANS.EQMT.AR.B.010;
 - (3) no feature or characteristic has been identified that may render the equipment unsafe for the intended use.

- (b) The ATM/ANS equipment certificate shall include the operating limitations, the data sheet for continued suitability, the applicable ATM/ANS equipment certification basis with which the Agency records compliance, and any other conditions or limitations prescribed in the applicable detailed specifications and special conditions.

ATM/ANS.EQMT.AR.B.020 Initial oversight investigation of declaration of design compliance of ATM/ANS equipment

- (a) Upon receiving a declaration of design compliance of the ATM/ANS equipment from an organisation involved in the design or production of ATM/ANS equipment and approved by the Agency in accordance with Implementing Regulation (EU) 2023/1769, the Agency shall verify that the following is complied with:
- (1) the declarant has the privilege to declare design compliance in accordance with point ATM/ANS.EQMT.DEC.005;
 - (2) the declaration contains all the information listed in point ATM/ANS.EQMT.DEC.010;
 - (3) the declaration does not contain information that indicates a non-compliance with the applicable requirements of Annex III and no feature or characteristic has been identified that may render the ATM/ANS equipment unsafe for the intended use.
- (b) The declaration of design compliance of the ATM/ANS equipment shall include the operating limitations, the data sheet for continued suitability, the applicable detailed specifications with which the organisation has demonstrated compliance, and any other conditions or limitations set out in the applicable detailed specifications and special conditions.
- (c) If the declaration is not consistent with the organisation's privileges or contains information that indicates non-compliance with the applicable detailed specifications and special conditions, the Agency shall notify the organisation concerned about the non-compliance and request further information, corrective actions, and evidence thereof.
- (d) If the requirements in points (a) and (b) are met, the Agency shall acknowledge the receipt of the declaration.

ATM/ANS.EQMT.AR.B.025 Registration of a declaration of design compliance of ATM/ANS equipment

The Agency shall register a declaration of design compliance of ATM/ANS equipment in a suitable database, provided that:

- (a) the declarant has declared compliance of the ATM/ANS equipment design in accordance with point ATM/ANS.EQMT.DEC.010;
- (b) the declarant has committed to undertake the obligations laid down in Annex III;
- (c) there are no unresolved issues in accordance with point ATM/ANS.EQMT.AR.B.020.

ATM/ANS.EQMT.AR.B.030 Changes to declarations

- (a) Upon receiving a notification of changes in accordance with point ATM/ANS.EQMT.DEC.020, the Agency shall verify the completeness of the notification in accordance with point ATM/ANS.EQMT.AR.B.020.
 - (b) When the change(s) affects (affect) any aspect of the declaration that is registered in accordance with point ATM/ANS.EQMT.AR.B.025, the Agency shall update the register.
 - (c) Upon completion of the activities required by points (a) and (b), the Agency shall acknowledge receipt of the notification to the organisation involved in the design or production of ATM/ANS equipment.
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ANNEX II

ATM/ANS EQUIPMENT CERTIFICATES**(Part-ATM/ANS.EQMT.CERT)****ATM/ANS.EQMT.CERT.001 Scope**

This Annex establishes the procedures for the issue of certificates for ATM/ANS equipment in accordance with Article 4, and the rights and obligations of the applicant for, and holder of, those certificates.

ATM/ANS.EQMT.CERT.005 Eligibility

Any natural or legal person who has demonstrated, or is in the process of demonstrating, their design capability in accordance with point ATM/ANS.EQMT.CERT.010, may apply for the issue of an ATM/ANS equipment certificate under the conditions laid down in this Annex.

ATM/ANS.EQMT.CERT.010 Demonstration of capability

An applicant for an ATM/ANS equipment certificate shall hold a design organisation approval issued by the Agency in accordance with Implementing Regulation (EU) 2023/1769 that covers the respective ATM/ANS equipment.

ATM/ANS.EQMT.CERT.015 Application for an ATM/ANS equipment certificate

- (a) An application for an ATM/ANS equipment certificate, or for changes to it, shall be made in a form and manner established by the Agency.
- (b) An application for an ATM/ANS equipment certificate shall include, as a minimum:
 - (1) preliminary descriptive data of the ATM/ANS equipment and its intended use;
 - (2) a certification programme for the demonstration of compliance in accordance with point ATM/ANS.EQMT.CERT.025, consisting of the following:
 - (i) a detailed description of the design, including all the configurations to be certified;
 - (ii) the proposed equipment characteristics and limitations;
 - (iii) the intended use of the ATM/ANS equipment;
 - (iv) a proposal for the initial certification basis, including applicable detailed certification specifications, proposed special conditions, proposed equivalent safety findings, as well as a proposed means of compliance and proposed deviations, as applicable, prepared in accordance with the requirements and options set out in point ATM/ANS.EQMT.AR.B.001;
 - (v) a proposal for a breakdown of the certification programme into subjective groups of compliance-demonstration activities and data, including a proposal for the means of compliance and related compliance-demonstration documents;
 - (vi) a proposal for the assessment of the subjective groups of compliance-demonstration activities and data, addressing the likelihood of an unidentified non-compliance with the certification-basis requirements and the potential impact of that non-compliance on the ATM/ANS equipment; the proposed assessment shall take into account at least the elements set out in points (a)(2)(i) to (iv) of point ATM/ANS.EQMT.AR.B.010; based on this assessment, the application shall include a proposal for the Agency's level of involvement in the verification of the compliance-demonstration activities and data;
 - (vii) a project schedule including the major milestones.

- (c) Following the initial submission of the application to the Agency, the applicant shall update the certification programme when there are changes to the certification project that affect any of points (b)(2)(i) to (vii).
- (d) An application for the issue of an ATM/ANS equipment certificate shall be valid for 5 years unless the applicant demonstrates at the time of the application that it requires a longer period of time to demonstrate compliance and the Agency agrees to extend that period of time.
- (e) In the case where an ATM/ANS equipment certificate has not been issued, or it is evident that it will not be issued, within the time limit provided for in point (d), the applicant may:
 - (1) submit a new application and comply with the requirements for certification basis, as established and notified by the Agency in accordance with point ATM/ANS.EQMT.AR.B.001 for the date of submission of the new application; or
 - (2) apply for an extension of the time limit provided for in point (d) and propose a new date for the issue of the certificate; in that case, the applicant shall comply with the requirements for certification basis, as established and notified by the Agency in accordance with point ATM/ANS.EQMT.AR.B.001 for a date to be selected by the applicant; however, that date shall not precede the new date proposed by the applicant for the issue of the certificate by more than 5 years for an application for the issue of an ATM/ANS equipment certificate.

ATM/ANS.EQMT.CERT.020 Changes that require the issue of a new ATM/ANS equipment certificate

An approved design organisation that proposes changes to ATM/ANS equipment shall apply for the issue of a new certificate where the changes in the design or the functionality of that ATM/ANS equipment are so extensive that a complete investigation of compliance with the applicable certification basis is required.

ATM/ANS.EQMT.CERT.025 Demonstration of compliance with the ATM/ANS equipment certification basis

- (a) An applicant shall, following the acceptance of the certification programme by the Agency, demonstrate compliance with the ATM/ANS equipment certification basis as established and notified to the applicant by the Agency in accordance with point ATM/ANS.EQMT.AR.B.001, and shall provide the Agency with the means by which such compliance has been demonstrated.
- (b) An applicant for an ATM/ANS equipment certificate shall update the certification programme with the updated certification basis in case the Agency identifies the need for the applicant to do so following the initial submission established in accordance with point ATM/ANS.EQMT.CERT.015.
- (c) An applicant shall report to the Agency any difficulty or event encountered during the process of demonstration of compliance that may have an appreciable effect on the assessment under point ATM/ANS.EQMT.CERT.015(b)(2)(vi) or on the certification programme or may otherwise require a change to the level of involvement of the Agency previously notified to the applicant in accordance with point ATM/ANS.EQMT.AR.B.010(b).
- (d) An applicant shall record demonstrations of compliance within the compliance documents as referred to in the certification programme.
- (e) Upon completion of all compliance-demonstration activities in accordance with the certification programme, including any inspections and tests carried out in accordance with point ATM/ANS.EQMT.CERT.040, an applicant shall declare and submit in a form and manner established by the Agency that:
 - (1) it has demonstrated compliance with the certification basis, as established and notified by the Agency, following the certification programme as accepted by the Agency in accordance with point (a);
 - (2) no feature or characteristic has been identified that may render the ATM/ANS equipment unsuitable for its intended use.
- (f) The applicant shall demonstrate that the features, characteristics or functions that do not form part of the certification basis have no interference or detrimental effect on the suitability of the ATM/ANS equipment for its intended use.

ATM/ANS.EQMT.CERT.030 Means of compliance

- (a) The Agency shall develop acceptable means of compliance ('AMC') that may be used to establish compliance with Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on the basis thereof.
- (b) Alternative means of compliance may be used to establish compliance with this Regulation.

ATM/ANS.EQMT.CERT.035 ATM/ANS equipment design

- (a) The ATM/ANS equipment design shall consist of:
 - (1) the drawings and specifications, and a listing of those drawings and specifications, necessary to define the configuration and the design features shown to comply with the certification basis;
 - (2) information on the processes and methods of manufacture and assembly of the equipment necessary to ensure the conformity of the ATM/ANS equipment;
 - (3) an approved limitations section of the instructions for continued suitability as defined by the applicable detailed certification specifications;
 - (4) any other data that allows by comparison the determination of the suitability of the design.
- (b) Each design shall be adequately identified.

ATM/ANS.EQMT.CERT.040 Inspection and testing

- (a) Before each test is undertaken during the demonstration of compliance required by point ATM/ANS.EQMT.CERT.025, the applicant shall have verified:
 - (1) for the test specimen, that:
 - (i) the standard parts, elements, configuration, coding and processes conform to the specifications for the proposed design;
 - (ii) the developed ATM/ANS equipment conforms to the proposed design;
 - (iii) the manufacturing processes, construction and assembly adequately conform to those specified in the proposed equipment design; and
 - (2) for the test and the measuring equipment to be used for the test, that those are adequate for the test and appropriately calibrated.
- (b) On the basis of the verifications carried out in accordance with point (a), the applicant shall issue a statement of verification listing any potential non-conformity, together with a justification that this will not affect the test results and shall allow the Agency to perform any inspection it considers necessary to check the validity of that statement.
- (c) The applicant shall allow the Agency to:
 - (1) review any data and information related to the demonstration of compliance;
 - (2) witness or carry out any test or inspection conducted for the purpose of demonstration of compliance.
- (d) For all the tests and inspections witnessed by the Agency:
 - (1) the applicant shall submit to the Agency a statement of verification in accordance with point (b);
 - (2) no change that affects the validity of the statement of verification shall be made to the test specimen, or the test and measuring equipment, between the time the statement of verification provided for in point (b) was issued and the time the test specimen is presented to or witnessed by the Agency for testing.

ATM/ANS.EQMT.CERT.045 Record-keeping

In addition to the record-keeping requirements appropriate to or associated with the management system, all relevant design information, drawings and test reports, including inspection records and tests recorded, shall be made available by the certificate holder to the Agency and shall be retained in order to provide the information necessary to ensure the continued compliance.

ATM/ANS.EQMT.CERT.050 Manuals

The holder of an ATM/ANS equipment certificate shall produce, maintain and update master copies of all manuals required by the applicable certification basis, and provide copies, on request, to the Agency.

ATM/ANS.EQMT.CERT.055 Maintenance instructions

- (a) The holder of an ATM/ANS equipment certificate shall furnish at least one set of complete maintenance instructions, comprising descriptive data and accomplishment instructions prepared in accordance with the applicable certification basis, to all known users and shall make them available on request to any other person that is required to comply with any of these maintenance instructions.
- (b) Changes to the maintenance instructions shall be made available to all known users and shall be made available on request to any person that is required to comply with any of these maintenance instructions. A programme that shows how changes to the maintenance instructions are made available to all known users shall be submitted to the Agency.

ATM/ANS.EQMT.CERT.060 Changes to the ATM/ANS equipment certification basis

- (a) All changes shall be approved by the Agency once the certificate holder demonstrates that the changes, and the areas affected by the changes, comply with the certification basis as established by the Agency in accordance with point ATM/ANS.EQMT.AR.B.001.
- (b) By way of derogation from point (a), the changes within the scope of the organisation's privileges following an approved change management procedure shall be managed by the approved design organisation and shall be limited to specific configuration(s) of the ATM/ANS equipment to which the changes relate.
- (c) For that purpose, the holder of an ATM/ANS equipment certificate shall have a system in place to identify the scope of the changes to ATM/ANS equipment as 'minor' and 'major'.
- (d) The changes shall be issued with a statement in accordance with point (b)(2) of point DPO.OR.C.001 of the Annex II (Part-DPO.OR) to Implementing Regulation (EU) 2023/1769.

ATM/ANS.EQMT.CERT.065 ATM/ANS equipment directives

When an ATM/ANS equipment directive is issued to correct the condition referred to in point (b) of ATM/ANS.EQMT.AR.A.030, the holder of the ATM/ANS equipment certificate, unless otherwise determined by the Agency in case urgent action is needed, shall:

- (a) propose appropriate corrective action and submit details of that proposal to the Agency for approval;
- (b) following the approval by the Agency, make available to all known users of the ATM/ANS equipment and to the competent authorities concerned, and if applicable and on request, to any person required to comply with the ATM/ANS equipment directive, appropriate descriptive data and accomplishment instructions.

ATM/ANS.EQMT.CERT.070 Inspections performed by the Agency

Upon the Agency's request, each organisation that holds a certificate issued by the Agency under this Annex shall:

- (a) grant the Agency access to any facility, equipment, document, record, data, process, procedure or any other material, and allow the Agency to review any report, make any inspection and perform or witness any test that is necessary to verify the compliance of the organisation with the applicable requirements of this Annex;
 - (b) if the natural or legal person employs partners, suppliers or subcontractors, make arrangements with them to ensure that the Agency has access to them and may investigate as described in point (a).
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ANNEX III

DECLARATION OF DESIGN COMPLIANCE OF THE ATM/ANS EQUIPMENT**(Part-ATM/ANS.EQMT.DEC)****ATM/ANS.EQMT.DEC.001 Scope**

This Annex establishes the procedures for declaring compliance of the ATM/ANS equipment design, and establishes the rights and obligations of organisations involved in the design of ATM/ANS equipment that are authorised to issue declarations.

ATM/ANS.EQMT.DEC.005 Eligibility and demonstration of compliance

An organisation involved in the design of ATM/ANS equipment shall demonstrate its capability to declare the compliance of the design of certain ATM/ANS equipment by holding an organisation approval issued by the Agency in accordance with Implementing Regulation (EU) 2023/1769, as specified in the terms of the organisation approval.

ATM/ANS.EQMT.DEC.010 Declaration of design compliance of the ATM/ANS equipment

An approved organisation shall submit to the Agency a dated and signed declaration of compliance of the design of certain ATM/ANS equipment. The declaration shall contain at least the following information:

- (a) description of the design, including all the configurations;
- (b) the rated performance of the equipment, where appropriate, either directly or by reference to other supplementary documents;
- (c) a statement of compliance certifying that the equipment meets the applicable specifications, and a list of the declaration specifications and special conditions, as applicable;
- (d) reference to relevant supporting evidence, including test reports;
- (e) reference to the appropriate operation, set-up and maintenance manuals;
- (f) the levels of compliance, where various levels of compliance are allowed by the declaration specifications;
- (g) list of deviations, as applicable.

ATM/ANS.EQMT.DEC.015 Means of compliance

- (a) The Agency shall develop acceptable means of compliance ('AMC') that may be used to establish compliance with Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on the basis thereof.
- (b) Alternative means of compliance may be used to establish compliance with this Regulation.

ATM/ANS.EQMT.DEC.020 Changes to the declaration of ATM/ANS equipment design

- (a) An approved organisation involved in the design of ATM/ANS equipment may make changes to the design that are within the scope of the approved organisation's privileges. In this case, the changed equipment shall keep its original part number.
- (b) Any change to the design that is within the scope of the approved organisation's privileges and that is extensive enough to require a complete investigation in accordance with point ATM/ANS.EQMT.AR.B.020 to determine its compliance shall require the assignment of a new model designation to the equipment.

ATM/ANS.EQMT.DEC.025 Record-keeping

In addition to the record-keeping requirements appropriate to or associated with the management system, all relevant design information, drawings and test reports, including inspection records for the equipment tested, shall be made available to the Agency and shall be retained in order to provide the information necessary to ensure the continued suitability of the ATM/ANS equipment.

ATM/ANS.EQMT.DEC.030 Manuals

The organisation involved in the design of ATM/ANS equipment, which has made the declaration shall produce, maintain and update master copies of all manuals identified in the declaration, and provide copies, on request, to the Agency.

ATM/ANS.EQMT.DEC.035 Maintenance instructions

- (a) The design organisation which has made the declaration shall furnish at least one set of complete maintenance instructions, comprising descriptive data and accomplishment instructions prepared in accordance with the specifications applicable to the ATM/ANS equipment covered by the declaration, to all known users and shall make them available on request to any other person that is required to comply with any of the terms of these maintenance instructions.
- (b) Changes to the maintenance instructions shall be made available to all known users and shall be made available on request to any person that is required to comply with any of these maintenance instructions. A programme that shows how changes to the maintenance instructions are made available to all known users shall be submitted to the Agency upon request.

ATM/ANS.EQMT.DEC.040 ATM/ANS equipment directives

When an ATM/ANS equipment directive is issued to correct the condition referred to in point (b) of ATM/ANS.EQMT.AR.A.030, the declarant of the design compliance of the ATM/ANS equipment shall, unless otherwise determined by the Agency in case urgent action is needed, shall:

- (a) propose appropriate corrective action and submit details of that proposal to the Agency for approval;
- (b) following the approval by the Agency, make available to all known users of the equipment and to the competent authorities concerned, if applicable, and, on request, to any person required to comply with the ATM/ANS equipment directive, appropriate descriptive data and accomplishment instructions.

ATM/ANS.EQMT.DEC.045 Inspections performed by the Agency

Upon the Agency's request, each organisation that is authorised to issue a declaration in accordance with this Regulation shall:

- (a) grant the Agency access to any facility, equipment, document, record, data, process, procedure or any other material, and allow the Agency to review any report, make any inspection and perform or witness any test that is necessary to verify the compliance and the continued compliance of the organisation with the applicable requirements of this Annex;
 - (b) if the natural or legal person uses partners, suppliers or subcontractors, make arrangements with them to ensure that the Agency has access to them and may investigate as provided for in point (a).
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COMMISSION IMPLEMENTING REGULATION (EU) 2023/1769**of 12 September 2023****laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 ⁽¹⁾, and in particular Article 43(1) and Article 62(15), point (c) thereof,

Whereas:

- (1) Taking into account the objectives and principles set out in Articles 1 and 4 to Regulation (EU) 2018/1139, and in particular the nature and risk of the activity concerned, organisations involved in the design or production of air traffic management/air navigation service (ATM/ANS) systems and ATM/ANS constituents, should be required to hold a certificate.
- (2) In order to ensure the uniform implementation of and compliance with the essential requirements referred to in Article 40 of Regulation (EU) 2018/1139, for the provision of ATM/ANS this Regulation should lay down rules and procedures for issuing, maintaining, amending, limiting, suspending or revoking the certificates for organisations involved in the design or production of ATM/ANS systems and ATM/ANS constituents, as well as the privileges and responsibilities of the holders of certificates.
- (3) The conformity assessment of ATM/ANS equipment laid down in Commission Delegated Regulation (EU) 2023/1768 ⁽²⁾ depends on the nature and the risk of the ATM/ANS service, or on the functionality of a particular ATM/ANS equipment and is based on the existing methodologies and best practices. That Regulation establishes three different types of conformity assessment, in particular: a certification by the Agency of certain ATM/ANS equipment; a declaration by an approved organisation involved in the design or production of ATM/ANS equipment; and a statement of compliance by the ATM/ANS provider or by an approved organisation involved in the design or production of ATM/ANS equipment.
- (4) The typical life cycle of ATM/ANS equipment consists of various phases: design, production, installation, operation, maintenance, and decommission. The ATM/ANS provider is usually responsible for some of those phases, while for other phases the organisations involved in the design or production of ATM/ANS equipment are responsible. Therefore, common requirements should be established for the approval and oversight of organisations involved in the design or production of certain ATM/ANS equipment used in the provision of ATM/ANS, in particular those referred to in point 3.1 of Annex VIII to Regulation (EU) 2018/1139.
- (5) The European Union Aviation Safety Agency ('the Agency') is responsible for all competent authority tasks related to certificates and declarations for ATM/ANS systems and ATM/ANS constituents ('ATM/ANS equipment'), including oversight and enforcement. To ensure consistency and risk-based assessment and, amongst others, to avoid duplication and administrative burdens, as well as to promote effectiveness in certification and oversight processes,

⁽¹⁾ OJ L 212, 22.08.2018, p. 1.

⁽²⁾ Commission Delegated Regulation (EU) 2023/1768 of 14 July 2023 laying down detailed rules for the certification and declaration of air traffic management/air navigation services systems and air traffic management/air navigation services constituents (see page 1 of this Official Journal).

those oversight and enforcement functions should be exercised by the Agency. For the purpose of certification or review of declarations of ATM/ANS equipment, it is necessary that the Agency also oversees the processes established by design and production organisations, including, where necessary, the certification of those organisations. Therefore, the Agency should be responsible for the approval of the organisations involved in the design or production of ATM/ANS equipment and at the same time for the attestation of ATM/ANS equipment.

- (6) The competency of the Agency to certify design or production organisations should allow also for a non-discriminatory and harmonised approach towards all design or production organisations applying for a certificate under this Regulation. ATM/ANS equipment put on the market in the Union can be used in all Member States and for all kind of services, no matter whether it is used by ATM/ANS providers active in one or more Member States. It is not possible to categorise the organisations involved in the design and production based on their future catalogue of equipment to be used on a local or Union level. The same principle is to be observed when the Agency is allocating certification and oversight tasks.
- (7) In accordance with Article 29(2), point (a), of Regulation (EU) 2021/696 ⁽³⁾ of the European Parliament and of the Council, the European Union Agency for the Space Programme (EUSPA) has been entrusted with the task of managing the exploitation of the European Geostationary Navigation Overlay Service (EGNOS), as provided for in Article 44 of that Regulation. The exploitation of EGNOS covers, amongst other actions, the support to certification and standardisation activities. EUSPA does not perform alone all the tasks relating to the exploitation of EGNOS and instead relies on the expertise of other entities, in particular the European Space Agency (ESA), on activities related to system evolution, design and development of parts of the ground segment. Hence EUSPA should be considered as equivalent to a design or production organisation in the context of this Regulation.
- (8) According to the roles and responsibilities defined in Regulation (EU) 2021/696 for EUSPA and ESA, there is not one unique entity responsible for the design of the EGNOS system and its equipment and therefore there is not a single Design and Production Organisation that could be approved by EASA.
- (9) Consequently, the specificities of the set-up for the design of the EGNOS system require specific means for the demonstration of compliance with the essential requirements laid down in Regulation (EU) 2018/1139, taking into account that EGNOS is a multimodal service, which should also comply with relevant regulatory requirements for other sectors.
- (10) Both agencies should cooperate to assure compliance of the EGNOS system with the relevant ICAO standards so that respective arrangements ensure a level of safety and interoperability equivalent to that resulting from the full application of the requirements for design and production in this Regulation. The cooperation will also include the consultation of EUSPA in the development of detailed specifications.
- (11) This Regulation has taken due account of the content of the ATM Master Plan and technological capabilities contained in it.
- (12) The Agency has prepared draft implementing rules and submitted them to the Commission with Opinion No 01/2023 in accordance with Article 75(2), points (b) and (c), and Article 76(1) of Regulation (EU) 2018/1139.
- (13) In order to make optimal use of existing resources and expertise, the Agency may seek administrative support when executing its certification, oversight and enforcement tasks under this Regulation from national competent authorities. This administrative support should not constitute any delegation of powers or responsibilities of tasks.

⁽³⁾ Regulation (EU) 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU (OJ L 170, 12.5.2021, p. 69).

- (14) In order to include design or production organisations of ATM/ANS equipment in the scope of the management of information security risks with a potential impact on aviation safety Implementing Regulation (EU) 2023/203 should be amended.
- (15) The measures provided for in this Regulation are in accordance with the opinion of the Committee referred to in Article 127(1) of Regulation (EU) 2018/1139.

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter

This Regulation lays down technical requirements and administrative procedures for the approval of organisations involved in the design or production of ATM/ANS systems and ATM/ANS constituents subject to certification in accordance with Article 4 of Delegated Regulation (EU) 2023/1768 or declaration of design compliance in accordance with Article 5 of that Regulation.

Article 2

Definitions

For the purpose of this Regulation the following definitions apply:

- (1) 'ATM/ANS equipment' means ATM/ANS constituents as defined by Article 3(6) of Regulation (EU) 2018/1139 and ATM/ANS systems as defined by Article 3(7) of that Regulation, excluding airborne constituents, which are subject to Commission Regulation (EU) No 748/2012 ⁽⁴⁾;
- (2) 'ATM/ANS equipment directive' means a document issued by the Agency which mandates actions to be performed by ATM/ANS providers on ATM/ANS equipment to address an unsafe and/or insecure condition that has been identified and restore the performance and interoperability of that ATM/ANS equipment when evidence shows that the safety, security, performance or interoperability of that particular equipment may otherwise be compromised.

Article 3

Competent authority requirements

1. For the purposes of this Regulation, the competent authority responsible for the issue of approvals to organisations involved in the design or production of ATM/ANS equipment and for the oversight and enforcement in respect of those organisations, shall be the Agency.
2. The Agency shall fulfil the detailed requirements laid down in Annex I (Part-DPO.AR) when conducting certification, investigations, inspections, audits and other monitoring activities necessary to ensure the effective oversight of organisations involved in the design or production of ATM/ANS equipment subject to this Regulation. The Agency may seek administrative support from national competent authorities for the performance of its tasks related to certification, oversight and enforcement when executing its functions under this Regulation.

⁽⁴⁾ Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1).

*Article 4***Organisations involved in the design, or production of ATM/ANS equipment**

1. An organisation involved in the design or production of ATM/ANS equipment subject to certification in accordance with Article 4 of Delegated Regulation (EU) 2023/1768 or declaration of design compliance in accordance with Article 5 of that Regulation shall demonstrate its capability as a design or production organisation for ATM/ANS equipment in accordance with Annex II (Part-DPO.OR).

2. Organisations involved in the design or production of the ATM/ANS equipment of the European Geostationary Navigation Overlay Service (EGNOS) shall be deemed to comply with the requirements of Annex II to this Regulation by demonstrating their compliance with Regulation (EU) 2021/696 and with the management, design and quality standards applicable to EGNOS under that Regulation. Such organisations shall not be required to be approved by the Agency.

The European Union Agency for the Space Programme shall ensure in its role of a design or production organisation that the other organisations involved in the design or production of the equipment of EGNOS follow design and production processes resulting in the level of safety and interoperability equivalent to Annex II (Part-DPO.OR).

*Article 5***Amendments to Implementing Regulation (EU) 2023/203 ⁽⁵⁾**

Implementing Regulation (EU) 2023/203 is amended as follows:

(1) in Article 2(1), the following point (j) is added:

‘(j) approved organisations involved in the design or production of ATM/ANS systems and ATM/ANS constituents subject to Commission Implementing Regulation (EU) 2023/1769 (*).

(*) Commission Implementing Regulation (EU) 2023/1769 of 12 September 2023 laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203 (OJ L 228, XX.9.2023, p. 19).’

(2) in Article 6(1), the following point (h) is added:

‘(h) with regard to organisations referred to in Article 2(1), point (j), the competent authority designated in accordance with Article 3(1) of Implementing Regulation (EU) 2023/1769.’

*Article 6***Entry into force**

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

⁽⁵⁾ Commission Implementing Regulation (EU) 2023/203 of 27 October 2022 laying down rules for the application of Regulation (EU) 2018/1139 of the European Parliament and of the Council, as regards requirements for the management of information security risks with a potential impact on aviation safety for organisations covered by Commission Regulations (EU) No 1321/2014, (EU) No 965/2012, (EU) No 1178/2011, (EU) 2015/340, Commission Implementing Regulations (EU) 2017/373 and (EU) No 2021/664, and for competent authorities covered by Commission Regulations (EU) No 748/2012, (EU) No 1321/2014, (EU) No 965/2012, (EU) No 1178/2011, (EU) 2015/340 and (EU) No 139/2014, Commission Implementing Regulations (EU) 2017/373 and (EU) No 2021/664 and amending Commission Regulations (EU) No 1178/2011, (EU) No 748/2012, (EU) No 965/2012, (EU) No 139/2014, (EU) No 1321/2014, (EU) 2015/340, and Commission Implementing Regulations (EU) 2017/373 and (EU) No 2021/664 (OJ L 31, 2.2.2023, p. 1).

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 12 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX I

REQUIREMENTS FOR THE AGENCY**(Part-DPO.AR)**

SUBPART A GENERAL REQUIREMENTS (DPO.AR.A)

DPO.AR.A.001 Scope

This Annex establishes the requirements for the administration and management systems of the Agency for the certification, oversight and enforcement tasks of design or production organisations when the Agency exercises its tasks and responsibilities.

DPO.AR.A.010 Immediate reaction to a safety, security and interoperability problem

- (a) Without prejudice to Regulation (EU) No 376/2014 of the European Parliament and of the Council ⁽¹⁾, and the delegated and implementing acts adopted on the basis thereof, the Agency shall implement a system to appropriately collect, analyse, and disseminate safety, security and interoperability information.
- (b) Upon receiving the information referred to in point (a), the Agency shall take appropriate measures to address any identified safety, security, or interoperability problem, including the issuing of ATM/ANS equipment directives in accordance with point ATM/ANS.EQMT.AR.A.030 of Annex I to Delegated Regulation (EU) 2023/1768.
- (c) The measures taken under point (b) shall immediately be notified to the organisation concerned, who is obliged to comply with them, in accordance with point DPO.OR.A.035. The competent authorities of the ATM/ANS providers concerned shall also be notified.

DPO.AR.A.015 Immediate reaction to an information security incident or vulnerability with an impact on aviation safety

- (a) The Agency shall implement a system to appropriately collect, analyse, and disseminate information related to information security incidents and vulnerabilities with a potential impact on aviation safety that are reported by organisations. This shall be done in coordination with any other relevant authorities responsible for information security or cybersecurity within the Member State to increase the coordination and compatibility of reporting schemes.
- (b) Upon receiving the information referred to in point (a), the Agency shall take adequate measures to address the potential impact on aviation safety of the information security incident or vulnerability.
- (c) Measures taken in accordance with point (b) shall immediately be notified to all persons or organisations that shall comply with them under Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis. The Agency shall also notify those measures to the competent authorities of the Member States concerned.

SUBPART B MANAGEMENT (DPO.AR.B)

DPO.AR.B.001 Management system

- (a) The Agency shall establish and maintain a management system, including, as a minimum, the following elements:
 - (1) documented policies and procedures to describe its organisation, means and methods to establish compliance with Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on their bases, as necessary, for the exercise of its certification, oversight and enforcement tasks; the procedures shall be kept up to date and serve as the basic working documents within the Agency for all related tasks;

⁽¹⁾ Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007 (OJ L 122, 24.4.2014, p. 18).

- (2) a sufficient number of personnel to perform its tasks and discharge its responsibilities under this Regulation; a system shall be in place to plan the availability of personnel in order to ensure the proper completion of all related tasks;
 - (3) personnel that are qualified to perform their allocated tasks and have the necessary knowledge and experience, and have received initial and recurrent training to ensure their continuing competence;
 - (4) adequate facilities and offices to perform the allocated tasks;
 - (5) a function to monitor the compliance of the management system with the relevant requirements and the adequacy of the procedures, including the establishment of an internal audit process and a safety risk management process; the compliance-monitoring function shall include a system to provide feedback about audit findings to the senior management of the Agency to ensure the implementation of corrective actions as necessary;
 - (6) a person or group of persons ultimately responsible to the senior management of the Agency for the compliance-monitoring function.
- (b) The Agency shall, for each field of activity included in the management system, appoint one or more persons with the overall responsibility for the management of the relevant task(s).
 - (c) The Agency shall establish procedures for its participation in a mutual exchange of all the necessary information with any other competent authority(ies) referred to in Article 4 of Commission Implementing Regulation (EU) 2017/373 ⁽²⁾ and provide them with assistance or request assistance from them, including any information that stems from mandatory and voluntary occurrence reporting as required by point DPO.OR.A.045.
 - (d) The management system established and maintained by the Agency shall comply with Annex I (Part-IS.AR) of Implementing Regulation (EU) 2023/203 in order to ensure the proper management of information security risks which may have an impact on aviation safety.

DPO.AR.B.010 Changes in the management system

- (a) The Agency shall have a system in place to identify those changes that affect its capability to perform its tasks and discharge its responsibilities as set out in Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on the basis thereof. That system shall enable the Agency to take action, as appropriate, to ensure that the management system remains adequate and effective.
- (b) The Agency shall update its management system to reflect any changes to Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on the basis thereof, in a timely manner, so as to ensure the effective implementation of its management system.

DPO.AR.B.015 Record-keeping

- (a) The Agency shall establish and maintain a record-keeping system that provides for adequate storage, accessibility, and reliable traceability of:
 - (1) the management system's documented policies and procedures;
 - (2) the training, qualifications, and authorisation of personnel as required by point DPO.AR.B.001 (a)(3);
 - (3) the allocation of tasks, covering the elements required by point ATM/ANS.EQMT.AR.A.020 of Annex I to Delegated Regulation (EU) 2023/1768, as well as the details of the allocated tasks;

⁽²⁾ Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1).

- (4) the approval process as regards organisations involved in the design or production of ATM/ANS equipment, the certification process, and the registration of declarations of design compliance for ATM/ANS equipment and the continuing oversight, including:
 - (i) applications for the issue of approvals;
 - (ii) approvals issued to organisations involved in the design or production of ATM/ANS equipment, including the associated privileges and any changes to them;
 - (iii) ATM/ANS equipment certificates issued, including any changes to them that it has issued;
 - (iv) all valid declarations of design compliance of ATM/ANS equipment that it has registered;
 - (v) the Agency's continuing oversight programme, including all assessment, audit and inspection records;
 - (vi) a copy of the oversight programme listing the dates when audits are due and when audits were carried out;
 - (vii) copies of all formal correspondence;
 - (viii) recommendations for the issue or continuation of a certificate or continuation of the registration of a declaration, details of findings, and actions taken by the organisations to close them, including the date of closure of each item, enforcement actions, and observations;
 - (ix) any assessment, audit or inspection report;
 - (x) copies of all organisation handbooks, procedures and processes or manuals and amendments to them;
 - (xi) copies of any other documents approved by the Agency;
 - (5) the notification and evaluation of the alternative means of compliance proposed by organisations involved in the design or production of ATM/ANS equipment and the assessment of these alternative means of compliance;
 - (6) safety information, ATM/ANS equipment directives, and follow-up measures;
 - (7) the use of flexibility provisions pursuant to Article 76(4) of Regulation (EU) 2018/1139.
- (b) The Agency shall maintain a list of all the certificates it has issued and of any declarations it has registered.
- (c) All the records referred to in points (a) and (b) shall be stored in a manner that ensures protection against damage, alteration and theft and kept for a minimum period of five years after the approvals and certificates cease to be valid or the declarations are withdrawn, subject to the applicable data protection law.

SUBPART C CERTIFICATION, OVERSIGHT, AND ENFORCEMENT (DPO.AR.C)

DPO.AR.C.001 Issue of approvals to organisations involved in the design or production of ATM/ANS equipment

- (a) Upon receiving an application for the issue of an approval to an organisation involved in the design or production of ATM/ANS equipment, the Agency shall verify the organisation's compliance with the requirements laid down in Annexes II and III of Delegated Regulation (EU) 2023/1768 and in Annex II to this Regulation.
- (b) The Agency may request any audits, inspections or assessments it finds necessary before issuing the approval with all the relevant information set out in Appendix 1 to this Annex.
- (c) The approval shall be issued for an unlimited duration. The privileges as regards the activities the organisation is approved to conduct shall be specified in the conditions attached to the approval.

- (1) With regard to an organisation involved in the design of ATM/ANS equipment, the conditions shall specify the type of design work and the categories of ATM/ANS equipment for which the organisation holds an approval, and the privileges the organisation is approved to exercise.
- (2) With regard to an organisation involved in the production of ATM/ANS equipment, the conditions shall specify the scope of work and the ATM/ANS equipment or the equipment categories, or both, for which the approval holder is entitled to exercise the privileges.
- (d) The approval shall not be issued where a level 1 finding referred to in DPO.AR.C.015 remains open. In exceptional circumstances, finding(s) other than level 1 shall be assessed and mitigated as necessary by the organisation and a corrective action plan for closing the finding(s) shall be approved by the Agency prior to the issue of the approval.
- (e) Each change to the approval and to its conditions shall be approved by the Agency.

DPO.AR.C.005 Oversight programme

- (a) The Agency shall establish and update annually an oversight programme taking into account the specific nature of the organisations it oversees, the complexity of their activities, and the results of past certification or oversight activities, and shall base it on the assessment of the associated risks. The oversight programme shall include audits, which shall:
 - (1) cover all the areas of potential concern, with a focus on those areas where problems have been identified in the past;
 - (2) cover all the organisations, certificates and declarations under the Agency's oversight;
 - (3) cover the means implemented by the organisations to ensure the competence of their personnel;
 - (4) ensure that audits are conducted in a manner commensurate with the level of the risk posed by the organisation's activities;
 - (5) ensure that for organisations under its supervision, an oversight planning cycle not exceeding 24 months is applied.

The oversight planning cycle may be reduced if there is evidence that the safety performance of the organisation has decreased.

The oversight planning cycle may be extended to a maximum of 36 months if the Agency has established that during the previous 24 months:

- (i) the organisation has continuously demonstrated compliance with the change management requirements under point DPO.OR.B.005;
- (ii) no level 1 findings referred to in DPO.AR.C.015 have been issued;
- (iii) all corrective actions referred to in DPO.AR.C.015 have been implemented within the time period accepted or extended by the Agency as defined in point DPO.AR.C.015.

If, in addition to points (i), (ii) and (iii), the organisation has established an effective continuous reporting system to the Agency as regards its regulatory compliance, which has been approved, the oversight planning cycle may be extended to a maximum of 48 months;

- (6) ensure the follow-up of the implementation of corrective actions referred to in DPO.AR.C.015;
- (7) be subject to consultation with the organisations concerned and thereafter its notification;
- (8) indicate the planned intervals of the inspections of the different sites, if necessary.
- (b) The Agency may decide to modify the objectives and the scope of the preplanned audits, including documentary reviews and additional audits, wherever that need arises.

- (c) The Agency shall decide which arrangements, elements, physical locations, and activities are to be audited within a specified time frame.
- (d) Audit observations and findings issued in accordance with point DPO.AR.C.015 shall be documented.
- (e) The findings shall be supported by evidence and identified in terms of applicable requirements and their implementation arrangements against which the audit has been conducted.
- (f) An audit report, including the details of findings and observations, shall be prepared and communicated to the organisation concerned.

DPO.AR.C.010 Changes to the information security management system

- (a) For changes managed and notified to the Agency in accordance with the procedure set out in point IS.I.OR.255(a) of Annex II (Part-IS.I.OR) to Implementing Regulation (EU) 2023/203, the Agency shall include the review of such changes in its continuing oversight programme in accordance with the principles laid down in point DPO.AR.C.005 of this Annex. If any non-compliance is found, the Agency shall notify the organisation thereof, request further changes and act in accordance with point DPO.AR.C.015 of this Annex.
- (b) With regard to other changes requiring an application for approval in accordance with point IS.I.OR.255(b) of Annex II (Part-IS.I.OR) to Implementing Regulation (EU) 2023/203:
 - (1) upon receiving the application for the change, the Agency shall check the organisation's compliance with the applicable requirements before issuing the approval;
 - (2) the Agency shall establish the conditions under which the organisation may operate during the implementation of the change;
 - (3) if it is satisfied that the organisation complies with the applicable requirements, the Agency shall approve the change.

DPO.AR.C.015 Findings, corrective actions, and enforcement measures

- (a) When the Agency, during investigation, oversight or by any other means, identifies any non-compliance with the applicable requirements of this Regulation of a procedure or manual required by this Regulation, or of a certificate or declaration issued in accordance with this Regulation, it shall, without prejudice to any additional action required by Regulation (EU) 2018/1139, raise a finding.
- (b) The Agency shall have a system in place to:
 - (1) analyse findings for their safety and interoperability significance;
 - (2) identify appropriate enforcement measures, including the suspension or revocation of approvals and certificates;
 - (3) issue directives on the basis of the risk posed by the organisation's non-compliance.
- (c) A level 1 finding shall be raised by the Agency when it identifies any significant non-compliance with the ATM/ANS certification basis as per point ATM/ANS.EQMT.AR.B.001 of Annex I to Delegated Regulation (EU) 2023/1768 that may lead to uncontrolled non-compliance and to a potential unwanted condition.

Level 1 findings shall include but are not limited to:

- (1) the promulgation of operational procedures which introduce a significant risk to the organisation's activities;
- (2) the obtainment or maintenance of the validity of the organisation's approval through the submission of falsified documentary evidence;
- (3) evidence of malpractice or fraudulent use of the organisation's approval;
- (4) the lack of an accountable manager.

(d) A level 2 finding shall be raised by the Agency where non-compliance with any of the following is identified:

- (i) with the applicable requirements of Regulation (EU) 2018/1139;
- (ii) with the delegated and implementing acts adopted on the basis of Regulation (EU) 2018/1139;
- (iii) with the procedures and manuals required by Regulation (EU) 2018/1139; or
- (iv) with the approval issued in accordance with Regulation (EU) 2018/1139,

which is not classified as a level 1 finding.

(e) Where a finding is raised, the Agency shall, without prejudice to any additional action required by Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis, communicate the finding in writing to the organisation concerned and require it to take corrective action to address the non-compliance(s) identified.

(1) In the case of level 1 findings, the Agency shall immediately take appropriate enforcement measures and may, if appropriate, limit, suspend or revoke in whole or in part the approval until successful corrective action has been taken by the organisation.

(2) In the case of level 2 findings, the Agency shall:

- (i) grant the organisation a corrective action implementation period, as part of an action plan, appropriate to the nature of the finding;
- (ii) assess the corrective action and implementation plan proposed by the organisation, and, if the assessment concludes that they are sufficient to address the non-compliance(s), accept them.

(3) In the case of level 2 findings, where the organisation fails to submit a corrective action plan that is acceptable to the Agency in the light of the finding, or where the organisation fails to perform the corrective action within the period of time accepted or extended by the Agency, the finding may be raised to a level 1 finding and action shall be taken in accordance with point (e)(1).

(f) For those cases where level 1 and level 2 findings are not required, the Agency may issue observations.

(g) The Agency shall:

- (1) suspend a certificate if it considers that there are reasonable grounds that such action is necessary to prevent a credible threat to the safety, security, performance or interoperability of ATM/ANS equipment;
- (2) issue an ATM/ANS equipment directive under the conditions of point ATM/ANS.EQMT.AR.A.030 of Annex I to Delegated Regulation (EU) 2023/1768;
- (3) suspend, revoke or limit a certificate if such action is required in accordance with point (c);
- (4) take immediate and appropriate action that is necessary to limit or prohibit the activities of an organisation or a natural or legal person if it considers that there are reasonable grounds that such action is necessary to prevent a credible threat to ATM/ANS equipment;
- (5) register a declaration of design compliance only after all the findings from the initial oversight investigation have been resolved;
- (6) temporarily or permanently deregister a declaration of design compliance if it considers that there are reasonable grounds that such action is necessary to prevent a credible threat to the safety, security, performance or interoperability of ATM/ANS equipment;

- (7) take any further enforcement measures which are necessary to ensure that any non-compliance with the essential requirements of Annex VIII and, if applicable, Annex VII to Regulation (EU) 2018/1139 and with this Annex, is rectified and, where necessary, mitigate its consequences.
 - (h) Upon taking enforcement measures in accordance with point (g), the Agency shall notify them to the addressee, state the reasons for them, and inform the addressee of its right to appeal.
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Appendix 1

SPECIFICATIONS OF THE APPROVAL OF AN ORGANISATION INVOLVED IN THE DESIGN OR PRODUCTION OF ATM/ANS EQUIPMENT

The approval shall specify:

- (a) the Agency as the competent authority that issues the approval;
 - (b) the applicant's name and postal address;
 - (c) the applicant's scope of work;
 - (d) the location where the activities are to be performed;
 - (e) the associated privileges for which the applicant has been approved;
 - (f) a statement of the applicant's conformity and compliance with the applicable requirements;
 - (g) the date of issue and the validity of the approval;
 - (h) the additional conditions or limitations attached to it.
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ANNEX II

**REQUIREMENTS FOR ORGANISATIONS INVOLVED IN THE DESIGN OR PRODUCTION
OF ATM/ANS EQUIPMENT****(Part-DPO.OR)**

SUBPART A GENERAL REQUIREMENTS (DPO.OR.A)

DPO.OR.A.001 Scope

This Annex establishes the common requirements as regards the rights and obligations of an applicant for, and a holder of, an organisation approval for the design or production of ATM/ANS equipment.

DPO.OR.A.005 Eligibility

Any natural or legal person who has demonstrated, or is set to demonstrate, their capability to design or produce ATM/ANS equipment in accordance with point DPO.OR.A.010, may apply for a design or production organisation approval under the conditions laid down in this Annex.

DPO.OR.A.010 Application for a design or production organisation approval and demonstration of capability

- (a) An application for a design or production organisation approval shall be made in a form and manner established by the Agency.
- (b) In order to obtain an approval, an organisation involved in the design or production of ATM/ANS equipment shall comply with the requirements set out in this Regulation where those requirements are applicable to the design or production of ATM/ANS systems and ATM/ANS constituents that the organisation performs or intends to perform.

DPO.OR.A.015 Organisation exposition

- (a) An organisation involved in the design or production of ATM/ANS equipment shall establish and maintain an organisation exposition, which provides the following information:
 - (1) a statement signed by the accountable manager confirming that the organisation exposition and any associated manuals, which define the organisation's compliance with the requirements will be complied with at all times;
 - (2) the title(s) and name(s) of the key manager(s) as referred to in point DPO.OR.B.020;
 - (3) the duties and responsibilities of the manager(s), including matters for which they may deal directly with the Agency on behalf of the organisation;
 - (4) an organisational chart showing lines of responsibility and accountability of the managers throughout the organisation, including a direct accountability of the accountable manager;
 - (5) a general description of the organisation's manpower resources;
 - (6) a general description of the facilities located at each location specified in the organisation's approval;
 - (7) a general description of the organisation's scope of work relevant to the terms of approval;
 - (8) the procedure(s) for the verification and demonstration that the design of ATM/ANS equipment, or changes to it, complies with the applicable detailed specifications and requirements as established by Delegated Regulation (EU) 2023/1768 and has no unsafe or insecure features, as applicable;
 - (9) the procedure for the preparation and maintenance of the technical data and records, for each model of each piece of ATM/ANS equipment for which a certificate or declaration of design compliance has been issued in accordance with Delegated Regulation (EU) 2023/1768, as applicable;
 - (10) the procedure(s) for the notification of organisational changes to the Agency;

- (11) the amendment procedure for the organisation's exposition;
 - (12) a description, direct or by cross reference, of the organisation's management system and procedure(s);
 - (13) a description, direct or by cross reference, of the contractors' management and procedure(s) of supervision referred to in point DPO.OR.B.015 of this Annex.
- (b) The organisation exposition shall be amended as necessary to remain an up-to-date description of the organisation, and a copy of it, including its amendments, shall be supplied to the Agency.
 - (c) An application for a change approval referred to in point DPO.OR.B.005 of this Annex shall be based on the submission of the proposed changes to the organisation exposition.

DPO.OR.A.025 Duration, continued validity and privileges of an organisation approval

- (a) An organisation's approval shall remain valid for an unlimited period of time provided that:
 - (1) the organisation remains compliant with Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis;
 - (2) the approval has not been surrendered by the organisation or suspended or revoked by the Agency.
- (b) Upon revocation or surrender of the approval, if issued in a paper format, it shall be returned to the Agency without delay.
- (c) The holder of an organisation approval shall be entitled, within the scope of its terms of approval and under the relevant procedures of the design management system:
 - (1) to classify changes to an ATM/ANS equipment as 'major' or 'minor';
 - (2) to approve minor changes to an ATM/ANS equipment certificate(s) and/or declaration(s) issued under Delegated Regulation (EU) 2023/1768;
 - (3) to approve certain major changes to an ATM/ANS equipment certificate issued under Delegated Regulation (EU) 2023/1768;
 - (4) to issue declarations of design compliance of ATM/ANS equipment pursuant to Article 5 of Delegated Regulation (EU) 2023/1768; and
 - (5) to issue statements of compliance of ATM/ANS equipment pursuant to Article 6 of Delegated Regulation (EU) 2023/1768.

DPO.OR.A.030 Facilitation and cooperation

- (a) An organisation involved in the design or production of ATM/ANS equipment shall facilitate the inspections and audits performed by the Agency or by a qualified entity that acts on its behalf, and it shall cooperate as necessary for the efficient and effective exercise of the powers of the Agency.
- (b) An organisation involved in the design or production of ATM/ANS equipment shall cooperate with and support the ATM/ANS providers using its ATM/ANS equipment in their compliance demonstration process to the competent authorities concerned.

DPO.OR.A.035 Findings and corrective actions

Following the receipt of the notification of findings from the Agency, the organisation involved in the design or production of ATM/ANS equipment shall:

- (a) identify the root cause of the non-compliance;
- (b) define a corrective action plan;
- (c) demonstrate the implementation of the corrective action to the satisfaction of the Agency within the time period proposed and approved by the Agency, as defined in point (e)(2) of point DPO.AR.C.015.

DPO.OR.A.040 Immediate reaction to a safety, security and interoperability problem

An organisation involved in the design or production of ATM/ANS equipment shall implement any safety and security measures, including ATM/ANS equipment directives, taken by the Agency in accordance with points DPO.AR.A.010 and DPO.AR.A.015.

DPO.OR.A.045 Failures, malfunctions, and defects

(a) The holder of an approval issued in accordance with this Regulation shall:

- (1) establish and maintain a system for collecting, investigating and analysing reports of and information on failures, malfunctions, defects or other occurrences which have caused or might cause adverse effects on the continuing compliance of the ATM/ANS equipment with the applicable requirements;
- (2) inform all known users of the ATM/ANS equipment concerned and, on request, any person mandated under other associated regulations, about the system established in accordance with point (1) and about how to provide such reports of and information on failures, malfunctions, defects or other occurrences.
- (b) For organisations that have their principal place of business in a Member State, the system established in accordance with point (a)(1) shall include provisions for occurrence reporting and follow-up that meet the requirements of Regulations (EU) No 376/2014 and (EU) No 2018/1139 and the delegated and implementing acts adopted on their basis.
- (c) The approval holder shall report to the Agency any failure, malfunction, defect or other occurrence of which it is aware, and which has resulted or may result in an unsafe, insecure, or under-performing condition.
- (d) For approval holders that do not have their principal place of business in a Member State, reports shall be made in a form and manner established by the Agency, as soon as practicable and in any case submitted not later than 72 hours after the person or organisation has become aware of the particular occurrence, unless exceptional circumstances prevent this.
- (e) The approval holder shall investigate an occurrence that has been reported under point (c), including the deficiencies that have led to that occurrence, and report to the Agency the results of its investigation and any action it intends to take or proposes to take to correct these deficiencies.

DPO.OR.A.050 Approval transferability

An organisation approval is not transferable, except as a result of a change in the ownership of the organisation.

SUBPART B MANAGEMENT (DPO.OR.B)**DPO.OR.B.001 Management system**

(a) An organisation involved in the design or production of ATM/ANS equipment shall implement and maintain a management system that includes the following:

- (1) clearly defined lines of responsibility and accountability throughout its organisation, including direct accountability of the accountable manager;
- (2) a description of the overall philosophy and principles of the organisation, collectively constituting a policy, signed by the accountable manager;
- (3) the means to verify the performance of the organisation in the light of the performance indicators and performance targets of the management system;
- (4) a process to identify changes within the organisation and the context in which it operates, which may affect established processes, procedures and products and, where necessary, change the management system to accommodate those changes;
- (5) a process to identify the scope of changes to the ATM/ANS equipment and the associated risk;

- (6) a process to review the management system, identify the causes of substandard performance of the management system, determine the implications of such substandard performance, and eliminate or mitigate such causes;
- (7) a process to ensure that the personnel of the organisation are trained and competent to perform their duties in a safe, efficient, continuous and sustainable manner; in this context, the organisation shall establish policies for the recruitment and training of its personnel;
- (8) a formal means for communication which ensures that all personnel of the organisation are fully aware of the management system that allows critical information to be communicated and that makes it possible to explain why particular actions are taken and why procedures are introduced or changed;
- (9) as regards design activities, procedures for:
 - (i) the design of ATM/ANS equipment, and for changes to its design;
 - (ii) the assurance that the design of ATM/ANS equipment, or the changes to its design, comply with the applicable specifications, including independent checking function of the demonstration of compliance on the basis of which the organisation submits compliance statements and associated documentation to the Agency;
 - (iii) the verification of the acceptability of the elements of the ATM/ANS equipment designed, or the tasks performed, by the contracted organisations referred to in point DPO.OR.B.015;
 - (iv) the assurance that staff involved in the design of ATM/ANS equipment are of sufficient numbers and are trained and competent, and have been authorised to discharge their allocated responsibilities;
 - (v) close and efficient coordination between departments and within departments;
- (10) as regards production activities, procedures for:
 - (i) the issue and approval of documents, or changes to them;
 - (ii) assessment audits and the control of contracted organisations referred to in point DPO.OR.B.015;
 - (iii) verifying that incoming materials and equipment, including the supply of new items or items used by ATM/ANS equipment buyers, are as specified in the applicable design data;
 - (iv) verifying that ATM/ANS equipment conforms to the applicable design data;
 - (v) identification and traceability;
 - (vi) organisation processes;
 - (vii) inspection and testing;
 - (viii) calibration of tools and test equipment;
 - (ix) the control of non-conforming items;
 - (x) the coordination with the applicant for, or holder of, the design approval;
 - (xi) the completion and retention of records of work carried out;
 - (xii) the issue of release documents;
 - (xiii) the handling, storage and packing of ATM/ANS equipment.
- (b) An organisation involved in the design or production of ATM/ANS equipment shall document all key management system processes, including a process for making personnel aware of their responsibilities, and the procedure for amending those processes.
- (c) An organisation involved in the design or production of ATM/ANS equipment shall establish a function within its management system to monitor its compliance with the applicable requirements and the adequacy of the established procedures. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure the effective implementation of corrective actions, as necessary.

- (d) The management system shall be proportionate to the size of the organisation involved in the design or production of ATM/ANS equipment and the complexity of its activities, taking into account the hazards and associated risks inherent in those activities.
- (e) In addition to the management system referred to in point (a), the organisation involved in the design or production of ATM/ANS equipment shall establish, implement and maintain an information security management system in accordance with Implementing Regulation (EU) 2023/203 in order to ensure the proper management of information security risks which may have an impact on aviation safety.

DPO.OR.B.005 Change management

- (a) Following the issue of an organisation's approval, any change to the management system that is significant shall be approved by the Agency before being implemented unless such a change is notified and managed in accordance with a procedure approved by the Agency. The organisation shall submit to the Agency an application for approval demonstrating continuous compliance with the applicable requirements.
- (b) Each change to ATM/ANS equipment shall be notified to and approved by the Agency before being implemented unless such a change is managed in accordance with a change management procedure approved by the Agency. This change management procedure shall define the classification of the changes to the ATM/ANS equipment and describe how such changes will be notified and managed.

DPO.OR.B.010 Facility requirements

An organisation involved in the design or production of ATM/ANS equipment shall ensure that its facilities and equipment, including testing facilities and equipment, are adequate and suitable to perform and manage all its tasks and activities in accordance with the applicable requirements.

DPO.OR.B.015 Contracted activities

- (a) Contracted activities include all those activities that are within the scope of the organisation's activities, in accordance with the terms of the certificate, which are performed by other organisations either themselves certified to carry out such activities or, if not certified, working under such an organisation's supervision. An organisation involved in the design or production of ATM/ANS equipment shall ensure that when it contracts any part of its activities to, or when it purchases any part of its activities from, external organisations, the contracted or purchased activity, as applicable, conforms with the applicable requirements.
- (b) When an organisation involved in the design or production of ATM/ANS equipment contracts any part of its activities to an organisation that is not itself certified in accordance with this Regulation to carry out such activities, it shall ensure that the contracted organisation works under its supervision. An organisation involved in the design or production of ATM/ANS equipment shall ensure that the Agency is given access to the contracted organisation to determine its continued compliance with the applicable requirements of this Regulation.

DPO.OR.B.020 Personnel requirements

- (a) An organisation involved in the design or production of ATM/ANS equipment shall appoint an accountable manager who has the authority to ensure that all activities may be financed and carried out in accordance with the applicable requirements of this Regulation. The accountable manager shall be responsible for establishing and maintaining an effective management system.
- (b) The authority, duties, and responsibilities of the nominated post-holders, in particular management personnel in charge of safety, quality, security, finance and human-resources, shall also be defined.

DPO.OR.B.025 Record-keeping

- (a) An organisation involved in the design or production of ATM/ANS equipment shall establish a record-keeping system that allows for the adequate storage of records and the reliable traceability of all its activities, covering in particular all the elements indicated in point DPO.OR.B.001.

- (b) The format and the retention period of the records referred to in point (a) shall be specified in the organisation's management system procedures.
- (c) Records shall be stored in a manner that ensures their protection against damage, alteration, and theft.
- (d) An organisation involved in the design or production of ATM/ANS equipment shall maintain a register of the ATM/ANS equipment deployed.

SUBPART C TECHNICAL REQUIREMENTS (DPO.OR.C)

DPO.OR.C.001 Organisations involved in the design or production of ATM/ANS equipment

- (a) An applicant for, and a holder of, a design or production organisation approval for ATM/ANS equipment shall be entitled, as applicable, to any of the following:
 - (1) hold or apply to be issued a certificate for the design of ATM/ANS equipment;
 - (2) issue a declaration of design compliance for ATM/ANS equipment;
 - (3) issue a statement of compliance for ATM/ANS equipment, upon request of an ATM/ANS provider.
- (b) As regards design activities, an organisation involved in the design or production of ATM/ANS equipment shall:
 - (1) issue a declaration of design compliance for the ATM/ANS equipment, as applicable;
 - (2) issue data and information, including instructions, under its responsibility within the scope of its terms of approval as established by the Agency;
 - (3) prepare and maintain, for each model of each piece for which an ATM/ANS equipment declaration has been issued, an up-to-date file of complete technical data and records.
- (c) As regards production activities, an organisation involved in the design or production of ATM/ANS equipment shall:
 - (1) manufacture each article ensuring that the completed ATM/ANS equipment conforms to its design data and is safe for installation;
 - (2) prepare and maintain, for each model of each piece for which an ATM/ANS equipment declaration has been issued, an up-to-date file of complete technical data and records;
 - (3) prepare, maintain and update the master copies of all manuals required by the applicable declaration specifications for the particular equipment;
 - (4) make available to the users of the ATM/ANS equipment, and to the Agency on request, those instructions for continued suitability necessary for the use and maintenance of the ATM/ANS equipment, and changes to those instructions;
 - (5) mark each article;
 - (6) continue to comply with the applicable requirements laid down in this Regulation.
- (d) In addition to point (c), an organisation involved in the production of ATM/ANS equipment shall be entitled, within the scope of its terms of approval, to determine that each completed ATM/ANS equipment conforms with the applicable design data and is in a condition for safe operation before issuing an EASA release form stating that the ATM/ANS equipment has been produced in accordance with the applicable requirements of this Regulation and with the applicable design data.
- (e) The EASA release form referred to in point (d) for each ATM/ANS equipment manufactured shall contain at least the following information:
 - (1) a description of the ATM/ANS equipment;
 - (2) the part number of the ATM/ANS equipment;
 - (3) the serial number of the ATM/ANS equipment;

- (4) a statement that the ATM/ANS equipment has been manufactured in conformity with the applicable design data and is in a condition for safe operation;
- (5) a reference to the certificate or declaration of design compliance.

DPO.OR.C.005 Coordination

An organisation involved in the design or production of ATM/ANS equipment shall ensure:

- (a) the satisfactory coordination, with the appropriate arrangements, between design and production activities, as appropriate;
- (b) the satisfactory coordination with and proper support to the relevant ATM/ANS providers and aviation undertaking(s) as regards the continued suitability of the ATM/ANS equipment, as applicable.

DPO.OR.C.010 ATM/ANS equipment directives

When the Agency issues an ATM/ANS equipment directive, pursuant to point ATM/ANS.EQMT.CERT.065 of Annex II to Delegated Regulation (EU) 2023/1768, the organisation involved in the design or production of ATM/ANS equipment shall:

- (a) propose an appropriate corrective action and submit it together with details to the Agency for approval;
 - (b) following the approval by the Agency of the proposal referred to in point (a), make available to all known users or owners of ATM/ANS equipment appropriate descriptive data and accomplishment instructions and, on request, to any person required to comply with the ATM/ANS equipment directive.
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COMMISSION IMPLEMENTING REGULATION (EU) 2023/1770**of 12 September 2023****laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 ⁽¹⁾, and in particular Article 44(1), point (a) thereof,

Whereas:

- (1) In accordance with Article 140(2) of Regulation (EU) 2018/1139, the implementing rules adopted on the basis of the repealed Regulation (EC) No 552/2004 of the European Parliament and of the Council ⁽²⁾ are to be adapted to the provisions of Regulation (EU) 2018/1139, not later than 12 September 2023.
- (2) Operating procedures for the use of airspace and the required aircraft equipment should be uniformly applied within the Single European Sky airspace in compliance with the essential requirements set out in point 1 of Annex VIII to Regulation (EU) 2018/1139, for the achievement of interoperability and safe operations. Those requirements therefore should be imposed on operators of aircraft when they fly into, within, or out of the Single European Sky airspace.
- (3) In order to ensure the continuity of aircraft operations with equipped Communication, Navigation, and Surveillance capabilities for the use of the Single European Sky airspace, this Regulation should be based on the relevant implementing rules adopted on the basis of Regulation (EC) No 552/2004 with necessary adaptations.
- (4) In particular, Commission Regulation (EC) No 29/2009 ⁽³⁾, Implementing Regulations (EU) No 1206/2011 ⁽⁴⁾, (EU) No 1207/2011 ⁽⁵⁾ and (EU) No 1079/2012 ⁽⁶⁾ address detailed provisions concerning the operating rules related to the use of airspace and aircraft equipment. Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012 should therefore be repealed.
- (5) Whenever possible, the existing requirements stemming from those Regulations should be replicated in this Regulation in order to respect the legitimate expectations of aircraft operators and ATM/ANS providers affected by those requirements.

⁽¹⁾ OJ L 212, 22.8.2018, p. 1.

⁽²⁾ Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation) (OJ L 96, 31.3.2004, p. 26).

⁽³⁾ Commission Regulation (EC) No 29/2009 of 16 January 2009 laying down requirements on data link services for the single European sky (OJ L 13, 17.1.2009, p. 3).

⁽⁴⁾ Commission Implementing Regulation (EU) No 1206/2011 of 22 November 2011 laying down requirements on aircraft identification for surveillance for the single European sky (OJ L 305, 23.11.2011, p. 23).

⁽⁵⁾ Commission Implementing Regulation (EU) No 1207/2011 of 22 November 2011 laying down requirements for the performance and the interoperability of surveillance for the single European sky (OJ L 305, 23.11.2011, p. 35).

⁽⁶⁾ Commission Implementing Regulation (EU) No 1079/2012 of 16 November 2012 laying down requirements for voice channels spacing for the single European sky (OJ L 320, 17.11.2012, p. 14).

- (6) It is appropriate that those requirements continue to apply to aircraft operators that operate as general air traffic in the Single European Sky airspace, during all phases of flight and in the movement area of an aerodrome, with the exception of aircraft referred to in Article 2(3), point (a), of Regulation (EU) 2018/1139. Member States should be responsible for ensuring that operations of these aircraft have due regard for the safety of navigation of all other aircraft. Member States may, however, decide to apply this Regulation to those aircraft.
- (7) In line with the scope of Regulation (EC) No 29/2009, this Regulation should provide for the same exceptions to datalink requirements as granted under Commission Implementing Decision (EU) 2019/2012 ⁽⁷⁾.
- (8) Article 14(2) of Implementing Regulation (EU) No 1079/2012 provided for exemptions from the obligation to operate an aircraft where radio is required with its radio equipment having 8,33 kHz channel spacing capability. This Regulation should not alter the existing exemptions.
- (9) The development of requirements in this Regulation have taken due account of the content of the ATM Master Plan and the communication, navigation and surveillance capabilities contained in it.
- (10) With its Opinion 01/2023, the European Union Aviation Safety Agency has prepared and submitted to the Commission draft implementing rules in accordance with Article 75(2), points (b) and (c), and Article 76(1) of Regulation (EU) 2018/1139.
- (11) The measures provided for in this Regulation are in accordance with the opinion of the committee established in accordance with Article 127 of Regulation (EU) 2018/1139,

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

- 1. This Regulation lays down operating rules related to the use of airspace and requirements on aircraft equipment required for the safe and uniform operation within the Single European Sky airspace.
- 2. This Regulation shall apply to operators of aircraft referred to in Article 2(1), points (b) (i) and (ii) and Article 2(1), point (c), of Regulation (EU) 2018/1139 that are engaged in general air traffic and operate into, within or out of the Single European Sky airspace.

Article 2

Definitions

For the purposes of this Implementing Regulation, the following definitions shall apply:

- (1) 'air traffic control unit' (ATC unit) means a generic term meaning variously, area control centre, approach control unit, or aerodrome control tower;
- (2) 'data link service' means a set of related air traffic management transactions, supported by air-ground data link communications, which have a clearly defined operational goal and which begin and end on an operational event;
- (3) 'offset carrier operation' means a case where the designated operational coverage cannot be ensured by a single ground transmitter, and where the signals from two or more ground transmitters are offset from the nominal channel centre frequency in order to minimise interference problems.

⁽⁷⁾ Commission Implementing Decision (EU) 2019/2012 of 29 November 2019 on exemptions under Article 14 of Commission Regulation (EC) No 29/2009 laying down requirements on data link services for the single European sky (OJ L 312, 3.12.2019, p. 95).

*Article 3***Aircraft equipment and operating rules**

Aircraft operators shall ensure that their aircraft are equipped and operated in accordance with the rules and procedures set out in Annex I (Part-COM) and Annex II (Part-SUR).

*Article 4***Means of compliance**

1. The Agency shall develop acceptable means of compliance ('AMC') that may be used to establish compliance with this Regulation, Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on the basis thereof.
2. Alternative means of compliance may be used to establish compliance with this Regulation.
3. Competent authorities shall establish a system to consistently evaluate whether the alternative means of compliance used by themselves or by organisations under their oversight comply with Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on the basis thereof.
4. Competent authorities shall inform the Agency of any alternative means of compliance used by natural or legal persons under their oversight or by themselves for establishing compliance with this Regulation.

*Article 5***Repeal**

Regulations (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012 are repealed.

*Article 6***Entry into force**

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 12 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX I

Communication**(Part-COM)****AUR.COM.1001 Subject**

This Part lays down requirements on aircraft equipment and operating rules with regard to the use of airspace covering the applicable requirements on data link services and voice channel spacing.

TITLE 1 – DATA LINK SERVICES

AUR.COM.2001 Scope

This Title applies only to flights operating as general air traffic in accordance with instrument flight rules above FL 285 within the Single European Sky airspace, excluding the airspace that is not part of the International Civil Aviation Organisation (ICAO) EUR region and Finland Upper Flight Information Region (UIR) north of 61°30', and Sweden UIR north of 61°30'.

AUR.COM.2005 Requirements on aircraft equipment

1. The aircraft operator shall:
 - (a) ensure that any aircraft it operates have the capability to operate the following data link services:
 - (i) Data Link Communications Initiation Capability;
 - (ii) Air Traffic Control (ATC) Communications Management;
 - (iii) ATC Clearances and Information;
 - (iv) ATC Microphone Check.
 - (b) make appropriate arrangements to ensure that data exchange can be established between its aircraft having data link capability and all ATC units which may control the flights it operates, with due regard to possible coverage limitations inherent in the communication technology used.
2. Point 1 shall not apply to:
 - (a) aircraft with an individual certificate of airworthiness first issued before 1 January 1995;
 - (b) aircraft with an individual certificate of airworthiness first issued before 1 January 2018 and fitted prior to this date with a data link equipment ensuring interoperability of the ATS applications over Aircraft Communications Addressing and Reporting System (ACARS) air-ground network, used primarily where radar surveillance is not practical;
 - (c) aircraft of a certified maximum seating capacity of 19 passengers or less, and a maximum certified take-off mass of 45 359 kg (100 000 lb) or less, and with an individual certificate of airworthiness first issued before 5 February 2020;
 - (d) aircraft flying for testing, delivery or for maintenance purposes or with data link constituents temporarily inoperative under the conditions specified in the applicable minimum equipment list;
 - (e) aircraft types and models combinations listed in Appendix I;
 - (f) aircraft types and models combinations listed in Appendix II having the first individual certificate of airworthiness issued prior to 5 February 2020.

AUR.COM.2010 DLS operating procedures and training

Aircraft operators shall take the necessary measures to ensure that:

- (a) their operating procedures are compliant with this Title and are reflected in their operations manuals; and

- (b) the personnel operating data link equipment are made duly aware of this Title and are adequately trained for their job functions.

TITLE 2 – VOICE CHANNEL SPACING

AUR.COM.3001 Scope

This Title applies only to flights operating as general air traffic within the Single European Sky airspace that is part of the ICAO EUR region, and where voice air-ground and ground-ground radio communications services in the 117,975–137 MHz frequency band are provided. Canarias Flight Information Region (FIR)/UIR are excluded from the scope of application.

AUR.COM.3005 Requirements on aircraft equipment

- (1) Aircraft operators shall ensure that all voice communication equipment put into service after 17 November 2013 includes the 8,33 kHz channel spacing capability and is able to tune to 25 kHz spaced channels.
 - (2) The exemptions from the obligation to operate an aircraft where radio is required with its radio equipment having 8,33 kHz channel spacing capability for cases with limited impact on the network granted by the Member States pursuant to Article 14(2) of Implementing Regulation (EU) No 1079/2012 that were communicated to the Commission shall remain valid.
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Appendix I

Exemptions referred to in point (e) of AUR.COM.2005 (2)

Aircraft type/series/model	Manufacturer	ICAO type designator
AN-12 all	Antonov	AN12
AN-124 100	Antonov	A124
IL-76 all	Ilyushin	IL76
A300 all	Airbus	A30B A306 A3ST
A310 all	Airbus	A310
A-319/-320/-321 with a first Certificate of Airworthiness issued between 1 January 1995 and 5 July 1999 inclusive	Airbus	A319 A320 A321
A340 all	Airbus	A342 A343 A345 A346
A318-112	Airbus	A318
AVROLINER (RJ-100)	AVRO	RJ1H
AVROLINER (RJ-85)	AVRO	RJ85
BA146-301	British Aerospace	B463
B717-200	Boeing	B712
B737-300	Boeing	B733
B737-400	Boeing	B734
B737-500	Boeing	B735
B747-400	Boeing	B744
B757-200	Boeing	B752
B757-300	Boeing	B753
B767-200	Boeing	B762
B767-300	Boeing	B763
B767-400	Boeing	B764
MD-82	Boeing	MD82
MD-83	Boeing	MD83
MD-11 all	Boeing	MD11
CL-600-2B19 (CRJ100/200/440)	Bombardier	CRJ1/CRJ2
Dornier 328-100	Dornier	D328
Dornier 328-300	Dornier	J328
Fokker 70	Fokker	F70
Fokker 100	Fokker	F100

King Air series (90/100/200/300)	Beechcraft	BE9L BE20 B350
Hercules L-382-G-44K-30	Lockheed	C130
SAAB 2000/SAAB SF2000	SAAB	SB20

*Appendix II***Exemptions referred to in point (f) of AUR.COM.2005 (2)**

Aircraft type/series/model	Manufacturer	ICAO type designator
A330 Series 200/300	Airbus	A332/A333
Global Express/5000 BD-700-1A10/1A11	Bombardier	GLEX/GL5T
CL-600-2C10 (CRJ-700)	Bombardier	CRJ7
C525C, CJ4	Cessna	C25C
C560XL (Citation XLS+)	Cessna	C56X
Falcon 2000 all	Dassault	F2TH
Falcon 900 all	Dassault	F900
EMB-500 (Phenom 100)	Embraer	E50P
EMB-505 (Phenom 300)	Embraer	E55P
EMB-135BJ (Legacy 600)	Embraer	E35L
EMB-135EJ (Legacy 650)	Embraer	E35L
EMB-145 (135/140/145)	Embraer	E135 E145, E45X
PC-12	Pilatus	PC12

ANNEX II

Surveillance**(Part-SUR)****AUR.SUR.1001 Subject matter**

This Part lays down requirements on aircraft equipment and operating rules with regard to the use of airspace covering the applicable requirements on surveillance.

TITLE 1 – DEPENDENT COOPERATIVE SURVEILLANCE

AUR.SUR.2001 Scope

- (1) This Title applies only to flights that operate as general air traffic in accordance with instrument flight rules within the Single European Sky airspace that is part of the International Civil Aviation Organisation (ICAO) EUR region.
- (2) Notwithstanding paragraph (1), AUR.SUR.2015 shall apply to all flights operating as general air traffic.

AUR.SUR.2005 Requirements on aircraft equipment

1. Aircraft operators shall ensure that:
 - (a) aircraft are equipped with serviceable secondary surveillance radar transponders that comply with the following conditions:
 - (i) they have the capabilities for airborne Mode S Elementary Surveillance (ELS);
 - (ii) they have sufficient continuity to avoid presenting an operational risk;
 - (b) aircraft of a maximum certified take-off mass exceeding 5 700 kg or that have a maximum cruising true airspeed capability greater than 250 kt, with an individual certificate of airworthiness first issued on or after 7 June 1995, are equipped with serviceable secondary surveillance radar transponders that comply with the following conditions:
 - (i) they have the capabilities for 1 090 MHz Extended Squitter (ES) automatic dependent surveillance-broadcast (ADS-B) Out, in addition to capabilities referred to in point (a)(i);
 - (ii) they have sufficient continuity to avoid presenting an operational risk;
 - (c) fixed-wing aircraft of a maximum certified take-off mass exceeding 5 700 kg or that have a maximum cruising true airspeed capability greater than 250 kt, with an individual certificate of airworthiness first issued on or after 7 June 1995, are equipped with serviceable secondary surveillance radar transponders that comply with the following conditions:
 - (i) they have the capabilities for airborne Mode S Enhanced Surveillance (EHS), in addition to capabilities referred to in points (a)(i) and (b)(i);
 - (ii) they have the continuity sufficient to avoid presenting an operational risk.
2. Points 1(b) and (c) shall not apply to aircraft that belong to one of the following categories:
 - (a) aircraft being flown to undergo maintenance;
 - (b) aircraft being flown for export;
 - (c) aircraft whose operation will cease by 31 October 2025.
3. Operators of aircraft with an individual certificate of airworthiness first issued before 7 December 2020 shall comply with points 1(b) and (c), subject to the following conditions:
 - (a) they have established before 7 December 2020 a retrofit programme demonstrating compliance with points 1(b) and (c);

- (b) those aircraft have not benefitted from any Union funding granted to bring such aircraft in compliance with the requirements set out in points 1(b) and (c).
- 4. Aircraft operators shall ensure that aircraft equipped in accordance with points 1, 2 and 3 and of a maximum certified take-off mass exceeding 5 700 kg or that have a maximum cruising true airspeed capability greater than 250 kt, operate with antenna diversity.

AUR.SUR.2010 Inoperative transponder

For aircraft where the capability of the transponders to comply with the requirements laid down in points 1(b) and (c) of point AUR.SUR.2005 is temporarily inoperative, aircraft operators shall be entitled to operate those aircraft for a maximum of 3 consecutive days.

AUR.SUR.2015 Transponder 24-bit ICAO aircraft address

Aircraft operators shall ensure that on board the aircraft they are operating, any Mode S transponder operates with a 24-bit ICAO aircraft address that corresponds to the registration that has been assigned by the State in which the aircraft is registered.

AUR.SUR.2020 Surveillance operating procedures and training

Aircraft operators shall take the necessary measures to ensure that:

- (a) their operating procedures are compliant with this Title and are reflected in their operations manuals; and
 - (b) the personnel operating surveillance equipment are made duly aware of this Title and are adequately trained for their job functions.
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COMMISSION IMPLEMENTING REGULATION (EU) 2023/1771**of 12 September 2023****amending Implementing Regulation (EU) 2017/373 as regards air traffic management and air navigation services systems and constituents and repealing Regulations (EC) No 1032/2006, (EC) No 633/2007 and (EC) No 262/2009**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 ⁽¹⁾, and in particular Article 43(1), points (a), (e) and (f), Article 44(1), point (a), and Article 62(15), points (a) and (c) thereof,

Whereas:

- (1) In accordance with Article 140(2) of Regulation (EU) 2018/1139, the implementing rules adopted on the basis of the repealed Regulation (EC) No 552/2004 of the European Parliament and of the Council ⁽²⁾ are to be adapted to the provisions of Regulation (EU) 2018/1139, not later than 12 September 2023.
- (2) Commission Implementing Regulation (EU) 2017/373 ⁽³⁾ lays down common requirements for the provision of air traffic management and air navigation services ('ATM/ANS') and other air traffic management network functions ('ATM network functions') for general air traffic and their oversight.
- (3) In accordance with Commission Implementing Regulation (EU) 2023/1769 ⁽⁴⁾, ATM/ANS systems and ATM/ANS constituents ('ATM/ANS equipment') are subject to certification or declaration by organisations involved in the design and production of ATM/ANS equipment. To ensure the appropriate installation, on-site testing and safe entry into service of such equipment, and their oversight, Implementing Regulation (EU) 2017/373 should be amended to include the necessary requirements applicable to ATM/ANS providers and competent authorities thereof.
- (4) In order to ensure the continuity of the requirements for the use of ATM/ANS equipment the amendments to Implementing Regulation (EU) 2017/373 should be based on the relevant implementing rules adopted on the basis of the repealed Regulation (EC) No 552/2004 with necessary adaptations.

⁽¹⁾ OJ L 212, 22.08.2018, p. 1

⁽²⁾ Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation) (OJ L 96, 31.3.2004, p. 26).

⁽³⁾ Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017, p. 1).

⁽⁴⁾ Commission Implementing Regulation (EU) 2023/1769 of 12 September 2023 laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203 (see page 19 of this Official Journal).

- (5) In particular, Commission Regulation (EC) No 1032/2006 ⁽⁵⁾ lays down requirements for automatic systems for the exchange of flight data for the purpose of notification, coordination and transfer of flights between air traffic control units; Commission Regulation (EC) No 633/2007 ⁽⁶⁾ lays down requirements for the application of a flight message transfer protocol used for the purpose of notification, coordination and transfer of flights between air traffic control units, and Commission Regulation (EC) No 262/2009 ⁽⁷⁾ lays down requirements for the coordinated allocation and use of Mode S interrogator codes for the Single European Sky (SES). Those requirements should be reflected in Implementing Regulation (EU) 2017/373.
- (6) Requirements related to air-ground communications using 8,33 kHz channel spacing that are set out in Commission Implementing Regulation (EU) No 1079/2012 ⁽⁸⁾ do not apply to services provided neither in the Single European Sky airspace outside the International Civil Aviation Organization (ICAO) European (EUR) region as defined in the European (EUR) Air Navigation Plan Volume I (Doc 7754) of ICAO nor in the Canarias FIR/UIR because their local conditions did not sufficiently justify their applicability as necessary. This Regulation should provide for the same scope of applicability.
- (7) Article 14(2) of Implementing Regulation 1079/2012 provided for exemptions from the obligation to convert all frequency assignments to 8,33 kHz channel spacing. This Regulation should not alter the existing exemptions.
- (8) Requirements related to the allocation of Mode S interrogator codes that are set out in Commission Regulation (EC) No 262/2009 do not apply to services provided in the Single European Sky airspace outside the ICAO EUR region due to its local low traffic volume and geographic situation with airspace borders only with airspace under the responsibility of a third-country ATM/ANS providers, which justifies different local coordination arrangements with surrounding non-EU States. This Regulation should provide for the same scope of applicability.
- (9) Implementing Regulation (EU) 2017/373 should therefore be amended accordingly and Regulations (EC) No 1032/2006, (EC) No 633/2007 and (EC) No 262/2009 should be repealed.
- (10) The development of requirements in this Regulation have taken due account of the content of the ATM Master Plan and the communication, navigation and surveillance capabilities contained in it.
- (11) The European Union Aviation Safety Agency has proposed measures in its Opinion No 01/2023 ⁽⁹⁾ in accordance with Articles 75(2), points (b) and (c), and Article 76(1) of Regulation (EU) 2018/1139.
- (12) The measures provided for in this Regulation are in accordance with the opinion of the committee established in accordance with Article 127 of Regulation (EU) 2018/1139.

HAS ADOPTED THIS REGULATION:

Article 1

Amendments to Implementing Regulation (EU) 2017/373

Implementing Regulation (EU) 2017/373 is amended as follows:

- ⁽⁵⁾ Commission Regulation (EC) No 1032/2006 of 6 July 2006 laying down requirements for automatic systems for the exchange of flight data for the purpose of notification, coordination and transfer of flights between air traffic control units (OJ L 186, 7.7.2006, p. 27).
- ⁽⁶⁾ Commission Regulation (EC) No 633/2007 of 7 June 2007 laying down requirements for the application of a flight message transfer protocol used for the purpose of notification, coordination and transfer of flights between air traffic control units (OJ L 146, 8.6.2007, p. 7).
- ⁽⁷⁾ Commission Regulation (EC) No 262/2009 of 30 March 2009 laying down requirements for the coordinated allocation and use of Mode S interrogator codes for the single European sky (OJ L 84, 31.3.2009, p. 20).
- ⁽⁸⁾ Commission Implementing Regulation (EU) No 1079/2012 of 16 November 2012 laying down requirements for voice channels spacing for the single European sky (OJ L 320, 17.11.2012, p. 14).
- ⁽⁹⁾ <https://www.easa.europa.eu/document-library/opinions>

(1) Article 2 is amended as follows:

(a) point (3) is replaced by the following:

‘(3) “Network Manager” means the body entrusted with the tasks necessary for the execution of the functions referred to in Article 6 of Regulation (EC) No 551/2004;’;

(b) the following points (9), (10), (11), (12) and (13) are added:

‘(9) “Mode S interrogator” means a system, composed of antenna and electronics, which supports the addressing of individual aircraft through the Mode Select (“Mode S”);

(10) “eligible Mode S interrogator” means a Mode S interrogator for which at least one of the following conditions is satisfied:

(a) the interrogator relies, at least partly, on Mode S all call interrogations and replies for Mode S targets acquisition;

(b) the interrogator locks out acquired Mode S targets in reply to Mode S all call interrogations, permanently or intermittently, in part or the totality of its coverage; or

(c) the interrogator uses multisite communications protocols for data link applications;

(11) “Mode S operator” means a person, organisation or enterprise that operates or offers to operate a Mode S interrogator, including:

(a) surveillance service providers;

(b) Mode S interrogator manufacturers;

(c) aerodrome operators;

(d) research establishments;

(e) any other entity entitled to operate a Mode S interrogator;

(12) “harmful interference” means interference that prevents the performance requirements from being achieved;

(13) “interrogator code allocation plan” means the most recently approved complete set of interrogator code allocations.’;

(2) in Article 3, the following paragraph 6a is inserted:

‘6a. Member States shall ensure that the use of a ground-based transmitter operated in their territory does not produce harmful interference on other surveillance systems.’;

(3) the following Articles 3e and 3f are inserted:

‘Article 3e

Allocation of Mode S interrogator codes

1. Member States shall ensure that changes to the allocation of an interrogator code resulting from an update to the interrogator code allocation plan are communicated to the relevant Mode S operators under their authority within 14 calendar days from the day of receipt of the updated interrogator code allocation plan.

2. Member States shall make available to other Member States, at least every 6 months through the interrogator code allocation system, an up-to-date record of the allocation and use of interrogator codes by the eligible Mode S interrogators within their area of responsibility.

3. Where an overlap exists between the coverage of a Mode S interrogator located within the area of responsibility of a Member State and the coverage of a Mode S interrogator located within the area of responsibility of a third country, the Member State concerned shall:

(a) ensure that the third country is informed about the safety requirements related to the allocation and use of interrogator codes;

(b) take the necessary measures to coordinate the use of interrogator codes with the particular third country.

4. A Member State shall notify the air traffic service providers under its jurisdiction of Mode S interrogators operating under the responsibility of a third country for which the allocation of Mode S interrogator codes has not been coordinated.
5. Member States shall check the validity of the interrogator code applications received from the Mode S operators before making interrogator codes available through the interrogator code allocation system for coordination as laid down in point 15 of Annex IV to Commission Implementing Regulation (EU) 2019/123 (*).
6. Member States shall ensure that the Mode S operators, other than surveillance service providers, comply with point CNS.TR.205 in Annex VIII.
7. The requirements laid down in paragraphs 1 to 6 shall not apply in the Single European Sky airspace that is not part of the International Civil Aviation Organisation (ICAO) European (EUR) region.

Article 3f

Use of the single European sky airspace

1. In the context of spectrum protection, the Member States shall ensure that a secondary surveillance radar transponder on board any aircraft flying over a Member State is not subject to excessive interrogations that are transmitted by ground-based surveillance interrogators and which either elicit replies, or whilst not eliciting a reply, are of sufficient power to exceed the minimum threshold level of the receiver of the secondary surveillance radar transponder. In the event of disagreement between Member States regarding necessary measures, the Member States concerned shall bring the matter to the Commission for action.
2. Member States shall ensure that all voice frequency assignments are converted to an 8,33 kHz channel spacing. The conversion requirements shall not apply to frequency assignments:
 - (a) which will remain within the 25 kHz channel spacing on the following frequencies:
 - (1) the emergency frequency (121,5 MHz);
 - (2) the auxiliary frequency for search and rescue operations (123,1 MHz);
 - (3) the VHF digital link (VDL) frequencies assigned to be used within the Single European Sky airspace;
 - (4) the aircraft communications addressing and reporting system (ACARS) frequencies (131,525 MHz, 131,725 MHz and 131,825 MHz);
 - (b) where offset carrier operation within a 25 kHz channel spacing is used.
3. The requirements laid down in paragraph 2 shall not apply neither in the Single European Sky airspace that is not part of ICAO EUR Region nor in the Canarias Flight Information Region (FIR)/Upper Information Region (UIR).
4. The exemptions from the obligation to ensure that all frequency assignments are converted to 8,33 kHz channel spacing for cases having limited impact on the network granted by the Member States pursuant to Article 14(2) of Implementing Regulation (EU) No 1079/2012 that were communicated to the Commission shall remain valid.
5. Member States shall establish and publish in national aeronautical information publications, where applicable, the procedures for the handling of aircraft which are not equipped with:
 - (a) secondary surveillance radar Mode-S transponders;
 - (b) radios having the 8,33 kHz channel spacing capability.

(*) Commission Implementing Regulation (EU) 2019/123 of 24 January 2019 laying down detailed rules for the implementation of air traffic management (ATM) network functions and repealing Commission Regulation (EU) No 677/2011 (OJ L 28, 31.1.2019, p. 1).;

(4) Annexes I, II, III, IV, VIII, IX, X and XII are amended in accordance with the Annex to this Regulation.

Article 2

Repeal

Regulations (EC) No 1032/2006, (EC) No 633/2007 and (EC) No 262/2009 are repealed.

Article 3

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 12 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX

Annexes I, II, III, IV, VIII, IX, X and XII to Implementing Regulation (EU) 2017/373 are amended as follows:

(1) Annex I is amended as follows:

(a) the following point (30a) is inserted:

‘(30a) “ATM/ANS equipment” means ATM/ANS constituents as defined in Article 3(6) of Regulation (EU) 2018/1139, and ATM/ANS systems as defined in Article 3(7) of that Regulation, excluding airborne constituents, which are subject to Commission Regulation (EU) No 748/2012 (*);

(*) Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1);

(b) the following point (34a) is inserted:

‘(34a) “boundary” means a lateral or vertical plane delineating the airspace in which an ATC unit provides air traffic services;’;

(c) the following points (39a) and (39b) are inserted:

‘(39a) “coordination data” means data of interest to operational staff in connection with the process of notification, coordination and transfer of flights, and with the process of civil-military coordination;

(39b) “coordination point” (COP) means a point on or adjacent to the boundary used by the ATC units and referred to in coordination processes;’;

(d) the following point (40a) is inserted:

‘(40a) “data link service” means a set of related air traffic management transactions, supported by air-ground data link communications, which have a clearly defined operational goal and begin and end on an operational event;’;

(e) the following point (46a) is inserted:

‘(46a) “eligible interrogator code” means any code among the II codes and the SI codes, except:

(a) II code 0;

(b) the interrogator code(s) reserved for military entities, including intergovernmental organisations and in particular North Atlantic Treaty Organisation management and allocation;’;

(f) the following point (47a) is inserted:

‘(47a) “estimate data” means the coordination point, the estimated time of an aircraft and the expected flight level of the aircraft at the coordination point;’;

(g) the following point (62a) is inserted:

‘(62a) “implementation sequence” means the time-bounded sequence of implementation of interrogator code allocations with which Mode S operators need to comply to avoid temporary interrogator code conflicts;’;

(h) the following point (73a) is inserted:

(73a) “notified unit” means the ATC unit that has received the notification information;’;

(i) the following point (81a) is inserted:

‘(81a) “receiving unit” means the air traffic control unit that receives data;’;

(j) point (88) is replaced by the following:

‘(88) “safety directive” means a document issued or adopted by a competent authority which:

- (1) mandates actions to be performed on a functional system or sets restrictions to its operational use to restore safety when evidence shows that aviation safety may otherwise be compromised; or
- (2) mandates actions to be performed on ATM/ANS equipment subject to the statement of compliance issued in accordance with Article 6 to Commission Delegated Regulation (EU) 2023/1768 (*) to address an unsafe or insecure condition, or both, that has been identified and restore the performance and interoperability of that ATM/ANS equipment when evidence shows that the safety, security, performance or interoperability of that particular equipment may otherwise be compromised.

(*) Commission Delegated Regulation (EU) 2023/1768 of 14 July 2023 laying down detailed rules for the certification and declaration of air traffic management/air navigation services systems and air traffic management/air navigation services constituents (OJ L 228, 15.9.2023, p. 1’.

(k) the following points (107a) and (107b) are inserted:

‘(107a) “working position” means the furniture and technical equipment at which a member of the air traffic services staff undertakes task associated with their job;

(107b) “warning” means a message displayed at a working position when the automated coordination process has failed;’;

(2) Annex II is amended as follows:

(a) in point ATM/ANS.AR.A.020, point (a) is replaced by the following:

‘(a) The competent authority shall without undue delay notify the Agency in case of any significant problems with the implementation of the relevant provisions of Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis or of Regulations (EC) No 549/2004, (EC) No 550/2004 and (EC) No 551/2004 applicable to service providers.’;

(b) point ATM/ANS.AR.A.030 is replaced by the following:

‘ATM/ANS.AR.A.030 Safety directives

(a) The competent authority shall issue a safety directive when it has determined the existence of any of the following:

- (1) an unsafe condition in a functional system requiring immediate action;
- (2) an unsafe, insecure, underperformance or non-interoperability condition in the equipment subject to the statement of compliance in accordance with Article 6 of Delegated Regulation (EU) 2023/1768 and this condition is likely to exist or develop in other ATM/ANS equipment.

(b) The safety directive shall be forwarded to the ATM/ANS providers concerned and contain, as a minimum, the following information:

- (1) the identification of the unsafe condition;
- (2) the identification of the affected functional system;
- (3) the actions required and their rationale;
- (4) the time limit for completing the actions required;
- (5) its date of entry into force.

(c) The competent authority shall forward a copy of the safety directive to the Agency and any other competent authorities concerned within one month from its issuance.

(d) The competent authority shall verify the compliance of the ATM/ANS providers with the safety directives and with the ATM/ANS equipment directives, as applicable.’;

(c) point (a) of ATM/ANS.AR.C.005 is replaced by the following:

‘(a) Within the scope of point ATM/ANS.AR.B.001(a)(1), the competent authority shall establish a process in order to verify:

- (1) service providers’ compliance with the applicable requirements set out in Annexes III to XIII, and any applicable conditions attached to the certificate before the issue of that certificate. The certificate shall be issued in accordance with Appendix 1 to this Annex;
- (2) the compliance with any safety-related obligations in the designation act issued in accordance with Article 8 of Regulation (EC) No 550/2004;
- (3) the continued compliance with the applicable requirements of the service providers under its oversight;
- (4) the implementation of safety, security and interoperability objectives, applicable requirements and other conditions identified in the statement of compliance for ATM/ANS equipment; technical and performance limitations and conditions identified in ATM/ANS equipment certificates and/or ATM/ANS equipment declarations; and of safety measures, including ATM/ANS equipment directives mandated by the Agency in accordance with point ATM/ANS.EQMT.AR.A.030 of Annex I to Delegated Regulation (EU) 2023/1768;
- (5) the implementation of safety directives, corrective actions and enforcement measures.’;

(d) point ATM/ANS.AR.C.050 is amended as follows:

(i) points (c), (d) (e) and (f) are replaced by the following:

‘(c) A level 1 finding shall be issued by the competent authority when any serious non-compliance is detected with the applicable requirements of Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis as well as Regulations (EC) No 549/2004, (EC) No 550/2004 and (EC) No 551/2004 and their implementing rules, with the ATM/ANS provider’s procedures and manuals, with the terms and conditions of the certificate, with the designation act, if applicable, or with the content of a declaration which poses a significant risk to flight safety or otherwise calls into question the service provider’s capability to continue operations.

Level 1 findings shall include but are not limited to:

- (1) the promulgation of operational procedures and/or provision of a service in a way which introduces a significant risk to flight safety;
- (2) the obtainment or maintenance of the validity of the service provider’s certificate through the submission of falsified documentary evidence;
- (3) evidence of malpractice or fraudulent use of the service provider’s certificate;
- (4) the lack of an accountable manager.

(d) A level 2 finding shall be issued by the competent authority when any other non-compliance is detected with the applicable requirements of Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis, as well as Regulations (EC) No 549/2004, (EC) No 550/2004 and (EC) No 551/2004 and their implementing rules, with the ATM/ANS provider’s procedures and manuals or with the terms and conditions of the certificate, or with the content of the declaration.

(e) When a finding is detected, during oversight or by any other means, the competent authority shall, without prejudice to any additional action required by Regulation (EU) 2018/1139 and the delegated and implementing acts adopted on its basis, as well as Regulations (EC) No 549/2004, (EC) No 550/2004, and (EC) No 551/2004 and their implementing rules, communicate the finding to the service provider in writing and require corrective action to address the non-compliance(s) identified.

- (1) In the case of level 1 findings, the competent authority shall take immediate and appropriate action, and may, if appropriate, limit, suspend or revoke in whole or in part the certificate while ensuring the continuity of services provided that safety is not compromised, and in the case of the Network Manager, it shall inform the Commission. The measures taken shall depend upon the extent of the finding and shall remain in force until successful corrective action has been taken by the ATM/ANS provider.
 - (2) In the case of level 2 findings, the competent authority shall:
 - (i) grant the service provider a corrective action implementation period included in an action plan appropriate to the nature of the finding;
 - (ii) assess the corrective action and implementation plan proposed by the service provider, and, if the assessment concludes that they are sufficient to address the non-compliance(s), accept them.
 - (3) In the case of level 2 findings, where the service provider fails to submit a corrective action plan that is acceptable to the competent authority in the light of the finding, or where the service provider fails to perform the corrective action within the time period accepted or extended by the competent authority, the finding may be raised to a level 1 finding, and action shall be taken as laid down in point (1).
 - (f) Where the competent authority detects that the ATM/ANS provider integrates ATM/ANS equipment into its functional system without ensuring compliance with point ATM/ANS.OR.A.045(g), it shall, with due regard to the need to ensure the safety and continuity of operations, take all measures necessary to restrict the area of application of the ATM/ANS equipment concerned or prohibit its use by the ATM/ANS providers under its oversight.;
 - (ii) the following point (g) is added:

‘(g) For those cases that do not require level 1 and 2 findings, the competent authority may issue observations.’;
- (3) Annex III is amended as follows:
- (a) in point ATM/ANS.OR.A.045, the following points (g) to (j) are added:

‘(g) Before integrating ATM/ANS equipment into the functional system, the ATM/ANS provider shall ensure that:

 - (1) new or modified ATM/ANS equipment is certified by the Agency in accordance with Delegated Regulation (EU) 2023/1768 and manufactured by an approved design or production organisation pursuant to Commission Implementing Regulation (EU) 2023/1769 (*); or
 - (2) new or modified ATM/ANS equipment is declared by an approved design organisation pursuant to Delegated Regulation (EU) 2023/1768 and manufactured by an approved design or production organisation pursuant to Implementing Regulation (EU) 2023/1769; or
 - (3) new or modified ATM/ANS equipment is issued with a statement of compliance in accordance with Article 6(1) of Delegated Regulation (EU) 2023/1768; or
 - (4) when the ATM/ANS equipment is not subject to the conformity assessment under Delegated Regulation (EU) 2023/1768, the particular ATM/ANS equipment has been verified to comply with the applicable specifications and qualifications.
 - (h) The ATM/ANS provider shall ensure that the ATM/ANS equipment has been verified to comply with the equipment manufacturer’s specifications, including installation and on-site test(s).
 - (i) Before the ATM/ANS provider puts the ATM/ANS equipment into service, it shall ensure that the modified functional system integrating this ATM/ANS equipment meets all the applicable requirements and shall identify all deviations and limitations.

- (j) When the ATM/ANS provider puts the ATM/ANS equipment into service, it shall ensure that the ATM/ANS equipment, or the modified one, is deployed according to the conditions of use, as well as to any applicable limitations, and meets all the applicable requirements.

(*) Commission Implementing Regulation (EU) 2023/1769 of 12 September 2023 laying down technical requirements and administrative procedures for the approval of organisations involved in the design or production of air traffic management/air navigation services systems and constituents and amending Implementing Regulation (EU) 2023/203 (OJ L 228, 15.9.2023, p. 19)';.

- (b) point ATM/ANS.OR.A.060 is replaced by the following:

'ATM/ANS.OR.A.060 Immediate reaction to a safety problem

- (a) A service provider shall implement any safety measures, including safety directives, mandated by the competent authority in accordance with point ATM/ANS.ARA.025(c).

When a safety directive is issued to correct the condition referred to in the statement of compliance issued in accordance with Article 6 of Delegated Regulation (EU) 2023/1768, the ATM/ANS provider shall, unless otherwise determined by the competent authority in case urgent action is needed:

- (1) propose appropriate corrective action and submit details of that proposal to the competent authority for approval;
- (2) following the approval by the competent authority, comply therewith.;

- (c) in point (a) of ATM/ANS.OR.B.005, the following point (8) is added:

'(8) a process to ensure that the design of ATM/ANS equipment, or the changes to its design, subject to Article 6 of Delegated Regulation (EU) 2023/1768 comply with the applicable specifications, including independent checking function of the demonstration of compliance on the basis of which the ATM/ANS provider issues a statement of compliance and the associated compliance documentation thereto.;

- (d) ATM/ANS.OR.D.025 is amended as follows:

- (1) point (c) is replaced by the following:

'(c) The Network Manager shall provide an annual report of its activities to the Commission and the Agency. This report shall cover its operational performance, as well as significant activities and developments in particular in the area of safety.;

- (2) point (d)(3) is replaced by the following:

'(3) for the Network Manager, its performance compared to the performance objectives established in the Network Strategy Plan, comparing actual performance against the performance set out in the Network Operational Plan by using the indicators of performance established in the Network Operational Plan.;

- (4) Annex IV is amended as follows:

- (a) point ATS.OR.400 is replaced by the following:

'ATS.OR.400 Aeronautical mobile service (air-ground communications) – general

- (a) An air traffic services provider shall use voice or data link, or both, in air-ground communications for air traffic services purposes.
- (b) When air-ground voice communications are based on 8,33 kHz channel spacing, an air traffic services provider shall ensure that:
 - (1) all items of equipment for air-ground voice communications include the 8,33 kHz channel spacing capability and are able to tune to 25 kHz spaced channels;

- (2) all voice frequency assignments have the 8,33 kHz channel spacing capability;
 - (3) the procedures applicable to aircraft equipped with radios having the 8,33 kHz channel spacing capability and to aircraft which are not equipped with such equipment, subject to transfer between air traffic services units, are specified in the letters of agreement between those ATS units;
 - (4) aircraft not equipped with radios having the 8,33 kHz channel spacing capability can be accommodated, provided they can be safely handled within the capacity limits of the air traffic management system on UHF or on 25 kHz frequency assignments; and
 - (5) it communicates, on an annual basis, to the Member State that has designated it their plans for the handling of State aircraft which are not equipped with radios having the 8,33 kHz channel spacing capability, taking into account the capacity limits associated with the procedures published by the Member States in their national aeronautical information publications (AIPs).
- (c) When direct pilot–controller two-way voice or data link communications are used for the provision of air traffic control service, recording facilities shall be provided by the air traffic services provider on all such air–ground communication channels.
- (d) When direct air–ground two-way voice or data link communications are used for the provision of flight information service, including aerodrome flight information service (AFIS), recording facilities on all such air–ground communication channels shall be provided by the air traffic services provider, unless otherwise prescribed by the competent authority.;
- (b) point ATS.OR.415 is replaced by the following:

‘ATS.OR.415 Aeronautical mobile service (air–ground communications) – area control service

An air traffic services provider shall ensure that:

- (a) air–ground communication facilities enable two-way voice communications to take place between a unit providing area control service and appropriately equipped aircraft flying anywhere within the control area or areas; and
- (b) air–ground communications facilities enable two-way data communications to take place between a unit providing area control service and appropriately equipped aircraft flying within the airspace referred to in point AUR.COM.2001 of Commission Implementing Regulation (EU) 2023/1770 (*), to operate the data link services referred to point (1) (a) of point AUR.COM.2005 of that Implementing Regulation.

(*) Commission Implementing Regulation (EU) 2023/1770 of 12 September 2023 laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012 (OJ L 228 of 15.9.2023, p. 39);.

- (c) point ATS.OR.430 is replaced by the following:

‘ATS.OR.430 Aeronautical fixed service (ground–ground communications) – general

- (a) An air traffic services provider shall ensure that direct-speech or data link communications, or both, are used in ground–ground communications for air traffic services purposes.
- (b) When communication for ATC coordination purposes is supported by automation, an air traffic services provider shall ensure that:
 - (1) the appropriate means are implemented to automatically receive, store, process, extract and display, and transmit the relevant flight information;

- (2) the failures or anomalies of such automated coordination are presented clearly to the air traffic controller or controllers responsible for coordinating flights at a transferring unit;
 - (3) the warnings related to system information exchange are presented to the relevant working positions;
 - (4) the information about the relevant system information exchange processes is provided to the air traffic controllers;
 - (5) air traffic controllers are provided with the means to modify the flight information exchanged.’;
- (d) the following point ATS.OR.446 is inserted:

‘ATS.OR.446 Surveillance data

- (a) Air traffic services providers shall not use data from Mode S interrogators that operate under the responsibility of a third country if the allocation of the interrogator code has not been coordinated.
 - (b) Air traffic services providers shall ensure that the necessary capabilities are implemented to allow air traffic controllers to establish individual aircraft identification using the downlinked aircraft identification feature, as detailed in Appendix 1.
 - (c) Air traffic service providers shall ensure seamless operations within the airspace under their responsibility and at the boundary with adjacent airspaces by applying appropriate minimum requirements for the separation of aircraft.’;
- (e) in point ATS.TR.230, the following point (c) is added:
- ‘(c) The coordination of transfer of control between units that provide area control service within the ICAO EUR region, or when so agreed with or between other air traffic control units, shall be supported by automated processes as defined in Appendix 2.’;
- (f) the following Appendices 1 and 2 are added:

‘Appendix 1

Identification of individual aircraft using the downlinked aircraft identification feature as required by point ATS.OR.446(b)

The downlinked aircraft identification feature shall be used as follows to establish individual aircraft identification:

- (a) The air traffic services provider shall declare to the Network Manager the airspace volumes where individual aircraft identification is established using the downlinked aircraft identification feature.
- (b) The conspicuity SSR code A1000 shall be assigned to aircraft where individual aircraft identification is established by using the downlinked aircraft identification feature.
- (c) Except when one of the conditions set out in point (d) apply, the conspicuity SSR code A1000 shall be assigned to departing aircraft or to aircraft for which, in accordance with point (g), a code change is required, where the following conditions apply:
 - (1) the downlinked aircraft identification matches the corresponding entry in the flight plan for that aircraft;
 - (2) the Network Manager has communicated that the particular aircraft is eligible for the assignment of the conspicuity SSR code A1000.
- (d) The conspicuity SSR code A1000 shall not be assigned to aircraft referred to in point (c) if any of the following conditions apply:
 - (1) contingency measures that require the assignment of discrete SSR codes to aircraft have been put in place by an air navigation service provider that experiences unplanned ground surveillance sensor outages;

- (2) exceptional military contingency measures require air navigation service providers to assign discrete SSR codes to aircraft;
- (3) an aircraft which is eligible for the assignment of the conspicuity SSR code A1000 established in accordance with point (c) exits or is otherwise diverted outside the airspace volume referred to in point (a).
- (e) Aircraft that are not assigned the conspicuity SSR code A1000 established in accordance with point (c) shall be assigned an SSR code that complies with a code allocation list agreed by the Member States and coordinated with third countries.
- (f) When an SSR code has been assigned to an aircraft, a check shall be made at the earliest opportunity to confirm that the SSR code set by the pilot is identical to that assigned to the flight.
- (g) SSR codes assigned to aircraft being transferred from air traffic services providers in neighbouring States shall be automatically checked to see whether the assignments can be retained in compliance with a code allocation list agreed by the Member States and coordinated with third countries.
- (h) Formal arrangements with the following minimum content shall be established with neighbouring air navigation service providers that establish individual aircraft identification by using discrete SSR codes:
 - (1) an obligation on the neighbouring air navigation service providers to transfer aircraft with verified discrete SSR codes assigned in compliance with a code allocation list agreed by the Member States and coordinated with third countries;
 - (2) an obligation to notify accepting units about any observed irregularity in the operation of airborne constituents of surveillance systems;
- (i) air traffic services providers shall ensure that the assignment of discrete SSR codes in compliance with a code allocation list agreed by the Member States and coordinated with third countries to establish individual aircraft identification complies with the following:
 - (1) the SSR codes are automatically assigned to aircraft in compliance with a code allocation list agreed by the Member States and coordinated with third countries;
 - (2) the SSR codes assigned to aircraft being transferred from air navigation service providers in neighbouring States are checked to see whether the assignments can be retained in compliance with a code allocation list agreed by the Member States and coordinated with third countries;
 - (3) the SSR codes are classified into different categories to allow for differentiated code assignment;
 - (4) the SSR codes from the different categories referred to in point (3) are assigned according to the directions of flights;
 - (5) multiple simultaneous assignments of the same SSR code are made to flights that operate in code conflict-free directions;
 - (6) the controllers are automatically informed when SSR code assignments are unintentionally duplicated.;

Appendix 2

Processes to be implemented for automated coordination as required by point ATS.TR.230(c)

A. The mandatory processes to be implemented between units that provide area control service, or when so agreed with or between other air traffic control units, shall be the following:

(a) Notification

(1) The flight information subject to the notification process shall include as a minimum:

- (i) aircraft identification,
- (ii) SSR mode and code (if available),

- (iii) departure aerodrome,
 - (iv) estimate data,
 - (v) destination aerodrome,
 - (vi) number and type of aircraft,
 - (vii) type of flight,
 - (viii) equipment capability and status.
- (2) The content of the “equipment capability and status” information shall include reduced vertical separation minima (RVSM) and the 8,33 kHz channel spacing capability as a minimum. Other items may be included in accordance with the letters of agreement.
- (3) The notification process shall be performed at least once for each eligible flight planned to cross boundaries unless the flight is the subject of the pre-departure notification and coordination process.
- (4) The eligibility criteria for cross-boundary notification of flights shall be in accordance with the letters of agreement.
- (5) When the notification process cannot be performed by a bilaterally agreed time prior to the initial coordination process, it shall be included in the initial coordination process.
- (6) When performed, the notification process shall precede the initial coordination process.
- (7) The notification process shall take place again each time there is a change to any of the following data prior to the initial coordination process:
 - (i) coordination point (COP);
 - (ii) expected SSR code at the transfer of control point;
 - (iii) destination aerodrome;
 - (iv) type of aircraft;
 - (v) equipment capability and status.
- (8) If a discrepancy is identified between the transmitted data and the corresponding data in the receiving system, or no such information is available that would result in the need for corrective action upon receipt of the following initial coordination data, the discrepancy shall be referred to an appropriate controller working position for resolution.
- (9) Time criteria for the initiation of the notification process:
 - (i) The notification process shall be initiated at a parameter number of minutes before the estimated time at the COP.
 - (ii) The notification parameter(s) shall be included in the letters of agreement between the ATC units concerned.
 - (iii) The notification parameter(s) may be defined separately for each of the coordination points.
- (b) Initial coordination
 - (1) For a flight subject to initial coordination, the agreed transfer conditions of a flight shall be operationally binding for both air traffic control units unless the coordination is abrogated or revised.
 - (2) The information on the flight that is subject to the initial coordination process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) SSR mode and code;
 - (iii) departure aerodrome;
 - (iv) estimate data;

- (v) destination aerodrome;
 - (vi) number and type of aircraft;
 - (vii) type of flight;
 - (viii) equipment capability and status.
- (3) The content of the “equipment capability and status” information shall include RVSM and the 8,33 kHz channel spacing capability as a minimum. Other items may be included as bilaterally agreed by the letters of agreement.
 - (4) The initial coordination process shall be performed for all eligible flights planned to cross boundaries.
 - (5) The eligibility criteria for cross-boundary initial coordination of flights shall be in accordance with the letters of agreement.
 - (6) Unless already manually initiated, the initial coordination process shall be automatically initiated, in accordance with the letters of agreement, at:
 - (i) a bilaterally agreed parameter time period before the estimated time at the coordination point; or
 - (ii) the time at which the flight is at a bilaterally agreed distance from the coordination point.
 - (7) The initial coordination process for a flight shall only be performed once unless the abrogation of the coordination process is initiated.
 - (8) Following the abrogation of the coordination process, the initial coordination process may be initiated again with the same unit.
 - (9) The completion of the initial coordination process, including confirmation from the receiving unit, shall be passed on to the transferring unit – the flight is then considered “coordinated”.
 - (10) Failure of the initial coordination process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the controller working position responsible for the coordination of the flight within the transferring unit.
 - (11) The initial coordination information shall be made available to the appropriate controller working position at the accepting unit.
- (c) Revision of coordination
- (1) The revision-of-coordination process shall ensure association with the flight previously coordinated.
 - (2) For a flight subject to the revision-of-coordination process, the agreed transfer conditions of a flight shall be operationally binding for both air traffic control units unless the coordination is abrogated or the conditions are further revised.
 - (3) The revision-of-coordination process shall provide the following flight information, provided it has changed:
 - (i) SSR mode and code;
 - (ii) estimated time and flight level;
 - (iii) equipment capability and status.
 - (4) If bilaterally agreed, the revision-of-coordination data shall provide the following information provided it has changed:
 - (i) coordination point;
 - (ii) route.
 - (5) The revision-of-coordination process may take place one or more times with the unit with which a flight is currently coordinated.

- (6) The revision-of-coordination process shall take place when:
 - (i) the estimated time over the coordination point differs from that previously provided by more than a value bilaterally agreed;
 - (ii) the transfer level(s), SSR code or equipment capability and status is (are) different from that (those) previously provided.
 - (7) Where bilaterally agreed, the revision-of-coordination process shall take place when there is any change in the following:
 - (i) coordination point;
 - (ii) route.
 - (8) The completion of the revision-of-coordination process, including confirmation from the receiving unit, shall be passed on to the transferring unit.
 - (9) Failure of the revision-of-coordination process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the controller working position responsible for the coordination of the flight within the transferring unit.
 - (10) The revision-of-coordination process shall take place immediately following the relevant input or update.
 - (11) The revision-of-coordination process shall be inhibited after the flight is at a bilaterally agreed time/distance from the transfer control point in accordance with the letters of agreement.
 - (12) The revision-of-coordination information shall be made available to the appropriate controller working position within the receiving unit.
 - (13) Where the completion of the revision-of-coordination process is not confirmed in accordance with the applicable quality-of-service requirements, the transferring unit shall initiate verbal coordination.
- (d) Abrogation of coordination
- (1) The abrogation-of-coordination process shall ensure association with the previous notification or coordination process that is being cancelled.
 - (2) The abrogation-of-coordination process shall take place with a unit for a coordinated flight when:
 - (i) the unit is no longer the next unit in the coordination sequence;
 - (ii) the flight plan is cancelled in the sending unit and the coordination is no longer relevant;
 - (iii) abrogation-of-coordination information is received from the previous unit in respect of the flight.
 - (3) The abrogation-of-coordination process may take place with a unit for a notified flight when:
 - (i) the unit is no longer the next unit in the coordination sequence;
 - (ii) the flight plan is cancelled in the sending unit and the coordination is no longer relevant;
 - (iii) abrogation-of-coordination information is received from the previous unit in respect of the flight;
 - (iv) the flight is delayed en route, and a revised estimate cannot be determined automatically.
 - (4) The completion of the abrogation-of-coordination process, including confirmation from the receiving unit, shall be passed on to the transferring unit.
 - (5) Failure of the abrogation-of-coordination process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the controller working position responsible for the coordination of the flight within the transferring unit.

- (6) The abrogation-of-coordination information shall be made available to the appropriate controller working position within the notified unit or within the unit with which the coordination is cancelled.
 - (7) Where the completion of the abrogation-of-coordination process is not confirmed in accordance with the applicable quality-of-service requirements, the transferring unit shall initiate verbal coordination.
 - (e) Basic flight data
 - (1) The information subject to the basic-flight-data process shall provide as a minimum:
 - (i) aircraft identification;
 - (ii) SSR mode and code.
 - (2) Any additional information provided by the basic-flight-data process shall be subject to bilateral agreement.
 - (3) The basic-flight-data process shall be performed automatically for each eligible flight.
 - (4) The eligibility criteria for basic-flight-data shall be in accordance with the letters of agreement.
 - (5) The completion of the basic-flight-data process, including confirmation from the receiving unit, shall be passed on to the supplying unit.
 - (6) Failure of the basic-flight-data process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate controller working position within the supplying unit.
 - (f) Change to basic flight data
 - (1) The change-to-basic-flight-data process shall ensure association with the flight previously subject to a basic-flight-data process.
 - (2) Any other information subject to the change-to-basic-flight-data process and the associated criteria for its provision shall be subject to bilateral agreement.
 - (3) A change-to-basic-flight-data process shall only take place for a flight which has previously been notified by a basic-flight-data process.
 - (4) A change-to-basic-flight-data process shall be initiated automatically in accordance with bilaterally agreed criteria.
 - (5) The completion of the change-to-basic-flight-data process, including confirmation from the receiving unit, shall be passed on to the supplying unit.
 - (6) Failure of the change-to-basic-flight-data process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate controller working position within the supplying unit.
 - (7) The change-to-basic-flight-data information shall be made available to the appropriate controller working position within the receiving unit.
- B. When agreed between the units concerned to conduct the pre-departure notification, the change-of-frequency or the manual-assumption-of-communication processes shall be as follows:
 - (a) Pre-departure notification and coordination
 - (1) The information subject to the pre-departure notification and coordination process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) SSR mode and code (if available);
 - (iii) departure aerodrome;
 - (iv) estimated take-off time or estimate data, as bilaterally agreed;

- (v) destination aerodrome;
 - (vi) number and type of aircraft.
 - (2) The information subject to the pre-departure notification and coordination process from a terminal manoeuvring area (TMA) control unit or an ACC shall contain the following:
 - (i) type of flight;
 - (ii) equipment capability and status.
 - (3) The content of the “equipment capability and status” information shall include RVSM and the 8,33 kHz channel spacing capability as a minimum.
 - (4) The “equipment capability and status” information may contain other items as bilaterally agreed by the letters of agreement.
 - (5) The pre-departure notification and coordination process shall take place one or more times for each eligible flight planned to cross the boundaries where the flight time from departure to the coordination point would not allow sufficient time for the initial coordination or notification processes to be executed.
 - (6) The eligibility criteria for the cross-boundary pre-departure notification and coordination of flights shall be in accordance with the letters of agreement.
 - (7) The pre-departure notification and coordination process shall take place again each time there is a change to any item of the data subject to the previous pre-departure notification and coordination process before departure.
 - (8) The completion of the pre-departure notification and coordination process, including confirmation from the receiving unit, shall be passed on to the transferring unit.
 - (9) Failure of the pre-departure notification and coordination process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the controller working position responsible for the notification/coordination of the flight within the transferring unit.
 - (10) The pre-departure notification and coordination information shall be made available at the appropriate controller working position within the notified unit.
- (b) Change of frequency
- (1) The information subject to the change-of-frequency process shall include the aircraft identification and any of the following, if available:
 - (i) release indication;
 - (ii) cleared flight level;
 - (iii) assigned heading/track or direct clearance;
 - (iv) assigned speed;
 - (v) assigned rate of climb/descent.
 - (2) If bilaterally agreed, change of frequency data shall contain the following:
 - (i) current track position;
 - (ii) instructed frequency.
 - (3) The change-of-frequency process shall be manually initiated by the transferring controller.
 - (4) The completion of the change-of-frequency process, including confirmation from the accepting unit, shall be passed on to the transferring ATC unit.

- (5) Failure of the change-of-frequency process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate controller working position within the transferring ATC unit.
 - (6) The change-of-frequency information shall be made available to the accepting controller without delay.
- (c) Manual assumption of communications
 - (1) The information subject to the manual-assumption-of-communications process shall include as a minimum the aircraft identification.
 - (2) The manual-assumption-of-communications process shall be initiated by the accepting unit when communication is established.
 - (3) The completion of the manual-assumption-of-communications process, including confirmation from the transferring unit, shall be passed on to the accepting ATC unit.
 - (4) Failure of the manual-assumption-of-communications process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate controller working position within the accepting ATC unit.
 - (5) The manual-assumption-of-communications information shall be presented immediately to the controller within the transferring unit.
- (d) Crossing intention notification
 - (1) The information subject to the crossing-intention-notification process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) SSR mode and code;
 - (iii) number and type of aircraft;
 - (iv) identifier of sector in charge;
 - (v) crossing route including estimated times and flight levels for each point on the route.
 - (2) The crossing-intention-notification process shall be initiated manually by the controller, or automatically as described in the letters of agreement.
 - (3) The completion of the crossing-intention-notification process, including confirmation from the notified unit, shall be passed on to the notifying unit.
 - (4) Failure of the crossing-intention-notification process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning within the notifying unit.
 - (5) The crossing-intention-notification information shall be made available to the appropriate controller working position within the notified unit.
- (e) Crossing clearance request
 - (1) The information subject to the crossing-clearance-request process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) SSR mode and code;
 - (iii) number and type of aircraft;
 - (iv) identifier of sector in charge;
 - (v) crossing route including estimated times and flight levels for each point on the route.
 - (2) If bilaterally agreed, a crossing clearance request shall contain the equipment capability and status.

- (3) The content of the “equipment capability and status” information shall include the RVSM capability as a minimum, and may contain other items as bilaterally agreed.
 - (4) The crossing clearance request shall be initiated at the controller’s discretion, in accordance with the conditions specified in the letters of agreement.
 - (5) The completion of the crossing-clearance-request process, including confirmation from the unit receiving the request, shall be provided to the requesting unit.
 - (6) Failure of the crossing-clearance-request process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate controller working position within the requesting unit.
 - (7) The crossing-clearance-request information shall be made available to the appropriate controller working position within the unit receiving the request.
 - (8) A crossing-clearance-request process shall be replied to by any of the following:
 - (i) the acceptance of the proposed route/airspace crossing details;
 - (ii) a counter-proposal including different route/airspace crossing details as specified in Section 6 below;
 - (iii) the rejection of the proposed route/airspace crossing details.
 - (9) If an operational reply is not received within a bilaterally agreed interval, a warning shall be issued at the appropriate controller working position within the requesting unit.
- (f) Crossing counter-proposal
- (1) The crossing-counter-proposal process shall ensure association with the flight previously subject to coordination.
 - (2) The information subject to the crossing-counter-proposal process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) crossing route including estimated times and flight levels for each point on the route.
 - (3) The counter-proposal shall include a proposed new flight level and/or route.
 - (4) The completion of the crossing-counter-proposal process, including confirmation from the original requesting unit, shall be passed on to the counter-proposing unit.
 - (5) Failure of the crossing-counter-proposal process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate controller working position within the counter-proposing unit.
 - (6) The crossing-counter-proposal information shall be made available to the appropriate controller working position within the original requesting unit.
 - (7) The confirmation of the successful processing of the crossing-counter-proposal information by the original requesting unit shall be followed by an operational reply from the original requesting unit.
 - (8) The operational reply to a crossing counter-proposal shall be acceptance or rejection, as appropriate.
 - (9) If an operational reply is not received within a bilaterally agreed interval, a warning shall be issued at the appropriate controller working position within the counter-proposing unit.
- (g) Crossing cancellation
- (1) The crossing-cancellation process shall ensure association with the previous notification or coordination process that is cancelled.

- (2) A crossing-cancellation process shall be initiated by the unit responsible for the flight when one of the following occurs:
 - (i) the flight previously notified by the basic-flight-data process will now not enter the airspace of the notified unit or is no longer of interest to the notified unit;
 - (ii) the crossing will not be executed on the route expressed in the crossing-intention-notification information;
 - (iii) the crossing will not be executed according to the conditions under negotiation or according to the conditions agreed after an airspace crossing dialogue.
 - (3) A crossing-cancellation process shall be triggered automatically or manually by a controller input in accordance with the letters of agreement.
 - (4) The completion of the crossing-cancellation process, including confirmation from the notified/requested unit, shall be passed on to the cancelling unit.
 - (5) Failure of the crossing-cancellation process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in a warning at the appropriate working position within the cancelling unit.
 - (6) The crossing-cancellation information shall be made available to the appropriate controller working position within the notified/requested unit.
- C. Between units that provide area control services required to operate the data link services as referred to in point AUR.COM.2005(1)(a) of Implementing Regulation (EU) 2023/1770, or when so agreed with or between other units, the following processes shall be supported by automation:
- (a) Logon forward
 - (1) The information subject to the logon-forward process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) departure aerodrome;
 - (iii) destination aerodrome;
 - (iv) logon type;
 - (v) logon parameters.
 - (2) One logon-forward process shall be performed for each data link logged-on flight planned to cross boundaries.
 - (3) The logon-forward process shall be initiated at or as soon as possible after the earlier of the times determined, in accordance with the letters of agreement, from the following:
 - (i) a parameter number of minutes before the estimated time at the coordination point;
 - (ii) the time at which the flight is at a bilaterally agreed distance from the coordination point.
 - (4) The eligibility criteria for the logon-forward process shall be in accordance with the letters of agreement.
 - (5) The logon-forward information shall be included with the corresponding flight information in the receiving unit.
 - (6) The logged-on status of the flight may be displayed at the appropriate controller working position within the receiving unit.
 - (7) The completion of the logon-forward process, including confirmation from the receiving unit, shall be passed on to the transferring unit.

- (8) Failure of the logon-forward process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in the initiation of an air-ground data link contact request to the aircraft.
- (b) Next authority notified
 - (1) The information subject to the next-authority-notified process shall include as a minimum:
 - (i) aircraft identification;
 - (ii) departure aerodrome;
 - (iii) destination aerodrome.
 - (2) One next-authority-notified process shall be performed for each eligible flight crossing boundaries.
 - (3) The next-authority-notified process shall be initiated after the next data authority request with the aircraft has been acknowledged by the airborne system.
 - (4) Following the successful processing of the next-authority-notified information, the receiving unit shall initiate a controller-pilot data link communication (CPDLC) start request with the aircraft.
 - (5) If the next-authority-notified information has not been received in accordance with a bilaterally agreed parameter time, local procedures shall be applied by the receiving unit for the initiation of data link communications with the aircraft.
 - (6) The completion of the next-authority-notified process, including confirmation from the receiving unit, shall be passed on to the transferring unit.
 - (7) Failure of the next-authority-notified-process to confirm completion, in accordance with the applicable quality-of-service requirements, shall result in the initiation of local procedures within the transferring unit.’;
- (5) in Annex VIII, Subpart B, the following Section 2 is added:

‘SECTION 2

Technical requirements for providers of surveillance services

CNS.TR.205 Allocation and use of Mode S interrogator codes

- (a) A surveillance services provider shall only operate an eligible Mode S interrogator, using an eligible interrogator code (IC), if it has received an interrogator code allocation, for this purpose, from the Member State concerned.
- (b) A surveillance services provider that intends to operate, or operates, an eligible Mode S interrogator for which no interrogator code allocation has been received, shall submit to the Member State concerned an interrogator code application, include the following key items, as a minimum:
 - (1) a unique application reference from the Member State concerned;
 - (2) full contact details of the Member State’s representative responsible for the coordination of the Mode S interrogator code allocation;
 - (3) full contact details of the Mode S operator’s point of contact for Mode S IC allocation matters;
 - (4) Mode S interrogator name;
 - (5) Mode S interrogator use (operational or test);
 - (6) Mode S interrogator location;
 - (7) Mode S interrogator planned date of first Mode S transmission;
 - (8) requested Mode S coverage;
 - (9) specific operational requirements;

- (10) SI code capability;
- (11) “II/SI code operation” capability;
- (12) coverage map capability.
- (c) A surveillance services provider shall comply with the key items of the interrogator code allocations it has received, including the following items as a minimum:
 - (1) the corresponding application reference from the Member State concerned;
 - (2) a unique allocation reference from the interrogator code allocation service;
 - (3) superseded allocation references, as required;
 - (4) allocated interrogator code;
 - (5) surveillance and lockout coverage restrictions under the form of sectorised ranges or Mode S coverage map;
 - (6) implementation period during which the allocation needs to be registered into the Mode S interrogator identified in the application;
 - (7) implementation sequence which needs to be complied with;
 - (8) optionally and associated with other alternatives: cluster recommendation;
 - (9) specific operational restrictions, as required.
- (d) A surveillance services provider shall inform the Member State concerned at least every 6 months of any change in the installation planning or in the operational status of the eligible Mode S interrogators regarding any of the interrogator code allocation key items listed in point (c).
- (e) The surveillance services provider shall ensure that each of their Mode S interrogators uses exclusively its allocated interrogator code.’;
- (6) in Annex IX, point ATFM.TR.100 is replaced by the following:

‘ATFM.TR.100 Working methods and operating procedures for providers of air traffic flow management

An air traffic flow management provider shall be able to demonstrate that its working methods and operating procedures are compliant with Commission Regulations (EU) No 255/2010 (*) and (EU) 2019/123.

(*) Commission Regulation (EU) No 255/2010 of 25 March 2010 laying down common rules on air traffic flow management (OJ L 80, 26.3.2010, p. 10).;

- (7) in Annex X, point ASM.TR.100 is replaced by the following:

‘ASM.TR.100 Working methods and operating procedures for providers of airspace management

An airspace management provider shall be able to demonstrate that its working methods and operating procedures are compliant with Commission Regulations (EC) No 2150/2005 (*) and (EU) 2019/123.

(*) Commission Regulation (EC) No 2150/2005 of 23 December 2005 laying down common rules for the flexible use of airspace (OJ L 342, 24.12.2005, p. 20).;

- (8) Annex XII is amended as follows:

- (a) NM.TR.100 is replaced by the following:

‘NM.TR.100 Working methods and operating procedures for the Network Manager

The Network Manager shall be able to demonstrate that its working methods and operating procedures are compliant with Regulations (EU) No 255/2010 and (EU) No 2019/123.’;

- (b) the following Section 2 is added:

*SECTION 2****Technical requirements for the execution of air traffic management network functions (network functions)*****NM.TR.105 Allocation and use of Mode S interrogator codes**

- (a) The Network Manager shall have a procedure in place that ensures that the interrogator code allocation system:
- (1) checks interrogator code applications for compliance with the applicable format and data conventions;
 - (2) checks interrogator code applications for completeness, accuracy, and timeliness;
 - (3) within maximum 6 calendar months from the date of application:
 - (i) performs interrogator code allocation plan update simulations on the basis of the pending applications;
 - (ii) prepares a proposed update of the interrogator code allocation plan for approval by the Member States affected by it;
 - (iii) ensures that the proposed update to the interrogator code allocation plan meets, to the greatest extent possible, the operational requirements of the interrogator code applications, as described by key items (7), (8) and (9) listed in point (b) of point CNS.TR.205;
 - (iv) updates, and communicates to Member States, the interrogator code allocation plan immediately after its approval, without prejudice to national procedures for the communication of information on Mode S interrogators operated by the military.
- (b) The Network Manager shall take the necessary measures to ensure that military units that operate eligible Mode S interrogators on any interrogator code other than II code 0, and other codes reserved for military management, comply with the requirements on the allocation and use of Mode S interrogator codes.
- (c) The Network Manager shall take the necessary measures to ensure that military units that operate Mode S interrogators on II code 0, or other interrogator codes reserved for military management, monitor the exclusive use of these interrogator codes to avoid the uncoordinated use of any eligible interrogator code (IC).
- (d) The Network Manager shall take the necessary measures to ensure that the allocation and use of interrogator codes for military units has no detrimental impact on the safety of general air traffic.

NM.TR.110 Flagging of flights that are eligible for individual identification using the aircraft identification feature

- (a) The Network Manager shall, based on the airspace volume declared according to Appendix 1 to point (b) of point ATS.OR.446 of this Regulation and the flight plans filed in accordance with point SERA.4013 of Implementing Regulation (EU) No 923/2012, assess the eligibility of the flight for the assignment of the conspicuity SSR code A1000.
- (b) The Network Manager shall communicate to all affected air traffic services units those flights that are eligible for the use of the conspicuity SSR code A1000.'
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COMMISSION IMPLEMENTING REGULATION (EU) 2023/1772**of 12 September 2023****amending Implementing Regulation (EU) No 923/2012 as regards the operating rules related to the use of Air Traffic Management and Air Navigation Services systems and constituents in the Single European Sky airspace and repealing Regulation (EC) No 1033/2006**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 ⁽¹⁾, and in particular Article 31 and Article 44(1), point (a), thereof,

Whereas:

- (1) In accordance with Article 140(2) of Regulation (EU) 2018/1139, the implementing rules adopted on the basis of the repealed Regulation (EC) No 552/2004 of the European Parliament and of the Council ⁽²⁾ are to be adapted to the provisions of Regulation (EU) 2018/1139, not later than 12 September 2023.
- (2) Commission Regulation (EC) No 1033/2006 ⁽³⁾ lays down the requirements on procedures for flight plans in the pre-flight phase for the Single European Sky.
- (3) Commission Implementing Regulation (EU) No 923/2012 ⁽⁴⁾ lays down the common rules of the air and operational provisions regarding services and procedures in air navigation.
- (4) In order to ensure the continuity of the requirements for the use of the air traffic management and air navigation services ('ATM/ANS') equipment in the Single European Sky airspace, Implementing Regulation (EU) No 923/2012 should be amended to include the relevant requirements for flight planning contained in Regulation (EC) No 1033/2006, which is being repealed by this Regulation.
- (5) As the Network Manager is entrusted with flight plan processing tasks in the pre-flight phase, Implementing Regulation (EU) No 923/2012 should also apply to the Network Manager.
- (6) It is essential that all users adhere to the operations manuals developed and maintained by the Network Manager when they submit flight plans.
- (7) The repetitive flight plans (RPL) are no longer applicable in the EUR region, thus any reference to RPL should be removed.

⁽¹⁾ OJ L 212, 22.8.2018, p. 1.

⁽²⁾ Regulation (EC) No 552/2004 of the European Parliament and of the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation) (OJ L 96, 31.3.2004, p. 26).

⁽³⁾ Commission Regulation (EC) No 1033/2006 of 4 July 2006 laying down the requirements on procedures for flight plans in the pre-flight phase for the single European sky (OJ L 186, 7.7.2006, p. 46).

⁽⁴⁾ Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).

- (8) Requirements related to procedures for flight plans in the pre-flight phase for the Single European Sky that are set out in Regulation (EC) No 1033/2006 do not apply to services provided in the Single European Sky airspace outside the International Civil Aviation Organization (ICAO) European (EUR) region as defined in the EUR Air Navigation Plan Volume I (Doc 7754) of ICAO due to their local low traffic volume and geographic situation with airspace borders only with airspace under the responsibility of a third-country ATM/ANS providers, which justifies different local coordination arrangements with surrounding non-EU States.
- (9) Regulation (EC) No 1033/2006 should therefore be repealed and Implementing Regulation (EU) No 923/2012 should therefore be amended accordingly.
- (10) The amended requirements set out in this Regulation have taken due account of the content of the Air Traffic Management Master Plan and the communication, navigation and surveillance capabilities contained in it.
- (11) The European Union Aviation Safety Agency has proposed measures in its Opinion No 01/2023 ^(⁹) in accordance with Article 75(2), points (b) and (c), and Article 76(1) of Regulation (EU) 2018/1139.
- (12) The measures provided for in this Regulation are in accordance with the opinion of the committee established in accordance with Article 127 of Regulation (EU) 2018/1139,

HAS ADOPTED THIS REGULATION:

Article 1

Amendments to Implementing Regulation (EU) No 923/2012

Implementing Regulation (EU) No 923/2012 is amended as follows:

- (1) In Article 1, paragraph 3 is replaced by the following:

‘3. This Regulation shall also apply to the competent authorities of the Member States, air navigation service providers, the Network Manager, aerodrome operators and ground personnel engaged in aircraft operations.’;

- (2) Article 2 is amended as follows:

- (a) the following point 19a is inserted:

‘19a. “aircraft identification” means a group of letters, figures, or a combination of them, which is either identical, or the coded equivalent, to the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications’;

- (b) the following point 69a is inserted:

‘69a. “estimated off-block date” means the estimated date on which the aircraft will commence movement associated with departure’;

- (c) the following point 89b is inserted:

‘89b. “Integrated Initial Flight Plan Processing System (IFPS)” means a system within the European Air Traffic Management network through which a centralised flight planning processing and distribution service, dealing with the reception, validation and distribution of flight plans, is provided within the airspace to which this Regulation applies’;

- (d) the following point 96a is inserted:

‘96a. “Network Manager (NM)” means the body entrusted with the tasks necessary for the execution of the functions referred to in Article 6 of Regulation (EC) No 551/2004’;

- (e) the following point 97a is inserted:

‘97a. “NOTAM” means a notice distributed by means of telecommunication containing information concerning the establishment, condition, or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to personnel concerned with flight operations’;

⁽⁹⁾ <https://www.easa.europa.eu/document-library/opinions>

(f) the following point 99a is inserted:

‘99a. “originator of a flight plan” means a person or organisation submitting flight plans and any associated update messages to the Integrated Initial Flight Plan Processing System (IFPS), including pilots, operators and agents acting on their behalf, and ATS units;’

(g) the following point 100a is inserted:

‘100a. “pre-flight phase” means the period from the first submission of a flight plan until the first air traffic control clearance is delivered;’

(3) the Annex is amended in accordance with the Annex to this Regulation.

Article 2

Repeal

Regulation (EC) No 1033/2006 is repealed.

Article 3

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 12 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX

The Annex to Implementing Regulation (EU) No 923/2012 is amended as follows:

(1) point SERA.2001 is replaced by the following:

‘SERA.2001 Subject

Without prejudice to point SERA.1001, this Annex applies to airspace users and aircraft:

- (a) operating into, within or out of the Union;
- (b) bearing the nationality and registration marks of a Member State of the Union, and operating in any airspace to the extent that they do not conflict with the rules published by the State having jurisdiction over the territory overflown.’;

(2) point SERA.4001 is amended as follows:

(a) points (c) and (d) are replaced by the following:

‘(c) A flight plan shall be:

(1) submitted, before departure:

- (i) to the Network Manager directly or via an air traffic services reporting office, in accordance with the operations manuals containing the necessary instructions and information developed and maintained by the Network Manager, if there is the intent for the flight to operate in accordance with IFR for a portion, or the entire route, of the flight within the single European sky airspace; or

(ii) to an air traffic services reporting office for other cases;

(2) transmitted, during flight, to the appropriate air traffic services unit or air–ground control radio station.

(d) Unless a shorter period of time has been prescribed by the competent authority for domestic VFR flights, a flight plan for any flight planned to operate across international borders or to be provided with air traffic control service or air traffic advisory service shall be submitted as follows:

(1) not more than 120 hours before the estimated off-block time;

(2) at least 3 hours before the estimated off-block time for flights that may be subject to air traffic flow management measures;

(3) at least 60 minutes before departure for all other flights not covered in point (2); or

(4) if submitted during flight, at a time which ensures its receipt by the appropriate ATS unit, at least 10 minutes before the aircraft is estimated to reach:

(i) the intended point of entry into a control area or advisory area; or

(ii) the point of crossing an airway or advisory route.’;

(b) the following points (e) and (f) are added:

‘(e) For flights operated partially or entirely in accordance with IFR, entering the area of responsibility of an air traffic services unit, for which no flight plan has previously been received from the Network Manager, the unit concerned shall transmit to the Network Manager the aircraft identification, aircraft type, point of entry to its area of responsibility, time and flight level at that point, route and destination aerodrome of the flight.

(f) Requirements laid down in points (c), (d), and (e) shall not apply in the Single European Sky airspace that is not part of the ICAO EUR region.’;

(3) point SERA.4005 is replaced by the following:

‘SERA.4005 Content of a flight plan

(a) A flight plan shall include all information considered relevant by the competent authority as regards the following:

(1) aircraft identification;

(2) flight rules and type of flight;

- (3) number and type(s) of aircraft and wake turbulence category;
 - (4) aircraft equipment and capabilities;
 - (5) departure aerodrome or operating site;
 - (6) estimated off-block date and time;
 - (7) cruising speed(s);
 - (8) cruising level(s);
 - (9) route to be followed;
 - (10) destination aerodrome or operating site and total estimated elapsed time;
 - (11) alternate aerodrome(s) or operating site(s);
 - (12) fuel endurance;
 - (13) total number of persons on board;
 - (14) emergency and survival equipment, including ballistic parachute recovery system;
 - (15) other information.
- (b) For flight plans submitted during flight, the departure aerodrome or operating site provided shall be the location from which supplementary information concerning the flight may be obtained, if required. Additionally, the information to be provided in lieu of the estimated off-block time shall be the time over the first point of the route to which the flight plan relates.'
- (4) point SERA.4010 is replaced by the following:

'SERA.4010 Completion of a flight plan

- (a) A flight plan shall contain information, as applicable, on relevant items listed in point SERA.4005(a)(1) to (11) regarding the whole route or the portion thereof for which the flight plan is submitted.
- (b) Aircraft operators, flight plan originators and air traffic services units following the necessary instructions referred to in point SERA.4001(c)(1)(i) shall comply with the following:
 - (1) the instructions for completion of the flight plan form contained in Appendix 6;
 - (2) any constraints identified in relevant Aeronautical Information Publications (AIPs).
- (c) Aircraft operators, or the agents that act on their behalf, which intend to operate within the single European sky airspace for a portion of or the entire route in accordance with IFR shall insert the appropriate indicator for the aircraft equipment available on board and its capabilities in accordance with Commission Implementing Regulation (EU) 2023/1770 (*) in the relevant item in the flight plan as required in point SERA.4005(a)(4).
- (d) Operators of aircraft not equipped in accordance with Implementing Regulation (EU) 2023/1770 which intend to operate within the single European sky airspace shall insert the appropriate indicator for the aircraft equipment available on board and its capabilities, and any potential exemptions in the relevant items in the flight plan as per points SERA.4005(a) (4) and SERA.4005(a) (15) respectively. The flight plan shall, in addition, contain information, as applicable, on all other items when so prescribed by the competent authority or when otherwise deemed necessary by the person submitting the flight plan.

(*) Commission Implementing Regulation (EU) 2023/1770 of 12 September 2023 laying down provisions on aircraft equipment required for the use of the Single European Sky airspace and operating rules related to the use of the Single European Sky airspace and repealing Regulation (EC) No 29/2009 and Implementing Regulations (EU) No 1206/2011, (EU) No 1207/2011 and (EU) No 1079/2012 (OJ L 228, XX.9.2023, p. 39);

(5) the following point SERA.4013 is inserted:

'SERA.4013 Acceptance of a flight plan

- (a) The Network Manager, for the portion of the route operated in accordance with IFR, and the air traffic services reporting office shall take the necessary measures to ensure that when a flight plan is received, or when changes are made to it, it is:
 - (1) in compliance with the applicable format and data conventions;
 - (2) complete and, to the extent possible, accurate;
 - (3) if necessary, made acceptable to the air traffic services; and
 - (4) accepted, or the changes made to it are also accepted, and this is indicated to the originator of the flight plan.
- (b) ATC units shall provide the Network Manager with any necessary changes of a flight plan affecting items related to the route or flight level as listed in point SERA.4005 (a) (1) to (10) that could affect the safe conduct of a flight, for flight plans and associated update messages previously received by them from the Network Manager. No other changes to, or cancellation of, a flight plan shall be made by an ATC unit in the pre-flight phase without coordination with the aircraft operator.
- (c) The Network Manager shall communicate to all affected ATS units the accepted flight plan and any accepted pre-flight-phase changes made to the items listed in point SERA.4005 (a) (1) to (10) of the flight plan and associated update messages.
- (d) The Network Manager shall communicate to the aircraft operator any necessary pre-flight-phase changes made to the flight plan affecting items listed in point SERA.4005 (a) (1) to (10) related to the route or flight level that could affect the safe conduct of a flight, for flight plans and associated update messages previously received.
- (e) The originator of a flight plan, when not being the aircraft operator or the pilot, shall ensure that the conditions of acceptance of a flight plan and any necessary changes to these conditions as notified by the Network Manager for the portion of the flight operated in accordance with IFR, or by the air traffic services reporting offices, are made available to the aircraft operator or the pilot that has submitted the flight plan.
- (f) The aircraft operator shall ensure that the conditions of acceptance of a flight plan and any necessary changes to it as notified by the Network Manager or by the air traffic services reporting office to the originator of the flight plan are incorporated into the planned flight operation and communicated to the pilot.
- (g) The aircraft operator shall ensure prior to the operation of the flight that the content of the flight plan correctly reflects the operational intentions.
- (h) The Network Manager shall process and distribute the information on the 8,33 kHz channel spacing capability received in the flight plans.
- (i) Requirements laid down in points (a) to (h) shall not apply in the Single European Sky airspace that is not part of the ICAO EUR region.;

(6) point SERA.4015 is replaced by the following:

'SERA.4015 Changes to a flight plan

- (a) All changes to a flight plan submitted for an IFR flight, or a VFR flight operated as a controlled flight, shall be reported:
 - (1) during the pre-flight phase, to the Network Manager for flights intended to operate in accordance with IFR for a portion of or the entire route, and to air traffic services reporting offices as soon as practicable;
 - (2) during the flight, subject to the provisions of point SERA.8020(b), to the appropriate air traffic services unit.

For other VFR flights, significant changes to a flight plan shall be reported as soon as practicable to the appropriate air traffic services unit.

- (b) In the event of a delay of 30 minutes in excess of the estimated off-block time for a controlled flight or a delay of 1 hour for an uncontrolled flight for which a flight plan has been submitted, the flight plan shall be amended, or a new flight plan submitted, and the old flight plan cancelled, whichever is applicable. For any flight operated in accordance with IFR, delays of more than 15 minutes shall be communicated to the Network Manager.
 - (c) In the case of a change in the aircraft equipment and its capability status for a flight, aircraft operators, or the agents that act on their behalf, shall send a modification message to the Network Manager or the air traffic services reporting offices with the appropriate indicator inserted in the relevant item of the flight plan form.
 - (d) Information submitted prior to departure regarding fuel endurance or total number of persons carried on board, if incorrect at the time of departure, constitutes a significant change to the flight plan and, as such, shall be reported.
 - (e) Requirements laid down in points (a) to (d) shall not apply in Single European Sky airspace that is not part of the ICAO EUR region.;
- (7) the following Section 15 is added:

SECTION 15

Controller–pilot data link communication (CPDLC) procedures

SERA.15001 Data link initiation and data link initiation failure

- (a) The logon address associated with an air traffic services unit shall be published in the national aeronautical information publications (AIPs).
- (b) Upon receipt of a valid data link initiation request from an aircraft approaching or within the data link service area, the air traffic services unit shall accept the request and, if able to correlate it with a flight plan, shall establish a connection with the aircraft.
- (c) The air traffic services provider shall establish procedures to resolve, as soon as practicable, data link initiation failures.
- (d) The aircraft operator shall establish procedures to resolve, as soon as practicable, data link initiation failures.

SERA.15005 Establishment of CPDLC

- (a) CPDLC shall be established in sufficient time in advance to ensure that the aircraft communicates with the appropriate air traffic control unit.
- (b) Information concerning when and, if applicable, where the air or ground systems should establish CPDLC shall be published in aeronautical information circulars or publications.
- (c) The pilot shall be able to identify the air traffic control unit that provides the air traffic control service at any time while the service is being provided.

SERA.15010 Transfer of CPDLC

- (a) When CPDLC is transferred, the transfer of voice communication and CPDLC shall commence concurrently.
- (b) When an aircraft is transferred from an air traffic control unit where CPDLC is available to an air traffic control unit where CPDLC is not available, the termination of CPDLC shall commence concurrently with the transfer of voice communication.
- (c) The air traffic controller shall be informed when attempting a transfer of CPDLC resulting in a change in data authority if there are data link messages for which a closure response has not been received. When the air traffic controller decides to transfer the aircraft without receiving pilot responses to the uplink message(s) outstanding, the air traffic controller shall normally revert to voice communication to clarify any ambiguity associated with the uplink message(s) outstanding.

SERA.15015 Construction of CPDLC messages

- (a) The text of CPDLC messages shall be composed in standard message format, in plain language, or in abbreviations and codes. Plain language shall be avoided when the length of the text can be reduced by using appropriate abbreviations and codes. Non-essential words and phrases, such as expressions of politeness, shall not be used.
- (b) The air traffic controller and the pilot shall construct CPDLC messages using standard message elements, free text message elements, or a combination of both. The use of free text message elements by air traffic controllers or pilots shall, be avoided.
- (c) When the implemented CPDLC message set does not provide for specific circumstances, the competent authority may determine, in consultation with operators and other air traffic services providers, that it is acceptable to use free text message elements. In such cases, the competent authority concerned shall define the display format, intended use and attributes for each free text message element.
- (d) The composition of a CPDLC message shall not exceed five message elements, only two of which may contain the route clearance variable.
- (e) Construction of multi-element CPDLC messages:
 - (1) When a multi-element CPDLC message requires a response, the response shall apply to all message elements.
 - (2) When a single message element clearance or any part of a multi-element clearance message cannot be complied with, the pilot shall send an "UNABLE" response for the whole message.
 - (3) The controller shall respond with an "UNABLE" message that applies to all elements of the request when no element(s) of a single or multi-element clearance request can be approved. The current clearance(s) shall not be restated.
 - (4) When a multi-element clearance request can only be partially accommodated, the controller shall respond with an "UNABLE" message applying to all the message elements of the request and, if appropriate, include a reason and/or information on when clearance may be expected.
 - (5) When all elements of a single or multi-element clearance request can be accommodated, the controller shall respond with clearances corresponding to each element of the request. This response shall be a single uplink message.
 - (6) When a CPDLC message contains more than one message element and the response attribute for the message is "Y", when utilised, the single response message shall contain the corresponding number of replies in the same order.

SERA.15020 Responding to CPDLC messages

- (a) Unless otherwise specified by the competent authority, voice read-back of CPDLC messages shall not be required.
- (b) Except when correction of the CPDLC message transmitted is needed, when a controller or a pilot communicates via CPDLC, the response shall normally be via CPDLC. When a controller or a pilot communicates via voice, the response shall normally be via voice.

SERA.15025 Correction of CPDLC messages

- (a) When a correction to a CPDLC message is deemed necessary or when the contents of such a message need to be clarified, the air traffic controller and the pilot shall use the most appropriate means available for issuing the correct details or for providing the necessary clarification.
- (b) When voice communication is used to correct a CPDLC message for which no operational response has yet been received, the controller's or the pilot's voice transmission shall be prefaced by the phrase: "DISREGARD CPDLC (message type) MESSAGE, BREAK" – followed by the correct clearance, instruction, information or request.
- (c) When referring to and identifying the CPDLC message to be disregarded, caution shall be exercised in its phrasing so as to avoid any ambiguity with the issue of the correction to the clearance, instruction, information or request.

- (d) If a CPDLC message that requires an operational response is subsequently negotiated via voice, an appropriate CPDLC message closure response shall be sent to ensure proper synchronisation of the CPDLC dialogue. This may be achieved either by explicitly instructing the recipient of the message via voice to close the dialogue or by allowing the system to automatically close the dialogue.

SERA.15030 Controller data link communication procedures for emergencies, hazards, and CPDLC equipment failure

- (a) When an air traffic controller or a pilot is alerted that a single controller–pilot data link communication message has failed, the air traffic controller or the pilot shall take one of the following actions, as appropriate:
 - (1) via voice, confirm the actions that will be taken with respect to the related dialogue, prefacing the information with the phrase: “CPDLC MESSAGE FAILURE”;
 - (2) via controller–pilot data link communication, reissue the controller–pilot data link communication message that failed.
- (b) Air traffic controllers that are required to transmit information concerning a complete controller–pilot data link communication ground system failure to all stations likely to intercept should preface such a transmission by the general call: “ALL STATIONS CPDLC FAILURE” – followed by the identification of the calling station.
- (c) When controller–pilot data link communication fail and the communication reverts to voice, all CPDLC messages outstanding shall be considered not delivered and the entire dialogue involving the messages outstanding shall be recommenced by voice.
- (d) When controller–pilot data link communication fails but is restored prior to a need to revert to voice communication, all messages outstanding shall be considered not delivered and the entire dialogue involving the messages outstanding shall be recommenced via CPDLC.

SERA.15035 Intentional shutdown of CPDLC system

- (a) When a system shutdown of the communications network or the CPDLC ground system is planned, a NOTAM shall be published to inform all affected parties of the shutdown period and, if necessary, the details of the voice communication frequencies to be used.
- (b) Aircraft in communication with the ATC units shall be informed by voice or CPDLC of any imminent loss of the CPDLC service.

SERA.15040 Discontinuation of the use of CPDLC requests

- (a) When a controller requires all stations or a specific flight to avoid sending CPDLC requests for a limited period of time, the following phrase shall be used: ((call sign) or ALL STATIONS) STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [(reason)].
- (b) The resumption of the normal use of CPDLC shall be advised by using the following phrase: ((call sign) or ALL STATIONS) RESUME NORMAL CPDLC OPERATIONS.

SERA.15045 Use of CPDLC in the event of air–ground voice communication failure

The existence of a CPDLC connection between an air traffic services unit and an aircraft should not prevent the pilot and the air traffic controller concerned from initiating and performing all the required actions in the event of air–ground voice communication failure.

SERA.15050 Testing of CPDLC

Where the testing of CPDLC with an aircraft could affect the air traffic services being provided to the aircraft, coordination shall be effected prior to such testing.;

(8) the following Appendix 6 is added:

'Appendix 6

COMPLETION OF A FLIGHT PLAN

1. ICAO model flight plan form

FLIGHT PLAN PLAN DE VOL			
PRIORITY Priorité FF		ADDRESSEE(S) Destinataire(s)	
FILING TIME Heure de dépôt		ORIGINATOR Expéditeur	
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR Identification précise du(des) destinataire(s) et/ou de l'expéditeur			
3 MESSAGE TYPE Type de message (FPL)	7 AIRCRAFT IDENTIFICATION Identification de l'aéronef	8 FLIGHT RULES Règles de vol	TYPE OF FLIGHT Type de vol
9 NUMBER Nombre	TYPE OF AIRCRAFT Type d'aéronef	WAKE TURBULENCE CAT. Cat. de turbulence de sillage	10 EQUIPMENT Équipement
13 DEPARTURE AERODROME Aérodrome de départ	TIME Heure		
15 CRUISING SPEED Vitesse croisière	LEVEL Niveau	ROUTE Route	
16 DESTINATION AERODROME Aérodrome de destination	TOTAL EET Durée totale estimée HR MIN	ALTN AERODROME Aérodrome de déviation	2ND ALTN AERODROME 2 ^e aérodrome de déviation
18 OTHER INFORMATION Renseignements divers			
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES) Renseignements complémentaires (À NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL DÉPOSÉ)			
19 ENDURANCE Autonomie E / HR MIN	PERSONS ON BOARD Personnes à bord P /	EMERGENCY RADIO Radio de secours R / UHF VHF ELT	
SURVIVAL EQUIPMENT/Équipement de survie			
JACKETS/Gilets de sauvetage			
DINGHIES/Canots			
NUMBER / CAPACITY / COVER / COLOUR Nombre / Capacité / Couverture / Couleur			
AIRCRAFT COLOUR AND MARKINGS Couleur et marques de l'aéronef			
REMARKS Remarques			
PILOT-IN-COMMAND Pilote commandant de bord			
C /			
FILED BY / Déposé par		SPACE RESERVED FOR ADDITIONAL REQUIREMENTS Espace réservé à des fins supplémentaires	

2. Instructions for the completion of the flight plan form

2.1. General

Adhere closely to the prescribed formats and manner of specifying data.

Commence inserting data in the first space provided. Where excess space is available, leave unused spaces blank.

Insert all clock times in 4 figures UTC.

Insert all estimated elapsed times in 4 figures (hours and minutes).

The shaded area preceding item 3 – shall be completed by ATS and COM services, unless the responsibility for originating flight plan messages has been delegated.

2.2. Instructions for insertion of ATS data

Complete items 7 to 18 and, when so required by the competent authority or otherwise deemed necessary, item 19 as indicated hereunder.

INSERT one of the following aircraft identifications, not exceeding 7 alphanumeric characters and without hyphens or symbols:

- (a) the ICAO designator for the aircraft operator followed by the flight identification (e.g. KLM511, NGA213, JTR25) when in radiotelephony the call sign to be used by the aircraft consists of the ICAO telephony designator for the operator followed by the flight identification (e.g. KLM511, NIGERIA 213, JESTER 25); or
- (b) the nationality or common mark and registration mark of the aircraft (e.g. EIAKO, 4XBCD, N2567GA), when:
 - (1) in radiotelephony the call sign to be used by the aircraft consists of this identification alone (e.g. CGAJS), or preceded by the ICAO telephony designator for the aircraft operator (e.g. BLIZZARD CGAJS);
 - (2) the aircraft is not equipped with radio.

Flight rules

INSERT one of the following letters to denote the category of flight rules with which the pilot intends to comply:

- I** – if it is intended that the entire flight is operated under IFR; or
- V** – if it is intended that the entire flight is operated under VFR; or
- Y** – if the flight is initially operated under IFR, followed by one or more subsequent changes of flight rules; or
- Z** – if the flight is initially operated under VFR, followed by one or more subsequent changes of flight rules.

Specify in Item 15 the point or points at which a change of flight rules is planned.

Type of flight

INSERT one of the following letters to denote the type of flight when so required by the competent authority:

- S** – if scheduled air service;
- N** – if non-scheduled air transport operation;
- G** – if general aviation;
- M** – if military;
- X** – if other than any of the defined categories above.

Specify status of a flight following the indicator STS in Item 18, or when necessary to denote other reasons for specific handling by ATS, indicate the reason following the indicator RMK in Item 18.

Number of aircraft (1 or 2 characters)

INSERT the number of aircraft, if more than one.

Type of aircraft (2 to 4 characters)

INSERT the appropriate designator as specified in Doc 8643, Aircraft Type Designators, OR, if no such designator has been assigned, or in case of formation flights comprising more than one type, INSERT ZZZZ, and SPECIFY in item 18 the (numbers and) type(s) of aircraft preceded by 'TYP/

Wake turbulence category (1 character)

INSERT an oblique stroke followed by one of the following letters to indicate the wake turbulence category of the aircraft:

- J** – SUPER, to indicate an aircraft type specified as such in ICAO Doc 8643, Aircraft Type Designators, latest edition;
- H** – HEAVY, to indicate an aircraft type with a maximum certified take-off mass of 136 000 kg or more, with the exception of aircraft types listed in ICAO Doc 8643 in the SUPER (J) category;
- M** – MEDIUM, to indicate an aircraft type with a maximum certified take-off mass of less than 136 000 kg but more than 7 000 kg;
- L** – LIGHT, to indicate an aircraft type with a maximum certified take-off mass of 7 000 kg or less.

Capabilities comprise the following elements:

- (a) presence of relevant serviceable equipment on board the aircraft;
- (b) equipment and capabilities commensurate with flight crew qualifications; and
- (c) where applicable, authorisation from the appropriate authority.

Radio communication, navigation and approach aid equipment and capabilities

INSERT one letter as follows:

- N** – if no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable; or
- S** – if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable; and/or

INSERT one or more of the following letters to indicate the serviceable COM/NAV/approach aid equipment and capabilities available:

A	GBAS landing system	J7	CPDLC FANS 1/A SATCOM (Iridium)
B	LPV (APV with SBAS)	K	MLS
C	Loran C	L	ILS
D	DME	M1	ATC SATVOICE (INMARSAT)
E1	FMC WPR ACARS	M2	ATC SATVOICE (MTSAT)
E2	D-FIS ACARS	M3	ATC SATVOICE (Iridium)
E3	PDC ACARS	O	VOR

G	GNSS. If any portion of the flight is planned to be conducted under IFR, it refers to GNSS receivers that comply with ICAO Annex 10 Volume I	P1	CPDLC RCP 400
		P2	CPDLC RCP240
		P3	SATVOICE RCP 400
H	HF RTF	P4-P9	Reserved for RCP
I	Inertial Navigation	R	PBN approved
J1	CPDLC ATN VDL Mode 2	T	TACAN
J2	CPDLC FANS 1/A HFDL	U	UHF RTF
J3	CPDLC FANS 1/A VDL Mode A	V	VHF RTF
J4	CPDLC FANS 1/A VDL Mode 2	W	RVSM approved
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	X	MNPS Approved
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Y	VHF with 8,33 kHz channel spacing capability
		Z	Other equipment carried or other capabilities

Any alphanumeric characters not indicated above are reserved.

Surveillance equipment and capabilities

INSERT **N** if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable;

OR

INSERT one or more of the following descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment and/or capabilities on board:

SSR Modes A and C

- A –** Transponder – Mode A (4 digits – 4 096 codes)
- C –** Transponder – Mode A (4 digits – 4 096 codes) and Mode C

SSR Mode S

- E –** Transponder – Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability
- H –** Transponder – Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability
- I –** Transponder – Mode S, including aircraft identification, but no pressure-altitude capability
- L –** Transponder – Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability
- P –** Transponder – Mode S, including pressure-altitude, but no aircraft identification capability
- S –** Transponder – Mode S, including both pressure-altitude and aircraft identification capability
- X –** Transponder – Mode S with neither aircraft identification nor pressure-altitude capability

ADS-B

- B1 –** ADS-B with dedicated 1 090 MHz ADS-B “out” capability
- B2 –** ADS-B with dedicated 1 090 MHz ADS-B “out” and “in” capability

- U1** – ADS-B “out” capability using UAT
U2 – ADS-B “out” and “in” capability using UAT
V1 – ADS-B “out” capability using VDL Mode 4
V2 – ADS-B “out” and “in” capability using VDL Mode 4

ADS-C

- D1** – ADS-C with FANS 1/A capabilities
G1 – ADS-C with ATN capabilities

Alphanumeric characters not indicated above are reserved.

INSERT the ICAO 4-letter location indicator of the departure aerodrome as specified in Doc 7910, *Location Indicators*;

OR, if no location indicator has been assigned,

INSERT ZZZZ and SPECIFY, in Item 18:

- the name and location of the aerodrome preceded by DEP/; or
- the first point of the route or the marker radio beacon preceded by DEP/..., if the aircraft has not taken off from an aerodrome;

OR, – if the flight plan is received from an aircraft in flight,

INSERT AFIL, and SPECIFY, in Item 18, the ICAO 4-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, preceded by DEP/.

THEN, WITHOUT A SPACE,

INSERT for a flight plan submitted before departure, the estimated off-block time (EOBT), or for a flight plan received from an aircraft in flight, the actual or estimated time over the first point of the route to which the flight plan applies.

INSERT the *first cruising speed* as in (a) and the *first cruising level* as in (b), without a space between them.

THEN, following the arrow, INSERT the route description as in (c).

(a) *Cruising speed (maximum 5 characters)*

INSERT the *True airspeed* for the first or the whole cruising portion of the flight, in terms of:

Kilometres per hour, expressed as K followed by 4 figures (e.g. K0830), or

Knots, expressed as N followed by 4 figures (e.g. N0485), or

True Mach number, when so prescribed by the competent authority, to the nearest hundredth of unit Mach, expressed as M followed by 3 figures (e.g. M082).

(b) *Cruising level (maximum 5 characters)*

INSERT the planned cruising level for the first or the whole portion of the route to be flown, in terms of:

Flight level, expressed as F followed by 3 figures (e.g. F085; F330), or

Standard metric *level in tens of metres*, when so prescribed by the competent authority expressed as S followed by 4 figures (e.g. S1130), or

Altitude in hundreds of feet, expressed as A followed by 3 figures (e.g. A045; A100), or

Altitude in tens of metres, expressed as M followed by 4 figures (e.g. M0840), or

for uncontrolled VFR flights, the letters VFR.

(c) *Route (including changes of speed level and/or flight rules)*

Flights along designated ATS routes

INSERT, if the departure aerodrome is located on or connected to the ATS route, the designator of the first ATS route,

OR, if the departure aerodrome is not on or connected to the ATS route, the letters DCT followed by the point of joining the first ATS route, followed by the designator of the ATS route.

THEN

INSERT each point at which either a change of speed and/or level is planned to commence, or a change of ATS route, and/or a change of flight rules is planned,

FOLLOWED IN EACH CASE

by the designator of the next ATS route segment, even if it is the same as the previous one,

OR by DCT, if the flight to the next point is outside a designated route, unless both points are defined by geographical coordinates.

Flights outside designated ATS routes

INSERT points normally not more than 30 minutes flying time or 370 km (200 NM) apart, including each point at which a change of speed or level, a change of track, or a change of flight rules is planned,

OR, when required by competent authority(ies),

DEFINE the track of flights operating predominantly in an east-west direction between 70°N and 70°S by reference to significant points formed by the intersections of half or whole degrees of latitude with meridians spaced at intervals of 10 degrees of longitude. For flights operating in areas outside those latitudes, the tracks shall be defined by significant points formed by the intersection of parallels of latitude with meridians normally spaced at 20 degrees of longitude. The distance between significant points shall, as far as possible, not exceed 1 hour's flight time. Additional significant points shall be established as deemed necessary.

For flights operating predominantly in a north-south direction, define tracks by reference to significant points formed by the intersection of whole degrees of longitude with specified parallels of latitude which are spaced at 5 degrees.

INSERT DCT between successive points unless both points are defined by geographical coordinates or by bearing and distance.

USE ONLY the conventions in (1) to (5) below and SEPARATE each sub-item by a space.

(1) *ATS route (2 to 7 characters)*

The coded designator assigned to the route or route segment including, where appropriate, the coded designator assigned to the standard departure or arrival route (e.g. BCN1, BL, R14, UB10, KODAP2A).

(2) *Significant point (2 to 11 characters)*

The coded designator (2 to 5 characters) assigned to the point (e.g. LN, MAY, HADDY),

or, if no coded designator has been assigned, one of the following ways:

— Degrees only (7 characters):

2 figures describing latitude in degrees, followed by “N” (North) or “S” (South), followed by 3 figures describing longitude in degrees, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 46N078W.

— Degrees and minutes (11 characters):

4 figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W.

— Bearing and distance from a reference point:

The identification of the reference point, followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros – e.g. a point 180° magnetic at a distance of 40 NM from VOR “DUB” should be expressed as DUB180040.

(3)

Change of speed or level
(maximum 21 characters)

The point at which a change of speed (5 % TAS or 0,01 Mach or more) or a change of level is planned to commence, expressed exactly as in (2) above, followed by an oblique stroke and both the cruising speed and the cruising level, expressed exactly as in (a) and (b) above, without a space between them, even when only one of these quantities will be changed.

Examples:

LN/N0284A045
MAY/N0305F180
HADDY/N0420F330
4602N07805W/N0500F350
46N078W/M082F330
DUB180040/N0350M0840

(4)

Change of flight rules
(maximum 3 characters)

The point at which the change of flight rules is planned, expressed exactly as in (2) or (3) above as appropriate, followed by a space and one of the following:

VFR if from IFR to VFR

IFR if from VFR to IFR

Examples:

LN VFR
LN/N0284A050 IFR

(5)

Cruise climb (maximum 28 characters)

The letter C followed by an oblique stroke; THEN the point at which cruise climb is planned to start, expressed exactly as in (2) above, followed by an oblique stroke; THEN the speed to be maintained during cruise climb, expressed exactly as in (a) above, followed by the two levels defining the layer to be occupied during cruise climb, each level expressed exactly as in (b) above, or the level above which cruise climb is planned followed by the letters PLUS, without a space between them.

Examples: C/48N050W/M082F290F350
C/48N050W/M082F290PLUS
C/52N050W/M220F580F620

Destination aerodrome and total elapsed time (8 characters)

INSERT the ICAO 4-letter location indicator of the destination aerodrome as specified in Doc 7910, Location Indicators,

OR, if no location indicator has been assigned,

INSERT ZZZZ and SPECIFY in Item 18 the name and location of the aerodrome, preceded by DEST/.

THEN WITHOUT A SPACE

INSERT the total estimated elapsed time.

Destination alternate aerodrome

INSERT the ICAO 4-letter location indicator(s) of not more than two destination alternate aerodromes, as specified in Doc 7910, Location Indicators, separated by a space,

OR, if no location indicator has been assigned to the destination alternate aerodrome(s),

INSERT ZZZZ and SPECIFY in Item 18 the name and location of the destination alternate aerodrome(s), preceded by ALTN/.

Hyphens or oblique strokes should only be used as prescribed below.

INSERT **0** (zero) if no other information,

OR, any other necessary information in the sequence shown hereunder, in the form of the appropriate indicator selected from those defined hereunder followed by an oblique stroke and the information to be recorded:

STS/ Reason for special handling by ATS, e.g. a search and rescue mission, as follows:

ALTRV: for a flight operated in accordance with an altitude reservation;

ATFMX: for a flight approved for exemption from ATFM measures by the competent authority;

FFR: firefighting;

FLTCK: flight check for calibration of nav aids;

HAZMAT: for a flight carrying hazardous material;

HEAD: a flight with Head of State status;

HOSP: for a medical flight declared by medical authorities;

HUM: for a flight operating on a humanitarian mission;

MARSA:	for a flight for which a military entity assumes responsibility for separation of military aircraft;
MEDEVAC:	for a life-critical medical emergency evacuation;
NONRVSM:	for a non-RVSM-capable flight intending to operate in RVSM airspace;
SAR:	for a flight engaged in a search and rescue mission; and
STATE:	for a flight engaged in military, customs, or police services.

Other reasons for special handling by ATS shall be denoted under the designator “RMK/”.

PBN/ Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight, up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

RNAV SPECIFICATIONS

A1	RNAV 10 (RNP 10)	C1	RNAV 2 all permitted sensors
		C2	RNAV 2 GNSS
B1	RNAV 5 all permitted sensors	C3	RNAV 2 DME/DME
B2	RNAV 5 GNSS	C4	RNAV 2 DME/DME/IRU
B3	RNAV 5 DME/DME		
B4	RNAV 5 VOR/DME	D1	RNAV 1 all permitted sensors
B5	RNAV 5 INS or IRS	D2	RNAV 1 GNSS
B6	RNAV 5 LORANC	D3	RNAV 1 DME/DME
		D4	RNAV 1 DME/DME/IRU

RNP SPECIFICATIONS

L1	RNP 4	S1	RNP APCH
		S2	RNP APCH with BARO-VNAV
O1	Basic RNP 1 all permitted sensors		
O2	Basic RNP 1 GNSS	T1	RNP AR APCH with RF (special authorisation required)
O3	Basic RNP 1 DME/DME	T2	RNP AR APCH without RF (special authorisation required)
O4	Basic RNP 1 DME/DME/IRU		

Combinations of alphanumeric characters not indicated above are reserved.

NAV/ Significant data related to navigation equipment, other than specified in PBN/, as required by the competent authority.

Indicate GNSS augmentation under this indicator, with a space between two or more methods of augmentation, e.g. NAV/GBAS SBAS.

Indicate EURPNAV if the aircraft approved P-RNAV relies solely on VOR/DME for the determination of position.

COM/	Indicate communication equipment and capabilities not specified in Item 10 a).
DAT/	Indicate data communication equipment and capabilities not specified in Item 10 a) or “CPDLCX” to indicate exemption granted from the requirement to be equipped with CPDLC-ATN-B1.
SUR/	Indicate surveillance equipment and capabilities not specified in Item 10 b). Indicate as many RSP specification(s) as apply to the flight, using designator(s) with no space. Multiple RSP specifications are separated by a space. Example: RSP180 RSP400. Insert EUADSBX, EUEHSX, EUELSX, or a combination of them, to indicate exemptions granted for the requirement to be equipped with SSR Mode S transponders or ADS-B transmitters.
DEP/	Name and location of departure aerodrome, if ZZZZ is inserted in Item 13, or the ATS unit from which supplementary flight plan data can be obtained, if AFIL is inserted in Item 13. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location as follows: With 4 figures describing latitude in degrees and tens and units of minutes followed by “N” (North) or “S” (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by “E” (East) or “W” (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W (11 characters). OR, Bearing and distance from the nearest significant point, as follows: The identification of the significant point followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing NM. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros, e.g. a point of 180° magnetic at a distance of 40 NM from VOR “DUB” should be expressed as DUB180040. OR, The first point of the route (name or LAT/LONG) or the marker radio beacon, if the aircraft has not taken off from an aerodrome.
DEST/	Name and location of destination aerodrome, if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described under DEP/above.
DOF/	The date of flight departure in a 6-figure format (YYMMDD, where YY equals the year, MM equals the month, and DD equals the day).
REG/	The nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7.
EET/	Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the competent authority. Examples: EET/CAP0745 XYZ0830 EET/EINN0204
SEL/	SELCAL Code, for aircraft so equipped.

TYP/	Type(s) of aircraft, preceded if necessary without a space by number(s) of aircraft and separated by one space, if ZZZZ is inserted in Item 9. Example: TYP/2F15 5F5 3B2
CODE/	Aircraft address (expressed in the form of an alphanumerical code of 6 hexadecimal characters) when required by the competent authority. Example: "F00001" is the lowest aircraft address contained in the specific block administered by ICAO.
DLE/	En-route delay or holding, insert the significant point(s) on the route where a delay is planned to occur, followed by the length of delay using 4-figure time in hours and minutes (hhmm). Example: DLE/MDG0030
OPR/	ICAO designator or name of the aircraft operator, if different from the aircraft identification in Item 7.
ORGN/	The originator's 8-letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the competent authority.
PER/	Aircraft performance data, indicated by a single letter as specified in the Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS, Doc 8168), Volume I – Flight Procedures, if so prescribed by the competent authority.
ALTN/	Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/above.
RALT/	ICAO 4-letter indicator(s) for en-route alternate(s), as specified in Doc 7910, Location Indicators, or name(s) of en-route alternate aerodrome(s), if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/above.
TALT/	ICAO 4-letter indicator(s) for take-off alternate, as specified in Doc 7910, Location Indicators, or name of take-off alternate aerodrome, if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/above.
RIF/	The route details to the revised destination aerodrome, followed by the ICAO 4-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight. Examples: RIF/DTA HEC KLAX RIF/ESP G94 CLA YPPH
RVR/	minimum runway visual range requirement for the flight expressed in 3 figures.
RFP/	indication of the number of the replacement flight plans submitted in format "Q" followed by 1 figure indicating the iteration of replacement. Examples: RFP/Q2.
RMK/	Any other plain-language remarks when required by the competent authority or deemed necessary.

Endurance

After E/ INSERT a 4-figure group giving the fuel endurance in hours and minutes.

Persons on board

After P/ INSERT the total number of persons (passengers and crew) on board, when required by the competent authority. INSERT TBN (to be notified) if the total number of persons is not known at the time of filing.

Emergency and survival equipment

R/ (RADIO) CROSS OUT U if UHF on frequency 243,0 MHz is not available.
CROSS OUT V if VHF on frequency 121,5 MHz is not available.
CROSS OUT E if emergency locator transmitter (ELT) is not available.

S/(SURVIVAL EQUIPMENT) CROSS OUT all indicators if survival equipment is not carried.
CROSS OUT P if polar survival equipment is not carried.
CROSS OUT D if desert survival equipment is not carried.
CROSS OUT M if maritime survival equipment is not carried.
CROSS OUT J if jungle survival equipment is not carried.

J/(JACKETS) CROSS OUT all indicators if life jackets are not carried.
CROSS OUT L if life jackets are not equipped with lights.
CROSS OUT F if life jackets are not equipped with fluorescein.
CROSS OUT U or V or both as in R/above to indicate radio capability of jackets, if any.

D/(DINGHIES)
(NUMBER) CROSS OUT indicators D and C if no dinghies are carried; or
INSERT number of dinghies carried; and
(CAPACITY) – INSERT total capacity, in persons, of all dinghies carried; and
(COVER) – CROSS OUT indicator C if dinghies are not covered; and
(COLOUR) – INSERT colour of dinghies if carried.

A/(AIRCRAFT COLOUR AND MARKINGS) INSERT colour of aircraft and significant markings.

N/(REMARKS) CROSS OUT indicator N if no remarks, or INDICATE any other survival equipment carried and any other remarks regarding survival equipment.

C/(PILOT) INSERT name of pilot-in-command.

2.3 Filed by

INSERT the name of the unit, the agency or the person filing the flight plan.'

COMMISSION IMPLEMENTING REGULATION (EU) 2023/1773**of 17 August 2023****laying down the rules for the application of Regulation (EU) 2023/956 of the European Parliament and of the Council as regards reporting obligations for the purposes of the carbon border adjustment mechanism during the transitional period****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism ⁽¹⁾, and in particular Article 35(7) thereof,

Whereas:

- (1) Regulation (EU) 2023/956 lays down reporting obligations for the purposes of carbon border adjustment mechanism during the transitional period from 1 October 2023 until 31 December 2025.
- (2) During the transitional period, importers or indirect customs representatives are to report on the quantity of imported goods, direct and indirect emissions embedded in them, and any carbon price due for those emissions, including carbon prices due for emissions embedded in relevant precursor materials.
- (3) The first report should be submitted by 31 January 2024 in respect of goods imported during the fourth quarter of 2023. The last report should be submitted by 31 January 2026 in respect of goods imported during the fourth quarter of 2025.
- (4) The Commission is to adopt implementing rules for those reporting requirements.
- (5) The reporting requirements should be limited to what is necessary to minimise the burden on importers in the transitional period and facilitate the smooth roll-out of the CBAM declaration requirements after the transitional period.
- (6) In line with Annex IV to Regulation (EU) 2023/956, the detailed rules for calculating embedded emissions of imported goods should be based on the methodology applicable under the Emission Trading Scheme for installations located in the EU, as notably specified in Commission Implementing Regulation (EU) 2018/2066 ⁽²⁾. The principles for determining the embedded emissions of the goods listed in Annex I to Regulation (EU) 2023/956 should aim at identifying the relevant production processes for goods categories, and to monitor the direct and indirect emissions of those production processes. Reporting during the transitional period should also take into account existing norms and procedures of relevant Union legislation. As regards the production of hydrogen and its derivatives, the reporting should take into account Directive (EU) 2018/2001 of the European Parliament and of the Council ⁽³⁾.
- (7) The system boundaries of production processes, including emissions data at installation level, attributed emissions of production processes and embedded emissions of goods should be used for determining data to be provided for the purpose of fulfilling the reporting obligations. For those obligations, the importers and indirect customs representatives should ensure the availability of information needed from the operators of installations. That information should be received in a timely manner for the importers and indirect customs representatives to fulfil their reporting obligations. That information should include standard emission factors to use for calculating direct embedded emissions, notably fuel emission factors and process emission factors and reference efficiency factors for electricity and heat production.

⁽¹⁾ OJ L 130, 16.5.2023, p. 52.

⁽²⁾ Commission Implementing Regulation (EU) 2018/2066 of 19 December 2018 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 601/2012 (OJ L 334, 31.12.2018, p. 1).

⁽³⁾ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, p. 82).

- (8) Since the beginning of the reporting period starts on 1 October 2023, importers and indirect customs representatives have limited time available to ensure compliance with the reporting obligations. Synergies can be obtained with the monitoring and reporting systems already used by third country operators. A temporary derogation to the calculation methods for reporting embedded emissions should therefore be allowed for a limited period, until end of 2024. That flexibility should apply when the operator in a third country is subject to a mandatory monitoring and reporting system associated to a carbon pricing scheme, or to other mandatory monitoring and reporting schemes, or when the operator is monitoring the emissions of the installation, including for an emissions reduction project.
- (9) For a limited period, until 31 July 2024, reporting declarants that would not be able to obtain all the information from third country operators to determine the actual embedded emissions of the imported goods in accordance with the methodology set in Annex III to this Regulation should be able to use and refer to an alternative method for determining the direct embedded emissions.
- (10) The reporting obligations should also afford some flexibility for the determination of the production steps in installations that do not account for a significant part of the embedded direct emissions of the imported goods. Such would be typically the case for the final production steps of steel or aluminium downstream products. In that case, a derogation from the required reporting obligations should be provided and estimated values may be reported for the production steps in installations whose contribution to direct emissions do not exceed 20 % of the total embedded emissions of the imported goods. That threshold should ensure sufficient flexibility for small operators in third countries.
- (11) One of the objectives of the transitional period is to collect data for the purpose of further specifying, in the implementing act pursuant to Article 7(7) of Regulation (EU) 2023/956, the methodology for calculating embedded indirect emissions after that period. In that context, the reporting of indirect emissions during the transitional period should be open and designed to allow to select the most appropriate value among those listed in Section 4.3 in Annex IV to Regulation (EU) 2023/956. Reporting of indirect emissions should however not include reporting based on the average emission factor of the Union grid as that value is already known by the Commission.
- (12) Data collected during the transitional period should provide the basis for the reports that the Commission is to present in accordance with Article 30(2) and (3) of Regulation (EU) 2023/956. Data collected during the transitional period should also help define a unique monitoring, reporting and verification methodology after the transitional period. The assessment of data collected should in particular be used for the Commission's work in view of adjusting the methodology applicable after the transitional period.
- (13) The indicative range of penalties that are to be imposed on a reporting declarant who has failed to respect the reporting obligations should be based on the default values made available and published by the Commission for the transitional period for the embedded emissions that were not reported. The indicative maximum range should be coherent with the penalty pursuant to Article 16(3) and (4) of Directive 2003/87/EC of the European Parliament and of the Council^(*), while also taking into account that the obligation in the transitional period is limited to data reporting. The criteria to be used by competent authorities for determining the actual amount of the penalty should be based on the gravity and duration of the failure to report. The Commission should monitor the CBAM reports in order to provide for an indicative assessment of the information needed by the competent authorities and to ensure coherency of the penalties to be applied.
- (14) In order to ensure the efficient implementation of reporting obligations, an electronic database, the CBAM Transitional Registry, should be established by the Commission to collect the information reported during the transitional period. The CBAM Transitional Registry should be the basis for the establishment of the CBAM Registry pursuant to Article 14 of Regulation (EU) 2023/956.

(*) Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32).

- (15) The CBAM Transitional Registry should become the system for the filing and management of the CBAM reports for reporting declarants, including checks, indicative assessments, and review procedures. To ensure an accurate assessment of the reporting obligations, the CBAM Transitional Registry should be interoperable with existing customs systems.
- (16) In order to ensure an effective and uniform reporting system, technical arrangements for the functioning of the CBAM Transitional Registry should be laid down, such as arrangements for the development, testing and deployment as well as for the maintenance and potential modifications of the electronic systems, data protection, updating of data, limitation of data processing, systems ownership, and security. These arrangements should be compatible with the principle of data protection by design and by default under Article 27 of Regulation (EU) 2018/1725 of the European Parliament and of the Council ⁽⁵⁾ and Article 25 of Regulation (EU) 2016/679 of the European Parliament and of the Council ⁽⁶⁾, as well as with security of processing under Article 33 of Regulation (EU) 2018/1725 and Article 32 of Regulation (EU) 2016/679.
- (17) In order to ensure the continuity of data reporting at all times, it is important to provide for alternative solutions to be implemented in the event of a temporary failure of the electronic systems for data reporting. To that effect, the Commission should work on a CBAM business continuity plan.
- (18) In order to secure access to the CBAM Transitional Registry, the Uniform User Management and Digital Signature (UUM&DS) system, as referred to in Article 16 of Commission Implementing Regulation (EU) 2023/1070 ⁽⁷⁾, should be used for managing, the authentication, and access verification process for reporting declarants.
- (19) For the purpose of identifying the reporting declarants and establishing a list of the reporting declarants with their Economic Operator Registration and Identification (EORI) numbers, the CBAM Transitional Registry should be interoperable with the Economic Operator Registration and Identification system, as referred to in Article 30 of Implementing Regulation (EU) 2023/1070.
- (20) For checking and reporting purposes, the national systems should provide the required information on goods listed in Annex I to Regulation (EU) 2023/956, as referred in Commission Implementing Decision (EU) 2019/2151 ⁽⁸⁾.
- (21) Identifying imported goods by means of their classification in the Combined Nomenclature ('CN') set out in Council Regulation (EEC) No 2658/87 ⁽⁹⁾ and the storage provisions set out in Implementing Regulation (EU) 2023/1070 should be used for providing information on imported goods listed in Annex I to Regulation (EU) 2023/956.
- (22) This Regulation respects the fundamental rights and observes the principles recognised by the Charter of Fundamental Rights of the European Union, and notably the right to protection of personal data. The personal data of economic operators and other persons processed by the electronic systems should be restricted to the dataset set out in Annex I to this Regulation. Where it is necessary, for the purposes of the Implementing Regulation, to process personal data, this should be carried out in accordance with Union law on the protection of personal data.

⁽⁵⁾ Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of individuals with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data, and repealing Regulation (EC) No 45/2001 and Decision No 1247/2002/EC (EU Data Protection Regulation) (OJ L 295, 21.11.2018, p. 39).

⁽⁶⁾ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1).

⁽⁷⁾ Commission Implementing Regulation (EU) 2023/1070 of 1 June 2023 on technical arrangements for developing, maintaining and employing electronic systems for the exchange and storage of information under Regulation (EU) No 952/2013 of the European Parliament and the Council (OJ L 143, 2.6.2023, p. 65).

⁽⁸⁾ Commission Implementing Decision (EU) 2019/2151 of 13 December 2019 establishing the work programme relating to the development and deployment of the electronic systems provided for in the Union Customs Code (OJ L 325, 16.12.2019, p. 168).

⁽⁹⁾ Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff (TARIC) (OJ L 256, 7.9.1987, p. 1).

In that regard, any processing of personal data by Member States' authorities should be subject to Regulation (EU) 2016/679 and national requirements on the protection of natural persons with regard to the processing of personal data. Any processing of personal data by the Commission should be subject to Regulation (EU) 2018/1725. Personal data should be kept in a form which permits the identification of data subjects for no longer than necessary for the purposes for which personal data are processed. In this regard, the data retention period for the CBAM Transitional Registry shall be limited to 5 years from the reception of the CBAM report.

- (23) The European Data Protection Supervisor was consulted in accordance with Article 42(1) of Regulation (EU) 2018/1725 and delivered an opinion on 28 July 2023.
- (24) As the first reporting period starts on 1 October 2023, this Regulation should enter into force as a matter of urgency.
- (25) The measures provided for in this Regulation are in accordance with the opinion of the CBAM Committee,

HAS ADOPTED THIS REGULATION:

CHAPTER I

SUBJECT MATTER AND DEFINITIONS

Article 1

Subject matter

This Regulation lays down rules for reporting obligations laid down in Article 35 of Regulation (EU) 2023/956 in respect of goods listed in Annex I to that Regulation imported into the customs territory of the Union during the transitional period from 1 October 2023 to 31 December 2025 ('transitional period').

Article 2

Definitions

For the purposes of this Regulation, the following definitions apply:

- (1) 'reporting declarant' means any of the following persons:
 - (a) the importer who lodges a customs declaration for release for free circulation of goods in its own name and on its own behalf;
 - (b) the person, holding an authorisation to lodge a customs declaration referred to in Article 182(1) of Regulation (EU) No 952/2013 of the European Parliament and of the Council ⁽¹⁰⁾, who declares the importation of goods;
 - (c) the indirect customs representative, where the customs declaration is lodged by the indirect customs representative appointed in accordance with Article 18 of Regulation (EU) No 952/2013, when the importer is established outside the Union or where the indirect customs representative has agreed to the reporting obligations in accordance with Article 32 of Regulation (EU) 2023/956;
- (2) 'rebate' means any amount that reduces the amount due or paid by a person liable for the payment of a carbon price, before its payment or after, in a monetary form or in any other form.

⁽¹⁰⁾ Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (OJ L 269, 10.10.2013, p. 1).

CHAPTER II

RIGHTS AND OBLIGATIONS OF REPORTING DECLARANTS RELATED TO REPORTING

Article 3

Reporting obligations of reporting declarants

1. Each reporting declarant shall provide, based on the data, that the operator may communicate, as provided in Annex III to this Regulation, the following information regarding goods listed in Annex I to Regulation (EU) 2023/956 imported during the quarter to which the CBAM report relates:

- (a) the quantity of the goods imported, expressed in megawatt hours for electricity and in tonnes for other goods;
- (b) the type of goods as identified by their CN code.

2. Each reporting declarant shall provide the following information regarding the embedded emissions of the goods listed in Annex I to Regulation (EU) 2023/956, as listed in Annex I to this Regulation, in the CBAM reports:

- (a) the country of origin of the imported goods;
- (b) the installation where the goods were produced, identified by the following data:
 - (1) the applicable United Nations Code for Trade and Transport Location (UN/LOCODE) of the location;
 - (2) the company name of the installation, the address of the installation and its English transcript;
 - (3) geographical coordinates of the main emission source of the installation;
- (c) the production routes used, defined in Section 3 of Annex II to this Regulation, which shall reflect the technology used for the production of the goods, and information on specific parameters qualifying the indicated production route chosen as defined in Section 2 of Annex IV, for determining the embedded direct emissions;
- (d) the specific embedded direct emissions of the goods, which shall be determined by converting the attributed direct emissions of the production processes into emissions specific of the goods expressed as CO₂e per tonne in accordance with Sections F and G of Annex III to this Regulation;
- (e) the reporting requirements that have an effect on the embedded emissions of the goods as referred to in Section 2 of Annex IV to this Regulation;
- (f) for electricity as imported goods, the reporting declarant shall report the following information:
 - (1) the emission factor used for electricity, expressed as tonne CO₂e per MWh (megawatt hour) as determined in accordance with Section D of Annex III to this Regulation;
 - (2) the data source or method used for determining the emission factor of electricity as determined in accordance with Section D of Annex III to this Regulation;
- (g) for steel goods, the identification number of the specific steel mill where a particular batch of raw materials was produced, where known.

3. For specific embedded indirect emissions, each reporting declarant shall report the following information, as listed in Annex I to this Regulation, in the CBAM reports:

- (a) electricity consumption, expressed in megawatt hours, of the production process per tonne of goods produced;

- (b) specify whether the declarant reports actual emissions or default values made available and published by the Commission for the transitional period in accordance with Section D of Annex III to this Regulation;
 - (c) the corresponding emissions factor of the electricity consumed;
 - (d) the amount of specific embedded indirect emissions, which shall be determined by converting the attributed embedded indirect emissions of the production processes into indirect emissions specific of the goods expressed as CO₂e per tonne in accordance with Sections F and G of Annex III to this Regulation.
4. Where the rules for determining data are different from the ones indicated in Annex III to this Regulation, the reporting declarant shall provide additional information and description on the methodological basis of the rules used to determine the embedded emissions. The rules described shall lead to similar coverage and accuracy of emissions data, including systems boundaries, production processes monitored, emission factors and other methods employed for the calculations and reporting.
5. For the purposes of reporting, the reporting declarant may request that the operator uses an electronic template provided by the Commission and provide the content of the communication in Sections 1 and 2 of Annex IV.

Article 4

Calculation of embedded emissions

1. For the purpose of Article 3(2), the specific embedded emissions of goods produced in an installation shall be determined using one of the following methods, which are based on the choice of monitoring methodology determined in accordance with point B.2 of Annex III to this Regulation, consisting of either:
- (a) determining emissions from source streams on the basis of activity data obtained by means of measurement systems and calculation factors from laboratory analyses or standard values;
 - (b) determining emissions from emission sources by means of continuous measurement of the concentration of the relevant greenhouse gas in the flue gas and of the flue gas flow.
2. By way of derogation from paragraph 1, until 31 December 2024, the specific embedded emissions of goods produced in an installation may be determined using one of the following monitoring and reporting methods, if they lead to similar coverage and accuracy of emissions data compared to the methods listed in that paragraph:
- (a) a carbon pricing scheme where the installation is located; or
 - (b) a compulsory emission monitoring scheme where the installation is located; or
 - (c) an emission monitoring scheme at the installation which can include verification by an accredited verifier.
3. By way of derogation from paragraphs 1 and 2, until 31 July 2024 for each import of goods for which the reporting declarant does not have all the information listed in Article 3(2) and (3), the reporting declarant may use other methods for determining the emissions, including default values made available and published by the Commission for the transitional period or any other default values as specified in Annex III. In such cases, the reporting declarant shall indicate and reference in the CBAM reports the methodology followed for establishing such values.

*Article 5***Use of estimated values**

By way of derogation from Article 4, up to 20 % of the total embedded emissions of complex goods may be based on estimations made available by the operators of the installations.

*Article 6***Data collection and reporting regarding inward processing**

1. For goods placed under inward processing and subsequently released for free circulation either as the same goods or as processed products, the reporting declarant shall submit in the CBAM reports, for the quarter following the quarter where the discharge from customs procedure occurred in accordance with Article 257 of Regulation (EU) No 952/2013, the following information:

- (a) the quantities of goods listed in Annex I to Regulation (EU) 2023/956 that have been released for free circulation following inward processing during that period;
- (b) embedded emissions corresponding to those quantities of goods referred to in point (a) that have been released for free circulation following inward processing during that period;
- (c) the country of origin of the goods referred to in point (a), where known;
- (d) the installations where the goods referred to in point (a) were produced, where known;
- (e) the quantities of goods listed in Annex I to Regulation (EU) 2023/956 placed under inward processing that resulted in processed products that have been released for free circulation during that period;
- (f) embedded emissions corresponding to the goods that have been used to produce the quantities of processed products referred to in point (e);
- (g) in case of waiver for the bill of discharge granted by customs in accordance with Article 175 of Commission Delegated Regulation (EU) 2015/2446 ⁽¹⁾ the reporting declarant shall submit the waiver.

2. The reporting and calculation of the embedded emissions referred to in paragraph 1 points (b) and (f) shall be done in accordance with Articles 3, 4 and 5.

3. By way of derogation from paragraph 2, when processed products or goods placed under the inward processing are released for free circulation in accordance with Article 170(1) of Delegated Regulation (EU) 2015/2446, the embedded emissions referred to in paragraph 1 points (b) and (f) shall be calculated on the basis of the weighted average embedded emissions of the totality of the goods of the same CBAM goods category as defined in Annex II to this Regulation placed under the inward processing procedure from 1 October 2023.

The embedded emissions referred to in the first subparagraph shall be calculated as follows:

- (a) the embedded emissions of paragraph 2, point (b), shall be the total embedded emissions of the goods placed under inward processing that are imported; and

⁽¹⁾ Commission Delegated Regulation (EU) 2015/2446 of 28 July 2015 supplementing Regulation (EU) No 952/2013 of the European Parliament and of the Council as regards detailed rules concerning certain provisions of the Union Customs Code (OJ L 343, 29.12.2015, p. 1).

- (b) the embedded emissions of paragraph 2, point (f), shall be the total embedded emissions of the goods placed under inward processing that were used in one or more processing operations multiplied by the percentage quantities of the processed products obtained therefrom that are imported.

Article 7

Reporting of information regarding the carbon price due

1. Where applicable, the reporting declarant shall provide in the CBAM reports the following information regarding the carbon price due in a country of origin for the embedded emissions:

- (a) the type of product indicated by CN code;
- (b) the type of carbon price;
- (c) the country, where a carbon price is due;
- (d) form of rebate or any other form of compensation available in that country that would have resulted in a reduction of that carbon price;
- (e) the amount of the carbon price due, a description of the carbon pricing instrument and possible compensation mechanisms;
- (f) indication of the provision of the legal act providing for the carbon price, rebate, or other forms of relevant compensation, including a copy of the legal act;
- (g) the quantity of embedded direct or indirect emissions covered;
- (h) the quantity of embedded emissions covered by any rebate or other form of compensation, including free allocations, if applicable.

2. The monetary amounts referred to in paragraph 1 point (e), will be converted into euro based on the average exchange rates of the year preceding to the year when the report is due. The yearly average exchange rates shall be based on quotations published by the European Central Bank. For currencies for which a quotation is not published by the European Central Bank, the yearly average exchange rates shall be based on publicly available information about the effective exchange rates. The yearly average exchange rates shall be provided by the Commission in the CBAM Transitional Registry.

Article 8

Submission of CBAM reports

1. For each quarter from 1 October 2023 until 31 December 2025 the reporting declarant shall submit the CBAM reports to the CBAM Transitional Registry no later than one month after the end of that quarter.

2. In the CBAM Transitional Registry the reporting declarant shall provide information and indicate, whether:

- (a) the CBAM report is submitted by an importer in its own name and on its own behalf;
- (b) the CBAM report is submitted by an indirect customs representative on behalf of an importer.

3. Where an indirect customs representative does not agree to carry out reporting obligations of the importer under this Regulation, the indirect customs representative shall notify the importer of the obligation to comply with this Regulation. The notification shall include the information referred to in Article 33(1) of Regulation (EU) 2023/956.

4. The CBAM reports shall include the information in Annex I to this Regulation.
5. The CBAM report, once submitted in the CBAM Transitional Registry, shall be allocated a unique Report ID.

Article 9

Modification and correction of CBAM reports

1. A reporting declarant may modify a submitted CBAM report until two months after the end of the relevant reporting quarter.
2. By way of derogation from paragraph 1, a reporting declarant may modify the CBAM reports for the first two reporting periods until the submission deadline for the third CBAM report.
3. Upon a justified request of the reporting declarant, the competent authority shall assess that request and where appropriate shall allow the reporting declarant to resubmit a CBAM report or to correct it after the deadline referred to in paragraphs 1 and 2 and within one year after the end of the relevant reporting quarter. The resubmission of the corrected CBAM report or the correction, as applicable, shall be made no later than a month following the approval by the competent authority.
4. The competent authorities shall motivate the refusal of the request provided in paragraph 3 and inform the reporting declarant on the rights to appeal.
5. A CBAM report pending a dispute may not be modified. It can be replaced to take into account the outcome of that dispute.

CHAPTER III

ADMINISTRATION REGARDING CBAM REPORTING

Article 10

CBAM Transitional Registry

1. The CBAM Transitional Registry shall be a standardised and secure electronic database containing common data elements for reporting during the transitional period, and for providing access, case handling and confidentiality.
2. The CBAM Transitional Registry shall enable communication, checks and information exchange between the Commission, the competent authorities, customs authorities, and reporting declarants in accordance with Chapter V.

Article 11

Checks of CBAM reports and use of information by the Commission

1. The Commission may check CBAM reports to assess compliance with the reporting obligations of reporting declarants within the transitional period and until three months after the last CBAM report should have been submitted.

2. The Commission shall use the CBAM Transitional Registry, and the information contained in that Registry to perform the tasks laid down in this Regulation and in Regulation (EU) 2023/956.

Article 12

Indicative assessment by the Commission

1. For indicative purposes, the Commission shall communicate to the Member States a list of reporting declarants established in the Member State for which the Commission has reasons to believe they have failed to comply with the obligation to submit a CBAM report.

2. Where the Commission considers that a CBAM report does not contain all the information required in Articles 3 to 7 or considers a report incomplete or incorrect in accordance with Article 13, the Commission shall communicate the indicative assessment regarding that CBAM report to the competent authority in the Member State where the reporting declarant is established.

Article 13

Incomplete or incorrect CBAM reports

1. A CBAM report shall be considered incomplete where the reporting declarant has failed to report in accordance with Annex I to this Regulation.

2. A CBAM report shall be considered incorrect in any of the following cases:

- (a) the data or information in the submitted report do not comply with the requirements laid down in Articles 3 to 7 and Annex III to this Regulation;
- (b) the reporting declarant has submitted wrongful data and information;
- (c) where the reporting declarant does not provide an adequate justification for the use of reporting rules other than those listed in Annex III to this Regulation.

Article 14

Assessment of CBAM reports and use of information by the competent authorities

1. The competent authority of the Member State of establishment of the reporting declarant shall initiate the review and assess the data, information, list of reporting declarants communicated by the Commission and indicative assessment as referred to in Article 12 within three months from the communication of that list or indicative assessment.

2. The competent authorities shall use the CBAM Transitional Registry, and the information contained in that Registry, to perform the tasks laid down in this Regulation and Regulation (EU) 2023/956.

3. Within the transitional period or thereafter, the competent authorities may initiate the correction procedure regarding any of the following:

- (a) incomplete or incorrect CBAM reports;
- (b) failure to submit a CBAM report.

4. Where the competent authority initiates the correction procedure, the reporting declarant shall be notified that the report is under review, and that additional information is required. The request for additional information by the competent authority shall include the information required in Articles 3 to 7. The reporting declarant shall submit the additional information through the CBAM Transitional Registry.

5. The competent authority, or any other authority appointed by the competent authority, shall grant the authorisation to access the CBAM Transitional Registry and manage the registration at national level taking into consideration the EORI number in accordance with the technical arrangement set out in Article 20.

Article 15

Confidentiality

1. All decisions of the competent authorities and information acquired by the competent authority in the course of performing its duty related to reporting under this Regulation, which is confidential, or which is provided on a confidential basis shall be covered by the obligation of professional secrecy. Such information shall not be disclosed by the competent authority without the express permission of the person or authority that provided it.

By way of derogation from the first subparagraph, such information may be disclosed without permission where this Regulation provides for it and where the competent authority is obliged or authorised to disclose it by virtue of Union or national law.

2. Competent authorities may communicate confidential information referred to in paragraph 1 to customs authorities of the Union.

3. Any disclosure or communication of information as referred to in paragraphs 1 and 2 shall be made in compliance with applicable data protection provisions.

CHAPTER IV

ENFORCEMENT

Article 16

Penalties

1. Member States shall apply penalties in the following cases:

- (a) where the reporting declarant has not taken the necessary steps to comply with the obligation to submit a CBAM report; or
- (b) where the CBAM report is incorrect or incomplete in accordance with Article 13, and the reporting declarant has not taken the necessary steps to correct the CBAM report where the competent authority initiated the correction procedure in accordance with Article 14(4).

2. The amount of the penalty shall be between EUR 10 and EUR 50 per tonne of unreported emissions. The penalty shall increase in accordance with the European index of consumer prices.

3. When determining the actual amount of a penalty, for the unreported emissions calculated on the basis of the default values made available and published by the Commission for the transitional period, the competent authorities shall consider the following factors:

- (a) the extent of unreported information;
- (b) the unreported quantities of imported goods and the unreported emissions relating to those goods;
- (c) the readiness of the reporting declarant to comply with requests for information or to correct the CBAM report;

- (d) the intentional or negligent behaviour of the reporting declarant;
- (e) the past behaviour of the reporting declarant as regards compliance with the reporting obligations;
- (f) the level of cooperation of the reporting declarant to bring the infringement to an end;
- (g) whether the reporting declarant has voluntarily taken measures to ensure that similar infringements cannot be committed in the future.

4. Higher penalties shall be applied when more than two incomplete or incorrect reports within the meaning of Article 13 have been submitted in a row or the duration of the failure to report exceeds 6 months.

CHAPTER V

TECHNICAL ELEMENTS REGARDING THE CBAM TRANSITIONAL REGISTRY

SECTION 1

Introduction

Article 17

Central system in scope

1. The CBAM Transitional Registry shall be interoperable with:
 - (a) the Uniform User Management and Digital Signature (UUM&DS) system for the purposes of users registration and access management for the Commission, Member States, and reporting declarants, as referred to in Article 16 of Implementing Regulation (EU) 2023/1070;
 - (b) the Economic Operator Registration and Identification (EORI) for the purpose of validating and retrieving the Economic Operator Identity Information, as referred to in Article 30 of Implementing Regulation (EU) 2023/1070, for the data laid out Annex V to this Regulation;
 - (c) the Surveillance system for the purpose of retrieving information on Customs Imports Declarations for goods listed in Annex I to Regulation (EU) 2023/956 for checks of the CBAM reports and compliance, developed through the UCC Surveillance 3 (SURV3), as referred to in Article 99 of Implementing Regulation (EU) 2023/1070;
 - (d) the TARIC System as referred to in Regulation (EEC) No 2658/87.
2. The CBAM Transitional Registry shall be interoperable with decentralised systems as developed or upgraded through the Implementing Decision (EU) 2019/2151, for the purpose of retrieving information on Customs Imports Declarations for goods listed in Annex I to Regulation (EU) 2023/956, as specified in Annex VI and Annex VII to this Regulation, and for checking the CBAM reports and ensuring compliance of the reporting declarants when that information is not available in the SURV3 system.

Article 18

Contact points for the electronic systems

The Commission and Member States shall designate contact points for each of the electronic systems referred to in Article 17 of this Regulation, for the purposes of exchanging information to ensure a coordinated development, operation, and maintenance of those electronic systems.

The Commission and Member States shall communicate the details of these contact points to each other and inform each other immediately of any changes to those details.

SECTION 2

CBAM Transitional Registry*Article 19***Structure of the CBAM Transitional Registry**

The CBAM Transitional Registry shall consist of the following common components ('common components'):

- (a) the CBAM Trader Portal (CBAM TP);
- (b) the CBAM Competent Authorities Portal (CBAM CAP) with two segregated spaces:
 - (1) one for the National Competent Authorities (CBAM CAP/N); and
 - (2) another for the Commission (CBAM CAP/C);
- (c) the CBAM User Access Management;
- (d) the CBAM Registry Back End Services (CBAM BE);
- (e) the public CBAM page on the Europa website.

*Article 20***Terms of collaboration in the CBAM Transitional Registry**

1. The Commission shall propose the Terms of Collaboration, Service Level Agreement, and security Plan, for agreement with the competent authorities. The Commission shall operate the CBAM Transitional Registry in compliance with the terms agreed.
2. The CBAM Transitional Registry shall be used with respect to the CBAM reports and to the Import Declarations Records to which these reports relate.

*Article 21***The CBAM User Access Management**

1. The authentication and access verification of the reporting declarant for the goods listed in Annex I to Regulation (EU) 2023/956, for the purposes of access to the components of the CBAM Registry shall be done using the UUM&DS system as referred to in Article 17(1), point (a).
2. The Commission shall provide the authentication services allowing the users of the CBAM Transitional Registry to securely access that Registry.
3. The Commission shall use UUM&DS to grant the authorisation to access the CBAM Transitional Registry to its staff and to provide the delegations to the competent authorities to issue their authorisations.
4. The competent authorities shall use UUM&DS to grant the authorisation to access the CBAM Transitional Registry to their staff and to the reporting declarants established in their Member State.
5. A competent authority may opt to use an identity and access management system set up in their Member State pursuant to Article 26 of this Regulation (national Customs eIDAS system) to provide the necessary credentials to access the CBAM Transitional Registry.

*Article 22***CBAM Trader Portal**

1. The CBAM Trader Portal shall be the unique entry point to the CBAM Transitional Registry for the reporting declarants. The portal shall be accessible from the internet.
2. The CBAM Trader Portal shall interoperate with the CBAM Registry Back End services.
3. The CBAM Trader Portal shall be used by the reporting declarant for:
 - (a) the submission of the CBAM reports via a web interface or a System-to-System interface; and
 - (b) receiving notifications related to their CBAM compliance obligations.
4. The CBAM Trader Portal shall offer facilities for the reporting declarants to store the information about third countries installations and embedded emissions for their later re-use.
5. The access to the CBAM Trader Portal shall be exclusively managed by the CBAM Access Management referred to in Article 26.

*Article 23***CBAM Competent Authorities Portal (CBAM CAP) for the CBAM National Competent Authorities (CBAM CAP/N)**

1. The CBAM Competent Authorities Portal for the National Competent Authorities shall be the unique entry point to the CBAM Transitional Registry for the competent authorities. The portal shall be accessible from the internet.
2. The CBAM Competent Authorities Portal for the National Competent authorities shall interoperate with the CBAM Registry Back End services via the internal network of the Commission.
3. The CBAM Competent Authorities Portal for the National Competent Authorities shall be used by the competent authorities to carry out the tasks laid down in this Regulation and in Regulation (EU) 2023/956.
4. The access to the CBAM Competent Authorities Portal for the National Competent Authorities shall be exclusively managed by the CBAM Access Management referred to in Article 26.

*Article 24***CBAM Competent Authorities Portal (CBAM CAP) for the Commission (CBAM CAP/C)**

1. The CBAM Competent Authorities Portal for the Commission shall be the unique entry point to the CBAM Transitional Registry for the Commission. The portal shall be accessible on the Commission internal network and the internet.
2. The CBAM Competent Authorities Portal for the Commission shall interoperate with the CBAM Registry Back End services over the internal network of the Commission.
3. The CBAM Competent Authorities Portal for the Commission shall be used by the Commission to perform the tasks laid down in this Regulation and in Regulation (EU) 2023/956.

4. The access to the CBAM Competent Authorities Portal for the Commission shall be exclusively managed by the CBAM Access Management referred to in Article 26.

Article 25

The CBAM Registry Back End Services (CBAM BE)

1. The CBAM Registry Back End Services shall serve all requests placed by:
 - (a) the reporting declarants via the CBAM Trader Portal;
 - (b) the competent authorities via the CBAM Competent Authority Portal/N;
 - (c) the Commission via the CBAM Competent Authority Portal/C.
2. The CBAM Registry Back End Services shall store centrally and manage all the information entrusted to the CBAM Transitional Registry. It shall guarantee their persistence, integrity, and coherence of that information.
3. The CBAM Registry Back End Services shall be managed by the Commission.
4. The access to the CBAM Registry Back End Services shall be exclusively managed by the CBAM Access Management referred to in Article 26.

Article 26

Access management system

The Commission shall set up the access management system to validate the access requests submitted by reporting declarants and other persons within the UUM&DS system as referred to in Article 17(1), point (a) by connecting the Member States' identity and the EU identity and access management systems pursuant to Article 27.

Article 27

Administration management system

The Commission shall set up the administration management system to manage the authentication and authorisation, the identification data of reporting declarants and other persons for the purposes of allowing access to the electronic systems.

Article 28

Member States' identity and access management systems

The Member States shall set up or use existing an identity and access management systems to ensure:

- (a) a secure registration and storage of identification data of reporting declarants and other persons;
- (b) a secure exchange of signed and encrypted identification data of reporting declarants and other persons.

SECTION 3

Functioning of the electronic systems and training in the use thereof*Article 29***Development, testing, deployment, and management of the electronic systems**

1. The CBAM Transitional Registry common components shall be developed, tested, deployed, and managed by the Commission, and may be tested by the Member States. The competent authority of the Member State of establishment of the reporting declarant shall communicate the decisions on penalties with the respective outcome of that process to the Commission, by electronic systems developed at national level, linked to enforcement and penalties, or by other means.
2. The Commission shall design and maintain the common specifications of the interfaces with components of electronic systems developed at national level in close cooperation with the Member States.
3. Where appropriate, common technical specifications shall be defined by the Commission in close cooperation with, and subject to review by the Member States, with a view to deploying them in due time. The Member States and, where appropriate, the Commission shall engage in the development and deployment of the systems. The Commission and the Member States shall also collaborate with reporting declarants and other stakeholders.

*Article 30***Maintenance and changes to the electronic systems**

1. The Commission shall perform the maintenance of the common components and the Member States shall perform the maintenance of their national components.
2. The Commission shall ensure uninterrupted operation of the electronic systems.
3. The Commission may change the common components of the electronic systems to correct malfunctions, to add new functionalities or to alter existing ones.
4. The Commission shall inform the Member States of changes and updates to the common components.
5. The Commission shall make the information on the changes and updates to the electronic systems set out in paragraphs 3 and 4 publicly available.

*Article 31***Temporary failure of the electronic systems**

1. In the event of a temporary failure of the CBAM Transitional Registry, reporting declarants and other persons shall submit the information required to fulfil the required formalities by the means determined by the Commission, including by means other than electronic data-processing techniques.
2. The Commission shall inform Member States and reporting declarants about any unavailability of the electronic systems resulting from a temporary failure.
3. The Commission shall prepare a CBAM business continuity plan to be agreed between the Member States and the Commission. In case of temporary failure of the CBAM Transitional Registry, the Commission shall evaluate the conditions to activate it.

*Article 32***Training support on the use and functioning of the common components**

The Commission shall support the Member States on the use and functioning of the common components of the electronic systems by providing the appropriate training material.

*SECTION 4****Data protection, data management and the ownership and security of the electronic systems****Article 33***Personal data protection**

1. The personal data registered in the CBAM Transitional Registry, and the components of electronic systems developed at national level shall be processed for the purposes of implementing the Regulation (EU) 2023/956 having regard to the specific objectives of those databases as set out in this Regulation. The purposes for which the personal data could be processed shall be the following:

- (a) authentication purposes and access management;
- (b) monitoring, checks and review of CBAM reports;
- (c) communication and notifications;
- (d) compliance and judicial proceedings;
- (e) functioning of the IT infrastructure, including interoperability with decentralised systems under this Regulation;
- (f) statistics and review of the functioning of Regulation (EU) 2023/956 and this Regulation.

2. The Member States' national supervisory authorities in the field of personal data protection and the European Data Protection Supervisor shall cooperate, in accordance with Article 62 of Regulation (EU) 2018/1725, to ensure coordinated supervision of the processing of personal data registered in the CBAM Transitional Registry and the components of electronic systems developed at national level.

3. The provisions contained in this Article shall be without prejudice to the right to rectification of personal data in accordance with Article 16 of Regulation (EU) 2016/679.

*Article 34***Limitation of data access and data processing**

1. The data registered in the CBAM Transitional Registry by a reporting declarant may be accessed or otherwise processed by that reporting declarant. It may also be accessed and otherwise processed by the Commission and competent authorities.

2. Where incidents and problems in the operational processes are identified in the provision of the services of the systems where the Commission act as a processor, the Commission may have access to the data in these processes only for the purpose of resolving a registered incident or problem. The Commission shall ensure the confidentiality of such data.

*Article 35***System ownership**

The Commission shall be the system owner of the CBAM Transitional Registry.

*Article 36***System security**

1. The Commission shall ensure the security of the CBAM Transitional Registry.
2. For those purposes, the Commission and Member States shall take the necessary measures to:
 - (a) prevent any unauthorised person from having access to installations used for the processing of data;
 - (b) prevent the entry of data and any consultation, modification, or deletion of data by unauthorised persons;
 - (c) detect any of the activities referred to in points (a) and (b).
3. The Commission and the Member States shall inform each other of any activities that might result in a breach or a suspected breach of the security of the CBAM Transitional Registry.
4. The Commission and the Member States shall establish security plans concerning the CBAM Transitional Registry.

*Article 37***Controller for the CBAM Transitional Registry**

For the CBAM Transitional Registry and in relation to the processing of personal data, the Commission and Member States shall act as joint controllers as defined in Article 4, point (7), of Regulation (EU) 2016/679 and as defined in Article 3, point (8) of Regulation (EU) 2018/1725.

*Article 38***Data retention period**

1. In order to achieve the objectives pursued under this Regulation and Regulation (EU) 2023/956, in particular Article 30 thereof, the data retention period for the data in the CBAM Transitional Registry shall be limited to 5 years from the reception of the CBAM report.
2. Notwithstanding paragraph 1, where an appeal has been lodged or where court proceedings have begun involving data stored in the CBAM Transitional Registry, those data shall be retained until the appeal procedure or court proceedings are terminated and shall only be used for the purpose of the aforementioned appeal procedure or court proceedings.

*Article 39***Assessment of the electronic systems**

The Commission and the Member States shall conduct assessments of the components they are responsible for and shall, in particular, analyse the security and integrity of those components and the confidentiality of the data processed within those components.

The Commission and the Member States shall inform each other of the results of those assessments.

*Article 40***Entry into force**

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 17 August 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX I

Information to be submitted in the CBAM reports

The reporting declarant shall follow the CBAM report structure listed in Table 1 of this Annex and provided in the CBAM Transitional Registry, and include the detailed information listed in Table 2 of this Annex, when submitting the CBAM report.

Table 1

CBAM report structure

CBAM Report
Report issue date
Draft report ID
Report ID
Reporting period
Year
– Reporting declarant
—— Address
– Representative (*)
—— Address
– Importer (*)
—— Address
– Competent authority
– Signatures
—— Report confirmation
—— Type of applicable reporting methodology
– Remarks
– CBAM goods imported
Goods item number
—— Representative (*)
—— Address
—— Importer (*)
—— Address
—— Commodity code
Harmonized system sub-heading code
Combined nomenclature code
—— Commodity details
—— Country of origin
—— Imported quantity per customs procedure
—— Procedure

—————	Inward processing information
—————	Area of import
—————	Goods measure (per procedure)
—————	Goods measure (inward processing)
—————	Special references for goods
———	Goods measure (imported)
———	Goods imported total emissions
———	Supporting documents (for goods)
—————	Attachments
———	Remarks
———	CBAM goods' emissions
	Emissions sequence number
	Country of production
—————	The company name of the installation
—————	Address
—————	Contact details
—————	Installation
—————	Address
—————	Goods measure (produced)
—————	Installation emissions
—————	Direct embedded emissions
—————	Indirect embedded emissions
—————	Production method & qualifying parameters
—————	Direct emissions qualifying parameters
—————	Indirect emissions qualifying parameters
—————	Supporting documents (for emissions definition)
—————	Attachments
—————	Carbon price due
—————	Goods covered under carbon price due
—————	Goods measure (covered)
———	Remarks

(*) Note: Representatives/importers shall be registered either at CBAM report level or at the CBAM goods imported level, which shall depend on whether the same or different representatives/importers are related to CBAM goods imported.

Table 2

Detailed information requirements in the CBAM report

CBAM Report
Report issue date
Draft report ID
Report ID
Reporting period
Year
Total goods imported
Total emissions
– Reporting declarant
Identification number
Name
Role
— Address
Member State of establishment
Sub-division
City
Street
Street additional line
Number
Postcode
P.O. Box
– Representative (*)
Identification number
Name
— Address
Member State of establishment
Sub-division
City
Street
Street additional line
Number
Postcode
P.O. Box
– Importer (*)
Identification number
Name

— Address	
Member State or country of establishment	
Sub-division	
City	
Street	
Street additional line	
Number	
Postcode	
P.O. Box	
– Competent authority	
Reference number	
– Signatures	
— Report confirmation	
Report global data confirmation	
Use of data confirmation	
Date of signature	
Place of signature	
Signature	
Position of person signing	
— Type of applicable reporting methodology	
Other applicable reporting methodology	
– Remarks	
Additional information	
– CBAM goods imported	
Goods item number	
— Representative (*)	
Identification number	
Name	
— Address	
Member State of establishment	
Sub-division	
City	
Street	
Street additional line	
Number	
Postcode	
P.O. Box	

— Importer (*)
Identification number
Name
— Address
Member State or country of establishment
Sub-division
City
Street
Street additional line
Number
Postcode
P.O. Box
— Commodity code
Harmonized system sub-heading code
Combined nomenclature code
— Commodity details
Description of goods
— Country of origin
Country code
— Imported quantity per customs procedure
Sequence number
— Procedure
Requested procedure
Previous procedure
Inward processing information
Member State of inward processing authorisation
Inward processing waiver for bill of discharge
Authorisation
Globalisation time start
Globalisation time end
Deadline for submission of bill of discharge
— Area of import
Area of import
— Goods measure (per procedure)
Net mass
Supplementary units
Type of measurement unit

——— Goods measure (inward processing)
Net mass
Supplementary units
Type of measurement unit
——— Special references for goods
Additional information
—— Goods measure (imported)
Net mass
Supplementary units
Type of measurement unit
—— Goods imported total emissions
Goods emissions per unit of product
Goods total emissions
Goods direct emissions
Goods indirect emissions
Type of measurement unit for emissions
—— Supporting documents (for goods)
Sequence number
Type
Country of document issuance
Reference number
Document line item number
Issuing authority name
Validity start date
Validity end date
Description
——— Attachments
Filename
Universal Resource Identified
Multipurpose Internet Mail Extensions
Included binary object
—— Remarks
Additional information
—— CBAM goods' emissions
Emissions sequence number
Country of production

_____	The company name of the installation
	Operator ID
	Operator name
_____	Address
	Country code
	Sub-division
	City
	Street
	Street additional line
	Number
	Postcode
	P.O. Box
_____	Contact details
	Name
	Phone number
	e-mail
_____	Installation
	Installation ID
	Installation name
	Economic activity
_____	Address
	Country of establishment
	Sub-division
	City
	Street
	Street additional line
	Number
	Postcode
	P.O. Box
	Plot or parcel number
	UNLOCODE
	Latitude
	Longitude
	Type of coordinates
_____	Goods measure (produced)
	Net mass
	Supplementary units
	Type of measurement unit

————— Installation emissions
Installation total emissions
Installation direct emissions
Installation indirect emissions
Type of measurement unit for emissions
————— Direct embedded emissions
Type of determination
Type of determination (electricity)
Type of applicable reporting methodology
Applicable reporting methodology
Specific (direct) embedded emissions
Other source indication
Source of emission factor (for electricity)
Emission factor
Electricity imported
Total embedded emissions of electricity imported
Type of measurement unit
Source of emissions factor value
Justification
Fulfilment of conditionality
————— Indirect embedded emissions
Type of determination
Source of emission factor
Emission factor
Specific (indirect) embedded emissions
Type of measurement unit
Electricity consumed
Source of electricity
Source of emissions factor value
————— Production method & qualifying parameters
Sequence number
Method ID
Method name
Identification number of the specific steel mill
Additional Information

—————	Direct emissions qualifying parameters
	Sequence number
	Parameter ID
	Parameter name
	Description
	Type of parameter value
	Parameter value
	Additional information
—————	Indirect emissions qualifying parameters
	Sequence number
	Parameter ID
	Parameter name
	Description
	Type of parameter value
	Parameter value
	Additional information
—————	Supporting documents (for emissions definition)
	Sequence number
	Type of emissions document
	Country of document issuance
	Reference number
	Document line item number
	Issuing authority name
	Validity start date
	Validity end date
	Description
—————	Attachments
	Filename
	Universal Resource Identified
	Multipurpose Internet Mail Extensions
	Included binary object
—————	Carbon price due
	Sequence number
	Type of instrument
	Description and indication of legal act
	Amount of carbon price due
	Currency

Exchange rate
Amount (EURO)
Country code
———— Goods covered under carbon price due
Sequence number
Type of goods covered
CN code of goods covered
Quantity of emissions covered
Quantity covered by free allocations, any rebate or other form of compensation
Supplementary information
Additional information
———— Goods measure (covered)
Net mass
Supplementary units
Type of measurement unit
———— Remarks
Sequence number
Additional Information

(*) *Note:* Representatives/importers shall be registered either at CBAM report level or at the CBAM goods imported level, which shall depend on whether the same or different representatives/importers are related to CBAM goods imported.

ANNEX II

Definitions and production routes for goods

1. DEFINITIONS

For the purpose of this Annex and of Annexes III, IV and VIII to IX the following definitions shall apply:

- (0) 'activity data' means the amount of fuels or materials consumed or produced by a process relevant for the calculation-based methodology, expressed in terajoules, mass in tonnes or (for gases) volume in normal cubic metres, as appropriate;
- (1) 'activity level' means the quantity of goods produced (expressed in MWh for electricity, or in tonnes for other goods) within the boundaries of a production process;
- (2) 'reporting period' means a period that the operator of an installation has chosen to use as reference for the determination of embedded emissions;
- (3) 'source stream' means any of the following:
 - (a) a specific fuel type, raw material or product giving rise to emissions of relevant greenhouse gases at one or more emission sources as a result of its consumption or production;
 - (b) a specific fuel type, raw material or product containing carbon and included in the calculation of greenhouse gas emissions using a mass balance method;
- (4) 'emission source' means a separately identifiable part of an installation or a process within an installation, from which relevant greenhouse gases are emitted;
- (5) 'uncertainty' means a parameter, associated with the result of the determination of a quantity, that characterises the dispersion of the values that could reasonably be attributed to the particular quantity, including the effects of systematic as well as of random factors, expressed in per cent, and describes a confidence interval around the mean value comprising 95 % of inferred values taking into account any asymmetry of the distribution of values;
- (6) 'calculation factors' means net calorific value, emission factor, preliminary emission factor, oxidation factor, conversion factor, carbon content or biomass fraction;
- (7) 'combustion emissions' means greenhouse gas emissions occurring during the exothermic reaction of a fuel with oxygen;
- (8) 'emission factor' means the average emission rate of a greenhouse gas relative to the activity data of a source stream assuming complete oxidation for combustion and complete conversion for all other chemical reactions;
- (9) 'oxidation factor' means the ratio of carbon oxidised to CO₂ as a consequence of combustion to the total carbon contained in the fuel, expressed as a fraction, considering carbon monoxide (CO) emitted to the atmosphere as the molar equivalent amount of CO₂;
- (10) 'conversion factor' means the ratio of carbon emitted as CO₂ to the total carbon contained in the source stream before the emitting process takes place, expressed as a fraction, considering CO emitted to the atmosphere as the molar equivalent amount of CO₂;
- (11) 'accuracy' means the closeness of the agreement between the result of a measurement and the true value of the particular quantity or a reference value determined empirically using internationally accepted and traceable calibration materials and standard methods, taking into account both random and systematic factors;
- (12) 'calibration' means the set of operations, which establishes, under specified conditions, the relations between values indicated by a measuring instrument or measuring system, or values represented by a material measure or a reference material and the corresponding values of a quantity realised by a reference standard;
- (13) 'conservative' means that a set of assumptions is defined in order to ensure that no under-estimation of reported emissions or over-estimation of production of heat, electricity or goods occurs;

- (14) 'biomass' means the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin;
- (15) 'waste' means any substance or object which the holder discards or intends or is required to discard, excluding substances that have been intentionally modified or contaminated in order to meet this definition;
- (16) 'residue' means a substance that is not the end product(s) that a production process directly seeks to produce; it is not a primary aim of the production process and the process has not been deliberately modified to produce it;
- (17) 'agricultural, aquaculture, fisheries and forestry residues' means residues that are directly generated by agriculture, aquaculture, fisheries and forestry and that do not include residues from related industries or processing;
- (18) 'legal metrological control' means the control by a public authority or regulator of the measurement tasks intended for the field of application of a measuring instrument, for reasons of public interest, public health, public safety, public order, protection of the environment, the levying of taxes and duties, the protection of consumers and fair trading;
- (19) 'data flow activities' mean activities related to the acquisition, processing and handling of data that are needed to draft an emissions report from primary source data;
- (20) 'measurement system' means a complete set of measuring instruments and other equipment, such as sampling and data processing equipment, used to determine variables such as the activity data, the carbon content, the calorific value or the emission factor of the greenhouse gas emissions;
- (21) 'net calorific value' (NCV) means the specific amount of energy released as heat when a fuel or material undergoes complete combustion with oxygen under standard conditions, less the heat of vaporisation of any water formed;
- (22) 'process emissions' means greenhouse gas emissions other than combustion emissions occurring as a result of intentional and unintentional reactions between substances or their transformation, for a primary purpose other than the generation of heat, including from the following processes:
 - (a) the chemical, electrolytic or pyrometallurgical reduction of metal compounds in ores, concentrates and secondary materials;
 - (b) the removal of impurities from metals and metal compounds;
 - (c) the decomposition of carbonates, including those used for flue gas cleaning;
 - (d) chemical syntheses of products and intermediate products where the carbon bearing material participates in the reaction;
 - (e) the use of carbon containing additives or raw materials;
 - (f) the chemical or electrolytic reduction of metalloid oxides or non-metal oxides such as silicon oxides and phosphates;
- (23) 'batch' means an amount of fuel or material representatively sampled and characterised, and transferred as one shipment or continuously over a specific period of time;
- (24) 'mixed fuel' means a fuel which contains both biomass and fossil carbon;
- (25) 'mixed material' means a material which contains both biomass and fossil carbon;
- (26) 'preliminary emission factor' means the assumed total emission factor of a fuel or material based on the carbon content of its biomass fraction and its fossil fraction before multiplying it by the fossil fraction to produce the emission factor;
- (27) 'fossil fraction' means the ratio of fossil and inorganic carbon to the total carbon content of a fuel or material, expressed as a fraction;

- (28) 'biomass fraction' means the ratio of carbon stemming from biomass to the total carbon content of a fuel or material, expressed as a fraction;
- (29) 'continuous emission measurement' means a set of operations having the objective of determining the value of a quantity by means of periodic measurements, applying either measurements in the stack or extractive procedures with a measuring instrument located close to the stack, whilst excluding measurement methodologies based on the collection of individual samples from the stack;
- (30) 'inherent CO₂' means CO₂ which is part of a source stream;
- (31) 'fossil carbon' means inorganic and organic carbon that is not biomass;
- (32) 'measurement point' means the emission source for which continuous emission measurement systems (CEMS) are used for emission measurement, or the cross-section of a pipeline system for which the CO₂ flow is determined using continuous measurement systems;
- (33) 'fugitive emissions' means irregular or unintended emissions from sources that are not localised, or too diverse or too small to be monitored individually;
- (34) 'standard conditions' means temperature of 273,15 K and pressure conditions of 101 325 Pa defining normal cubic metres (Nm³);
- (35) 'proxy data' means annual values which are empirically substantiated or derived from accepted sources and which an operator uses to substitute a data set for the purpose of ensuring complete reporting when it is not possible to generate all the required data or factors in the applicable monitoring methodology;
- (36) 'measurable heat' means a net heat flow transported through identifiable pipelines or ducts using a heat transfer medium, such as, in particular, steam, hot air, water, oil, liquid metals and salts, for which a heat meter is or could be installed;
- (37) 'heat meter' means a thermal energy meter or any other device to measure and record the amount of thermal energy produced based upon flow volumes and temperatures;
- (38) 'non-measurable heat' means all heat other than measurable heat;
- (39) 'waste gas' means a gas containing incompletely oxidised carbon in a gaseous state under standard conditions which is a result of any of the processes listed in point (22);
- (40) 'production process' means the chemical or physical processes carried out in parts of an installation to produce goods under an aggregated goods category defined in Table 1 of Section 2 of this Annex, and its specified system boundaries regarding inputs, outputs and corresponding emissions;
- (41) 'production route' means a specific technology used in a production process to produce goods under an aggregated goods category;
- (42) 'data set' means one type of data, either at installation level or production process level as relevant in the circumstances, as any of the following:
- (a) the amount of fuels or materials consumed or produced by a production process as relevant for the calculation-based methodology, expressed in terajoules, mass in tonnes, or for gases as volume in normal cubic metres, as appropriate, including for waste gases;
 - (b) a calculation factor;
 - (c) net quantity of measurable heat, and the relevant parameters required for determining this quantity, in particular:
 - mass flow of heat transfer medium, and
 - enthalpy of transmitted and returned heat transfer medium, as specified by composition, temperature, pressure and saturation;
 - (d) quantities of non-measurable heat, specified by the relevant quantities of fuels used for producing the heat, and the net calorific value (NCV) of the fuel mix;
 - (e) quantities of electricity;

- (f) quantities of CO₂ transferred between installations;
 - (g) quantities of precursors received from outside the installation, and their relevant parameters, such as country of origin, used production route, specific direct and indirect emissions, carbon price due;
 - (h) parameters relevant for a carbon price due;
- (43) 'minimum requirements' means monitoring methods using the minimum efforts allowed for determining data in order to result in emission data acceptable for the purpose of Regulation (EU) 2023/956;
- (44) 'recommended improvements' means monitoring methods which are proven means to ensure that data are more accurate or less prone to mistakes than by mere application of minimum requirements, and which may be chosen on a voluntary basis;
- (45) 'misstatement' means an omission, misrepresentation or error in the operator's reported data, not considering the uncertainty permissible for measurements and laboratory analyses;
- (46) 'material misstatement' means a misstatement that, in the opinion of the verifier, individually or when aggregated with other misstatements, exceeds the materiality level or could affect the treatment of the operator's report by the competent authority;
- (47) 'reasonable assurance' means a high but not absolute level of assurance, expressed positively in the verification opinion, as to whether the operator's report subject to verification is free from material misstatement;
- (48) 'eligible monitoring, reporting and verification system' means the monitoring, reporting and verification systems where the installation is established for the purpose of a carbon pricing scheme, or compulsory emission monitoring schemes, or an emission monitoring scheme at the installation which can include verification by an accredited verifier, in accordance with Article 4(2) of this Regulation.

2. MAPPING OF CN CODES TO AGGREGATED GOODS CATEGORIES

Table 1 of this Annex defines aggregated goods categories for each CN code listed in Annex I to Regulation (EU) 2023/956. Those categories are used for the purpose of defining system boundaries of production processes for the determination of embedded emissions corresponding to the goods listed in Annex I to Regulation (EU) 2023/956.

Table 1

Mapping of CN codes to aggregated goods categories

CN code	Aggregated goods category	Greenhouse gas
<i>Cement</i>		
2507 00 80 – Other kaolinic clays	Calcined clay	Carbon dioxide
2523 10 00 – Cement clinkers	Cement clinker	Carbon dioxide
2523 21 00 – White Portland cement, whether or not artificially coloured 2523 29 00 – Other Portland cement 2523 90 00 – Other hydraulic cements	Cement	Carbon dioxide
2523 30 00 – Aluminous cement	Aluminous cement	Carbon dioxide
<i>Electricity</i>		
2716 00 00 – Electrical energy	Electricity	Carbon dioxide
<i>Fertiliser</i>		
2808 00 00 – Nitric acid; sulphonitric acids	Nitric acid	Carbon dioxide and nitrous oxide

3102 10 – Urea, whether or not in aqueous solution	Urea	Carbon dioxide
2814 – Ammonia, anhydrous or in aqueous solution	Ammonia	Carbon dioxide
2834 21 00 – Nitrates of potassium 3102 – Mineral or chemical fertilisers, nitrogenous except 3102 10 (Urea) 3105 – Mineral or chemical fertilisers containing two or three of the fertilising elements nitrogen, phosphorus, and potassium; other fertilisers — Except: 3105 60 00 – Mineral or chemical fertilisers containing the two fertilising elements phosphorus and potassium	Mixed fertilisers	Carbon dioxide and nitrous oxide
<i>Iron and Steel</i>		
2601 12 00 – Agglomerated iron ores and concentrates, other than roasted iron pyrites	Sintered Ore	Carbon dioxide
7201 – Pig iron and spiegeleisen in pigs, blocks, or other primary forms Some products under 7205 (Granules and powders, of pig iron, spiegeleisen, iron, or steel) may be covered here	Pig Iron	Carbon dioxide
7202 1 – Ferro-manganese	FeMn	Carbon dioxide
7202 4 – Ferro-chromium	FeCr	Carbon dioxide
7202 6 – Ferro-nickel	FeNi	Carbon dioxide
7203 – Ferrous products obtained by direct reduction of iron ore and other spongy ferrous products	DRI	Carbon dioxide
7206 – Iron and non-alloy steel in ingots or other primary forms (excluding iron of heading 7203) 7207 – Semi-finished products of iron or non-alloy steel 7218 – Stainless steel in ingots or other primary forms; semi-finished products of stainless steel 7224 – Other alloy steel in ingots or other primary forms; semi-finished products of other alloy steel	Crude steel	Carbon dioxide
7205 – Granules and powders, of pig iron, spiegeleisen, iron or steel (if not covered under category pig iron) 7208 – Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated 7209 – Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, cold-rolled (cold-reduced), not clad, plated or coated 7210 – Flat-rolled products of iron or non-alloy steel, of a width of 600 mm or more, clad, plated or coated	Iron or steel products	Carbon dioxide

7211 – Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated 7212 – Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, clad, plated or coated 7213 – Bars and rods, hot-rolled, in irregularly wound coils, of iron or non-alloy steel 7214 – Other bars and rods of iron or non-alloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling 7215 – Other bars and rods of iron or non-alloy steel 7216 – Angles, shapes and sections of iron or non-alloy steel 7217 – Wire of iron or non-alloy steel 7219 – Flat-rolled products of stainless steel, of a width of 600 mm or more 7220 – Flat-rolled products of stainless steel, of a width of less than 600 mm 7221 – Bars and rods, hot-rolled, in irregularly wound coils, of stainless steel 7222 – Other bars and rods of stainless steel; angles, shapes and sections of stainless steel 7223 – Wire of stainless steel 7225 – Flat-rolled products of other alloy steel, of a width of 600 mm or more 7226 – Flat-rolled products of other alloy steel, of a width of less than 600 mm 7227 – Bars and rods, hot-rolled, in irregularly wound coils, of other alloy steel 7228 – Other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel 7229 – Wire of other alloy steel 7301 – Sheet piling of iron or steel, whether or not drilled, punched or made from assembled elements; welded angles, shapes and sections, of iron or steel 7302 – Railway or tramway track construction material of iron or steel, the following: rails, check-rails and rack rails, switch blades, crossing frogs, point rods and other crossing pieces, sleepers (cross-ties), fish- plates, chairs, chair wedges, sole plates (base plates), rail clips, bedplates, ties and other material specialised for jointing or fixing rails 7303 – Tubes, pipes and hollow profiles, of cast iron 7304 – Tubes, pipes and hollow profiles, seamless, of iron (other than cast iron) or steel 7305 – Other tubes and pipes (for example, welded, riveted or similarly closed), having circular cross-sections, the external diameter of which exceeds 406,4 mm, of iron or steel 7306 – Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel		
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7307 – Tube or pipe fittings (for example, couplings, elbows, sleeves), of iron or steel 7308 – Structures (excluding prefabricated buildings of heading 9406) and parts of structures (for example, bridges and bridge-sections, lock-gates, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, shutters, balustrades, pillars and columns), of iron or steel; plates, rods, angles, shapes, sections, tubes and the like, prepared for use in structures, of iron or steel 7309 – Reservoirs, tanks, vats and similar containers for any material (other than compressed or liquefied gas), of iron or steel, of a capacity exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment 7310 – Tanks, casks, drums, cans, boxes and similar containers, for any material (other than compressed or liquefied gas), of iron or steel, of a capacity not exceeding 300 l, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment 7311 – Containers for compressed or liquefied gas, of iron or steel 7318 – Screws, bolts, nuts, coach screws, screw hooks, rivets, cotter pins, washers (including spring washers) and similar articles, of iron or steel 7326 – Other articles of iron or steel		
<i>Aluminium</i>		
7601 – Unwrought aluminium	Unwrought aluminium	Carbon dioxide and perfluorocarbons
7603 – Aluminium powders and flakes 7604 – Aluminium bars, rods and profiles 7605 – Aluminium wire 7606 – Aluminium plates, sheets and strip, of a thickness exceeding 0,2 mm 7607 – Aluminium foil (whether or not printed or backed with paper, paper-board, plastics or similar backing materials) of a thickness (excluding any backing) not exceeding 0,2 mm 7608 – Aluminium tubes and pipes 7609 00 00 – Aluminium tube or pipe fittings (for example, couplings, elbows, sleeves) 7610 – Aluminium structures (excluding prefabricated buildings of heading 9406) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, balustrades, pillars and columns); aluminium plates, rods, profiles, tubes and the like, prepared for use in structures 7611 00 00 – Aluminium reservoirs, tanks, vats and similar containers, for any material (other than compressed or liquefied gas), of a capacity exceeding 300 litres, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment	Aluminium products	Carbon dioxide and perfluorocarbons

7612 – Aluminium casks, drums, cans, boxes and similar containers (including rigid or collapsible tubular containers), for any material (other than compressed or liquefied gas), of a capacity not exceeding 300 litres, whether or not lined or heat-insulated, but not fitted with mechanical or thermal equipment 7613 00 00 – Aluminium containers for compressed or liquefied gas 7614 – Stranded wire, cables, plaited bands and the like, of aluminium, not electrically insulated 7616 – Other articles of aluminium		
<i>Chemicals</i>		
2804 10 000 – Hydrogen	Hydrogen	Carbon dioxide

3. PRODUCTION ROUTES, SYSTEM BOUNDARIES AND RELEVANT PRECURSORS

3.1. Cross-sectoral rules

For determining the activity level (quantity produced) of the goods, which is used as denominator in Equations 50 and 51 (Section F.1 of Annex III), the monitoring rules of Section F.2 of Annex III shall apply.

Where several production routes are used in the same installation for producing goods falling under the same CN code, and where those production routes are assigned separate production processes, the embedded emissions of those goods shall be calculated separately for each production route.

For the monitoring of direct emissions, all emission sources and source streams associated with the production process shall be monitored, taking into account specific requirements laid down in Sections 3.2 to 3.19 of this Annex, where relevant, and the rules laid down in Annex III.

Where CO₂ capture is used, the rules of Section B.8.2 of Annex III shall apply.

For the monitoring of indirect emissions, the total electricity consumption of each production process shall be determined, within the system boundaries defined in line with Sections 3.2 to 3.19 of this Annex and in accordance with Section A.4 of Annex III, where relevant. The relevant emission factor of electricity shall be determined in accordance with Section D.2 of Annex III.

If relevant precursors are specified, they refer to the corresponding aggregated goods categories.

3.2. Calcined clay

3.2.1. Special provisions

Clays falling under CN code 2507 00 80 which are not calcined, are assigned embedded emissions of zero. They shall be included in the CBAM report, but no additional information from the producer of the clay is required. The following provisions relate only to clays falling under that CN code and that are calcined.

3.2.2. Production route

For calcined clay, direct emissions monitoring shall encompass:

- All processes directly or indirectly linked to the production processes, such as raw material preparation, mixing, drying, and calcining, and flue gas cleaning.
- CO₂ emissions from the combustion of fuels as well as from raw materials, where relevant.

Relevant precursors: none.

3.3. **Cement clinker**

3.3.1. *Special provisions*

No distinction shall be made between grey and white cement clinker.

3.3.2. *Production route*

For cement clinker, direct emissions monitoring shall encompass:

- Calcination of limestone and other carbonates in the raw materials, conventional fossil kiln fuels, alternative fossil-based kiln fuels and raw materials, biomass kiln fuels (such as waste-derived fuels), non-kiln fuels, non-carbonate carbon content of limestone and shales, or alternative raw materials such as fly ash used in the raw meal in the kiln and raw materials used for flue gas scrubbing.
- The additional provisions of Section B.9.2 of Annex III shall apply.

Relevant precursors: none.

3.4. **Cement**

3.4.1. *Special provisions*

None.

3.4.2. *Production route*

For cement, direct emissions monitoring shall encompass:

- All CO₂ emissions from fuel combustion, where relevant for drying of materials.

Relevant precursors:

- Cement clinker;
- Calcined clay, if used in the process.

3.5. **Aluminous cement**

3.5.1. *Special provisions*

None.

3.5.2. *Production route*

For aluminous cement, direct emissions monitoring shall encompass:

- All CO₂ emissions from fuel combustion directly or indirectly linked to the process.
- Process emissions from carbonates in raw materials, if applicable, and flue gas cleaning.

Relevant precursors: none.

3.6. **Hydrogen**

3.6.1. *Special provisions*

Only the production of pure hydrogen or mixtures of hydrogen with nitrogen usable in ammonia production shall be considered. Not covered are the production of synthesis gas or of hydrogen within refineries or organic chemical installations, where hydrogen is exclusively used within those plants and not used for the production of goods listed in Annex I to Regulation (EU) 2023/956.

3.6.2. *Production routes*

3.6.2.1. *Steam reforming and partial oxidation*

For those production routes, direct emissions monitoring shall encompass:

- All processes directly or indirectly linked to hydrogen production, and flue gas cleaning.

- All fuels used in the hydrogen production process irrespective of their energetic or non-energetic use, and fuels used for other combustion processes including for the purpose of producing hot water or steam.

Relevant precursors: none.

3.6.2.2. Electrolysis of water

For that production route, direct emissions monitoring shall encompass, if relevant:

- All emissions from fuel use directly or indirectly linked to the hydrogen production process and from flue gas cleaning.

Indirect emissions: Where the produced hydrogen has been certified to comply with Commission Delegated Regulation (EU) 2023/1184 ⁽¹⁾, an emission factor of zero for the electricity may be used. In all other cases, the rules on indirect embedded emissions (Section D of Annex III) shall apply.

Relevant precursors: none.

Attribution of emissions to products: Where the co-produced oxygen is vented, all emissions of the production process shall be attributed to hydrogen. Where by-product oxygen is used in other production processes at the installation or sold, and where direct or indirect emissions are not equal to zero, the emissions of the production process shall be attributed to hydrogen based on molar proportions using the following equation:

$$Em_{H_2} = Em_{total} \left(1 - \frac{\frac{m_{O_2,sold}}{M_{O_2}}}{\frac{m_{H_2,prod}}{M_{H_2}} + \frac{m_{O_2,prod}}{M_{O_2}}} \right) \quad (\text{Equation 1})$$

Where:

- Em_{H_2} are either the direct or indirect emissions attributed to hydrogen produced over the reporting period, expressed in tonnes of CO₂;
- Em_{total} are either the direct or indirect emissions of the whole production process over the reporting period, expressed in tonnes of CO₂;
- $m_{O_2,sold}$ is the mass of oxygen sold or used in the installation over the reporting period, expressed in tonnes;
- $m_{O_2,prod}$ is the mass of oxygen produced over the reporting period, expressed in tonnes;
- $m_{H_2,prod}$ is the mass of hydrogen produced over the reporting period, expressed in tonnes;
- M_{O_2} is the molar mass of O₂ (31,998 kg/kmol); and
- M_{H_2} is the molar mass of H₂ (2,016 kg/kmol).

3.6.2.3. Chlor-Alkali electrolysis and production of chlorates

For those production routes, direct emissions monitoring shall encompass, if relevant:

- All emissions from fuel use directly or indirectly linked to the hydrogen production process and from flue gas cleaning.

Indirect emissions: Where the produced hydrogen has been certified to comply with Delegated Regulation (EU) 2023/1184, an emission factor of zero for the electricity may be used. In all other cases, the rules on indirect embedded emissions (Section D of Annex III) shall apply.

Relevant precursors: none.

Attribution of emissions to products: As hydrogen is considered a by-product in this production process, only a molar proportion of the overall process shall be attributed to the fraction of hydrogen sold or used as a precursor within the installation. Provided that direct or indirect emissions are not equal to zero, the emissions of the production process shall be attributed to hydrogen used or sold using the following equations:

⁽¹⁾ Commission Delegated Regulation (EU) 2023/1184 of 10 February 2023 supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council by establishing a Union methodology setting out detailed rules for the production of renewable liquid and gaseous transport fuels of non-biological origin (OJ L 157, 20.6.2023, p. 11).

Chlor-Alkali electrolysis:

$$Em_{H_2,sold} = Em_{total} \left(\frac{\frac{m_{H_2,sold}}{M_{H_2}}}{\frac{m_{H_2,prod}}{M_{H_2}} + \frac{m_{Cl_2,prod}}{M_{Cl_2}} + \frac{m_{NaOH,prod}}{M_{NaOH}}} \right) \quad (\text{Equation 2})$$

Production of Sodium Chlorate:

$$Em_{H_2,sold} = Em_{total} \left(\frac{\frac{m_{H_2,sold}}{M_{H_2}}}{\frac{m_{H_2,prod}}{M_{H_2}} + \frac{m_{NaClO_3,prod}}{M_{NaClO_3}}} \right) \quad (\text{Equation 3})$$

Where:

- $Em_{H_2,sold}$ are either the direct or indirect emissions attributed to hydrogen sold or used as precursor over the reporting period, expressed in tonnes of CO₂;
- Em_{total} are either the direct or indirect emissions of the production process over the reporting period, expressed in tonnes of CO₂;
- $m_{H_2,sold}$ is the mass of hydrogen sold or used as precursor over the reporting period, expressed in tonnes;
- $m_{H_2,prod}$ is the mass of hydrogen produced over the reporting period, expressed in tonnes;
- $m_{Cl_2,prod}$ is the mass of chlorine produced over the reporting period, expressed in tonnes;
- $m_{NaOH,prod}$ is the mass of sodium hydroxide (caustic soda) produced over the reporting period, expressed in tonnes, calculated as 100 % NaOH;
- $m_{NaClO_3,prod}$ is the mass of sodium chlorate produced over the reporting period, expressed in tonnes, calculated as 100 % NaClO₃;
- M_{H_2} is the molar mass of H₂ (2,016 kg/kmol);
- M_{Cl_2} is the molar mass of Cl₂ (70,902 kg/kmol);
- M_{NaOH} is the molar mass of NaOH (39,997 kg/kmol); and
- M_{NaClO_3} is the molar mass of NaClO₃ (106,438 kg/kmol).

3.7. Ammonia

3.7.1. Special provisions

Both hydrous and anhydrous ammonia shall be reported jointly as 100 % ammonia.

Where CO₂ from ammonia production is used as feedstock for the production of urea or other chemicals, point (b) of Section B.8.2 of Annex III shall apply. Where a deduction of CO₂ is allowed according to that section and where it would lead to negative specific embedded direct emissions of ammonia, the specific embedded direct emissions of ammonia shall be zero.

3.7.2. Production routes

3.7.2.1. Haber-Bosch process with steam reforming of natural gas or biogas

For that production route, direct emissions monitoring shall encompass:

- All fuels directly or indirectly linked to ammonia production, and materials used for flue gas cleaning.
- All fuels shall be monitored, irrespective of whether used as energetic or non-energetic input.
- Where biogas is used, the provisions of Section B.3.3 of Annex III shall be applied.
- Where hydrogen from other production routes is added to the process, it shall be treated as a precursor with its own embedded emissions.

Relevant precursors: separately produced hydrogen, if used in the process.

3.7.2.2. Haber-Bosch process with gasification of coal or other fuels

That route applies where hydrogen is produced by gasification of coal, heavy refinery fuels or other fossil feedstock. Input materials may include biomass, for which the provisions of Section B.3.3 of Annex III shall be taken into account.

For that production route, direct emissions monitoring shall encompass:

- All fuels directly or indirectly linked to ammonia production, and materials used for flue gas cleaning.
- Each fuel input shall be monitored as one fuel stream, irrespective of whether it is used as energetic or non-energetic input.
- Where hydrogen from other production routes is added to the process, it shall be treated as a precursor with its own embedded emissions.

Relevant precursors: separately produced hydrogen, if used in the process.

3.8. Nitric acid

3.8.1. *Special provisions*

Amounts of nitric acid produced shall be monitored and reported as 100 % nitric acid.

3.8.2. *Production route*

For nitric acid, direct emissions monitoring shall encompass:

- CO₂ from all fuels directly or indirectly linked to nitric acid production, and materials used for flue gas cleaning;
- N₂O emissions from all sources emitting N₂O from the production process, including unabated and abated emissions. Any N₂O emissions from the combustion of fuels are excluded from monitoring.

Relevant precursors: Ammonia (as 100 % ammonia).

3.9. Urea

3.9.1. *Special provisions*

Where the CO₂ used in the production of urea stems from ammonia production, it is accounted for as subtraction in the embedded emissions of ammonia as precursor of urea, if the provisions of Section 3.7 of this Annex allow such deduction. However, where ammonia produced without direct fossil CO₂ emissions is used as a precursor, the used CO₂ may be deducted from the direct emissions of the installation producing the CO₂, provided that the delegated act adopted pursuant to Article 12(3b) of Directive 2003/87/EC defines urea production as a case where CO₂ is permanently chemically bound so that it does not enter the atmosphere under normal use, including any normal activity taking place after the end of the life of the product. Where such deduction would lead to negative specific direct embedded emissions of urea, the specific direct embedded emissions of urea shall be zero.

3.9.2. *Production route*

For urea, direct emissions monitoring shall encompass:

- CO₂ from all fuels directly or indirectly linked to urea production, and materials used for flue gas cleaning.
- Where CO₂ is received from another installation as process input, the CO₂ received and not bound in urea shall be considered an emission, if not already counted as emission of the installation where the CO₂ was produced, under an eligible monitoring, reporting and verification system.

Relevant precursors: Ammonia (as 100 % ammonia).

3.10. **Mixed fertilisers**

3.10.1. *Special provisions*

This section applies to the production of all kinds of nitrogen containing fertilisers, including ammonium nitrate, calcium ammonium nitrate, ammonium sulphate, ammonium phosphates, urea ammonium nitrate solutions, as well as nitrogen-phosphorus (NP), nitrogen-potassium (NK) and nitrogen-phosphorus-potassium (NPK) fertilisers. All kinds of operations are included such as mixing, neutralisation, granulation, prilling, irrespective of whether only physical mixing or chemical reactions take place.

The amounts of different nitrogen compounds contained in the final product shall be recorded in accordance with Regulation (EU) 2019/1009 of the European Parliament and of the Council ⁽²⁾:

- content of N as ammonium (NH_4^+);
- content of N as nitrate (NO_3^-);
- content of N as Urea;
- content of N in other (organic) forms.

The direct and indirect emissions of the production processes falling under this aggregated goods category may be determined for the whole reporting period and attributed to all mixed fertilisers on a pro-rata basis per tonne of final product. For each fertiliser grade, embedded emissions shall be calculated separately taking into account the relevant mass of precursors used and applying average embedded emissions during the reporting period for each of the precursors.

3.10.2. *Production route*

For mixed fertilisers, direct emissions monitoring shall encompass:

- CO_2 from all fuels directly or indirectly linked to fertiliser production, such as fuels used in driers and for heating input materials, and materials used for flue gas cleaning.

Relevant precursors:

- ammonia (as 100 % ammonia), if used in the process;
- nitric acid (as 100 % nitric acid), if used in the process;
- urea, if used in the process;
- mixed fertilisers (in particular salts containing ammonium or nitrate), if used in the process.

3.11. **Sintered ore**

3.11.1. *Special provisions*

This aggregated goods category includes all kinds of iron ore pellet production (for sale of pellets as well as for direct use in the same installation) and sinter production. To the extent covered by CN code 2601 12 00, also iron ores used as precursors for ferro-chromium (FeCr), ferro-manganese (FeMn) or ferro-nickel (FeNi) may be covered.

3.11.2. *Production route*

For sintered ore, direct emissions monitoring shall encompass:

- CO_2 from process materials such as limestone and other carbonates or carbonatic ores;
- CO_2 from all fuels including coke, waste gases such as coke oven gas, blast furnace gas or converter gas; directly or indirectly linked to the production process, and materials used for flue gas cleaning.

Relevant precursors: none.

⁽²⁾ Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003 (OJ L 170, 25.6.2019, p. 1).

3.12. **FeMn (Ferro-Manganese), FeCr (Ferro-Chromium) and FeNi (Ferro-Nickel)**

3.12.1. *Special provisions*

This process covers only the production of the alloys identified under CN codes 7202 1, 7202 4 and 7202 6. Other iron materials with significant alloy content such as spiegeleisen are not covered. NPI (nickel pig iron) is included if the nickel content is greater than 10 %.

Where waste gases or other flue gases are emitted without abatement, CO contained in the waste gas shall be considered as the molar equivalent of CO₂ emissions.

3.12.2. *Production route*

For FeMn, FeCr and FeNi, direct emissions monitoring shall encompass:

- CO₂ emissions caused by fuel inputs, irrespective of whether they are used for energetic or non-energetic use;
- CO₂ emissions from process inputs such as limestone and from flue gas cleaning;
- CO₂ emissions from the consumption of electrodes or electrode pastes;
- Carbon remaining in the product or in slags or wastes is taken into account by using a mass balance method in accordance with Section B.3.2 of Annex III.

Relevant precursors: Sintered ore, if used in the process.

3.13. **Pig iron**

3.13.1. *Special provisions*

This aggregated goods category includes non-alloyed pig iron from blast furnaces as well as alloy-containing pig irons (e.g. spiegeleisen), irrespective of the physical form (e.g. ingots, granules). NPI (nickel pig iron) is included if the nickel content is lower than 10 %. In integrated steel plants, liquid pig iron ('hot metal') directly charged to the oxygen converter is the product which separates the production process for pig iron from the production process of crude steel. Where the installation does not sell or transfer pig iron to other installations, there is no need to monitor emissions from pig iron production separately. A common production process including crude steel making and, subject to the rules of Section A.4 of Annex III, further downstream production may be defined.

3.13.2. *Production routes*

3.13.2.1. Blast furnace route

For that production route, direct emissions monitoring shall encompass:

- CO₂ from fuels and reducing agents such as coke, coke dust, coal, fuel oils, plastic wastes, natural gas, wood wastes, charcoal, as well as from waste gases such as coke oven gas, blast furnace gas or converter gas.
- Where biomass is used, the provisions of Section B.3.3 of Annex III shall be taken into account.
- CO₂ from process materials such as limestone, magnesite, and other carbonates, carbonatic ores; materials for flue gas cleaning.
- Carbon remaining in the product or in slags or wastes is taken into account by using a mass balance method in accordance with Section B.3.2 of Annex III.

Relevant precursors:

- sintered ore;
- pig iron or direct reduced iron (DRI) from other installations or production processes, if used in the process;
- FeMn, FeCr, FeNi if used in the process;
- hydrogen if used in the process.

3.13.2.2. Smelting reduction

For this production route, direct emissions monitoring shall encompass:

- CO₂ from fuels and reducing agents such as coke, coke dust, coal, fuel oils, plastic wastes, natural gas, wood wastes, charcoal, waste gases from the process or converter gas, etc.

- Where biomass is used, the provisions of Section B.3.3 of Annex III shall be taken into account.
- CO₂ from process materials such as limestone, magnesite, and other carbonates, carbonatic ores; materials for flue gas cleaning.
- Carbon remaining in the product or in slags or wastes is taken into account by using a mass balance method in accordance with Section B.3.2 of Annex III.

Relevant precursors:

- sintered ore;
- pig iron or DRI from other installations or production processes, if used in the process;
- FeMn, FeCr, FeNi if used in the process;
- hydrogen if used in the process.

3.14. **DRI (Direct Reduced Iron)**

3.14.1. *Special provisions*

There is only one production route defined, although different technologies may use different qualities of ores, which may require pelletisation or sintering, and different reducing agents (natural gas, diverse fossil fuels or biomass, hydrogen). Therefore, precursors sintered ore or hydrogen may be relevant. As products, iron sponge, hot briquetted iron (HBI) or other forms of direct reduced iron may be relevant, including DRI which is immediately fed to electric arc furnaces or other downstream processes.

Where the installation does not sell or transfer DRI to other installations, there is no need to monitor emissions from DRI production separately. A common production process including steel making and, subject to the rules of Section A.4 of Annex III, further downstream production may be used.

3.14.2. *Production route*

For this production route, direct emissions monitoring shall encompass:

- CO₂ from fuels and reducing agents such as natural gas, fuel oils, waste gases from the process or converter gas, etc.;
- Where biogas or other forms of biomass are used, the provisions of Section B.3.3 of Annex III shall be taken into account;
- CO₂ from process materials such as limestone, magnesite, and other carbonates, carbonatic ores; materials for flue gas cleaning;
- Carbon remaining in the product or in slags or wastes is taken into account by using a mass balance method in accordance with Section B.3.2 of Annex III.

Relevant precursors:

- sintered ore, if used in the process;
- hydrogen, if used in the process;
- pig iron or DRI from other installations or production processes, if used in the process;
- FeMn, FeCr, FeNi if used in the process.

3.15. **Crude steel**

3.15.1. *Special provisions*

The system boundaries shall cover all necessary activities and units for obtaining crude steel:

- If the process starts from hot metal (liquid pig iron), the system boundaries shall include the basic oxygen converter, vacuum degassing, secondary metallurgy, argon oxygen decarburisation/vacuum oxygen decarburisation, continuous casting or ingot casting, where relevant hot-rolling or forging, and all necessary auxiliary activities such as transfers, re-heating and flue gas cleaning;

- If the process uses an electric arc furnace, the system boundaries shall include all relevant activities and units such as the electric arc furnace itself, secondary metallurgy, vacuum degassing, argon oxygen decarburisation/vacuum oxygen decarburisation, continuous casting or ingot casting, where relevant hot-rolling or forging, and all necessary auxiliary activities such as transfers, heating of raw materials and equipment, re-heating and flue gas cleaning;
- Only primary hot-rolling and rough shaping by forging to obtain the semi-finished products under CN codes 7207, 7218 and 7224 are included in this aggregated goods category. All other rolling and forging processes are included in the aggregated goods category 'iron or steel products'.

3.15.2. *Production routes*

3.15.2.1. Basic oxygen steelmaking

For that production route, direct emissions monitoring shall encompass:

- CO₂ from fuels such as coal, natural gas, fuel oils, waste gases such as blast furnace gas, coke oven gas or converter gas, etc.
- CO₂ from process materials such as limestone, magnesite, and other carbonates, carbonatic ores; materials for flue gas cleaning.
- Carbon entering the process in scrap, alloys, graphite, etc. and carbon remaining in the product or in slags or wastes is taken into account by using a mass balance method in accordance with Section B.3.2 of Annex III.

Relevant precursors:

- pig iron, DRI, if used in the process;
- FeMn, FeCr, FeNi if used in the process;
- crude steel from other installations or production processes if used in the process.

3.15.2.2. Electric arc furnace

For that production route, direct emissions monitoring shall encompass:

- CO₂ from fuels such as coal, natural gas, fuel oils, as well as from waste gases such as blast furnace gas, coke oven gas or converter gas.
- CO₂ from the consumption of electrodes and electrode pastes.
- CO₂ from process materials such as limestone, magnesite, and other carbonates, carbonatic ores; materials for flue gas cleaning.
- Carbon entering the process, e.g. in the form of scrap, alloys and graphite, and carbon remaining in the product or in slags or wastes is taken into account by using a mass balance method in accordance with Section B.3.2 of Annex III.

Relevant precursors:

- pig iron, DRI, if used in the process;
- FeMn, FeCr, FeNi if used in the process;
- crude steel from other installations or production processes if used in the process.

3.16. **Iron or steel products**

3.16.1. *Special provisions*

Subject to the rules of Section A.4 of Annex III and Sections 3.11 to 3.15 of this Annex, the production process for iron or steel products may apply to the following cases:

- System boundaries cover as one process all steps of an integrated steel plant from production of pig iron or DRI, crude steel, semi-finished products as well as final steel products under the CN codes listed in Section 2 of this Annex.

- System boundaries cover the production of crude steel, semi-finished products and final steel products under the CN codes listed in Section 2 of this Annex.
- System boundaries cover the production of final steel products under the CN codes listed in Section 2 of this Annex starting from crude steel, semi-finished products or from other final steel products under the CN codes listed in Section 2 which are either received from other installations or produced within the same installation but under a separate production process.

Double counting or gaps in the monitoring of production processes of an installation shall be avoided. The following production steps shall be covered by the production process of 'iron or steel products':

- All production steps for producing goods covered by the CN codes given in Section 2 of this Annex for the aggregated goods category 'iron or steel products', which are not already covered by separate production processes for pig iron, DRI or crude steel, as required by Sections 3.11 to 3.15 of this Annex and as applied at the installation.
- All production steps applied at the installation, starting from crude steel, including, but not limited to: re-heating, re-melting, casting, hot rolling, cold rolling, forging, pickling, annealing, plating, coating, galvanising, wire drawing, cutting, welding, finishing.

For products that contain more than 5 % by mass of other materials, e.g. insulation materials in CN code 7309 00 30, only the mass of iron or steel shall be reported as the mass of the goods produced.

3.16.2. *Production route*

For iron or steel products, direct emissions monitoring shall encompass:

- All CO₂ emissions from combustion of fuels and process emissions from flue gas treatment, related to production steps applied at the installation, including, but not limited to: re-heating, re-melting, casting, hot rolling, cold rolling, forging, pickling, annealing, plating, coating, galvanising, wire drawing, cutting, welding and finishing of iron or steel products.

Relevant precursors:

- crude steel, if used in the process;
- pig iron, DRI, if used in the process;
- FeMn, FeCr, FeNi, if used in the process;
- iron or steel products, if used in the process.

3.17. **Unwrought aluminium**

3.17.1. *Special provisions*

This aggregated goods category includes non-alloyed as well as alloyed aluminium, in physical form typical for unwrought metals, such as ingots, slabs, billets or granules. In integrated aluminium plants, liquid aluminium directly charged to the production of aluminium products is included, too. Where the installation does not sell or transfer unwrought aluminium to other installations, there is no need to monitor emissions from unwrought aluminium production separately. A common production process including unwrought aluminium and, subject to the rules of Section A.4 of Annex III, further processes to produce aluminium products may be defined.

3.17.2. *Production routes*

3.17.2.1. Primary (electrolytic) smelting

For that production route, direct emissions monitoring shall encompass:

- CO₂ emissions from the consumption of electrodes or electrode pastes.
- CO₂ emissions from any fuels used (e.g. for drying and pre-heating of raw materials, heating of electrolysis cells, heating required for casting).
- CO₂ emissions from any flue gas treatment, from soda ash or limestone if relevant.
- Perfluorocarbon emissions caused by anode effects monitored in accordance with Section B.7 of Annex III.

Relevant precursors: none.

3.17.2.2. Secondary melting (recycling)

Secondary melting (recycling) of aluminium uses aluminium scrap as main input. However, where unwrought aluminium from other sources is added, it is treated like a precursor. Furthermore, where the product of this process contains more than 5 % alloying elements, the embedded emissions of the product shall be calculated as if the mass of alloying elements were unwrought aluminium from primary smelting.

For that production route, direct emissions monitoring shall encompass:

- CO₂ emissions from any fuels used for drying and pre-heating of raw materials, used in melting furnaces, in pre-treatment of scrap such as de-coating and de-oiling, and combustion of the related residues, and fuels required for casting of ingots, billets or slabs;
- CO₂ emissions from any fuels used in associated activities such as treatment of skimmings and slag recovery;
- CO₂ emissions from any flue gas treatment, from soda ash or limestone if relevant.

Relevant precursors:

- Unwrought aluminium from other sources, if used in the process.

3.18. Aluminium products

3.18.1. Special provisions

Subject to the rules of Section A.4 of Annex III and Section 3.17 of this Annex, the production process for aluminium products may apply to the following cases:

- System boundaries cover as one process all steps of an integrated aluminium plant from production of unwrought aluminium to semi-finished products as well as aluminium products under the CN codes listed in Section 2 of this Annex.
- System boundaries cover the production of aluminium products under the CN codes listed in Section 2 of this Annex starting from semi-finished products or from other aluminium products under the CN codes listed in Section 2 which are either received from other installations or produced within the same installation but under a separate production process.

Double counting or gaps in the monitoring of production processes of an installation shall be avoided. The following production steps shall be covered by the production process of 'aluminium products':

- All production steps for producing goods covered by the CN codes given in Section 2 of this Annex for the aggregated goods category 'aluminium products', which are not already covered by separate production processes for unwrought aluminium, as required by Section 3.17 of this Annex and as applied at the installation.
- All production steps applied at the installation, starting from unwrought aluminium, including, but not limited to: re-heating, re-melting, casting, rolling, extruding, forging, coating, galvanising, wire drawing, cutting, welding, finishing.

Where the product contains more than 5 % by mass alloying elements, the embedded emissions of the product shall be calculated as if the mass of alloying elements were unwrought aluminium from primary smelting.

For products that contain more than 5 % by mass of other materials, e.g. insulation materials in CN code 7611 00 00 only the mass of aluminium shall be reported as the mass of the goods produced.

3.18.2. Production route

For aluminium products, direct emissions monitoring shall encompass:

- All CO₂ emissions from fuel consumption in processes forming aluminium products, and flue gas cleaning.

Relevant precursors:

- unwrought aluminium, if used in the production process (treat primary and secondary aluminium separately, if data is known);
- aluminium products, if used in the production process.

3.19. **Electricity**

3.19.1. *Special provisions*

For electricity, only direct emissions shall be monitored and reported. The emission factor for electricity shall be determined in accordance with Section D.2 of Annex III.

3.19.2. *Production routes*

For electricity, direct emissions monitoring shall encompass:

— Any combustion emissions and process emissions from flue gas treatment.

Relevant precursors: none.

ANNEX III

Rules for determining data including on emissions at installation level, attributed emissions of production processes, and embedded emissions of goods

A. PRINCIPLES

A.1. Overall approach

1. For the purpose of determining embedded emissions of goods listed in Annex I to Regulation (EU) 2023/956, the following activities shall be performed:
 - (a) The production processes relating to goods produced in the installation shall be identified using the aggregated goods categories as defined in Section 2 of Annex II, as well as the relevant production routes listed in Section 3 of Annex II, taking into account the rules for setting system boundaries of production processes in accordance with Section A.4 of this Annex.
 - (b) At the level of the installation producing the goods, the direct emissions of the greenhouse gases specified in Annex II for those goods shall be monitored in line with the methods provided in Section B of this Annex.
 - (c) Where measurable heat is imported to, produced in, consumed in or exported from the installation, net heat flows and the emissions associated with the production of that heat shall be monitored in line with the methods provided in Section C of this Annex.
 - (d) For the purpose of monitoring indirect emissions embedded in the goods produced, the consumption of electricity in the relevant production processes shall be monitored in line with the methods provided in Section D.1 of this Annex. Where electricity is produced within the installation or by a source with a direct technical link, the emissions associated with that electricity production shall be monitored in order to determine the emission factor for that electricity. Where the installation receives electricity from the grid, the emission factor for that electricity shall be determined according to Section D.2.3 of this Annex. Any quantities of electricity transferred between production processes or exported from the installation shall be monitored as well.
 - (e) The direct emissions at the installations, with heat production and consumption, electricity production and consumption, and any relevant waste gas streams shall be attributed to the production processes associated with the goods produced by applying the rules provided in Section F of this Annex. Those attributed emissions shall be used to calculate the specific direct and indirect embedded emissions of the goods produced, applying the Section F of this Annex.
 - (f) Where Section 3 of Annex II defines relevant precursors for goods produced in the installations, making those goods 'complex goods', the embedded emissions of the relevant precursor shall be determined according to Section E of this Annex, and shall be added to the embedded emissions of the complex goods produced, by applying the rules provided in Section G of this Annex. Where precursors are themselves complex goods, that process shall be repeated recursively until no more precursors are at stake.
2. Where an operator cannot adequately determine actual data for one or more data sets, by applying methods provided in Section A.3 of this Annex, and where no other method for closing data gaps is available, the default values made available and published by the Commission for the transitional period may be used under the conditions specified in Article 4(3) of this Regulation. In that case, a short explanation of the reasons for not using actual data shall be added.
3. Monitoring shall cover a reporting period which ensures that non-representative data due to short-time fluctuations in the production processes and data gaps are avoided to the highest extent feasible. The default reporting period is a calendar year. However, the operator may choose as alternative:
 - (a) if the installation has a compliance obligation under an eligible monitoring, reporting and verification system, that system's reporting period may be used, if it covers at least three months;

(b) the operator's fiscal year provided such period ensures higher data quality than the use of the calendar year.

The embedded emissions of goods shall be calculated as average of the reporting period chosen.

4. Regarding emissions occurring outside the installation boundaries that are relevant for calculating embedded emissions, data for the latest available reporting period shall be used, as obtained from the supplier of the input (e.g. electricity, heat, precursor). Emissions occurring outside the installation boundaries include:

- (a) indirect emissions where electricity is received from the grid;
- (b) emissions from electricity and heat imported from other installations;
- (c) embedded direct and indirect emissions of precursors received from other installations.

5. Emissions data over a full reporting period shall be expressed in tonnes CO₂e rounded to full tonnes.

All parameters used to calculate the emissions shall be rounded to include all significant digits for the purpose of calculating and reporting emissions.

Specific direct and indirect embedded emissions shall be expressed in tonnes of CO₂e per tonne of goods, rounded to include all significant digits, with a maximum of 5 digits after the comma.

A.2. **Monitoring principles**

For the monitoring of actual data at installation level, and for data sets necessary for attributing emissions to goods, the following principles shall apply:

1. **Completeness:** The monitoring methodology shall cover all parameters necessary to determine the embedded emissions of the goods listed in Annex I to Regulation (EU) 2023/956 in accordance with the methods and formulae contained in this Annex.
 - (a) Direct emissions at installation level include combustion and process emissions.
 - (b) Direct embedded emissions include the attributed emissions of the relevant production process in accordance with Section F of this Annex, based on direct emissions at the installation, emissions related to relevant heat flows and to material flows between process system boundaries, including waste gases, if relevant. Direct embedded emissions furthermore include the direct embedded emissions of relevant precursors.
 - (c) Indirect emissions at the installation level cover the emissions related to electricity consumption within the installation.
 - (d) Indirect embedded emissions include the indirect emissions of the goods produced within the installation, and the indirect embedded emissions of relevant precursors.
 - (e) For each parameter, an appropriate method in accordance with Section A.3 of this Annex shall be selected, ensuring that neither double counting nor data gaps occur.
2. **Consistency and comparability:** Monitoring and reporting shall be consistent and comparable over time. To that end, the selected methods shall be laid down in a written monitoring methodology documentation so that the methods are used consistently. The methodology shall be changed only if objectively justified. Relevant reasons include:
 - (a) changes in the configuration of the installation in the technology used, in the input materials and fuels, or in the goods produced;
 - (b) new data sources or monitoring methods have to be introduced because of changes of trade partners responsible for data used in the monitoring methodology;
 - (c) the accuracy of the data can be improved, data flows can be simplified or the control system can be improved.

3. Transparency: Monitoring data shall be obtained, recorded, compiled, analysed and documented, including assumptions, references, activity data, emission factors, calculation factors, data on embedded emissions of purchased precursors, measurable heat and electricity, default values of embedded emissions, information on a carbon price due, and any other data relevant for the purpose of this Annex, in a transparent manner that enables the reproduction of the determination of emissions data including by independent third parties, such as accredited verifiers. Documentation shall include a record of all changes of methodology.

Complete and transparent records shall be kept at the installation of all data relevant for determining embedded emissions of the goods produced, including necessary supporting documents, for at least 4 years after the reporting period. Those records may be disclosed to a reporting declarant.

4. Accuracy: The chosen monitoring methodology shall ensure that emission determination is neither systematically nor knowingly inaccurate. Any source of inaccuracies shall be identified and reduced as far as possible. Due diligence shall be exercised to ensure that the calculation and measurement of emissions exhibit the highest achievable accuracy.

Where data gaps have occurred or are expected to be unavoidable, substitute data shall consist of conservative estimates. Further cases where emissions data shall be based on conservative estimates include:

- (a) carbon monoxide (CO) emitted to the atmosphere shall be calculated as the molar equivalent amount of CO₂;
 - (b) all biomass emissions in mass balances and for transferred CO₂, where it is not possible to determine the biomass content in materials or fuels, the emissions shall be considered to be from fossil carbon.
5. Integrity of methodology: The chosen monitoring methodology shall enable reasonable assurance of the integrity of emission data to be reported. Emissions shall be determined using the appropriate monitoring methodologies set out in this Annex. Reported emission data shall be free from material misstatement, avoid bias in the selection and presentation of information, and provide a credible and balanced account of the embedded emissions of installation's produced goods.
 6. Optional measures to increase the quality of the data to be reported may be applied, in particular the data flow and control activities in line with Section H of this Annex.
 7. Cost-effectiveness: In selecting a monitoring methodology, the improvements from greater accuracy shall be balanced against additional costs. Monitoring and reporting of emissions shall aim for the highest achievable accuracy, unless that is technically not feasible or incurs unreasonable costs.
 8. Continuous improvement: It shall be regularly checked if monitoring methodologies can be improved. If verification of emissions data is performed, any recommendations for improvements included in the verification reports shall be considered for implementation within a reasonable timeframe, unless the improvement would incur unreasonable costs or would be technically not feasible.

A.3. Methods representing the best available data source

1. For the determination of embedded emissions of goods, and for underlying data sets, such as emissions related to individual source streams or emission sources, quantities of measurable heat, the overarching principle shall be to always select the best available data source. For this purpose, the following guiding principles shall apply:
 - (a) Monitoring methods described in this Annex are preferred. If for a specific data set there is no monitoring method described in this Annex, or it would incur unreasonable costs or is technically not feasible, monitoring methods from another eligible monitoring, reporting and verification system may be used under the conditions specified in Article 4(2) of this Regulation, if they cover the required data set. Where such methods are not available, not technically feasible, or would incur unreasonable costs, indirect methods for determination of the data set in

accordance with point 2 may be used. Where such methods are not available, not technically feasible, or would incur unreasonable costs, default values made available and published by the Commission for the transitional period may be used under the conditions specified in Article 4(3) of this Regulation.

- (b) For direct or indirect determination methods, a method is deemed suitable where it is ensured that any metering, analyses, sampling, calibrations, and validations for the determination of the specific data set are carried out by applying methods defined in relevant EN or ISO standards. Where such standards are not available, national standards may be used. Where no applicable published standards exist, suitable draft standards, industry best practice guidelines or other scientifically proven methodologies shall be used, limiting sampling and measurement bias.
 - (c) Within one method mentioned in point (a), measuring instruments or laboratory analyses under the operator's control shall be preferred over measuring instruments or analyses under the control of another legal entity, such as the supplier of fuel or materials or trade partners regarding goods produced.
 - (d) Measuring instruments shall be selected such that they exhibit the lowest uncertainty in use without incurring unreasonable costs. Instruments under legal metrological control are preferred, except where other instruments with significantly lower uncertainty in use are available. Instruments shall be used only in environments appropriate according to their use specification.
 - (e) Where laboratory analyses are used, or where laboratories carry out sample treatment, calibrations, method validations, or activities relating to continuous emissions measurements, the requirements of Section B.5.4.3 of this Annex shall apply.
2. Indirect determination methods: Where no direct determination method is available for a required data set, in particular for cases where net measurable heat going into different production processes needs to be determined, an indirect determination method may be used, such as:
- (a) calculation based on a known chemical or physical process, using appropriate accepted literature values for the chemical and physical properties of substances involved, appropriate stoichiometric factors and thermodynamic properties such as reaction enthalpies, as appropriate;
 - (b) calculation based on the installation's design data such as the energy efficiencies of technical units or calculated energy consumption per unit of product;
 - (c) correlations based on empirical tests for determining estimation values for the required data set from non-calibrated equipment or data documented in production protocols. For that purpose it shall be ensured that the correlation satisfies the requirements of good engineering practice and that it is applied only to determine values which fall into the range for which it was established. The validity of such correlations shall be evaluated at least once a year.
3. To determine the best available data sources, the data source highest in the ranking presented under point 1 and already available at the installation shall be selected. However, where it is technically feasible to apply a data source higher in the ranking without incurring unreasonable costs, such better data source shall be applied without undue delay. Where different data sources are available for the same data set at the same level in the ranking presented under point 1, the data source which ensures the clearest data flow with lowest inherent risk and control risk regarding misstatements shall be chosen.
4. The data sources chosen under point 3 shall be used for the determination and reporting of embedded emissions.
5. To the extent feasible without incurring unreasonable costs, for the purpose of the control system in accordance with Section H of this Annex, additional data sources or methods for determining data sets shall be identified to allow corroboration of data sources under point 3. The selected data sources, if any, shall be laid down in the monitoring methodology documentation.

6. Recommended improvements: It shall be checked regularly, but at least once per year, whether new data sources have become available, for the purpose of improving the monitoring methods. In the case that such new data sources are considered more accurate in accordance with the ranking presented under point 1, they shall be laid down in the monitoring methodology documentation and be applied from the earliest date possible.
7. Technical feasibility: Where a claim is made that applying a specific determination methodology is technically not feasible, a justification for this fact shall be laid down in the monitoring methodology documentation. It shall be re-assessed during the regular checks in line with point 6. That justification shall be based on whether the installation has technical resources capable of meeting the needs of a proposed data source or monitoring method that can be implemented in the required time for the purposes of this Annex. Those technical resources shall include availability of required techniques and technology.
8. Unreasonable costs: Where a claim is made that applying a specific determination methodology for a data set incurs unreasonable costs, a justification for this fact shall be laid down in the monitoring methodology documentation. It shall be re-assessed during the regular checks in line with point 6. The unreasonable nature of the costs shall be determined as follows.

Costs for determining a specific data set is considered unreasonable where the operator's cost estimation exceeds the benefit of a specific determination methodology. To that end, the benefit shall be calculated by multiplying an improvement factor with a reference price of EUR 20 per tonne of CO₂e and costs shall include an appropriate depreciation period based on the economic lifetime of the equipment, where applicable.

The improvement factor shall be:

- (a) the improvement of estimated uncertainty in a measurement, expressed in per cent, multiplied with the estimated related emissions over the reporting period. Related emissions means:
 - (1) the direct emissions caused by the source stream or emission source concerned;
 - (2) emissions attributed to a quantity of measurable heat;
 - (3) the indirect emissions related to the quantity of electricity concerned;
 - (4) embedded emissions of a material produced or of a precursor consumed;
- (b) 1 % of the related emissions, where no improvement of measuring uncertainty is involved.

Measures relating to the improvement of an installation's monitoring methodology shall not be deemed to incur unreasonable costs up to an accumulated amount of EUR 2 000 per year.

A.4. Division of installations into production processes

Installations shall be divided into production processes with system boundaries which ensure that relevant inputs, outputs and emissions can be monitored in accordance with Sections B to E of this Annex and direct and indirect emissions can be attributed to groups of goods defined in Section 2 of Annex II, by applying the rules of Section F of this Annex.

Installations shall be divided into production processes as follows:

- (a) A single production process shall be defined for each of the aggregated goods categories defined in Section 2 of Annex II that are relevant at the installation.
- (b) By way of derogation from point (a), separate production processes shall be defined for each production route where different production routes in accordance with Section 3 of Annex II for the same aggregated goods category are applied in the same installation, or where the operator selects voluntarily different goods or groups of goods for separate monitoring. A more disaggregated definition of production processes may also be used where it is in accordance with an eligible monitoring, reporting and verification system applicable at the installation.

- (c) By way of derogation from point (a), where at least a part of the precursors relevant for complex goods are produced in the same installation as the complex goods, and where the respective precursors are not transferred out of the installation for sale or use in other installations, the production of precursors and complex goods may be covered by a joint production process. Separate calculation of embedded emissions of the precursors shall be omitted in that case.
- (d) The following sectoral derogations from point (a) may be applied:
 - (1) Where two or more goods from the aggregated goods categories sintered ore, pig iron, FeMn, FeCr, FeNi, DRI, crude steel, or iron or steel products are produced in the same installation, the embedded emissions may be monitored and reported by defining one joint production process for all those goods.
 - (2) Where two or more goods from the groups unwrought aluminium or aluminium products are produced in the same installation, the embedded emissions may be monitored and reported by defining one joint production process for all those goods.
 - (3) For the production of mixed fertilisers, the monitoring and reporting for the respective production process may be simplified by determining one uniform value of embedded emissions per tonne of nitrogen contained in the mixed fertilisers, irrespective of the chemical form of nitrogen (ammonium, nitrate or urea forms).
- (e) Where a part of the installation serves the production of goods not listed in Annex I to Regulation (EU) 2023/956, it is a recommended improvement to monitor that part as one additional production process for the purpose of corroborating the completeness of the installation's total emissions data.

B. MONITORING OF DIRECT EMISSIONS AT INSTALLATION LEVEL

B.1. Completeness of source streams and emission sources

The boundaries of the installation and its production processes shall be clearly known to the operator and defined in the monitoring methodology documentation, taking into account the sector-specific requirements laid down in Section 2 of Annex II as well as Section B.9 of this Annex. The following principles shall apply:

1. As a minimum, all relevant greenhouse gas emissions emission sources and source streams associated directly or indirectly with the production of goods listed in Section 2 of Annex II shall be covered.
2. It is a recommended improvement to cover all emission sources and source streams of the total installation, in order to perform plausibility checks and to control the energy and emissions efficiency of the installation as a whole.
3. All emissions from regular operations shall be included, as well as from abnormal events, including start-up, shut-down and emergency situations, over the reporting period.
4. Emissions from mobile machinery for transportation purposes shall be excluded.

B.2. Choice of monitoring methodology

The applicable methodology shall be either:

1. The calculation-based methodology, which consists in determining emissions from source streams on the basis of activity data obtained by means of measurement systems and additional parameters from laboratory analyses or standard values. The calculation-based methodology may be implemented according to the standard method or the mass balance method.
2. The measurement-based methodology, which consists in determining emissions from emission sources by means of continuous measurement of the concentration of the relevant greenhouse gas in the flue gas and of the flue gas flow.

By way of derogation, other methodologies may be used under the conditions specified in Articles 4(2), 4(3) and 5 of this Regulation.

The monitoring methodology that gives the most accurate and reliable results shall be chosen, except where sector-specific requirements in accordance with Section B.9 require one particular methodology. The applied monitoring methodology may be a combination of methodologies such that different parts of the installation's emissions are monitored by either of the applicable methodologies.

The monitoring methodology documentation shall clearly identify:

- (a) for which source stream the calculation-based standard method or the mass balance method is used, including the detailed description of the determination of each relevant parameter provided in Section B.3.4 of this Annex;
- (b) for which emission source a measurement-based methodology is used, including the description of all relevant elements provided in Section B.6 of this Annex;
- (c) by means of a suitable diagram and process description of the installation, evidence that there is neither double counting nor data gaps in the emissions of the installation.

The installation's emissions shall be determined by

$$Em_{inst} = \sum_{i=1}^n Em_{calc,i} + \sum_{j=1}^m Em_{meas,j} + \sum_{k=1}^l Em_{other,k} \quad (\text{Equation 4})$$

Where:

Em_{inst} are the (direct) emissions of the installation expressed in tonnes CO₂e;

$Em_{calc,i}$ are the emissions from source stream i determined using a calculation-based methodology expressed in tonnes CO₂e;

$Em_{meas,j}$ are the emissions from emission source j determined using a measurement-based methodology expressed in tonnes CO₂e; and

$Em_{other,k}$ Emissions determined by another method, index k expressed in tonnes CO₂e.

B.3. Formulae and parameters for the calculation-based methodology for CO₂

B.3.1. Standard method

Emissions shall be calculated separately for each source stream as follows:

B.3.1.1. Combustion emissions

Combustion emissions shall be calculated using the standard method as follows:

$$Em_i = AD_i \cdot EF_i \cdot OF_i \quad (\text{Equation 5})$$

Where:

Em_i are the emissions [t CO₂] caused by fuel i ;

EF_i is the emission factor [t CO₂/TJ] of fuel i ;

AD_i is the activity data [TJ] of fuel i , calculated as:

$$AD_i = FQ_i \cdot NCV_i \quad (\text{Equation 6})$$

FQ_i is the fuel quantity consumed [t or m³] of fuel i ;

NCV_i is the net calorific value (lower heating value) [TJ/t or TJ/m³] of fuel i ;

OF_i is the oxidation factor (dimensionless) of fuel i , calculated as:

$$OF = 1 - C_{ash}/C_{total} \quad (\text{Equation 7})$$

C_{ash} is the carbon contained in ash and flue gas cleaning dust; and

C_{total} is the total carbon contained in the fuel combusted.

The conservative assumption that $OF = 1$ may always be used in order to reduce monitoring efforts.

Provided that this leads to a higher accuracy, the standard method for combustion emissions may be modified as follows:

- (a) the activity data is expressed as fuel quantity (i.e. in t or m³);
- (b) the EF is expressed in t CO₂/t fuel or t CO₂/m³ fuel, as applicable; and
- (c) the NCV may be omitted from the calculation. However, it is a recommended improvement to report NCV for allowing consistency checking and monitoring of the energy efficiency of the whole production process.

If the emission factor of a fuel i is to be calculated from the analyses of carbon content and NCV, the following equation shall be used:

$$EF_i = CC_i \cdot f / NCV_i \quad (\text{Equation 8})$$

If the emission factor of a material or fuel expressed in t CO₂/t is to be calculated from an analysed carbon content, the following equation is used:

$$EF_i = CC_i \cdot f \quad (\text{Equation 9})$$

Where:

f is the ratio of the molar masses of CO₂ and C: $f = 3,664 \text{ t CO}_2/\text{t C}$.

As the emission factor of biomass shall be zero provided that the criteria given in Section B.3.3 are met, this fact may be taken into account for mixed fuels (i.e. fuels which contain both fossil and biomass components) as follows:

$$EF_i = EF_{pre,i} \cdot (1 - BF_i) \quad (\text{Equation 10})$$

Where:

$EF_{pre,i}$ is the preliminary emission factor of fuel i (i.e. emission factor assuming the total fuel is fossil); and

BF_i is the biomass fraction (dimensionless) of fuel i .

For fossil fuels and where the biomass fraction is not known, BF_i shall be set to the conservative value zero.

B.3.1.2. Process emissions

Process emissions shall be calculated using the standard method as follows:

$$Em_j = AD_j \cdot EF_j \cdot CF_j \quad (\text{Equation 11})$$

Where:

AD_j is the activity data [t of material] of material j ;

EF_j is the emission factor [t CO₂/t] of material j ; and

CF_j is the conversion factor (dimension-less) of material j .

The conservative assumption that $CF_j = 1$ may always be used in order to reduce monitoring efforts.

In the case of mixed process input materials which contain inorganic as well as organic forms of carbon, the operator may choose either:

1. to determine a total preliminary emission factor for the mixed material by analysing the total carbon content (CC_j), and using a conversion factor and, where applicable a biomass fraction and net calorific value related to that total carbon content; or
2. to determine the organic and inorganic contents separately and treat them as two separate source streams.

Considering the available measurement systems for activity data and methods for determining the emission factor, for emissions from the decomposition of carbonates, the method giving the more accurate results shall be chosen for each source stream from the following two methods:

- Method A (Input-based): The emission factor, conversion factor and activity data shall be related to the amount of material input into the process. The standard emission factors of pure carbonates as provided in Table 3 in Annex VIII shall be used, taking into account the composition of the material as determined in line with Section B.5 of this Annex.
- Method B (Output-based): The emission factor, conversion factor and activity data shall be related to the amount of output from the process. The standard emission factors of metal oxides after decarbonisation as provided in Table 4 in Annex VIII shall be used, taking into account the composition of the relevant material as determined in line with Section B.5 of this Annex.

For CO₂ process emissions other than from carbonates, method A shall be applied.

B.3.2. Mass balance method

The CO₂ quantities relevant for each source stream shall be calculated based on the carbon content in each material, without distinguishing fuels and process materials. Carbon leaving the installation in products instead of being emitted is taken into account by output source streams, which have therefore negative activity data.

The emissions corresponding to each source stream shall be calculated as follows:

$$Em_k = f \cdot AD_k \cdot CC_k \quad (\text{Equation 12})$$

Where:

- AD_k is the activity data [t] of material k ; for outputs, AD_k is negative;
- f is the ratio of the molar masses of CO₂ and C: $f = 3,664 \text{ t CO}_2/\text{t C}$; and
- CC_k is the carbon content of material k (dimensionless and positive).

If the carbon content of a fuel k is calculated from an emission factor expressed in t CO₂/TJ, the following equation shall be used:

$$CC_k = EF_k \cdot NCV_k / f \quad (\text{Equation 13})$$

If the carbon content of a material or fuel k is calculated from an emission factor expressed in t CO₂/t, the following equation shall be used:

$$CC_k = EF_k / f \quad (\text{Equation 14})$$

For mixed fuels, meaning fuels which contain both fossil and biomass components or mixed materials, the biomass fraction may be taken into account, provided that the criteria provided in Section B.3.3 are met as follows:

$$CC_k = CC_{pre,k} \cdot (1 - BF_k) \quad (\text{Equation 15})$$

Where:

- $CC_{pre,k}$ is the preliminary carbon content of fuel k (i.e. emission factor assuming the total fuel is fossil); and
- BF_k is the biomass fraction of fuel k (dimensionless).

For fossil fuels or materials and where the biomass fraction is not known, BF shall be set to the conservative value zero. Where biomass is used as input material or fuel, and output materials contain carbon, the overall mass balance shall treat the biomass fraction conservatively, meaning that the fraction of biomass in total output carbon shall not exceed the total fraction of biomass contained in input materials and fuels, except if the operator provides evidence of a higher biomass fraction in the output materials by a 'trace the atom' (stoichiometric) method or by ¹⁴C analyses.

B.3.3. *Criteria for zero-rating of biomass emissions*

Where biomass is used as a fuel for combustion, it shall fulfil the criteria of this section. Where the biomass used for combustion does not comply with these criteria, its carbon content shall be considered as fossil carbon.

1. The biomass shall comply with the sustainability and the greenhouse gas emissions saving criteria laid down in paragraphs 2 to 7 and 10 of Article 29 of Directive (EU) 2018/2001.
2. By derogation from the previous point, biomass contained in or produced from waste and residues, other than agricultural, aquaculture, fisheries and forestry residues shall fulfil only the criteria laid down in Article 29(10) of Directive (EU) 2018/2001. This point shall also apply to waste and residues that are first processed into a product before being further processed into fuels.
3. Electricity, heating and cooling produced from municipal solid waste shall not be subject to the criteria laid down in paragraph 10 of Article 29 of Directive (EU) 2018/2001.
4. The criteria laid down in paragraphs 2 to 7 and 10 of Article 29 of Directive (EU) 2018/2001 shall apply irrespective of the geographical origin of the biomass.
5. The compliance with the criteria laid down in paragraphs 2 to 7 and 10 of Article 29 of Directive (EU) 2018/2001 shall be assessed in accordance with Articles 30 and 31(1) of that Directive.

B.3.4. *Relevant parameters*

In line with the formulae given in Sections B.3.1 to B.3.3 of this Annex, the following parameters shall be determined for each source stream:

1. Standard method, combustion:
 - Minimum requirement: Fuel quantity (t or m³), Emission factor (t CO₂/t or t CO₂/m³).
 - Recommended improvement: Fuel quantity (t or m³), NCV (TJ/t or TJ/m³), Emission factor (t CO₂/TJ), Oxidation factor, Biomass fraction, evidence for meeting the criteria of Section B.3.3.
2. Standard method, process emissions:
 - Minimum requirement: Activity data (t or m³), Emission factor (t CO₂/t or t CO₂/m³).
 - Recommended improvement: Activity data (t or m³), Emission factor (t CO₂/t or t CO₂/m³), conversion factor.
3. Mass balance:
 - Minimum requirement: Material quantity (t), Carbon content (t C/t material).
 - Recommended improvement: Material quantity (t), Carbon content (t C/t material), NCV (TJ/t), biomass fraction, evidence for meeting the criteria of Section B.3.3.

B.4. **Requirements for activity data**

B.4.1. *Continual or batch-wise metering*

Where quantities of fuels or materials, including goods or intermediate products, have to be determined for a reporting period, one of the following methods may be chosen and laid down in the monitoring methodology documentation:

1. based on continual metering at the process where the material is consumed or produced;
2. based on aggregation of metering of quantities separately (batch-wise) delivered or produced taking into account relevant stock changes. For this purpose the following shall apply:
 - (a) the quantity of fuel or material consumed during the reporting period shall be calculated as the quantity of fuel or material imported during the reporting period, minus the quantity of fuel or material exported, plus the quantity of fuel or material in stock at the beginning of the reporting period, minus the quantity of fuel or material in stock at the end of the reporting period;

- (b) the production levels of goods or intermediate products shall be calculated as the quantity exported during the reporting period, minus the quantity imported, minus the quantity of product or material in stock at the beginning of the reporting period, plus the quantity of product or material in stock at the end of the reporting period. For avoiding any double counting, products of a production process returned into the same production process are deducted from production levels.

Where it is technically not feasible or would incur unreasonable costs to determine quantities in stock by direct measurement, those quantities may be estimated based on one of the following:

1. data from previous years and correlated with appropriate activity levels for the reporting period;
2. documented procedures and respective data in audited financial statements for the reporting period.

Where the determination of quantities of products, materials or fuels for the entire reporting period is technically not feasible or would incur unreasonable costs, the next most appropriate day may be chosen to separate a reporting period from the following one. It shall be reconciled accordingly to the reporting period required. The deviations involved for each product, material or fuel shall be clearly recorded to form the basis of a value representative for the reporting period and to be considered consistently in relation to the next year.

B.4.2. *Operator's control over measurement systems*

The preferred method for determining quantities of products, materials or fuels shall be that the operator of the installation uses measurement systems under its own control. Measurement systems outside the operator's own control, in particular if under the control of the supplier of the material or fuel, may be used in the following cases:

1. where the operator does not have an own measurement system available for determining the respective data set;
2. where determining the data set by the operator's own measurement system is technically not feasible or would incur unreasonable costs;
3. where the operator has evidence that the measurement system outside the operator's control gives more reliable results and is less prone to risks of misstatements.

In the case that measurement systems outside the operator's own control are used, applicable data sources shall be the following:

- (1) amounts from invoices issued by a trade partner, provided that a commercial transaction between two independent trade partners takes place;
- (2) direct readings from the measurement systems.

B.4.3. *Requirements for measurement systems*

A thorough understanding of the uncertainty associated with metering quantities of fuels and materials, including the influence of the operating environment and, where applicable, the uncertainty of stock determination shall be available. Measuring instruments shall be chosen that ensure the lowest uncertainty available without incurring unreasonable costs and that are fit for the environment they are used in, in accordance with applicable technical standards and requirements. If available, instruments subject to legal metrological control shall be preferred. In this case, the maximum permissible error in service allowed by the relevant national legislation on legal metrological control for the relevant measuring task may be used as the uncertainty value.

Where a measuring instrument needs to be replaced because of malfunction or because calibration demonstrates that requirements are not met anymore, it shall be replaced by instruments that ensure meeting the same or a better uncertainty level compared to the existing instrument.

B.4.4. *Recommended improvement*

It is considered a recommended improvement to achieve a measurement uncertainty commensurate with the total emissions of the source stream or emission source, with lowest uncertainty for the biggest parts of the emissions. For orientation purposes, for emissions of more than 500 000 t CO₂ per year, the uncertainty over the full reporting period taking into account stock changes, if applicable, shall be 1,5 % or better. For emissions below 10 000 t CO₂ per year, uncertainty lower than 7,5 % shall be acceptable.

B.5. **Requirements for calculation factors for CO₂**

B.5.1. *Methods for determining calculation factors*

For the determination of calculation factors required for the calculation-based methodology, one of the following methods may be chosen:

1. use of standard values;
2. use of proxy data based on empirical correlations between the relevant calculation factor and other properties better accessible to measurement;
3. use of values based on laboratory analysis.

Calculation factors shall be determined consistently with the state used for related activity data, referring to the fuel's or material's state in which the fuel or material is purchased or used in the emission causing process, before it is dried or otherwise treated for laboratory analysis. Where this incurs unreasonable costs or where higher accuracy can be achieved, activity data and calculation factors may be consistently reported referring to the state in which laboratory analyses are carried out.

B.5.2. *Applicable standard values*

Type I standard values, shall be applicable only if no type II standard value is available for the same parameter and material or fuel.

Type I standard values shall be the following:

- (a) standard factors provided in Annex VIII;
- (b) standard factors contained in the latest IPCC guidelines for GHG inventories ⁽¹⁾;
- (c) values based on laboratory analyses carried out in the past, not older than 5 years and considered representative for the fuel or material.

Type II standard values, shall be the following:

- (a) standard factors used by the country where the installation is located for its latest national inventory submission to the Secretariat of the United Nations Framework Convention on Climate Change;
- (b) values published by national research institutions, public authorities, standardisation bodies, statistical offices, etc. for the purpose of more disaggregated emissions reporting than under the previous point;
- (c) values specified and guaranteed by the supplier of a fuel or material where there is evidence that the carbon content exhibits a 95 % confidence interval of not more than 1 %;
- (d) stoichiometric values for the carbon content and related literature values for the net calorific value (NCV) of a pure substance;
- (e) values based on laboratory analyses carried out in the past not older than two years and considered representative for the fuel or material.

⁽¹⁾ United Nations International Panel on Climate Change (IPCC): IPCC Guidelines for National Greenhouse Gas Inventories.

In order to ensure consistency over time, any standard values used shall be laid down in the monitoring methodology documentation, and only changed if there is evidence that the new value is more adequate and representative for the fuel or material used than the previous one. Where the standard values change on an annual basis, the authoritative applicable source of that value shall be laid down in the monitoring methodology documentation instead of the value itself.

B.5.3. *Establishing correlations for determining proxy data*

A proxy for the carbon content or emission factor may be derived from the following parameters, in combination with an empirical correlation determined at least once per year in accordance with the requirements for laboratory analyses given in Section B.5.4 of this Annex as follows:

- (a) density measurement of specific oils or gases, including those common to the refinery or steel industry;
- (b) net calorific value for specific coal types.

The correlation has to satisfy the requirements of good industrial practice and may be applied only to values of the proxy which fall into the range for which it was established.

B.5.4. *Requirements for laboratory analyses*

Where laboratory analyses are required for determining properties (including moisture, purity, concentration, carbon content, biomass fraction, net calorific value, density) of products, materials, fuels or waste gases, or for establishing correlations between parameters for the purpose of indirect determination of required data, the analyses shall comply with the requirements of this section.

The result of any analysis shall be used only for the delivery period or batch of fuel or material for which the samples have been taken, and for which the samples were intended to be representative. When determining a specific parameter, the results of all analyses made shall be used with regard to that parameter.

B.5.4.1. *Use of standards*

Any analyses, sampling, calibrations and validations for the determination of calculation factors shall be carried out by applying methods based on corresponding ISO standards. Where such standards are not available, the methods shall be based on suitable EN or national standards or requirements laid down in an eligible monitoring, reporting and verification system. Where no applicable published standards exist, suitable draft standards, industry best practice guidelines or other scientifically proven methodologies may be used, limiting sampling and measurement bias.

B.5.4.2. *Recommendations on sampling plan and minimum frequency of analyses*

The minimum frequencies for analyses for relevant fuels and materials listed in Table 1 of this Annex shall be used. Another analysis frequency may be used in the following cases:

- (a) where the table does not contain an applicable minimum frequency;
- (b) where an eligible monitoring, reporting and verification system provides for another minimum analysis frequency for the same type of material or fuel;
- (c) where the minimum frequency listed in Table 1 of this Annex would incur unreasonable cost;
- (d) where it can be demonstrated that based on historical data, including analytical values for the respective fuels or materials in the reporting period immediately preceding the current reporting period, any variation in the analytical values for the respective fuel or material does not exceed 1/3 of the uncertainty in determining the activity data of the relevant fuel or material.

Where an installation operates for part of the year only, or where fuels or materials are delivered in batches that are consumed over more than one reporting period, a more appropriate schedule for analyses may be chosen, provided that it results in a comparable uncertainty as under the last point of the previous subparagraph.

Table 1

Minimum analyses frequencies

Fuel/material	Minimum frequency of analyses
Natural gas	At least weekly
Other gases, in particular synthesis gas and process gases such as refinery mixed gas, coke oven gas, blast-furnace gas, converter gas, oilfield, and gas field gas	At least daily – using appropriate procedures at different parts of the day
Fuel oils (for example light, medium, heavy fuel oil, bitumen)	Every 20 000 tonnes of fuel and at least six times a year
Coal, coking coal, coke, petroleum coke, peat	Every 20 000 tonnes of fuel/material and at least six times a year
Other fuels	Every 10 000 tonnes of fuel and at least four times a year
Untreated solid waste (pure fossil or mixed biomass/fossil)	Every 5 000 tonnes of waste and at least four times a year
Liquid waste, pre-treated solid waste	Every 10 000 tonnes of waste and at least four times a year
Carbonate minerals (including limestone and dolomite)	Every 50 000 tonnes of material and at least four times a year
Clays and shales	Amounts of material corresponding to emissions of 50 000 tonnes of CO ₂ and at least four times a year
Other materials (primary, intermediate, and final product)	Depending on the type of material and the variation, amounts of material corresponding to emissions of 50 000 tonnes of CO ₂ and at least four times a year

Samples shall be representative for the total batch or time period of deliveries for which they are taken. In order to ensure representativeness, the heterogeneity of the material has to be taken into account, as well as all other relevant aspects such as the available sampling equipment, possible segregation of phases or local distribution of particle sizes, stability of samples, etc. The sampling method shall be laid down in the monitoring methodology documentation.

It is considered a recommended improvement to use a dedicated sampling plan for each relevant material or fuel, following applicable standards, containing the relevant information on methodologies for the preparation of samples, including information on responsibilities, locations, frequencies and quantities, and methodologies for the storage and transport of samples.

B.5.4.3. Recommendations for laboratories

Laboratories used to carry out analyses for the determination of calculation factors shall be accredited in accordance with ISO/IEC 17025, for the relevant analytical methods. Laboratories not accredited may be used for the determination of calculation factors only where there is evidence that access to accredited laboratories is technically not feasible or would incur unreasonable costs, and that the non-accredited laboratory is sufficiently competent. A laboratory shall be considered sufficiently competent if it complies with all of the following:

1. it is economically independent of the operator, or at least organisationally shielded from influence by the management of the installation;
2. it applies the applicable standards for the analyses requested;

3. it employs personnel competent for the specific tasks assigned;
4. it appropriately manages the sampling and sample preparation, including control of sample integrity;
5. it regularly carries out quality assurance on calibrations, sampling and analytical methods, by suitable methods, including regular participation in proficiency testing schemes, applying analytical methods to certified reference materials, or inter-comparison with an accredited laboratory;
6. it manages equipment appropriately, including by maintaining and implementing procedures for calibration, adjustment, maintenance and repair of equipment, and record keeping thereof.

B.5.5. *Recommended methods for determination of calculation factors*

It is considered a recommended improvement to apply standard values only for source streams which correspond to minor emission quantities, and to apply laboratory analyses for all major source streams. The following list presents the applicable methods in sequence of increasing data quality:

1. type I standard values;
2. type II standard values;
3. correlations for determining proxy data;
4. analyses carried out outside the operator's control, e.g. by the supplier of the fuel or material, contained in purchase documents, without further information on the methods applied;
5. analyses in non-accredited laboratories, or in accredited laboratories, but with simplified sampling methods;
6. analyses in accredited laboratories, applying best practice regarding sampling.

B.6. **Requirements for a measurement-based methodology for CO₂ and N₂O**

B.6.1. *General provisions*

A measurement-based methodology requires the use of a Continuous Emission Measurement System (CEMS) installed at a suitable measurement point.

For the monitoring of N₂O emissions, the use of the measurement-based methodology, is mandatory. For CO₂ it shall be used only if there is evidence that it leads to more accurate data than the calculation-based methodology. The requirements on uncertainty of measurement systems pursuant to Section B.4.3 of this Annex shall apply.

CO emitted to the atmosphere shall be treated as the molar equivalent amount of CO₂.

Where several emission sources exist in one installation and cannot be measured as one emission source, the operator shall measure emissions from those sources separately and add the results to obtain the total emissions of the gas in question over the reporting period.

B.6.2. *Method and calculation*

B.6.2.1. Emissions of a reporting period (annual emissions)

The total emissions from an emission source over the reporting period shall be determined by summing up over the reporting period all hourly values of the measured greenhouse gas concentration multiplied by the hourly values of the flue gas flow, where the hourly values shall be averages over all individual measurement results of the respective operating hour, applying the formula:

$$GHG\ EM_{total}[t] = \sum_{i=1}^{HoursOp} (GHG\ conc_{hourly,i} \cdot V_{hourly,i}) \cdot 10^{-6} [t/g] \quad (\text{Equation 16})$$

Where:

- $GHG\ Em_{total}$ are the total annual GHG emissions in tonnes;
- $GHG\ conc_{hourly,i}$ are the hourly concentrations of GHG emissions in g/Nm³ in the flue gas flow measured during operation for hour or shorter reference period i ;
- $V_{hourly,i}$ is the flue gas volume in Nm³ for one hour or a shorter reference period i , determined by integrating the flow rate over the reference period; and
- $HoursOp$ are the total number of hours (or shorter reference periods) for which the measurement-based methodology is applied, including the hours for which data has been substituted in accordance with Section B.6.2.6 of this Annex.

The index i refers to the individual operating hour (or reference periods).

Hourly averages for each measured parameter shall be calculated before further processing, by using all data points available for that specific hour. Where data for shorter reference periods can be generated without additional cost, those periods shall be used for the determination of the annual emissions.

B.6.2.2. Determination of GHG concentration

The concentration of the GHG under consideration in the flue gas shall be determined by continuous measurement at a representative point through one of the following:

- direct measurement of the concentration of the GHG;
- indirect measurement: in the case of high concentration in the flue gas, the concentration of the GHG may be calculated using an indirect concentration measurement taking into account the measured concentration values of all other components i of the gas stream, using the following formula:

$$GHG\ conc\ [\%] = 100\ \% - \sum_i Conc_i[\%] \quad (\text{Equation 17})$$

Where:

- $conc_i$ is the concentration of gas component i .

B.6.2.3. CO₂ emissions from biomass

Where relevant, any CO₂ amount stemming from biomass which complies with the criteria given in Section B.3.3 of this Annex may be subtracted from the total measured CO₂ emissions, provided one of the following methods is used for the amount of biomass CO₂ emissions:

1. a calculation-based methodology, including methodologies using analyses and sampling based on ISO 13833 (Stationary source emissions – Determination of the ratio of biomass (biogenic) and fossil-derived carbon dioxide – Radiocarbon sampling and determination);
2. another method based on a relevant standard, including ISO 18466 (Stationary source emissions – Determination of the biogenic fraction in CO₂ in stack gas using the balance method);
3. another method allowed by an eligible monitoring, reporting and verification system.

B.6.2.4. Determining CO₂e emissions from N₂O

In the case of N₂O measurements, the total annual N₂O emissions from all emissions sources, measured in tonnes to three decimal places, shall be converted to annual CO₂e in rounded tonnes, using the following formula and the GWP values given in Annex VIII:

$$CO_2e\ [t] = N_2O_{annual}[t] \times GWP_{N_2O} \quad (\text{Equation 18})$$

Where:

- N_2O_{annual} is the total annual N₂O emissions, calculated in accordance with Section B.6.2.1 of this Annex.

B.6.2.5. Determination of flue gas flow

The flue gas flow may be determined by one of the following methods:

- calculation by means of a suitable mass balance, taking into account all significant parameters on the input side, including for CO₂ emissions at least input material loads, input airflow and process efficiency, and on the output side, including at least the product output and the concentration of oxygen (O₂), sulphur dioxide (SO₂) and nitrogen oxides (NO_x);
- determination by continuous flow measurement at a representative point.

B.6.2.6. Treatment of measurement gaps

Where the continuous measurement equipment for a parameter is out of control, out of range or out of operation for part of the hour or reference period, the related hourly average shall be calculated pro rata to the remaining data points for that specific hour or shorter reference period, provided that at least 80 % of the maximum number of data points for a parameter are available.

Where fewer than 80 % of the maximum number of data points for a parameter are available, the following methods shall be used.

- In the case of a parameter directly measured as concentration, a substitution value as the sum of an average concentration and twice the standard deviation associated with that average is used, applying the following equation:

$$C_{subst}^* = \bar{C} + 2 \sigma_c \quad (\text{Equation 19})$$

Where:

- $\bar{C}$ is the arithmetic mean of the concentration of the specific parameter over the whole reporting period or, where specific circumstances applied when data loss occurred, an appropriate period reflecting the specific circumstances; and
- σ_c is the best estimate of the standard deviation of the concentration of the specific parameter over the whole reporting or, where specific circumstances applied when data loss occurred, an appropriate period reflecting the specific circumstances.

Where the reporting period is not applicable for determining such substitution values due to significant technical changes at the installation, another sufficiently representative timeframe shall be chosen for determining the average and standard deviation, where possible with the duration of at least 6 months.

- In the case of a parameter other than concentration, substitute values shall be determined through a suitable mass balance model or an energy balance of the process. This model shall be validated by using the remaining measured parameters of the measurement-based methodology and data at regular working conditions, considering a time period of the same duration as the data gap.

B.6.3. Quality requirements

All measurements shall be carried out applying methods based on:

1. ISO 20181:2023 Stationary source emissions – Quality assurance of automated measuring systems
2. ISO 14164:1999 Stationary source emissions – Determination of the volume flowrate of gas streams in ducts – Automated method
3. ISO 14385-1:2014 Stationary source emissions – Greenhouse gases – Part 1: Calibration of automated measuring systems
4. ISO 14385-2:2014 Stationary source emissions – Greenhouse gases – Part 2: Ongoing quality control of automated measuring systems
5. other relevant ISO standards, in particular ISO 16911-2 (Stationary source emissions – Manual and automatic determination of velocity and volume flow rate in ducts).

Where no applicable published standards exist, suitable draft standards, industry best practice guidelines or other scientifically proven methodologies shall be used, limiting sampling and measurement bias.

All relevant aspects of the continuous measurement system shall be considered, including the location of the equipment, calibration, measurement, quality assurance and quality control.

Laboratories carrying out measurements, calibrations and relevant equipment assessments for continuous measurement systems shall be accredited in accordance with ISO/IEC 17025 for the relevant analytical methods or calibration activities. Where the laboratory does not have such accreditation, sufficient competence in line with Section B.5.4.3 of this Annex shall be ensured.

B.6.4. *Corroborating calculations*

CO₂ emissions determined by a measurement-based methodology shall be corroborated by calculating the annual emissions of each greenhouse gas in question for the same emission sources and source streams. For this purpose, the requirements laid down in Sections B.4 to B.6 of this Annex may be simplified as appropriate.

B.6.5. *Minimum requirements for continuous emissions measurements*

As a minimum requirement, an uncertainty 7,5 % of the GHG emissions of an emission source over the full reporting period shall be achieved. For minor emission sources, or under exceptional circumstances 10 % uncertainty may be allowed. It is a recommended improvement to achieve an uncertainty of 2,5 % at least for emission sources emitting more than 100 000 tonnes of fossil CO₂e per reporting period.

B.7. **Requirements for determining perfluorocarbon emissions**

Monitoring shall cover emissions of perfluorocarbons (PFCs) resulting from anode effects including fugitive emissions of perfluorocarbons. Emissions not related to anode effects shall be determined based on estimation methods in accordance with industry best practice, in particular guidelines provided by the International Aluminium Institute.

PFC emissions shall be calculated from the emissions measurable in a duct or stack ('point source emissions') as well as fugitive emissions using the collection efficiency of the duct:

$$PFC \text{ emissions (total)} = PFC \text{ emissions (duct)} / \text{collection efficiency} \quad (\text{Equation 20})$$

The collection efficiency shall be measured when the installation-specific emission factors are determined.

The emissions of CF₄ and C₂F₆ emitted through a duct or stack shall be calculated by using one of the following methods:

1. method A where the anode effect minutes per cell-day are recorded;
2. method B where the anode effect overvoltage is recorded.

B.7.1. *Calculation Method A – Slope Method*

The following equations for determining PFC emissions shall be used:

$$CF_4 \text{ emissions [t]} = AEM \times (SEF_{CF_4} / 1\,000) \times Pr_{Al} \quad (\text{Equation 21})$$

$$C_2F_6 \text{ emissions [t]} = CF_4 \text{ emissions} \times F_{C_2F_6} \quad (\text{Equation 22})$$

Where:

AEM is the anode effect minutes/cell-day;

SEF_{CF₄} is the slope emission factor expressed in [(kg CF₄/t Al produced)/(anode effect minutes/cell-day)]. Where different cell-types are used, different SEF may be applied as appropriate;

Pr_{Al} is the production of primary aluminium [t] during the reporting period; and

F_{C₂F₆} is the weight fraction of C₂F₆ [t C₂F₆/t CF₄].

The anode effect minutes per cell-day expresses the frequency of anode effects (number anode effects/cell-day) multiplied by the average duration of anode effects (anode effect minutes/occurrence):

$$AEM = frequency \times average\ duration \quad (\text{Equation 23})$$

Emission factor: The emission factor for CF₄ (slope emission factor, SEF_{CF4}) expresses the amount [kg] of CF₄ emitted per tonne of aluminium produced per anode effect minute per cell-day. The emission factor (weight fraction F_{C2F6}) of C₂F₆ expresses the amount [kg] of C₂F₆ emitted proportionate to the amount [kg] of CF₄ emitted.

Minimum requirement: Technology-specific emission factors from Table 2 of this Annex are used.

Recommended improvement: Installation-specific emission factors for CF₄ and C₂F₆ are established through continuous or intermittent field measurements. For the determination of those emission factors industry best practice shall be applied, in particular the most recent guidelines provided by the International Aluminium Institute. The emission factor shall also take into account emissions related to non-anode effects. Each emission factor shall be determined with a maximum uncertainty of $\pm 15\%$. The emission factors shall be determined at least every three years or earlier where necessary due to relevant changes at the installation. Relevant changes shall include a change in the distribution of anode effect duration, or a change in the control algorithm affecting the mix of the types of anode effects or the nature of the anode effect termination routine.

Table 2

Technology-specific emission factors related to activity data for the slope method

Technology	Emission factor for CF ₄ (SEF _{CF4}) [(kg CF ₄ /t Al)/(AE-Mins/ cell-day)]	Emission factor for C ₂ F ₆ (F _{C2F6}) [t C ₂ F ₆ / t CF ₄]
Legacy Point Feed Pre Bake (PFPB L)	0,122	0,097
Modern Point Feed Pre Bake (PFPB M)	0,104	0,057
Modern Point-Fed Prebake without fully automated anode effect intervention strategies for PFC emissions (PFPB MW)	– (*)	– (*)
Centre Worked Prebake (CWPB)	0,143	0,121
Side Worked Prebake (SWPB)	0,233	0,280
Vertical Stud Søderberg (VSS)	0,058	0,086
Horizontal Stud Søderberg (HSS)	0,165	0,077

(*) The installation has to determine the factor by own measurements. If this is technically not feasible or involves unreasonable costs, the values for CWPB methodology shall be used.

B.7.2. Calculation Method B – Overvoltage Method

For the overvoltage method, the following equations shall be used:

$$CF_4\ emissions\ [t] = OVC \times (AEO/CE) \times Pr_{Al} \times 0,001 \quad (\text{Equation 24})$$

$$C_2F_6\ emissions\ [t] = CF_4\ emissions \times F_{C2F6} \quad (\text{Equation 25})$$

Where:

OVC is the overvoltage coefficient ('emission factor') expressed in kg CF₄ per tonne of aluminium produced per mV overvoltage;

AEO is the anode effect overvoltage per cell [mV] determined as the integral of (time $\times$ voltage above the target voltage) divided by the time (duration) of data collection;

CE is the average current efficiency of aluminium production [%];

Pr_{Al} is the annual production of primary aluminium [t]; and

$F_{C_2F_6}$ is the weight fraction of C_2F_6 [t C_2F_6 /t CF_4].

the term AEO/CE (Anode effect overvoltage/current efficiency) expresses the time-integrated average anode effect overvoltage [mV overvoltage] per average current efficiency [%].

Minimum requirement: Technology-specific emission factors from Table 3 of this Annex shall be used.

Recommended improvement: Installation-specific emission factors are used for CF_4 [(kg CF_4 /t Al)/(mV)] and C_2F_6 [t C_2F_6 /t CF_4] established through continuous or intermittent field measurements. For the determination of those emission factors industry best practice shall be applied, in particular the most recent guidelines provided by the International Aluminium Institute. The emission factors shall be determined with a maximum uncertainty of ± 15 % each. The emission factors shall be determined at least every three years or earlier where necessary due to relevant changes at the installation. Relevant changes shall include a change in the distribution of anode effect duration, or a change in the control algorithm affecting the mix of the types of anode effects or the nature of the anode effect termination routine

Table 3

Technology-specific emission factors related to overvoltage activity data

Technology	Emission factor for CF_4 [(kg CF_4 /t Al)/mV]	Emission factor for C_2F_6 [t C_2F_6 /t CF_4]
Centre Worked Prebake (CWPB)	1,16	0,121
Side Worked Prebake (SWPB)	3,65	0,252

B.7.3. Determination of CO_2e emissions

CO_2e emissions shall be calculated from CF_4 and C_2F_6 emissions as follows, using the global warming potentials listed in Annex VIII.

$$PFC \text{ emissions [t } CO_2e] = CF_4 \text{ emissions [t]} \times GWP_{CF_4} + C_2F_6 \text{ emissions [t]} \times GWP_{C_2F_6} \quad (\text{Equation 26})$$

B.8. Requirements for CO_2 transfers between installations

B.8.1. CO_2 contained in gases ('inherent CO_2 ')

Inherent CO_2 that is transferred into an installation, including that contained in natural gas, a waste gas (including blast furnace or coke oven gas) or in process inputs (including synthesis gas), shall be included in the emission factor for that source stream.

Where inherent CO_2 is transferred out of the installation as part of a source stream to another installation, it shall not be counted as emissions of the installation where it originates. However, where inherent CO_2 is emitted (e.g. vented or flared) or transferred to entities that do not themselves monitor emissions for the purpose of this Regulation or an eligible monitoring, reporting and verification system, it shall be counted as emissions of the installation where it originates.

B.8.2. Eligibility to deduct stored or used CO_2

In the following cases CO_2 originating from fossil carbon and originating from combustion or processes leading to process emissions, or which is imported from other installations, including in the form of inherent CO_2 , may be accounted for as not emitted:

1. if the CO₂ is used within the installation or transferred out of the installation to any of the following:
 - (a) an installation for the purpose of CO₂ capture which monitors emissions for the purpose of this Regulation or an eligible monitoring, reporting and verification system;
 - (b) an installation or transport network with the purpose of long-term geological storage of CO₂ which monitors emissions for the purpose of this Regulation or an eligible monitoring, reporting and verification system;
 - (c) a storage site for the purpose of long-term geological storage which monitors emissions for the purpose of this Regulation or an eligible monitoring, reporting and verification system.
2. If the CO₂ is used within the installation or transferred out of the installation to an entity which monitors emissions for the purpose of this Regulation or an eligible monitoring, reporting and verification system, in order to produce products in which the carbon stemming from CO₂ is permanently chemically bound so that it does not enter the atmosphere under normal use, including any normal activity taking place after the end of the life of the product, as defined in the delegated act adopted pursuant to Article 12(3b) of Directive 2003/87/EC.

CO₂ transferred to another installation for the purposes given in points 1 and 2 may be accounted for as not emitted only to the extent evidence is provided across the whole chain of custody to the storage site or installation of CO₂ use and including any transport operators, of the fraction of CO₂ actually stored or used for the production of chemically stable products compared to the total amount of CO₂ transferred out of the originating installation.

If CO₂ is used within the same installation for the purposes in points 1 and 2, the monitoring methods given in Sections 21 to 23 of Annex IV to Implementing Regulation (EU) 2018/2066 shall be applied.

B.8.3. *Monitoring rules for CO₂ transfers*

The identity and contact data of a responsible person of the receiving installations or entities shall be clearly laid down in the monitoring methodology documentation. The amount of CO₂ considered not emitted shall be reported in the communication pursuant to Annex IV.

The identity and contact data of a responsible person of the installations or entities from which CO₂ was received shall be clearly laid down in the monitoring methodology documentation. The amount of CO₂ received shall be reported in the communication pursuant to Annex IV.

For the determination of the quantity of CO₂ transferred from one installation to another, a measurement-based methodology shall be used. For the amount of CO₂ permanently chemically bound in products, a calculation-based methodology shall be used, preferably using a mass balance. The chemical reactions applied, and all relevant stoichiometric factors shall be laid down in the monitoring methodology documentation.

B.9. **Sector-specific requirements**

B.9.1. *Additional rules for combustion units*

Combustion emissions shall cover all CO₂ emissions from the combustion of carbon-containing fuels, including wastes, independent of any other classification of such emissions or fuels. Where it is unclear if a material acts as fuel or as process input, e.g. for reducing metal ores, that material's emissions shall be monitored the same way as combustion emissions. All stationary combustion units shall be considered, including boilers, burners, turbines, heaters, furnaces, incinerators, calciners, kilns, ovens, dryers, engines, fuel cells, chemical looping combustion units, flares, thermal or catalytic post-combustion units.

Monitoring shall furthermore include CO₂ process emissions from flue gas scrubbing, in particular CO₂ from limestone or other carbonates for desulphurisation and similar scrubbing, and from urea used in de-NO_x units.

B.9.1.1. Desulphurisation and other acid gas scrubbing

Process CO₂ emissions from the use of carbonates for acid gas scrubbing from the flue gas stream shall be calculated on the basis of carbonate consumed (Method A). In the case of desulphurisation, calculation may be based alternatively on the quantity of gypsum produced (Method B). In the latter case, the emission factor shall be the stoichiometric ratio of dry gypsum (CaSO₄ × 2H₂O) to CO₂ emitted: 0,2558 t CO₂/t gypsum.

B.9.1.2. De-NO_x

If urea is used as reduction agent in a de-NO_x unit, process CO₂ emissions from its use shall be calculated using method A, applying an emission factor based on the stoichiometric ratio of 0,7328 t CO₂/t urea.

B.9.1.3. Monitoring of flares

When calculating emissions from flares, routine flaring as well as operational flaring (trips, start-up, and shutdown as well as emergency relieves) shall be covered. Inherent CO₂ in the flared gases is to be included.

If more accurate monitoring is technically not feasible or would lead to unreasonable costs, a reference emission factor of 0,00393 t CO₂/Nm³ shall be used, derived from the combustion of pure ethane used as a conservative proxy for flare gases.

It is a recommended improvement to determine installation-specific emission factors derived from an estimate of the molecular weight of the flare stream, using process modelling based on industry standard models. By considering the relative proportions and the molecular weights of each of the contributing streams, a weighted annual average figure shall be derived for the molecular weight of the flare gas.

For activity data, higher measurement uncertainty than for other fuels combusted is acceptable.

B.9.2. Additional rules for emissions from cement clinker production

B.9.2.1. Additional rules for Method A (input-based)

Where method A (kiln input-based) is used for determining process emissions, the following special rules shall apply:

- Where cement kiln dust (CKD) or bypass dust leave the kiln system, the related quantities of raw material shall not be considered as process input. Emissions from CKD shall be calculated separately in accordance with Section B.9.2.3 of this Annex.
- Either raw meal as a whole, or separate input materials may be characterised, avoiding double counting or omissions from returned or by-passed materials. Where activity data is determined based on the clinker produced, the net amount of raw meal may be determined by means of a site-specific empirical raw meal/clinker ratio. That ratio shall be updated at least once per year applying industry best practice guidelines.

B.9.2.2. Additional rules for Method B (output-based)

Where method B (clinker output-based) is used for determining process emissions, the following special rules shall apply:

Activity data shall be determined as the clinker production [t] over the reporting period in one of the following ways:

- by direct weighing of clinker;
- based on cement deliveries, by material balance taking into account dispatch of clinker, clinker supplies as well as clinker stock variation, using the following formula:

$$Cli_{prod} = (Cem_{deliv} - Cem_{sv}) \cdot CCR - Cli_s + Cli_d - Cli_{sv} \quad (\text{Equation 27})$$

Where:

- $Cl_{i_{prod}}$ is the amount of clinker produced expressed in tonnes;
 Cem_{deliv} is the amount of cement deliveries expressed in tonnes;
 Cem_{SV} are the cement stock variations expressed in tonnes;
 CCR is the clinker to cement ratio (tonnes clinker per tonne cement);
 Cl_{i_s} is the amount of clinker supplied expressed in tonnes;
 Cl_{i_d} is the amount of clinker dispatched expressed in tonnes; and
 $Cl_{i_{SV}}$ is the amount of clinker stock variations expressed in tonnes.

The clinker to cement ratio shall either be derived separately for each of the different cement products based on laboratory analyses in line with the provisions of Section B.5.4 or calculated as ratio from the difference of cement deliveries and stock changes and all materials used as additives to the cement including by-pass dust and cement kiln dust.

As minimum requirement to determine the emission factor, a standard value of 0,525 t CO₂/t clinker shall be applied.

B.9.2.3. Emissions related to discarded dust

CO₂ process emissions from bypass dust or cement kiln dust (CKD) leaving the kiln system, shall be added to the emissions, corrected for a partial calcination ratio of CKD.

Minimum requirement: An emission factor of 0,525 t CO₂/t dust shall be applied.

Recommended improvement: The emission factor (EF) is determined at least once annually in line with the provisions of Section B.5.4 of this Annex and using the following formula:

$$EF_{CKD} = \left(\frac{EF_{Cli}}{1 + EF_{Cli}} \cdot d \right) / \left(1 - \frac{EF_{Cli}}{1 + EF_{Cli}} \cdot d \right) \quad (\text{Equation 28})$$

Where:

- EF_{CKD} is the emission factor of partially calcined cement kiln dust [t CO₂/t CKD];
 EF_{Cli} is the installation-specific emission factor of clinker [t CO₂/t clinker]; and
 d is the degree of CKD calcination (released CO₂ as % of total carbonate CO₂ in the raw mix).

B.9.3. Additional rules for emissions from nitric acid production

B.9.3.1. General rules for N₂O measurement

N₂O emissions shall be determined using a measurement-based methodology. N₂O concentrations in the flue gas from each emission source shall be measured at a representative point, after the NO_x/N₂O abatement equipment, where abatement is used. Techniques capable of measuring N₂O concentrations of all emission sources during both abated and unabated conditions shall be applied. All measurements shall be adjusted to a dry gas basis where required and consistently reported.

B.9.3.2. Determination of flue gas flow

For monitoring flue gas flow, the mass balance method set out in Section B.6.2.5 of this Annex shall be used, unless it is technically not feasible. In that case, an alternative method may be used, including by another mass balance method based on significant parameters such as ammonia input load, or determination of flow by continuous emissions flow measurement.

The flue gas flow shall be calculated in accordance with the following formula:

$$V_{flue\ gas\ flow} [Nm^3/h] = V_{air} \times (1 - O_{2,air}) / (1 - O_{2,flue\ gas}) \quad (\text{Equation 29})$$

Where:

V_{air} is the total input air flow in Nm³/h at standard conditions;

$O_{2,air}$ is the volume fraction of O₂ in dry air (= 0,2095); and

$O_{2,flue\ gas}$ is the volume fraction of O₂ in the flue gas.

V_{air} shall be calculated as the sum of all air flows entering the nitric acid production unit, in particular primary and secondary input air, and seal input air, where applicable.

All measurements shall be adjusted to a dry gas basis and reported consistently.

B.9.3.3. Oxygen (O₂) concentrations

Where necessary for calculating the flue gas flow in accordance with Section B.9.3.2 of this Annex, the oxygen concentrations in the flue gas shall be measured, applying the requirements laid down in Section B.6.2.2 of this Annex. All measurements shall be adjusted to a dry gas basis and reported consistently.

C. HEAT FLOWS

C.1. Rules for determining net measurable heat

C.1.1. Principles

All specified amounts of measurable heat shall always refer to net amount of measurable heat, determined as the heat content (enthalpy) of the heat flow transmitted to the heat-consuming process or external user minus the heat content of the return flow.

Heat-consuming processes necessary for operating the heat production and distribution, such as deaerators, make-up water preparation, and regular blow offs, shall be taken into account in the efficiency of the heat system and shall be accounted for in the embedded emissions of goods.

Where the same heat medium is used by several consecutive processes and its heat is consumed starting from different temperature levels, the quantity of heat consumed by each heat-consuming process shall be determined separately, unless the processes are part of the overall production process of the same goods. Re-heating of the transfer medium between consecutive heat-consuming processes shall be treated like additional heat production.

Where heat is used to provide cooling via an absorption cooling process, that cooling process shall be considered as the heat-consuming process.

C.1.2. Methodology for determining net amounts of measurable heat

For the purpose of selecting data sources for quantification of energy flows in accordance with Section A.4 of this Annex, the following methods for determining net amounts of measurable heat shall be considered:

C.1.2.1. Method 1: Using measurements

Under this method, all relevant parameters shall be measured, in particular temperature, pressure, state of the transmitted as well as the returned heat medium. In the case of steam, the state of the medium shall refer to its saturation or degree of superheating. The (volumetric) flow rate of the heat transfer medium shall be measured. Based on the measured values, the enthalpy and the specific volume of the heat transfer medium shall be determined using suitable steam tables or engineering software.

The mass flow rate of the medium shall be calculated as

$$\dot{m} = \dot{V} / v \quad (\text{Equation 30})$$

Where:

- $\dot{m}$ is the mass flow rate in kg/s;
 $\dot{V}$ is the volumetric flow rate in m³/s; and
 v is the specific volume in m³/kg.

As the mass flow rate is considered the same for transmitted and returned medium, the heat flow rate shall be calculated using the difference in enthalpy between the transmitted flow and the return, as follows:

$$\dot{Q} = (h_{\text{flow}} - h_{\text{return}}) \cdot \dot{m} \quad (\text{Equation 31})$$

Where:

- $\dot{Q}$ is the heat flow rate in kJ/s;
 h_{flow} is the enthalpy of the transmitted flow in kJ/kg;
 h_{return} is the enthalpy of the return flow in kJ/kg; and
 $\dot{m}$ is the mass flow rate in kg/s.

In the case of steam or hot water used as heat transfer medium, where the condensate is not returned, or where it is not feasible to estimate the enthalpy of the returned condensate, h_{return} shall be determined based on a temperature of 90 °C.

If the mass flow rates are known to be not identical, the following shall apply:

- where evidence is available that condensate remains in the product (e.g. in 'life steam injection' processes), the respective amount of condensate enthalpy is not deducted;
- where heat transfer medium is known to be lost (e.g. due to leakages or sewerage), an estimate for the respective mass flow is deducted from the mass flow of the transmitted heat transfer medium.

For determining the annual net heat flow from the above data, one of the following methods shall be used, subject to the measurement equipment and data processing available:

- determine annual average values for the parameters determining the annual average enthalpy of the transmitted and returned heat medium, multiplied by the total annual mass flow, using Equation 31;
- determine hourly values of the heat flow and sum up those values over the annual total operating time of the heat system. Subject to the data processing system, hourly values may be substituted by other time intervals as appropriate.

C.1.2.2. Method 2: Calculation of a proxy based on measured efficiency

The amounts of net measurable heat shall be determined based on the fuel input and the measured efficiency related to the heat production:

$$Q = \eta_H \cdot E_{\text{in}} \quad (\text{Equation 32})$$

$$E_{\text{in}} = \sum_i AD_i \cdot NCV_i \quad (\text{Equation 33})$$

Where:

- Q is the amount of heat expressed in TJ;
 η_H is the measured efficiency of heat production;
 E_{in} is the energy input from fuels;

AD_i are the annual activity data (i.e. quantities consumed) of the fuels i ; and
 NCV_i are the net calorific values of the fuels i .

The value of η_H is either measured over a reasonably long period, which sufficiently takes into account different load states of the installation or taken from the manufacturer's documentation. In that regard the specific part load curve shall be taken into account by using an annual load factor, as follows:

$$L_F = \frac{E_{In}}{E_{Max}} \quad (\text{Equation 34})$$

Where:

L_F is the load factor;
 E_{In} the energy input as determined using Equation 33 over the reporting period; and
 E_{Max} the maximum fuel input if the heat producing unit had been running at 100 % nominal load for the full calendar year.

The efficiency shall be based on a situation in which all condensate is returned. A temperature of 90 °C shall be assumed for the returned condensate.

C.1.2.3. Method 3: Calculating a proxy based on the reference efficiency

This method is identical to method 3, but using a reference efficiency of 70 % ($\eta_{Ref,H} = 0,7$) in Equation 32.

C.1.3. *Special rules*

Where an installation *consumes* measurable heat produced from exothermic chemical processes other than combustion, such as in ammonia or nitric acid production, that amount of heat consumed shall be determined separately from other measurable heat and that heat consumption shall be assigned zero CO_{2e} emissions.

Where measurable heat is recovered from non-measurable heat generated from fuels and used in production processes after that use, e.g. from exhaust gases, for avoiding double counting, the relevant amount of net measurable heat divided by a reference efficiency of 90 % is subtracted from the fuel input.

C.2. **Determining the fuel mix emission factor of measurable heat**

Where a production process consumes measurable heat produced within the installation, the heat-related emissions shall be determined using one of the following methods.

C.2.1. *Emission factor of measurable heat produced in the installation other than by cogeneration*

For measurable heat produced from the combustion of fuels within the installation except heat produced by cogeneration, the emission factor of the relevant fuel mix shall be determined and the emissions attributable to the production process shall be calculated as:

$$Em_{Heat} = EF_{mix} \cdot Q_{consumed} / \eta \quad (\text{Equation 35})$$

Where:

Em_{Heat} is the heat-related emissions of the production process in t CO₂;
 EF_{mix} is the emission factor of the respective fuel mix expressed in t CO₂/TJ including emissions from flue gas cleaning, where applicable;
 $Q_{consumed}$ is the amount of measurable heat consumed in the production process expressed in TJ; and
 η is the efficiency of the heat production process.
 EF_{mix} shall be calculated as:

$$EF_{mix} = (\sum AD_i \cdot NCV_i \cdot EF_i + Em_{FGC}) / (\sum AD_i \cdot NCV_i) \quad (\text{Equation 36})$$

Where:

- AD_i are the annual activity data (i.e. quantities consumed) of the fuels i used for the measurable heat production expressed in tonnes or Nm^3 ;
- NCV_i are the net calorific values of the fuels i expressed in TJ/t or TJ/ Nm^3 ;
- EF_i are the emission factors of the fuels i expressed in t CO_2 /TJ; and
- Em_{FGC} are the process emissions from flue gas cleaning expressed in t CO_2 .

Where a waste gas is part of the fuel mix used, and where the emission factor of the waste gas is higher than the standard emission factor of natural gas given in Table 1 of Annex VIII, that standard emission factor shall be used to calculate EF_{mix} instead of the emission factor of the waste gas.

C.2.2. Emission factor of measurable heat produced in the installation by cogeneration

Where measurable heat and electricity are produced by cogeneration (i.e. by combined heat and power (CHP)), the relevant emissions attributed to measurable heat and electricity shall be determined as required by this section. The rules regarding electricity shall also apply to the production of mechanical energy, if relevant.

The emissions of a cogeneration unit shall be determined as follows:

$$Em_{CHP} = \sum_i AD_i \cdot NCV_i \cdot EF_i + Em_{FGC} \quad (\text{Equation 37})$$

Where:

- Em_{CHP} are the emissions of the cogeneration unit during the reporting period expressed in t CO_2 ;
- AD_i are the annual activity data (i.e. quantities consumed) of the fuels i used for the CHP unit expressed in tonnes or Nm^3 ;
- NCV_i are the net calorific values of the fuels i expressed in TJ/t or TJ/ Nm^3 ;
- EF_i are the emission factors of the fuels i expressed in t CO_2 /TJ; and
- Em_{FGC} are the process emissions from flue gas cleaning expressed in t CO_2 .

The energy input to the CHP unit shall be calculated in accordance with Equation 33. The respective average efficiencies over the reporting period of heat production and electricity (or mechanical energy, if applicable) production shall be calculated as follows:

$$\eta_{heat} = \frac{Q_{net}}{E_{In}} \quad (\text{Equation 38})$$

$$\eta_{el} = \frac{E_{EL}}{E_{In}} \quad (\text{Equation 39})$$

Where:

- η_{heat} is the average efficiency of heat production during the reporting period (dimensionless);
- Q_{net} is the net amount of heat produced during the reporting period by the cogeneration unit expressed in TJ as determined in accordance with Section C.1.2;
- E_{In} is the energy input as determined using Equation 33 expressed in TJ;
- η_{el} is the average efficiency of electricity production during the reporting period (dimensionless); and
- E_{el} is the net electricity production of the cogeneration unit during the reporting period, expressed in TJ.

Where the determination of the efficiencies η_{heat} and η_{el} is technically not feasible or would incur unreasonable costs, values based on technical documentation (design values) of the installation shall be used. If no such values are available, conservative standard values of $\eta_{heat} = 0,55$ and $\eta_{el} = 0,25$ shall be used.

The attribution factors for heat and electricity from CHP shall be calculated as follows:

$$F_{CHP,heat} = \frac{\frac{\eta_{heat}}{\eta_{ref,heat}}}{\frac{\eta_{heat}}{\eta_{ref,heat}} + \frac{\eta_{el}}{\eta_{ref,el}}} \quad (\text{Equation 40})$$

$$F_{CHP,el} = \frac{\frac{\eta_{el}}{\eta_{ref,el}}}{\frac{\eta_{heat}}{\eta_{ref,heat}} + \frac{\eta_{el}}{\eta_{ref,el}}} \quad (\text{Equation 41})$$

Where:

- $F_{CHP,Heat}$ is the attribution factor for heat (dimensionless);
 $F_{CHP,El}$ is the attribution factor for electricity (or mechanical energy, if applicable) (dimensionless);
 $\eta_{ref, heat}$ is the reference efficiency for heat production in a stand-alone boiler (dimensionless); and
 $\eta_{ref,el}$ is the reference efficiency of electricity production without cogeneration (dimensionless).

The appropriate fuel-specific reference efficiencies are given in Annex IX.

The specific emission factor of the CHP-related measurable heat to be used for the attribution of heat-related emissions to production processes shall be calculated as

$$EF_{CHP,Heat} = Em_{CHP} \cdot F_{CHP,Heat} / Q_{net} \quad (\text{Equation 42})$$

Where:

- $EF_{CHP, heat}$ is the emission factor for the production of measurable heat in the cogeneration unit expressed in t CO₂/TJ;
and
 Q_{net} is the net heat produced by the cogeneration unit expressed in TJ.

The specific emission factor of the CHP-related electricity to be used for the attribution of indirect emissions to production processes shall be calculated as:

$$EF_{CHP,El} = Em_{CHP} \cdot F_{CHP,El} / E_{El,prod} \quad (\text{Equation 43})$$

Where:

- $E_{El,prod}$ is the electricity produced by the CHP unit.

Where a waste gas is part of the fuel mix used, and where the emission factor of the waste gas is higher than the standard emission factor of natural gas given in Table 1 of Annex VIII, that standard emission factor is used to calculate EF_{mix} instead of the emission factor of the waste gas.

C.2.3. Emission factor of measurable heat produced outside the installation

Where a production process consumes measurable heat produced outside the installation, the heat-related emissions shall be determined using one of the following methods.

1. Where the installation producing the measurable heat is subject to an eligible monitoring, reporting and verification system, or where the operator of the installation consuming the measurable heat ensures by the means of relevant provisions of the heat delivery contract that the installation producing the heat carries out emission monitoring in line with this Annex, the emission factor of measurable heat shall be determined using relevant equations of Section C.2.1 or C.2.2, based on emission data provided by the operator of the installation producing the measurable heat.
2. Where the method pursuant to point 1 is not available, a standard value is used, based on the standard emission factor of the fuel most commonly used in the industrial sector of the country, assuming a boiler efficiency of 90 %.

D. ELECTRICITY

D.1. Calculation of the emissions related to electricity

The emissions relating to electricity production or consumption for the purpose of calculating embedded emissions in accordance with section F.1 shall be calculated using the following equation:

$$Em_{el} = E_{el} \cdot EF_{el} \quad (\text{Equation 44})$$

Where:

Em_{el} are the emissions related to electricity produced or consumed, expressed in t CO₂;

E_{el} is the electricity produced or consumed expressed in MWh or TJ; and

EF_{el} is the emission factor for electricity applied, expressed in t CO₂/MWh or t CO₂/TJ.

D.2. Rules for determining the emission factor of electricity as imported goods

For determining the specific actual embedded emissions of electricity as imported goods, only direct emissions shall be applicable in accordance with Section 2 of Annex IV to Regulation (EU) 2023/956.

The emission factor for calculating the specific actual embedded emissions of electricity shall be established as follows:

- (a) the specific default value for a third country, group of third countries or region within a third country, as the relevant CO₂ emission factor as set out in point D.2.1 of this Annex shall be used;
- (b) where no specific default value is available pursuant to point (a), the CO₂ emission factor in the EU as set out in point D.2.2 of this Annex shall be used;
- (c) where a reporting declarant submits sufficient evidence based on official and public information to demonstrate that the CO₂ emission factor in the third country, group of third countries or region within a third country from where electricity is imported is lower than the values in accordance with points (a) and (b), and where the conditions provided in point D.2.3 of this Annex are fulfilled, the claimed lower values shall be determined on the basis of the available and reliable data provided;
- (d) a reporting declarant may apply actual embedded emissions instead of default values for the calculation of embedded emissions of the imported electricity, if the cumulative criteria (a) to (d) provided in Section 5 of Annex IV to Regulation (EU) 2023/956 are met, and the calculation is based on data determined according to this Annex by the producer of the electricity, calculated using Section D.2.3 of this Annex.

D.2.1. CO₂ emission factor based on specific default values

In accordance with Section 4.2.1 of Annex IV to Regulation (EU) 2023/956, CO₂ emission factors in the third country, group of third countries or region within a third country, shall be used, based on the best data available to the Commission. For the purpose of this Regulation, these CO₂ emission factors shall be based on data from the International Energy Agency (IEA) and shall be provided by the Commission in the CBAM Transitional Registry.

D.2.2. CO₂ emission factor of the EU

Pursuant to Section 4.2.2 of Annex IV to Regulation (EU) 2023/956, the CO₂ emission factor for the Union shall apply. For the purpose of this Regulation, the CO₂ emission factor for the Union shall be based on data from the International Energy Agency (IEA) and shall be provided by the Commission in the CBAM Transitional Registry.

D.2.3. CO₂ emission factor based on reliable data demonstrated by the reporting declarant

For the purpose of point (c) of Section D.2 of this Annex, the reporting declarant shall provide the datasets from alternative official sources, including national statistics for the five-years period ending two years before the reporting.

In order to reflect the impact of decarbonisation policies, such as the increase in renewable energy production, as well as climatic conditions, such as particularly cold years, on the yearly electricity supply in the countries concerned, the reporting declarant shall calculate the CO₂ emission factor on the basis of the weighted average of the CO₂ emission factor for the five-years period ending two years before the reporting.

For this purpose, the reporting declarant shall calculate the yearly CO₂ emission factors per fossil fuel technology and its respective gross electricity generation in the third country capable of exporting electricity to the EU, based on the following equation:

$$Em_{el,y} = \frac{\sum_i EF_i \times E_{el,i,y}}{E_{el,y}} \quad (\text{Equation 45})$$

Where:

- $Em_{el,y}$ is the yearly CO₂ emission factor for all fossil fuel technologies in the given year in the third country capable of exporting electricity to the EU;
- $E_{el,y}$ is the total gross electricity generation from all fossil fuel technologies in that year; EF_i is the CO₂ emission factor for each fossil fuel technology 'i'; and
- $E_{el,i,y}$ is the yearly gross electricity generation for each fossil fuel technology 'i'.

The reporting declarant shall calculate the CO₂ emission factor as a moving average of those years starting with the current year minus two, based on the following equation:

$$Em_{el} = \frac{\sum_{y-6}^{y-2} Em_{el,i}}{5} \quad (\text{Equation 46})$$

Where:

- Em_{el} is the CO₂ emission factor resulting from the moving average of the CO₂ emission factors of the 5 previous years, starting from the current year, minus two years, until the current year, minus 6 years;
- $Em_{el,i}$ is the CO₂ emission factor for each year 'i';
- i is the variable index for the years to consider; and
- y is the current year.

D.2.4. CO₂ emission factor based on actual CO₂ emissions of the installation

Pursuant to Section 5 of Annex IV to Regulation (EU) 2023/956, a reporting declarant may apply actual embedded emissions instead of default values for the calculation of embedded emissions of the imported electricity if the cumulative criteria (a) to (d) provided in that section are met.

D.3. Rules for determining electricity quantities used for the production of goods other than electricity

For the purpose of determining embedded emissions, metering of electricity quantities shall apply to real power, not apparent power (complex power). Only the active power component shall be metered, and the reactive power shall be disregarded.

For the production of electricity, the activity level shall refer to net electricity leaving the system boundaries of the power plant or cogeneration unit, after subtraction of internally consumed electricity.

D.4. Rules for determining the embedded indirect emissions of electricity as an input for the production of goods other than electricity

During the transitional period, emission factors for electricity shall be determined based on either:

- (a) the average emission factor of the country of origin electricity grid, based on data from the International Energy Agency (IEA) provided by the Commission in the CBAM Transitional Registry; or

- (b) any other emission factor of the country of origin electricity grid based on publicly available data representing either the average emission factor or the CO₂ emission factor as referred to in Section 4.3 of Annex IV to Regulation (EU) 2023/956.

By derogation from the points (a) and (b), actual emission factors for electricity may be used for the cases specified in Sections D.4.1 to D.4.3.

D.4.1. *Emission factor of electricity produced in the installation other than by cogeneration*

For electricity produced from the combustion of fuels within the installation except electricity produced by cogeneration, the emission factor of electricity EF_{El} shall be determined based on the relevant fuel mix and the emissions attributable to the electricity production shall be calculated as:

$$EF_{El} = (\sum AD_i \cdot NCV_i \cdot EF_i + Em_{FGC}) / El_{prod} \quad (\text{Equation 47})$$

Where:

- AD_i are the annual activity data (i.e. quantities consumed) of the fuels i used for the electricity production expressed in tonnes or Nm³;
- NCV_i are the net calorific values of the fuels i expressed in TJ/t or TJ/Nm³;
- EF_i is the emission factors of the fuels i expressed in t CO₂/TJ;
- Em_{FGC} are the process emissions from flue gas cleaning expressed in t CO₂; and
- El_{prod} is the net amount of electricity produced expressed in MWh. It may include quantities of electricity produced from sources other than combustion of fuels.

Where a waste gas is part of the fuel mix used, and where the emission factor of the waste gas is higher than the standard emission factor of natural gas given in Table 1 of Annex VIII, that standard emission factor shall be used to calculate EF_{El} instead of the emission factor of the waste gas.

D.4.2. *Emission factor of electricity produced in the installation by cogeneration*

The emission factor of electricity production from by cogeneration shall be determined according to Section C.2.2 of this Annex.

D.4.3. *Emission factor of electricity produced outside the installation*

1. Where electricity is received from a source with a direct technical link, and where all the relevant data is available, the emission factor of that electricity shall be determined applying sections D.4.1 or D.4.2 as appropriate.
2. Where the electricity is received from an electricity producer under a power purchase agreement, the emission factor for electricity determined in accordance with sections D.4.1 or D.4.2 may be used, as appropriate, where communicated by the electricity producer to the operator and made available pursuant to Annex IV.

E. MONITORING OF PRECURSORS

Where the description of production routes for the production processes defined for the installation indicates relevant precursors, the quantity of each precursor consumed within the installation's production processes shall be determined in order to calculate the total embedded emissions of the complex goods produced in accordance with Section G of this Annex.

By way of derogation from the previous paragraph, where the production and use of a precursor are covered by the same production process, only the quantity of additional precursor used and obtained from other installations or from other production processes shall be determined.

The quantity used and emission properties shall be determined separately for each installation from which the precursor is sourced. The methods used for determining the required data shall be laid down in the monitoring methodology documentation of the installation, applying the following provisions:

1. Where the precursor is produced within the installation, but in a different production process as assigned by applying the rules of Section A.4 of this Annex, data sets to be determined shall include:
 - (a) specific embedded direct and indirect emissions of the precursor as average over the reporting period, expressed in tonnes CO₂e per tonne of precursor;
 - (b) quantity of the precursor consumed in each production process of the installation for which it is a relevant precursor.
2. Where the precursor is obtained from another installation, data sets to be determined shall include:
 - (a) the country of origin of the imported goods;
 - (b) the installation where it was produced, identified by
 - the unique installation identifier, if available,
 - the applicable United Nations Code for Trade and Transport Location (UN/LOCODE) of the location,
 - an exact address and its English transcript, and
 - the geographical coordinates of the installation;
 - (c) the production route used as defined in Section 3 of Annex II;
 - (d) the values of applicable specific parameters required for determining the embedded emissions, as listed in Section 2 of Annex IV;
 - (e) specific embedded direct and indirect emissions of the precursor as average over the most recent available reporting period, expressed in tonnes CO_{2(e)} CO₂e per tonne of precursor;
 - (f) the start and end date of the reporting period used by the installation from which the precursor was obtained;
 - (g) the information on the carbon price due for the precursor, if relevant.

The installation producing the precursor shall provide the relevant information, preferably by means of the electronic template mentioned in Article 3(5) and Annex IV.

3. For each quantity of precursor for which incomplete or inconclusive data under point (2) was received, the applicable default values made available and published by the Commission for the transitional period may be used under the conditions specified in Article 4(3) of this Regulation.

F. RULES FOR ATTRIBUTING EMISSIONS OF AN INSTALLATION TO GOODS

F.1. Calculation methods

For the purpose of assigning the installation's emissions to goods, the emissions, inputs, and outputs shall be attributed to production processes defined in accordance with Section A.4 of this Annex using Equation 48 for direct emissions and Equation 49 for indirect emissions, using total figures over the whole reporting period for the parameters given in the equation. The attributed direct and indirect emissions shall then be converted into specific embedded direct and indirect emissions of the goods resulting from the production process using Equations 50 and 51.

$$AttrEm_{Dir} = DirEm^* + Em_{H,imp} - Em_{H,exp} + WG_{corr,imp} - WG_{corr,exp} - Em_{el,prod} \quad (\text{Equation 48})$$

Where $AttrEm_{Dir}$ is calculated to have a negative value, it shall be set to zero.

$$AttrEm_{indir} = Em_{el,cons} \quad (\text{Equation 49})$$

$$SEE_{g,Dir} = \frac{AttrEm_{g,Dir}}{ALg} \quad (\text{Equation 50})$$

$$SEE_{g,Indir} = \frac{AttrEm_{g,Indir}}{ALg} \quad (\text{Equation 51})$$

Where:

- $AttrEm_{Dir}$ are the attributed direct emission of the production process over the whole reporting period, expressed in t CO₂e;
- $AttrEm_{Indir}$ are the attributed indirect emission of the production process over the whole reporting period, expressed in t CO₂e;
- $DirEm^*$ are the directly attributable emissions from the production process, determined for the reporting period using the rules provided in Section B of this Annex, and the following rules:

Measurable heat: Where fuels are consumed for the production of measurable heat which is consumed outside the production process under consideration, or which is used in more than one production process (which includes situations with imports from and exports to other installations), the fuels' emissions are not included in the directly attributable emissions of the production process, but added under the parameter $Em_{H,import}$ in order to avoid double counting.

Waste gases:

The emissions caused by waste gases produced and fully consumed within the same production process are included in $DirEm^*$.

The emissions from the combustion of waste gases exported from the production process are fully included in $DirEm^*$ irrespective of where they are consumed. However, for exports of waste gases the term $WG_{corr,export}$ shall be calculated.

Emissions from the combustion of waste gases imported from other production processes are not taken into account in $DirEm^*$. Instead the term $WG_{corr,import}$ shall be calculated;

- $Em_{H,imp}$ are the emissions equivalent to the quantity of measurable heat imported to the production process, determined for the reporting period using the rules provided in Section C of this Annex, and the following rules:

Emissions related to measurable heat imported to the production process include imports from other installations, other production processes within the same installation, as well as heat received from a technical unit (e.g. a central power house at the installation, or a more complex steam network with several heat producing units) that supplies heat to more than one production process.

Emissions from measurable heat shall be calculated using the following formula:

$$Em_{H,imp} = Q_{imp} \cdot EF_{heat} \quad (\text{Equation 52})$$

Where:

- EF_{heat} is the emission factor for the production of measurable heat determined in accordance with Section C.2 of this Annex, expressed in t CO₂/TJ; and
- Q_{imp} is the net heat imported to and consumed in the production process expressed in TJ;

- $Em_{H,exp}$ are the emissions equivalent to the quantity of measurable heat exported from the production process, determined for the reporting period using the rules provided in Section C of this Annex. For the exported heat either the emissions of the actually known fuel mix in accordance with Section C.2 shall be used, or – if the actual fuel mix is unknown – the standard emission factor of fuel most commonly used in the country and industrial sector, assuming a boiler efficiency of 90 %.

Heat recovered from electricity-driven processes and from nitric acid production shall not be accounted;

$WG_{corr,imp}$ are the attributed direct emissions of a production process consuming waste gases imported from other production processes, corrected for the reporting period using the following formula:

$$WG_{corr,imp} = V_{WG} \cdot NCV_{WG} \cdot EF_{NG} \quad (\text{Equation 53})$$

Where:

V_{WG} is the volume of the waste gas imported;

NCV_{WG} is the net calorific value of the waste gas imported; and

EF_{NG} is the standard emission factor of natural gas as given in Annex VIII;

$WG_{corr,exp}$ are the emissions equivalent to the quantity of waste gases exported from the production process, determined for the reporting period using the rules provided in Section B of this Annex, and the following formula:

$$WG_{corr,exp} = V_{WG,exp} \cdot NCV_{WG} \cdot EF_{NG} \cdot Corr_{\eta} \quad (\text{Equation 54})$$

Where:

$V_{WG,exp}$ is the volume of waste gas exported from the production process;

NCV_{WG} is the net calorific value of the waste gas;

EF_{NG} is the standard emission factor of natural gas as given in Annex VIII; and

$Corr_{\eta}$ is the factor that accounts for the difference in efficiencies between the use of waste gas and the use of the reference fuel natural gas. The standard value is $Corr_{\eta} = 0,667$;

$Em_{el,prod}$ are the emissions equivalent to the quantity of electricity produced within the boundaries of the production process, determined for the reporting period using the rules provided in Section D of this Annex;

$Em_{el,cons}$ are the emissions equivalent to the quantity of electricity consumed within the boundaries of the production process, determined for the reporting period using the rules provided in Section D of this Annex;

$SEE_{g,Dir}$ are the specific direct embedded emissions of goods g expressed in t CO₂e per tonne, valid for the reporting period;

$SEE_{g,Indir}$ are the specific indirect embedded emissions of goods g expressed in t CO₂e per tonne, valid for the reporting period;

AL_g is the activity level of the goods g , i.e. the amount of the goods g produced in the reporting period in that installation, determined in accordance with Section F.2 of this Annex, expressed in tonnes.

F.2. Monitoring methodology for activity levels

The activity level of a production process shall be calculated as the total mass of all goods leaving the production process during the reporting period for the goods listed in Annex I of Regulation (EU) 2023/956 by the aggregated goods category according to Section 2 of Annex II to which the production process relates. Where production processes are defined such that also the production of precursors is included, double counting shall be avoided by counting only the final products leaving the system boundaries of the production process. Any special provisions laid down for the production process or production route in Section 3 of Annex II shall be taken into account. Where several production routes are used at the same installation for producing goods falling under the same CN code, and where those production routes are assigned separate production processes, the embedded emissions of the goods shall be calculated separately for each production route.

Only goods which can be sold or directly used as precursor in another production process shall be taken into account. Off-spec products, by-products, waste, and scrap produced in a production process, irrespective of whether they are returned to production processes, delivered to other installations, or disposed of, shall not be included in the determination of the activity level. They shall therefore be assigned zero embedded emissions when entering another production process.

For determining activity levels, the metering requirements laid down in Section B.4 of this Annex apply.

F.3. Monitoring methods required for attributing emissions to production processes

F.3.1. Principles for attributing data to production processes

1. The methods chosen for attributing data sets to production processes shall be laid down in the monitoring methodology documentation. They shall be regularly reviewed in order to improve the data quality, where possible, in line with Section A of this Annex.
2. Where data for a specific data set are not available for each production process, an appropriate method for determining the required data for each individual production process shall be chosen. For this purpose, either of the following principles shall be applied depending on which principle yields more accurate results:
 - (a) where different goods are produced one after the other in the same production line, inputs, outputs, and corresponding emissions shall be attributed sequentially based on the usage time per year for each production process;
 - (b) inputs, outputs, and corresponding emissions shall be attributed based on the mass or volume of individual goods produced or estimates based on the ratio of free reaction enthalpies of the chemical reactions involved or based on another suitable distribution key that is corroborated by a sound scientific methodology.
3. Where several measuring instruments of different quality are contributing to measurement results, either of the following methods may be used for splitting installation-level data on quantities of materials, fuels, measurable heat, or electricity to production processes:
 - (a) Determination of the split based on a determination method, such as sub-metering, estimate, correlation, used equally for each production process. Where the sum of the production process data is different from the data determined separately for the installation, a uniform 'reconciliation factor' is applied for uniform correction to meet the total figure of the installation as follows:

$$RecF = D_{Inst} / \sum D_{PP} \quad (\text{Equation 55})$$

Where:

- $RecF$ is the reconciliation factor;
- D_{Inst} is the data value determined for the installation as a whole; and
- D_{PP} are the data values for the different production processes.

The data for each production process are then corrected as follows, with $D_{PP,corr}$ being the corrected value of D_{PP} :

$$D_{PP,corr} = D_{PP} \times RecF \quad (\text{Equation 56})$$

- (b) If only one production process's data are unknown or of lower quality than the data of other production processes, known production process data may be subtracted from the total installation data. This method is preferred only for production processes which contribute smaller quantities to the installation's allocation.

F.3.2. Procedure for tracking CN codes of goods and precursors

For the purpose of correct attribution of data to production processes, the installation shall maintain a list of all goods and precursors produced at the installation as well as of precursors obtained from outside the installation, and their applicable CN codes. Based on this list:

1. products and their annual production figures shall be attributed to production processes in accordance with the aggregated goods categories provided in Section 2 of Annex II;
2. this information shall be taken into account for attributing inputs, outputs, and emissions separately to production processes.

To this end a procedure shall be established, documented, implemented, and maintained for regular checking whether the goods and precursors produced in the installation correspond to the CN codes applied when setting up the monitoring methodology documentation. This procedure shall furthermore contain provisions to identify if the installation produces new goods and to ensure that the applicable CN code for the new product is determined and added it to the list of goods for attributing related inputs, outputs, and emissions to the appropriate production process.

F.4. Further rules for the attribution of direct emissions

1. Emissions of source streams or emission sources serving only one production process shall be attributed to that production process in full. Where a mass balance is used, outgoing source streams shall be subtracted in accordance with Section B.3.2 of this Annex. For avoiding double counting, source streams which are converted into waste gases, with the exception of waste gases produced and fully consumed within the same production process, shall be attributed using Equations 53 and 54. The necessary monitoring of the NCV and volume of the respective waste gas shall be done by applying the rules given in Sections B.4 and B.5 of this Annex.
2. Only where source streams or emission sources serve more than one production process, the following methods for attribution of direct emissions shall apply:
 - (a) Emissions from source streams or emission sources used for the production of measurable heat shall be attributed to production processes in accordance with Section F.5 of this Annex.
 - (b) Where waste gases are not used within the same production process in which they are produced, the emissions stemming from waste gases shall be attributed in accordance with rules and equations given in Section F.1 of this Annex.
 - (c) Where the amounts of source streams attributable to production processes are determined by metering before the use in the production process, the appropriate methodology shall be applied in accordance with Section F.3.1 of this Annex.
 - (d) Where emissions from source streams or emission sources cannot be attributed in accordance with other methods, they shall be attributed using correlated parameters, which have already been attributed to production processes in accordance with Section F.3.1 of this Annex. For that purpose, source stream amounts and their respective emissions shall be attributed proportionally to the ratio in which those parameters are attributed to production processes. Appropriate parameters include the mass of goods produced, mass or volume of fuel or material consumed, amount of non-measurable heat produced, operating hours, or known equipment efficiencies.

F.5. Further rules for the attribution of emissions from measurable heat

The general calculation principles given in Section F.1 of this Annex shall apply. The relevant heat flows shall be determined in line with Section C.1 of this Annex and the emission factor of measurable heat by applying Section C.2 of this Annex.

Where losses of measurable heat are determined separately from the amounts used in production processes, emissions related to these heat losses shall be added proportionally to the emissions of all production processes in which measurable heat produced in the installation is used, in order to ensure that 100 % of the quantity of net measurable heat produced within the installation, or imported or exported by the installation, as well as quantities transferred between production processes, shall be attributed to production processes without any omission or double counting.

G. CALCULATION OF SPECIFIC EMBEDDED EMISSIONS OF COMPLEX GOODS

In accordance with Annex IV to Regulation (EU) 2023/956, the specific embedded emissions SEE_g of complex goods g shall be calculated as follows:

$$SEE_g = \frac{AttrEmg + EE_{InpMat}}{AL_g} \quad (\text{Equation 57})$$

$$EE_{InpMat} = \sum_{i=1}^n M_i \cdot SEE_i \quad (\text{Equation 58})$$

Where:

SEE_g	are the specific direct or indirect embedded emissions of (complex) goods g expressed in t CO ₂ e per tonne of goods g ;
$AttrEm_g$	are the attributed direct or indirect emissions of the production process yielding goods g determined in accordance with Section F.1 of this Annex for the reporting period, expressed in t CO ₂ e;
AL_g	is the activity level of the production process yielding goods g determined in accordance with Section F.2 of this Annex for the reporting period, expressed in tonnes;
EE_{InpMat}	are the embedded direct or indirect emissions of all precursors consumed during the reporting period which are defined as relevant for the production process of goods g in Section 3 of Annex II, expressed in t CO ₂ e;
M_i	is the mass of precursor i used in the production process yielding g during the reporting period, expressed in tonnes of precursor i ; and
SEE_i	are the specific direct or indirect embedded emissions of precursor i expressed in t CO ₂ e per tonne of precursor i .

In this calculation, only precursors not covered by the same production process as goods g are taken into account. Where the same precursor is obtained from different installations, the precursor from each installation shall be treated separately.

Where a precursor i itself has precursors, those precursors are first taken into account using the same calculation method in order to calculate the embedded emissions of the precursor i before they are used for calculating the embedded emissions of goods g . This method is used recursively to all precursors which are complex goods.

The parameter M_i refers to the total mass of precursor required to produce the amount AL_g . It also includes quantities of the precursor which do not end up in the complex goods but may be spilt, cut off, combusted, chemically modified, etc. in the production process and leave the process as by-products, scrap, residues, wastes, or emissions.

In order to provide data which can be used independently of activity levels, the specific mass consumption m_i for each precursor i shall be determined and included in the communication pursuant to Annex IV:

$$m_i = M_i / AL_g \quad (\text{Equation 59})$$

Thereby the specific embedded emissions of complex goods g may be expressed as:

$$SEE_g = ae_g + \sum_{i=1}^n (m_i \cdot SEE_i) \quad (\text{Equation 60})$$

Where:

ae_g	are the specific attributed direct or indirect emissions of the production process yielding goods g , expressed in t CO ₂ e per tonne of g , being equivalent to specific embedded emissions without precursors' embedded emissions:
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$$ae_g = AttrEm_g / AL_g \quad (\text{Equation 61})$$

m_i	is the specific mass consumption of precursor i used in the production process yielding one tonne of goods g , expressed in tonnes of precursor i per tonne of goods g (i.e. dimensionless); and
SEE_i	are the specific direct or indirect embedded emissions of precursor i expressed in t CO ₂ e per tonne of precursor i .

H. OPTIONAL MEASURES TO INCREASE QUALITY OF DATA

1. Sources of risks of errors are identified in the data flow from primary data to final data in the communication pursuant to Annex IV. An effective control system is established, documented, implemented, and maintained to ensure that the communications resulting from data flow activities do not contain misstatements and are in conformity with the monitoring methodology documentation and in compliance with this Annex.

The risk assessment pursuant to the first subparagraph is made available to the Commission and the competent authority upon request. If the operator chooses to use verification in line with recommended improvements, the operator also makes it available for the purposes of verification.

2. For the purpose of the risk assessment, written procedures are established, documented, implemented, and maintained for data flow activities as well as for control activities, and references to those procedures are included in the monitoring methodology documentation.
3. Control activities referred to in paragraph 2 shall include, where applicable:
 - (a) quality assurance of the relevant measurement equipment;
 - (b) quality assurance of information technology systems ensuring that the relevant systems are designed, documented, tested, implemented, controlled and maintained in a way that ensures processing reliable, accurate and timely data in accordance with the risks identified in the risk assessment;
 - (c) segregation of duties in the data flow activities and control activities, as well as management of necessary competencies;
 - (d) internal reviews and validation of data;
 - (e) corrections and corrective action;
 - (f) control of out-sourced processes;
 - (g) keeping records and documentation including the management of document versions.

4. For the purposes of paragraph 3(a), it shall be ensured that all relevant measuring equipment is calibrated, adjusted, and checked at regular intervals including prior to use, and checked against measurement standards traceable to international measurement standards, where available, and proportionate to the risks identified.

Where components of the measuring systems cannot be calibrated, those components shall be identified in the monitoring methodology documentation and alternative control activities shall be established.

When the equipment is found not to comply with required performance, necessary corrective action shall be promptly taken.

5. For the purposes of paragraph 3(d), data resulting from the data flow activities referred to in paragraph 2 shall be regularly reviewed and validated. Such review and validation of the data shall include:
 - (a) a check as to whether the data are complete;
 - (b) a comparison of the data determined over the preceding reporting period and, in particular, consistency checks based on time series of greenhouse gas efficiency of the relevant production processes;
 - (c) a comparison of data and values resulting from different operational data collection systems, in particular for production protocols, sales figures and stock figures of relevant goods;
 - (d) comparisons and completeness checks of data at the level of the installation and production process of relevant goods.
6. For the purposes of paragraph 3(e), it shall be ensured that, where data flow activities or control activities are found not to function effectively, or not to respect the rules set in the documentation of procedures for those activities, corrective action is taken and affected data is corrected without undue delay.
7. For the purposes of paragraph 3(f), where one or more data flow activities or control activities referred to in paragraph 1 are outsourced from the installation, to all of the following shall be performed:
 - (a) checking the quality of the outsourced data flow activities and control activities in accordance with this Annex;

- (b) defining appropriate requirements for the outputs of the outsourced processes as well as the methods used in those processes;
- (c) checking the quality of the outputs and methods referred to in point (b) of this paragraph;
- (d) ensuring that outsourced activities are carried out such that those are responsive to the inherent risks and control risks identified in the risk assessment.

8. The effectiveness of the control system shall be monitored, including by carrying out internal reviews and taking into account the findings of the verifier, if verification is applied.

When the control system is found ineffective or not commensurate with the risks identified, the control system shall be improved and the monitoring methodology documentation updated accordingly, including the underlying written procedures for data flow activities, risk assessments and control activities, as appropriate.

9. Recommended improvement: the operator may voluntarily have the installation's emissions data and specific embedded emissions data of goods as compiled in accordance with Annex IV verified by an independent verifier accredited to ISO 14065, or according to the rules of the eligible monitoring, reporting and verification system relevant to the installation.
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ANNEX IV

Content of the recommended communication from operators of installations to reporting declarants

1. CONTENT OF THE EMISSIONS DATA COMMUNICATION TEMPLATE

General information

1. Information on the installation:

- (a) the name and contact details of the operator;
- (b) the name of the installation;
- (c) contact details for the installation;
- (d) the unique installation identifier, if available;
- (e) the applicable United Nations Code for Trade and Transport Location (UN/LOCODE) of the location;
- (f) an exact address and its English transcript;
- (g) geographical coordinates of the installation's main emission source.

2. For each of the aggregated goods category, the production processes and routes used as listed in Table 1 of Annex II.

3. For each of the goods, listed either for each CN code separately, or aggregated by aggregated goods category in accordance with Section 2 of Annex II:

- (a) the specific direct embedded emissions of each of the goods;
- (b) information on the data quality and methods used, in particular if the embedded emissions have been completely determined based on monitoring, or whether any of the default values made available and published by the Commission for the transitional period have been used;
- (c) the specific indirect embedded emissions of each of the goods, and the method how the emission factor was determined, and the information source used;
- (d) the emission factor used for electricity as imported goods, expressed as tonne CO₂e per MWh and the data source or method used for determining the emission factor of electricity, if different than the emission factors provided by the Commission in the CBAM Transitional Registry;
- (e) where default values made available and published by the Commission for the transitional period are reported instead of actual data of specific embedded emissions, a short description for the reasons shall be added;
- (f) the sector-specific information in accordance with Section 2 of this Annex, if relevant;
- (g) if applicable, the information on carbon price due. Where a carbon price due for precursors is obtained from other installations, any carbon price due for those precursors shall be listed separately per country of origin.

Recommended improvement of the general information

1. Total emissions of the installation, including:

- (a) activity data and calculation factors for each source stream used;
- (b) emissions of each emission source monitored using a measurement-based methodology;
- (c) emissions determined by other methods;
- (d) quantities of CO₂ received from other installations or exported to other installations, for the purpose of geological storage or as input to products in which the CO₂ is permanently chemically bound.

2. A balance of imported, produced, consumed, and exported measurable heat, waste gases and electricity.
3. The quantity of all precursors received from other installations, and their specific direct and indirect embedded emissions.
4. The quantity of precursor used in each production process, excluding precursors produced in the same installation.
5. Information on how the attributed direct and indirect emissions of each production process were calculated.
6. The activity level and attributed emissions of each production process.
7. A list of all relevant goods produced by CN code, including precursors not covered by separate production processes.
8. A short description of the installation, its main production processes, any production processes not covered for CBAM purposes, main elements of the monitoring methodology used, whether rules of an eligible monitoring, reporting and verification system have been applied, and which measures for improvement of the data quality have been taken, in particular whether any form of verification was applied.
9. Information on the electricity emissions factor in the power purchase agreement, where appropriate.

2. SECTOR-SPECIFIC PARAMETERS TO BE INCLUDED IN THE COMMUNICATION

Aggregated goods category	Reporting requirement in the CBAM report
Calcined clay	— Whether or not the clay is calcined.
Cement clinker	— N.a.
Cement	— Mass ratio of tonnes cement clinker consumed per produced tonne of cement (clinker to cement ratio expressed in per cent).
Aluminous cement	— N.a.
Hydrogen	— N.a.
Urea	— Purity (mass % urea contained, % N contained).
Nitric acid	— Concentration (mass %).
Ammonia	— Concentration, if hydrous solution.
Mixed fertilisers	— Information required anyway under Regulation (EU) 2019/1009: — content of N as ammonium (NH_4^+); — content of N as nitrate (NO_3^-); — content of N as urea; — content of N in other (organic) forms.
Sintered Ore	— N.a.
Pig Iron	— The main reducing agent used. — Mass % of Mn, Cr, Ni, total of other alloy elements.
FeMn Ferro-Manganese	— Mass % of Mn and carbon.
FeCr – Ferro-Chromium	— Mass % of Cr and carbon.
FeNi – Ferro-Nickel	— Mass % of Ni and carbon.

DRI (Direct Reduced Iron)	— The main reducing agent used. — Mass % of Mn, Cr, Ni, total of other alloy elements.
Crude steel	— The main reducing agent of the precursor, if known. — Mass % of Mn, Cr, Ni, total of other alloy elements. — Tonnes scrap used for producing 1 t crude steel. — % of scrap that is pre-consumer scrap.
Iron or steel products	— The main reducing agent used in precursor production, if known. — Mass % of Mn, Cr, Ni, total of other alloy elements. — Mass % of materials contained which are not iron or steel if their mass is more than 1 % to 5 % of the total goods' mass. — Tonnes scrap used for producing 1 t of the product. — % of scrap that is pre-consumer scrap.
Unwrought aluminium	— Tonnes scrap used for producing 1 t of the product. — % of scrap that is pre-consumer scrap. — If the total content of elements other than aluminium exceeds 1 %, the total percentage of such elements.
Aluminium products	— Tonnes scrap used for producing 1 t of the product. — % of scrap that is pre-consumer scrap. — If the total content of elements other than aluminium exceeds 1 %, the total percentage of such elements.

ANNEX V

EORI data

Table 1 contains the information on the economic operators as found in EOS, which shall be interoperable with the CBAM Transitional Registry.

Table 1

EORI data

Economic Operator System (EOS) EORI
Customer Identification
EORI country + EORI national Number
EORI country
EORI start date
EORI expiry date
Customs Customer Information
EORI short name
EORI full name
EORI language
EORI establishment date
EORI person type
EORI economic activity
List of EORI establishment addresses
Establishment addresses
EORI Address
EORI language
EORI name
Establishment in union
EORI address start date
EORI address end date
VAT or TIN numbers
'VAT' or 'TIN'
National identifier + VAT or TIN number Concatenate country with national identifier
EORI legal status
EORI legal status language
EORI legal status
EORI legal status begin date & end date
Contact list
Contact
EORI contact address
EORI contact language

EORI contact full name
EORI contact name
Publication agreement flag
Address fields description
Street and Number
Postcode
City
Country code
List of communication details
Communication type

ANNEX VI

Data Requirements complement for Inward Processing

Table 1 contains the information from the decentralised customs systems, which shall be interoperable with the CBAM Transitional Registry in accordance with Article 17 of this Regulation.

Table 1

Additional information for inward processing

Data requirement from customs authorities after inward processing bill of discharge, when no waiver is granted to the reporting declarant
Issuing country
Data record reference
Data record version number
Data record version status
Reporting Period Start Date
Reporting Period End Date
Supervising Custom Office (SCO for inward processing)
Authorization for inward processing reference number
Importer identification number/Authorization Holder for inward processing
Importer country
Goods item identifier (seq. no)
Harmonised system sub-heading code
Combined nomenclature code
Description of goods
Requested procedure code
Previous procedure code
Country of origin code
Country of destination code
Country of dispatch
Net mass
Type of measurement units
Supplementary units
Statistical value
Net mass of the actual product used in processed products released for free circulation
Net mass as actual products released on the same commodity code for free circulation
Representative identification number and status
Mode of transport at the border

ANNEX VII

National system data

Table 1 contains the information from the decentralised systems, which shall be interoperable with the CBAM Transitional Registry in accordance with Article 17 of this Regulation.

Table 1

National system data
Issuer
Data record reference
Data record version number
Data record version status
Import declaration number
Declaration goods item number
Declaration acceptance date
Requested procedure code
Previous procedure code
Country of origin code
Country of preferential origin code
Country of destination code
Country of dispatch
Quota order number
Description of goods
Harmonised system sub-heading code
Combined nomenclature code
TARIC code
Net mass
Statistical value
Supplementary units
Declaration type
Additional declaration type
Format
Importer identification number
Importer country
Consignee identification number
Declarant identification number
Holder of authorization identification number
Holder authorization type
Authorization reference number
Representative identification number
Mode of transport at the border
Inland mode of transport

ANNEX VIII

Standard factors used in the monitoring of direct emissions at installation level

1. FUEL EMISSION FACTORS RELATED TO NET CALORIFIC VALUES (NCV)

Table 1

Fuel emission factors related to net calorific value (NCV) and net calorific values per mass of fuel

Fuel type description	Emission factor (t CO ₂ /TJ)	Net calorific value (TJ/Gg)	Source
Crude oil	73,3	42,3	IPCC 2006 GL
Orimulsion	77,0	27,5	IPCC 2006 GL
Natural gas liquids	64,2	44,2	IPCC 2006 GL
Motor gasoline	69,3	44,3	IPCC 2006 GL
Kerosene (other than jet kerosene)	71,9	43,8	IPCC 2006 GL
Shale oil	73,3	38,1	IPCC 2006 GL
Gas/Diesel oil	74,1	43,0	IPCC 2006 GL
Residual fuel oil	77,4	40,4	IPCC 2006 GL
Liquefied petroleum gases	63,1	47,3	IPCC 2006 GL
Ethane	61,6	46,4	IPCC 2006 GL
Naphtha	73,3	44,5	IPCC 2006 GL
Bitumen	80,7	40,2	IPCC 2006 GL
Lubricants	73,3	40,2	IPCC 2006 GL
Petroleum coke	97,5	32,5	IPCC 2006 GL
Refinery feedstocks	73,3	43,0	IPCC 2006 GL
Refinery gas	57,6	49,5	IPCC 2006 GL
Paraffin waxes	73,3	40,2	IPCC 2006 GL
White spirit and SBP	73,3	40,2	IPCC 2006 GL
Other petroleum products	73,3	40,2	IPCC 2006 GL
Anthracite	98,3	26,7	IPCC 2006 GL
Coking coal	94,6	28,2	IPCC 2006 GL
Other bituminous coal	94,6	25,8	IPCC 2006 GL
Sub-bituminous coal	96,1	18,9	IPCC 2006 GL
Lignite	101,0	11,9	IPCC 2006 GL
Oil shale and tar sands	107,0	8,9	IPCC 2006 GL
Patent fuel	97,5	20,7	IPCC 2006 GL
Coke oven coke and lignite coke	107,0	28,2	IPCC 2006 GL
Gas coke	107,0	28,2	IPCC 2006 GL
Coal tar	80,7	28,0	IPCC 2006 GL

Gas works gas	44,4	38,7	IPCC 2006 GL
Coke oven gas	44,4	38,7	IPCC 2006 GL
Blast furnace gas	260	2,47	IPCC 2006 GL
Oxygen steel furnace gas	182	7,06	IPCC 2006 GL
Natural gas	56,1	48,0	IPCC 2006 GL
Industrial wastes	143	n.a.	IPCC 2006 GL
Waste oils	73,3	40,2	IPCC 2006 GL
Peat	106,0	9,76	IPCC 2006 GL
Waste tyres	85,0 ⁽¹⁾	n.a.	World Business Council for Sustainable Development - Cement Sustainability Initiative (WBCSD CSI)
Carbon monoxide	155,2 ⁽²⁾	10,1	J. Falbe and M. Regitz, Römpp Chemie Lexikon, Stuttgart, 1995
Methane	54,9 ⁽³⁾	50,0	J. Falbe and M. Regitz, Römpp Chemie Lexikon, Stuttgart, 1995

⁽¹⁾ This value is the preliminary emission factor, i.e. before application of a biomass fraction, if applicable.

⁽²⁾ Based on NCV of 10,12 TJ/t.

⁽³⁾ Based on NCV of 50,01 TJ/t.

Table 2

Fuel emission factors related to net calorific value (NCV) and net calorific values per mass of biomass material

Biomass material	Preliminary EF [t CO ₂ /TJ]	NCV [GJ/t]	Source
Wood / Wood waste (air dry ⁽¹⁾)	112	15,6	IPCC 2006 GL
Sulphite lyes (black liquor)	95,3	11,8	IPCC 2006 GL
Other primary solid biomass	100	11,6	IPCC 2006 GL
Charcoal	112	29,5	IPCC 2006 GL
Biogasoline	70,8	27,0	IPCC 2006 GL
Biodiesels	70,8	37,0	IPCC 2006 GL ⁽²⁾
Other liquid biofuels	79,6	27,4	IPCC 2006 GL
Landfill gas ⁽³⁾	54,6	50,4	IPCC 2006 GL

Sludge gas ⁽¹⁾	54,6	50,4	IPCC 2006 GL
Other biogas ⁽¹⁾	54,6	50,4	IPCC 2006 GL
Municipal waste (biomass fraction) ⁽¹⁾	100	11,6	IPCC 2006 GL

⁽¹⁾ The given emission factor assumes around 15 % water content of the wood. Fresh wood can have water content of up to 50 %. For determining the NCV of completely dry wood, the following equation shall be used:

$$NCV = NCV_{dry} \cdot (1 - w) - \Delta H_v \cdot w$$

Where NCV_{dry} is the NCV of the absolute dry material, w is the water content (mass fraction) and $\Delta H_v = 2,4 \text{ GJ/t } H_2O$ is the evaporation enthalpy of water. Using the same equation, the NCV for a given water content can be back-calculated from the dry NCV.

⁽²⁾ The NCV value is taken from Annex III to Directive (EU) 2018/2001.

⁽³⁾ For landfill gas, sludge gas and other biogas: Standard values refer to pure Biomethane. For arriving at the correct standard values, a correction is required for the methane content of the gas.

⁽⁴⁾ The IPCC guidelines also give values for the fossil fraction of municipal waste: EF = 91,7 t CO₂/TJ; NCV = 10 GJ/t.

2. EMISSION FACTORS RELATED TO PROCESS EMISSIONS

Table 3

Stoichiometric emission factor for process emissions from carbonate decomposition (Method A)

Carbonate	Emission factor [t CO ₂ /t Carbonate]
CaCO ₃	0,440
MgCO ₃	0,522
Na ₂ CO ₃	0,415
BaCO ₃	0,223
Li ₂ CO ₃	0,596
K ₂ CO ₃	0,318
SrCO ₃	0,298
NaHCO ₃	0,524
FeCO ₃	0,380
General	Emission factor = $[M(\text{CO}_2)] / \{Y * [M(x)] + Z * [M(\text{CO}_3^{2-})]\}$ X = metal M(x) = molecular weight of X in [g/mol] M(CO₂) = molecular weight of CO₂ in [g/mol] M(CO₃²⁻) = molecular weight of CO₃²⁻ in [g/mol] Y = stoichiometric number of X Z = stoichiometric number of CO₃²⁻

Table 4

Stoichiometric emission factor for process emissions from carbonate decomposition based on alkali earth oxides (Method B)

Oxide	Emission factor [t CO ₂ /t Oxide]
CaO	0,785
MgO	1,092
BaO	0,287
general: X _Y O _Z	$\text{Emission factor} = \frac{M(\text{CO}_2)}{\{Y * [M(x)] + Z * [M(O)]\}}$ X = alkali earth or alkali metal M(x) = molecular weight of X in [g/mol] M(CO₂) = molecular weight of CO₂ [g/mol] M(O) = molecular weight of O [g/mol] Y = stoichiometric number of X = 1 (for alkali earth metals) = 2 (for alkali metals) Z = stoichiometric number of O = 1

Table 5

Emission factors for process emissions from other process materials (production of iron or steel, and processing of ferrous metals) ⁽¹⁾

Input or output material	Carbon content (t C/t)	Emission factor (t CO ₂ /t)
Direct reduced iron (DRI)	0,0191	0,07
EAF carbon electrodes	0,8188	3,00
EAF charge carbon	0,8297	3,04
Hot briquetted iron	0,0191	0,07
Oxygen steel furnace gas	0,3493	1,28
Petroleum coke	0,8706	3,19
Pig iron	0,0409	0,15
Iron/iron scrap	0,0409	0,15
Steel/steel scrap	0,0109	0,04

⁽¹⁾ IPCC 2006 Guidelines for National Greenhouse Gas Inventories.

3. GLOBAL WARMING POTENTIALS FOR NON-CO₂ GREENHOUSE GASES

Table 6

Global warming potentials

Gas	Global warming potential
N ₂ O	265 t CO ₂ e/t N ₂ O
CF ₄	6 630 t CO ₂ e/t CF ₄
C ₂ F ₆	11 100 t CO ₂ e/t C ₂ F ₆

ANNEX IX

Harmonised efficiency reference values for separate production of electricity and heat

In the tables below the harmonised efficiency reference values for separate production of electricity and heat are based on net calorific value and standard atmospheric ISO conditions (15 °C ambient temperature, 1,013 bar, 60 % relative humidity).

Table 1

Reference efficiency factors for electricity production

Category		Type of fuel	Year of construction		
			Before 2012	2012-2-015	From 2016
Solids	S1	Hard coal including anthracite, bituminous coal, sub-bituminous coal, coke, semi-coke, pet coke	44,2	44,2	44,2
	S2	Lignite, lignite briquettes, shale oil	41,8	41,8	41,8
	S3	Peat, peat briquettes	39,0	39,0	39,0
	S4	Dry biomass including wood and other solid biomass including wood pellets and briquettes, dried woodchips, clean and dry waste wood, nut shells and olive and other stones	33,0	33,0	37,0
	S5	Other solid biomass including all wood not included under S4 and black and brown liquor	25,0	25,0	30,0
	S6	Municipal and industrial waste (non-renewable) and renewable/bio-degradable waste	25,0	25,0	25,0
Liquids	L7	Heavy fuel oil, gas/diesel oil, other oil products	44,2	44,2	44,2
	L8	Bio-liquids including bio-methanol, bioethanol, bio-butanol, biodiesel, and other bio-liquids	44,2	44,2	44,2
	L9	Waste liquids including biodegradable and non-renewable waste (including tallow, fat and spent grain)	25,0	25,0	29,0
Gaseous	G10	Natural gas, LPG, LNG and biomethane	52,5	52,5	53,0
	G11	Refinery gases hydrogen and synthesis gas	44,2	44,2	44,2
	G12	Biogas produced from anaerobic digestion, landfill, and sewage treatment	42,0	42,0	42,0
	G13	Coke oven gas, blast furnace gas, mining gas, and other recovered gases (excluding refinery gas)	35,0	35,0	35,0
Other	O14	Waste heat (including high temperature process exhaust gases, product from exothermic chemical reactions)			30,0

Table 2

Reference efficiency factors for heat production

Category		Type of fuel	Year of construction					
			Before 2016			From 2016		
			Hot water	Steam ⁽¹⁾	Direct use of exhaust gases ⁽²⁾	Hot water	Steam ⁽¹⁾	Direct use of exhaust gases ⁽²⁾
Solids	S1	Hard coal including anthracite, bituminous coal, sub-bituminous coal, coke, semi-coke, pet coke	88	83	80	88	83	80
	S2	Lignite, lignite briquettes, shale oil	86	81	78	86	81	78
	S3	Peat, peat briquettes	86	81	78	86	81	78
	S4	Dry biomass including wood and other solid biomass including wood pellets and briquettes, dried woodchips, clean and dry waste wood, nut shells and olive and other stones	86	81	78	86	81	78
	S5	Other solid biomass including all wood not included under S4 and black and brown liquor	80	75	72	80	75	72
	S6	Municipal and industrial waste (non-renewable) and renewable/bio-degradable waste	80	75	72	80	75	72
Liquids	L7	Heavy fuel oil, gas/diesel oil, other oil products	89	84	81	85	80	77
	L8	Bio-liquids including bio-methanol, bioethanol, bio-butanol, biodiesel, and other bio-liquids	89	84	81	85	80	77
	L9	Waste liquids including biodegradable and non-renewable waste (including tallow, fat and spent grain)	80	75	72	75	70	67
Gaseous	G10	Natural gas, LPG, LNG and biomethane	90	85	82	92	87	84
	G11	Refinery gases hydrogen and synthesis gas	89	84	81	90	85	82

	G12	Biogas produced from anaerobic digestion, landfill, and sewage treatment	70	65	62	80	75	72
	G13	Coke oven gas, blast furnace gas, mining gas, and other recovered gases (excluding refinery gas)	80	75	72	80	75	72
Other	O14	Waste heat (including high temperature process exhaust gases, product from exothermic chemical reactions)	—	—	—	92	87	—

(¹) If steam plants do not account for the condensate return in their calculation of CHP (combined heat and power) heat efficiencies, the steam efficiencies shown in the table above shall be increased by 5 percentage points.

(²) Values for direct use of exhaust gases shall be used if the temperature is 250 °C or higher.

COMMISSION REGULATION (EU) 2023/1774**of 14 September 2023****correcting certain language versions of Annex II to Regulation (EC) No 1333/2008 of the European Parliament and of the Council on food additives****(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 1333/2008 of the European Parliament and of the Council of 16 December 2008 on food additives ⁽¹⁾, and in particular Article 10(3) thereof,

Whereas:

- (1) The Dutch and Italian language versions of Annex II to Regulation (EC) No 1333/2008 contain a mistranslation of a term in Part E, in the entries concerning food category 17.1, that narrows down the scope of products in which certain food additives can be used.
- (2) The Dutch and Italian language versions of Annex II to Regulation (EC) No 1333/2008 should therefore be corrected accordingly. The other language versions are not affected.
- (3) The measures provided for in this Regulation are in accordance with the opinions of the Standing Committee on Plants, Animals, Food and Feed, delivered on 17 April 2018 and on 10 March 2021,

HAS ADOPTED THIS REGULATION:

Article 1

(Does not concern the English language)

Article 2

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 14 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

⁽¹⁾ OJ L 354, 31.12.2008, p. 16.

COMMISSION IMPLEMENTING REGULATION (EU) 2023/1775**of 14 September 2023****amending Implementing Regulation (EU) 2018/330 imposing a definitive anti-dumping duty on imports of certain seamless pipes and tubes of stainless steel originating in the People's Republic of China following an expiry review pursuant to Article 11(2) of Regulation (EU) 2016/1036 of the European Parliament and of the Council**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2016/1036 of the European Parliament and of the Council of 8 June 2016 on protection against dumped imports from countries not members of the European Union ⁽¹⁾, and in particular Article 14(1) thereof,

Whereas:

- (1) Imports of certain seamless pipes and tubes of stainless steel originating in the People's Republic of China are subject to definitive anti-dumping duties, imposed by Commission Implementing Regulation (EU) 2018/330 ⁽²⁾.
- (2) Zhejiang Tsingshan Steel Pipe, Co. Ltd, Lishui, with TARIC ⁽³⁾ additional code B 263, a company subject to the duty rate for cooperating non-sampled producers of 56,9 %, informed the Commission on 10 January 2023 that it had changed its name to Tsingshan Steel Pipe, Co. Ltd, Lishui.
- (3) The company requested the Commission to confirm that the change of name does not affect the right of the company to benefit from the anti-dumping duty rate applied to it under its previous name.
- (4) The Commission examined the information supplied and concluded that the change of name was properly registered with the relevant authorities and did not result in any new relationship with other groups of companies which were not investigated by the Commission.
- (5) Accordingly, this change of name does not affect the findings of Commission Implementing Regulation (EU) 2018/330 and in particular the anti-dumping duty rate applicable to it. The evidence on the file also confirmed that the change of the name was applicable as of 21 September 2022, the day when the Qingtian County Administration for Market Regulation approved the Business Registration Change.
- (6) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 15(1) of Regulation (EU) 2016/1036.

HAS ADOPTED THIS REGULATION:

Article 1

1. Annex I of Implementing Regulation (EU) 2018/330 is amended as follows:

'Zhejiang Tsingshan Steel Pipe, Co. Ltd, Lishui	B 263'
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is replaced by

'Tsingshan Steel Pipe, Co. Ltd, Lishui	B 263'
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⁽¹⁾ OJ L 176, 30.6.2016, p. 21.⁽²⁾ OJ L 63, 6.3.2018, p. 15.⁽³⁾ The Integrated Tariff of the European Union.

2. The TARIC additional code B 263 previously attributed to Zhejiang Tsingshan Steel Pipe, Co. Ltd, Lishui shall apply to Tsingshan Steel Pipe, Co. Ltd, Lishui, as of 21 September 2022. Any definitive duty paid on imports of products manufactured by Tsingshan Steel Pipe, Co. Ltd, Lishui in excess of the anti-dumping duty established in Article 1(2) of Commission Implementing Regulation (EU) 2018/330 as regards Zhejiang Tsingshan Steel Pipe, Co. Ltd, Lishui, shall be repaid or remitted in accordance with the applicable customs legislation.

Article 2

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 14 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

COMMISSION IMPLEMENTING REGULATION (EU) 2023/1776**of 14 September 2023****imposing a definitive anti-dumping duty on imports of melamine originating in the People's Republic of China following an expiry review pursuant to Article 11(2) of Regulation (EU) 2016/1036 of the European Parliament and of the Council**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2016/1036 of the European Parliament and of the Council of 8 June 2016 on protection against dumped imports from countries not members of the European Union ⁽¹⁾ ('the basic Regulation'), and in particular Article 11(2) thereof,

Whereas:

1. PROCEDURE**1.1. Previous investigation and measures in force**

- (1) Following an investigation ('the original investigation'), the Council imposed, by Council Implementing Regulation (EU) No 457/2011 ⁽²⁾, definitive anti-dumping measures on imports of melamine originating in the People's Republic of China ('the PRC' or 'China').
- (2) By Commission Implementing Regulation (EU) 2017/1171 ⁽³⁾, the Commission re-imposed definitive anti-dumping measures on imports of melamine originating in the People's Republic of China following an expiry review ('the previous expiry review').
- (3) The measures currently in force have the form of a fixed duty of 415 EUR/tonne on all imports from the PRC with the exception of three cooperating Chinese exporting producers whose exports are subject to a minimum import price of 1 153 EUR/tonne.
- (4) Following the publication of a notice of impending expiry of the measures in force ⁽⁴⁾, the Commission received a request for the initiation of an expiry review pursuant to Article 11(2) the basic Regulation.
- (5) The request was submitted on 31 March 2022 by Borealis Agrolinz Melamine GmbH, OCI Nitrogen BV and Grupa Azoty Zakłady Azotowe Pulawy SA ('the applicants') on behalf of the Union industry of melamine, within the meaning of Article 5(4) of the basic Regulation.

1.2. Initiation of an expiry review

- (6) Having determined, after consulting the Committee established by Article 15(1) of the basic Regulation, that sufficient evidence existed for the initiation of an expiry review, on 1 July 2022 the Commission initiated an expiry review of the anti-dumping measures applicable to imports of melamine, originating in the People's Republic of China, on the basis of Article 11(2) of the basic Regulation. It published a Notice of Initiation in the *Official Journal of the European Union* ⁽⁵⁾ ('the Notice of Initiation').

⁽¹⁾ OJ L 176, 30.6.2016, p. 21.

⁽²⁾ Council Implementing Regulation (EU) No 457/2011 of 10 May 2011 imposing a definitive anti-dumping duty and collecting definitively the provisional duty imposed on imports of melamine originating in the People's Republic of China (OJ L 124, 13.5.2011, p. 2).

⁽³⁾ Commission Implementing Regulation (EU) 2017/1171 of 30 June 2017 imposing definitive anti-dumping duties on imports of melamine, originating in the People's Republic of China (OJ L 170, 1.7.2017, p. 62).

⁽⁴⁾ Notice of impending expiry of certain anti-dumping measures (OJ C 396, 30.9.2021, p. 12).

⁽⁵⁾ Notice of initiation of an expiry review of the anti-dumping measures applicable to imports of melamine, originating in the People's Republic of China (OJ C 252, 1.7.2022, p. 6).

1.3. Review investigation period and period considered

- (7) The investigation of continuation or recurrence of dumping covered the period from 1 July 2021 to 30 June 2022 ('the review investigation period' or 'RIP'). The examination of trends relevant for the assessment of the likelihood of continuation or recurrence of injury covered the period from 1 January 2019 to the end of the review investigation period ('the period considered').

1.4. Interested parties

- (8) In the Notice of Initiation, interested parties were invited to contact the Commission in order to participate in the investigation. In addition, the Commission specifically informed the applicants, other known Union producers, the known exporting producers in the PRC, the PRC authorities, known importers, users, traders, as well as associations known to be concerned about the initiation of the expiry review and invited them to participate.
- (9) Interested parties had an opportunity to comment on the initiation of the expiry review and to request a hearing with the Commission and/or the Hearing Officer in trade proceedings. None of the interested parties requested a hearing.

1.5. Claims on initiation

- (10) China Chamber of Commerce for Metals, Minerals and Chemicals Importers & Exporters ('CCCMC') submitted comments further to the expiry review request or the aspects regarding the initiation of the present investigation as provided under point 5.2 of the Notice of Initiation.
- (11) CCCMC provided comments concerning the application of Article 2(6a) of the basic Regulation, the existence of significant distortions in the PRC and the selection of an appropriate representative country. Those comments are addressed below in Sections 3.2.2, 3.2.2.1, and 3.2.2.2.
- (12) Furthermore, CCCMC argued that the request contained an incorrectly calculated dumping margin. In this respect, CCCMC claimed that although the applicants constructed the normal value for two different production technologies used in the PRC, they failed to take into account different production processes (e.g. fully integrated melamine producers *versus* producers using purchased urea) and different raw materials (melamine produced from natural gas or coal as the two potential ultimate raw materials). With regard to the export price, according to CCCMC, the applicants were wrong to use prices of melamine originating in the PRC when exported to third countries as those prices were influenced by the situation on the respective local markets and thus not representative of pricing decisions for exports to the Union.
- (13) The Commission noted that CCCMC did not identify any actual errors in the dumping margin calculation. It merely claimed that the information used for the construction of the normal value was insufficient as it did not cover all potential production processes and raw materials used in production. In this respect, the Commission carried out its examination of the request in accordance with Article 11(2) of the basic Regulation and came to the conclusion that the requirements for initiation of an expiry review were met, i.e. that there was sufficient evidence to initiate the proceeding. According to Article 5(2) of the basic Regulation, by analogy, a request shall contain such information as is reasonably available to the applicants. The legal standard of evidence required for the purpose of initiating a review ('sufficient' evidence) is different from what is necessary for the purpose of a preliminary or final determination of the existence of dumping. Therefore, evidence which is insufficient in quantity or quality to justify a preliminary or final determination of dumping may nevertheless be sufficient to justify the initiation of an investigation ⁽⁹⁾.
- (14) Furthermore, with regard to the export price, the Commission noted that in the light of the considerations explained in recital (13), the applicants were not incorrect when relying on export prices to third countries for the determination of recurrence of dumping in a situation where the export price to the Union is guided by a minimum import price.

⁽⁹⁾ Judgment of the General Court of 11 July 2017, *Viraj Profiles Ltd v Council of the European Union*, Case T-67/14, ECLI:EU:T:2017:481, para. 98.

- (15) Consequently, the Commission rejected CCCMC's claim of incorrectly calculated dumping margin in the expiry review request.
- (16) CCCMC further submitted that the allegations concerning the likelihood of recurrence of dumping in the expiry review request were without merit. In particular, CCCMC addressed the existence of spare capacity in the PRC and the level of export prices to third countries.
- (17) In this respect, CCCMC argued that the applicants wrongly assumed that Chinese producers would mobilise their large spare capacity should the measure lapse. According to CCCMC, it would require years-long transitional period for additional producers to meet the technical requirements of Union customers and to gain experience with trading practices in the Union. In addition, CCCMC claimed that one of the Chinese companies referenced in the request was building a new plant only to replace its existing production capacity. Therefore, CCCMC requested the Commission to verify the accuracy, reliability and probability of the planned production capacity increases listed in the request ⁽⁷⁾.
- (18) Moreover, CCCMC criticised the applicants' assumption that should the measures lapse, Chinese producers would redirect their low-priced exports from third countries to the Union market at the same price. According to CCCMC, the applicants failed to explain why the Chinese export prices to third countries were a reliable indicator of future export prices to the Union. The association further claimed that the Chinese producers would sell at the current high export price to the Union even if measures were terminated and that they would not abandon already developed reliable export markets of third countries.
- (19) The Commission noted that CCCMC did not provide any evidence supporting its claims related either to spare capacity or to the export price to third countries. On the contrary, the evolution of imports originating in the PRC in the period 2018–2021, as demonstrated by Table 9 of the request, pointed to the fact that Chinese producers are well able and willing to either mobilise their spare capacity or redirect their exports from third countries to the Union depending on the price on the Union market. Finally, the Commission noted that the analysis provided by the applicants in the request must also be examined in the light of the requirements on sufficient evidence laid down in Articles 11(2) and 5(2) of the basic Regulation. When examining the request, the Commission concluded that the analysis of spare capacity in the PRC and of export prices to third countries constituted sufficient evidence of likelihood of recurrence of dumping for the purpose of the expiry review request.
- (20) Therefore, the Commission rejected CCCMC's claims concerning the likelihood of recurrence of dumping analysis included in the expiry review request.
- (21) Furthermore, CCCMC submitted comments concerning the likelihood of recurrence of injury. In that regard, CCCMC referred to the arguments made by the applicants in the expiry review request. CCCMC first attempted to rebut the significance of an increase in market shares of Chinese imports from 5 % to 6 % between 2018 and 2021, as summarized in Table 14 of the request. Secondly, CCCMC claimed that any difference between Union industry sales prices and Chinese import prices was caused by a difference in costs of production incurred. Thirdly, CCCMC questioned that Union producers profit rates could turn negative if Union industry prices dropped to the same levels as Chinese import prices.
- (22) The Commission noted that the applicant merely pointed at the fact that imports from China had been increasing, which indeed was the case from 2018 to 2021, without emphasizing the significance of that increase. However, the Commission also noted that the same table showed that the increase was significantly more pronounced if 2019 or 2020 was used as the starting point. The claim by CCCMC was therefore rejected. As to the claim on any difference between Union industry sales prices and Chinese import prices, the Commission noted that first, the claim by CCCMC was not substantiated by any evidence on cost of production incurred by Chinese exporting producers and second, cost of production of melamine are mainly driven by the cost of urea, which in turn is driven mainly by the cost of natural gas. Both urea and natural gas are commodities, the prices of which are, in the absence of state distortions, largely aligned in world markets. The claim was therefore rejected. As to the third claim, the Commission noted that as Union producers' cost of production were at about the same levels as or above Chinese import prices, Union producers' profit rates could indeed turn negative or at best only trail around break-even if Union industry prices dropped to the same levels as Chinese import prices.

⁽⁷⁾ See paragraph 103 and Figure 1 of the expiry review request.

1.6. Sampling

- (23) In the Notice of Initiation, the Commission stated that it might sample the interested parties in accordance with Article 17 of the basic Regulation.

1.6.1. Sampling of Union producers

- (24) In the Notice of Initiation, the Commission stated that it had provisionally selected a sample of three Union producers, located in three different Member States. The Commission selected the sample on the basis of the volume of production and sales of the like product in the Union during the period from 1 July 2021 to 30 June 2022 reported by the Union producers in the context of the pre-initiation standing assessment analysis. The sample accounted for 82 % of the estimated production in the Union of the like product. The Commission invited interested parties to comment on its provisional sample. No comments were received and the sample was considered representative of the Union industry.

1.6.2. Sampling of unrelated importers

- (25) To decide whether sampling was necessary and, if so, to select a sample, the Commission asked unrelated importers to provide the information specified in the Notice of Initiation. Only one unrelated importer, namely Borghi SpA, Grandate/Italy, came forward. Consequently, the Commission decided that sampling was not necessary and requested Borghi SpA to complete the questionnaire for unrelated importers. However, Borghi SpA did not submit any questionnaire reply.

1.6.3. Sampling of exporting producers in the PRC

- (26) To decide whether sampling was necessary and, if so, to select a sample, the Commission asked all exporting producers in the PRC to provide the information specified in the Notice of Initiation. In addition, the Commission asked the Mission of the People's Republic of China to the European Union to identify and/or contact other exporting producers, if any, that could be interested in participating in the investigation.
- (27) One producer in the country concerned, the company Xinjiang Xinlianxin Energy Chemical Co., Ltd. ('Xinjiang XLX'), provided the requested information and agreed to be included in the sample. The producer represented less than 3 % of total imports of melamine originating in the PRC in the review investigation period.
- (28) Considering the low level of cooperation, the Commission considered it appropriate to apply Article 18 of the basic Regulation to the non-cooperating exporting producers in the PRC and to base its country-wide findings on the likelihood of continuation and/or recurrence of dumping and injury on facts available.
- (29) In accordance with Article 17(2) of the basic Regulation, all known exporting producers concerned, and the authorities of the country concerned, were consulted on the Commission's considerations. In addition, the Commission informed Xinjiang XLX that for the sake of administrative economy, the Commission might not conduct the deficiency process and verification of the questionnaire reply. Any information provided by the company might be however used as fact available where appropriate. No comments were made.

1.7. Replies to the questionnaire

- (30) The Commission sent a questionnaire concerning the existence of significant distortions in the PRC within the meaning of Article 2(6a)(b) of the basic Regulation to the Government of the People's Republic of China ('GOC').

- (31) The Commission sent questionnaires to the one cooperating exporting producer, to sampled Union producers, to the one unrelated importer that came forward in the course of the sampling procedure, and to all known users of melamine. All applicable questionnaires were made available on DG Trade's website ⁽⁸⁾ on the day of initiation. In the course of the investigation, the Commission sent a questionnaire to the applicants requesting macroeconomic data of the Union industry.
- (32) Questionnaire replies were received from the one cooperating exporting producer, the three sampled Union producers, the applicants, one unrelated importer and three users.

1.8. Verification

- (33) The Commission sought and verified all the information deemed necessary for the determination of likelihood of continuation or recurrence of dumping and injury and of the Union interest.
- (34) Verification visits pursuant to Article 16 of the basic Regulation were carried out at the premises of the following companies:

Union producers:

- Borealis Agrolinz Melamine GmbH, Linz, Austria;
- Grupa Azoty Zakłady Azotowe, Pulawy, Poland;
- OCI Nitrogen B.V., Geleen, The Netherlands.

- (35) Remote crosscheck of the information used in the expiry review request for the construction of the normal value was conducted online with the following Union producer:
- OCI Nitrogen B.V., Geleen, The Netherlands.

1.9. Subsequent procedure

- (36) On 14 June 2023, the Commission disclosed the essential facts and considerations on the basis of which it intended to maintain the anti-dumping duties in force. All parties were set a deadline within which they could make comments on the disclosure and request a hearing.
- (37) Comments were received from Xinjiang XLX and from the CCCMC. The comments were considered by the Commission and taken into account, where appropriate. The sampled Union producers welcomed the Commission's conclusion and made no further comments. No party requested a hearing.

2. PRODUCT UNDER REVIEW AND LIKE PRODUCT

2.1. Product under review

- (38) The product subject to this review is melamine ('the product under review'), currently falling under CN code 2933 61 00.
- (39) Melamine is a white crystalline powder produced predominantly from urea and is used mainly for producing laminates, resins, wood adhesives, moulding compounds and paper/textile treatments.

2.2. Product concerned

- (40) Product concerned by this investigation is the product under review (see recital (38)) originating in China.

⁽⁸⁾ <https://tron.trade.ec.europa.eu/investigations/case-view?caseId=2609>.

2.3. Like product

(41) As shown in the investigation leading to the imposition of the measures in force ⁽⁹⁾, the following products have the same basic physical and technical characteristics as well as the same basic uses:

- the product concerned when exported to the Union;
- the product under review produced and sold on the domestic market of the country concerned (China); and
- the product under review produced and sold in the Union by the Union industry.

These products are therefore considered to be like products within the meaning of Article 1(4) of the basic Regulation.

3. DUMPING

3.1. Preliminary remarks

- (42) During the period considered, imports of melamine from the PRC continued. In the first half of the period considered, they were at volumes lower than in the investigation period of the original investigation (i.e. from 1 January 2009 to 31 December 2009). In the second half of the period considered, however, the import volumes increased considerably and by far exceeded the volumes recorded in the investigation period of the original investigation. In the review investigation period, the imports of melamine from the PRC were almost four times higher than in the investigation period of the original investigation. At the same time, they were eightfold in comparison to the review investigation period of the previous expiry review.
- (43) According to Eurostat (the Comext database) imports of melamine from the PRC accounted for about 15 % of the Union market in the review investigation period (see Table 3) compared to 6,5 % market share during the original investigation and 2 % during the previous expiry review. In absolute terms, the volume of imports of melamine originating in the PRC first decreased from 17 434 tonnes in the investigation period of the original investigation to 7 938 tonnes in the review investigation period of the first expiry review only to grow again to 64 673 tonnes in the review investigation period of the present expiry review.
- (44) As mentioned in recital (27), only one producer from the PRC cooperated in the investigation representing less than 3 % of imports of the product concerned during the RIP. Therefore, the Commission informed the authorities of the PRC that due to this very limited level of cooperation, the Commission may apply Article 18 of the basic Regulation concerning the findings with regard to the determination of likelihood of continuation or recurrence of dumping. The Commission did not receive any comments or requests for an intervention of the Hearing Officer in this regard.
- (45) Consequently, in accordance with Article 18 of the basic Regulation, the findings in relation to the likelihood of continuation or recurrence of dumping were based on facts available, in particular information contained in the expiry review request, readily available information from Turkish producers of products in the ammonia value chain, information from the Turkish Statistical Institute, Kocaeli City Water and Sewerage General Directorate, and Global Trade Atlas.

3.2. Continuation of dumping during the review investigation period

3.2.1. *Procedure for the determination of the normal value under Article 2(6a) of the basic Regulation for the imports of melamine originating in the PRC*

- (46) Given the sufficient evidence available at the initiation of the investigation tending to show, with regard to the PRC, the existence of significant distortions within the meaning of point (b) of Article 2(6a) of the basic Regulation, the Commission initiated the investigation on the basis of Article 2(6a) of the basic Regulation.

⁽⁹⁾ See footnote 2.

- (47) In order to obtain information it deemed necessary for its investigation with regard to the alleged significant distortions, the Commission sent a questionnaire to the GOC. In addition, in point 5.3.2 of the Notice of Initiation, the Commission invited all interested parties to make their views known, submit information and provide supporting evidence regarding the application of Article 2(6a) of the basic Regulation within 37 days of the date of publication of the Notice of Initiation in the *Official Journal of the European Union*. No questionnaire reply was received from the GOC. Subsequently, the Commission informed the GOC that it would use facts available within the meaning of Article 18 of the basic Regulation for the determination of the existence of the significant distortions in the PRC.
- (48) The comments submitted by CCCMC are addressed in Section 3.2.2.1.
- (49) In point 5.3.2 of the Notice of Initiation, the Commission also specified that, in view of the evidence available, it may need to select an appropriate representative country pursuant to Article 2(6a)(a) of the basic Regulation for the purpose of determining the normal value based on undistorted prices or benchmarks. It also specified that a possible representative third country for the PRC in this case was Türkiye, but that it would examine other possibly appropriate countries in accordance with the criteria set out in first indent of Article 2(6a) of the basic Regulation.
- (50) On 24 February 2023, the Commission issued a note on the sources for the determination of the normal value ('Note on sources').
- (51) In the Note on sources, the Commission informed interested parties that in the absence of cooperation, it would need to rely on facts available according to Article 18 of the basic Regulation. Therefore, the Commission intended to use the information contained in the expiry review request, combined with other sources of information deemed appropriate according to the relevant criteria laid down in Article 2(6a) of the basic Regulation in accordance with Article 18(5) of the basic Regulation.
- (52) By the Note on sources, the Commission also informed interested parties that it intended to use Türkiye as representative country and about the relevant sources it intended to use for the determination of the normal value with Türkiye as the representative country.
- (53) In the Note on sources, the Commission informed interested parties that, given the absence of cooperation it would base other direct costs and manufacturing overheads on the information regarding the Union industry provided in the expiry review request.
- (54) It further informed interested parties that it would establish selling, general and administrative expenses ('SG&A') and profit based on publicly available information for three Turkish producers of products in the ammonia value chain, namely Ege Gübre Sanayii A.Ş., Tekfen Holding A.Ş., and Bağfaş Bandırma Gübre Fabrikaları A.Ş.
- (55) Finally, by the Note on sources, the Commission invited interested parties to comment on the sources and the appropriateness of Türkiye as a representative country and to suggest other countries, provided they would submit sufficient information on the relevant criteria.
- (56) The Commission received comments from CCCMC. The association maintained that the Commission should use the questionnaire reply of Xinjiang XLX as fact available, take into account the various production processes and raw materials for the construction of the normal value and criticised undistorted values of certain inputs, SG&A and profit. Those comments are addressed in Sections 3.2.2.2, 3.2.2.3.1, 3.2.2.3.2, and 3.2.2.3.5 of this Regulation.

3.2.2. Normal value

- (57) According to Article 2(1) of the basic Regulation, 'the normal value shall normally be based on the prices paid or payable, in the ordinary course of trade, by independent customers in the exporting country'.

- (58) However, according to Article 2(6a)(a) of the basic Regulation, 'in case it is determined [...] that it is not appropriate to use domestic prices and costs in the exporting country due to the existence in that country of significant distortions within the meaning of point (b), the normal value shall be constructed exclusively on the basis of costs of production and sale reflecting undistorted prices or benchmarks', and 'shall include an undistorted and reasonable amount of administrative, selling and general costs and for profits' ('administrative, selling and general costs' is referred hereinafter as 'SG&A').
- (59) As further explained below, the Commission concluded in the present investigation that, based on the evidence available, and in view of the absence of cooperation by the GOC and of meaningful cooperation by the exporting producers, the application of Article 2(6a) of the basic Regulation was appropriate.
- (60) In accordance with Article 2(6a) of the basic Regulation, the normal value was constructed. In the expiry review request, the applicants constructed the normal value for two production technologies, the Tsinghua technology used exclusively in the PRC and the Eurotecnica technology used in the PRC but also by the producers in the Union. For the purpose of this investigation, the Commission limited its findings to the Eurotecnica technology, for which the list of factors of production and their consumption quantities could be properly crosschecked with the applicants that provided the information for the expiry review request. The Commission considered that a normal value constructed based on average consumption quantities, drawn from a brochure of the manufacturer of the equipment used in the production process, as provided in the expiry review request, was more representative in terms of utilisation rates for the purpose of country-wide findings than the individual consumptions of the one cooperating exporting producer achieved in its specific conditions of operation.

3.2.2.1. Existence of significant distortions

3.2.2.1.1. Introduction

- (61) Article 2(6a)(b) of the basic Regulation stipulates that 'significant distortions are those distortions which occur when reported prices or costs, including the costs of raw materials and energy, are not the result of free market forces as they are affected by substantial government intervention. In assessing the existence of significant distortions regard shall be had, inter alia, to the potential impact of one or more of the following elements:
- the market in question being served to a significant extent by enterprises which operate under the ownership, control or policy supervision or guidance of the authorities of the exporting country;
 - state presence in firms allowing the state to interfere with respect to prices or costs;
 - public policies or measures discriminating in favour of domestic suppliers or otherwise influencing free market forces;
 - the lack, discriminatory application or inadequate enforcement of bankruptcy, corporate or property laws;
 - wage costs being distorted;
 - access to finance granted by institutions which implement public policy objectives or otherwise not acting independently of the state'.
- (62) As the list in Article 2(6a)(b) of the basic Regulation is non-cumulative, not all the elements need to be given for a finding of significant distortions. Moreover, the same factual circumstances may be used to demonstrate the existence of one or more of the elements of the list. However, any conclusion on significant distortions within the meaning of Article 2(6a)(a) of the basic Regulation must be made on the basis of all the evidence at hand. The overall assessment on the existence of distortions may also take into account the general context and situation in the exporting country, in particular where the fundamental elements of the exporting country's economic and administrative set-up provides the government with substantial powers to intervene in the economy in such a way that prices and costs are not the result of the free development of market forces.

- (63) Article 2(6a)(c) of the basic Regulation provides that '[w]here the Commission has well-founded indications of the possible existence of significant distortions as referred to in point (b) in a certain country or a certain sector in that country, and where appropriate for the effective application of this Regulation, the Commission shall produce, make public and regularly update a report describing the market circumstances referred to in point (b) in that country or sector'.
- (64) Pursuant to this provision, the Commission has issued a country report concerning the PRC ('the Report') ⁽¹⁰⁾, showing the existence of substantial government intervention at many levels of the economy, including specific distortions in many key factors of production (such as land, energy, capital, raw materials and labour) as well as in specific sectors (such as steel and chemicals). Interested parties were invited to rebut, comment or supplement the evidence contained in the investigation file at the time of initiation. The Report was placed in the investigation file at the initiation stage. The request also contained some relevant evidence complementing the Report.
- (65) More specifically, the request, referring to the Report, indicated that structural distortions in many Chinese industrial sectors have contributed to the particularly low cost of natural gas and state interference in the urea market, one of the main components of melamine. The low price of natural gas has allowed melamine producers to produce the product under review at an artificially low cost. The request further outlines various types of state intervention in the urea market, such as the existence of strict import quotas for urea, high export taxes during the peak season, the exemption of the domestic sale of urea from VAT and the strategic stockpiling of urea by the Chinese government through the state fertiliser system. Moreover, the request pointed towards different findings of the United States on GOC's interventions favouring the Chinese Melamine industry, such as preferential lending, income tax programmes, tax programmes on tariff exemptions, VAT rebates, exemptions from administrative charges, government provisions and several grants, as well as export subsidy programs for the melamine market identified by the United States authorities. Furthermore, the request pointed out that policies of GOC, such as those detailed in the national 14th FYP, have confirmed the continued involvement of the state in the petrochemical and chemical sector which are categorized as 'a pillar industry of the national economy', as well as previous FYPs, such as the Guiding Opinions on promoting the high-quality development of the petrochemical and chemical industry during the 14th FYP, which refer to the socialist market economy as an overarching principle and objective, aiming to create Chinese national champions. In addition, referring back to the Report, the request noted significant distortions through the inadequate use of bankruptcy, corporate and property laws, as well as access to capital through the financial system. According to the request, those policies are likely to have a distortive impact on the melamine industry.
- (66) The Commission examined whether it was appropriate or not to use domestic prices and costs in the PRC, due to the existence of significant distortions within the meaning of point (b) of Article 2(6a) of the basic Regulation. The Commission did so on the basis of the evidence available on the file, including the evidence contained in the Report, which relies on publicly available sources. That analysis covered the examination of the substantial government interventions in the PRC's economy in general, but also the specific market situation in the relevant sector including the product under review. The Commission further supplemented these evidentiary elements with its own research on the various criteria relevant to confirm the existence of significant distortions in the PRC.

3.2.2.1.2. Significant distortions affecting the domestic prices and costs in the PRC

- (67) The Chinese economic system is based on the concept of a 'socialist market economy'. That concept is enshrined in the Chinese Constitution and determines the economic governance of the PRC. The core principle is the 'socialist public ownership of the means of production, namely, ownership by the whole people and collective ownership by the working people'. The state-owned economy is the 'leading force of the national economy' and the state has the mandate 'to ensure its consolidation and growth' ⁽¹¹⁾. Consequently, the overall setup of the Chinese economy not only allows for substantial government interventions into the economy, but such interventions are expressly mandated. The notion of supremacy of public ownership over the private one permeates the entire legal system and

⁽¹⁰⁾ Commission Staff Working Document on Significant Distortions in the Economy of the People's Republic of China for the purposes of Trade Defence Investigations, 20 December 2017, SWD(2017) 483 final/2.

⁽¹¹⁾ Report – Chapter 2, p. 6–7.

is emphasized as a general principle in all central pieces of legislation. The Chinese property law is a prime example: it refers to the primary stage of socialism and entrusts the state with upholding the basic economic system under which the public ownership plays a dominant role. Other forms of ownership are tolerated, with the law permitting them to develop side by side with the state ownership ⁽¹²⁾.

- (68) In addition, under Chinese law, the socialist market economy is developed under the leadership of the Chinese Communist Party ('CCP'). The structures of the Chinese state and of the CCP are intertwined at every level (legal, institutional, personal), forming a superstructure in which the roles of CCP and the state are indistinguishable. Following an amendment of the Chinese Constitution in March 2018, the leading role of the CCP was given an even greater prominence by being reaffirmed in the text of Article 1 of the Constitution. Following the already existing first sentence of the provision: '[t]he socialist system is the basic system of the People's Republic of China' a new second sentence was inserted which reads: '[t]he defining feature of socialism with Chinese characteristics is the leadership of the Communist Party of China' ⁽¹³⁾. This illustrates the unquestioned and ever growing control of the CCP over the economic system of the PRC. This leadership and control is inherent to the Chinese system and goes well beyond the situation customary in other countries where the governments exercise general macroeconomic control within the boundaries of which free market forces are at play.
- (69) The Chinese state engages in an interventionist economic policy in pursuance of goals, which coincide with the political agenda set by the CCP rather than reflecting the prevailing economic conditions in a free market ⁽¹⁴⁾. The interventionist economic tools deployed by the Chinese authorities are manifold, including the system of industrial planning, the financial system, as well as the level of the regulatory environment.
- (70) First, on the level of overall administrative control, the direction of the Chinese economy is governed by a complex system of industrial planning which affects all economic activities within the country. The totality of these plans covers a comprehensive and complex matrix of sectors and crosscutting policies and is present on all levels of government. Plans at provincial level are detailed while national plans set broader targets. Plans also specify the means in order to support the relevant industries/sectors as well as the timeframes in which the objectives need to be achieved. Some plans still contain explicit output targets. Under the plans, individual industrial sectors and/or projects are being singled out as (positive or negative) priorities in line with the government priorities and specific development goals are attributed to them (industrial upgrade, international expansion, etc.). The economic operators, private and state-owned alike, must effectively adjust their business activities according to the realities imposed by the planning system. This is not only because of the binding nature of the plans but also because the relevant Chinese authorities at all levels of government adhere to the system of plans and use their vested powers accordingly, thereby inducing the economic operators to comply with the priorities set out in the plans (see also Section 3.2.2.1.5 below) ⁽¹⁵⁾.
- (71) Second, on the level of allocation of financial resources, the financial system of the PRC is dominated by the state-owned commercial and policy banks. Those banks, when setting up and implementing their lending policy need to align themselves with the government's industrial policy objectives rather than primarily assessing the economic merits of a given project (see also Section 3.2.2.1.8 below) ⁽¹⁶⁾. The same applies to the other components of the Chinese financial system, such as the stock markets, bond markets, private equity markets etc. Also, these parts of the financial sector are institutionally and operationally set up in a manner not geared towards maximizing the efficient functioning of the financial markets but towards ensuring control and allowing intervention by the state and the CCP ⁽¹⁷⁾.
- (72) Third, on the level of regulatory environment, the interventions by the state into the economy take a number of forms. For instance, the public procurement rules are regularly used in pursuit of policy goals other than economic efficiency, thereby undermining market-based principles in the area. The applicable legislation specifically provides that public procurement shall be conducted in order to facilitate the achievement of goals designed by state policies.

⁽¹²⁾ Report – Chapter 2, p. 10.

⁽¹³⁾ Available at: www.npc.gov.cn/englishnpc/constitution2019/201911/1f65146fb6104dd3a2793875d19b5b29.shtml (accessed on 2 May 2022).

⁽¹⁴⁾ Report – Chapter 2, p. 20–21.

⁽¹⁵⁾ Report – Chapter 3, p. 41, 73–74.

⁽¹⁶⁾ Report – Chapter 6, p. 120–121.

⁽¹⁷⁾ Report – Chapter 6, p. 122–135.

However, the nature of these goals remains undefined, thereby leaving broad margin of appreciation to the decision-making bodies ⁽¹⁸⁾. Similarly, in the area of investment, the GOC maintains significant control and influence over destination and magnitude of both state and private investment. Investment screening as well as various incentives, restrictions, and prohibitions related to investment are used by authorities as an important tool for supporting industrial policy goals, such as maintaining state control over key sectors or bolstering domestic industry ⁽¹⁹⁾.

- (73) In sum, the Chinese economic model is based on certain basic axioms, which provide for and encourage manifold government interventions. Such substantial government interventions are at odds with the free play of market forces, resulting in distorting the effective allocation of resources in line with market principles ⁽²⁰⁾.

3.2.2.1.3. Significant distortions according to Article 2(6a)(b), first indent of the basic Regulation: the market in question being served to a significant extent by enterprises which operate under the ownership, control or policy supervision or guidance of the authorities of the exporting country

- (74) In the PRC, enterprises operating under the ownership, control and/or policy supervision or guidance by the state represent an essential part of the economy.

- (75) An analysis of the biggest Chinese melamine producers, namely Henan Zhongyuan Dahua Co., Ltd. ⁽²¹⁾, Henan Haohua Junhua Co., Ltd. ⁽²²⁾, Sichuan Golden-Elephant Sincerity Chemical Co., Ltd. ⁽²³⁾ and Xinjiang Xinlianxin Chemical Energy Co., Ltd. ⁽²⁴⁾, shows considerable state interference. While Henan Zhongyuan Dahua Co., Ltd., is a State Owned Enterprise ('SOE') wholly owned by Henan Energy and Chemical Industry Group (an SOE under SASAC ⁽²⁵⁾), the GOC maintains a 35 % stake in Henan Haohua Junhua Co. Ltd., ⁽²⁶⁾ which is held by Sinochem Holding an SOE under the supervision of SASAC, through its subsidiary Haohua Chemical Co. Sinochem Holding ⁽²⁷⁾. Beyond formal ownership, state authorities can control and supervise companies through informal channels, as illustrated by the privately owned melamine-producing company Sichuan Golden-Elephant Sincerity Co., Ltd. ⁽²⁸⁾ which, according to public sources, received financial support through a preferential loan by the Meishan City Market Supervision Administration and the Meishan Central Sub-branch of the People's Bank of China ⁽²⁹⁾ 'to promote quality development, stabilize the economy, and stabilize market players' ⁽³⁰⁾. The cooperating exporting producer, Xinjiang XLX ⁽³¹⁾, does also stress on its website that 'under the policy guidance and strong support of the autonomous region, state, county party committee, and government, Xinlianxin Company has achieved leapfrog development, and it has also witnessed the major development achievements of our district [...] under the strong leadership of the Party Central Committee with Comrade Xi Jinping as the core, and with the full support of the autonomous region, the district, the county committee, and the government ⁽³²⁾. In addition, given that CCP interventions into operational decision making have become the norm also in private companies ⁽³³⁾, with CCP claiming leadership over virtually every aspect of the country's economy, the influence of the state by means of CCP structures within companies effectively results in economic operators being under control and policy supervision of the government, given how far the state and Party structures have grown together in the PRC.

⁽¹⁸⁾ Report – Chapter 7, p. 167–168.

⁽¹⁹⁾ Report – Chapter 8, p. 169–170, 200–201.

⁽²⁰⁾ Report – Chapter 2, p. 15–16, Report – Chapter 4, p. 50, p. 84, Report – Chapter 5, p. 108–9.

⁽²¹⁾ See at: <http://www.hnzydhjt.com/> (accessed on 2 May 2023).

⁽²²⁾ See at: https://www.sohu.com/a/427199857_120109837 (accessed on 2 May 2023).

⁽²³⁾ See at: <http://scaffi.com/news/2492.html> (accessed on 2 May 2023).

⁽²⁴⁾ See at: <https://www.hnxx.com.cn/About/subcompany/cid/155/id/87?btwaf=23932495> (accessed on 2 May 2023).

⁽²⁵⁾ See at: https://aiqicha.baidu.com/company_detail_30432795595614 (accessed on 2 May 2023).

⁽²⁶⁾ See at: https://aiqicha.baidu.com/company_detail_31950371346728 (accessed on 2 May 2023).

⁽²⁷⁾ Ibid.

⁽²⁸⁾ See at: <http://www.jxgf.com/> (accessed on 2 May 2023).

⁽²⁹⁾ See at: <https://sichuan.scol.com.cn/ggwx/202209/58612536.html> (accessed on 2 May 2023).

⁽³⁰⁾ See at: https://www.sohu.com/a/575647079_120952561 (accessed on 2 May 2023).

⁽³¹⁾ See at: <http://www.xjxl.com.cn/> (accessed on 2 May 2023).

⁽³²⁾ See at: <http://www.xjxl.com.cn/News/detail/fid/3/cid/470/id/5404.html> (accessed on 2 May 2023).

⁽³³⁾ See for example Article 33 of the CCP Constitution, Article 19 of the Chinese Company Law or General Office of CCP Central Committee's Guidelines on stepping up the United Front work in the private sector for the new era (see below for full reference).

(76) This is apparent also at the level of the China Petrochemical and Chemical Industry Federation ('CPCIF') the sectoral industry association. According to Art. 3 of CPCIF's Articles of Association, the organisation 'accepts the professional guidance, supervision and management by the entities in charge of registration and management, by entities in charge of Party building, as well as by the relevant administrative departments in charge of industry management' ⁽³⁴⁾.

(77) Consequently, even privately owned producers in the sector of the product under review are prevented from operating under market conditions. Indeed, both public and privately owned enterprises in the sector are subject to policy supervision and guidance as also set out in Section 3.2.2.1.5 below.

3.2.2.1.4. Significant distortions according to Article 2(6a)(b), second indent of the basic Regulation: State presence in firms allowing the state to interfere with respect to prices or costs

(78) Apart from exercising control over the economy by means of ownership of SOEs and other tools, the GOC is in position to interfere with prices and costs through state presence in firms. While the right to appoint and to remove key management personnel in SOEs by the relevant state authorities, as provided for in the Chinese legislation, can be considered to reflect the corresponding ownership rights ⁽³⁵⁾, CCP cells in enterprises, state-owned and private alike, represent another important channel through which the state can interfere with business decisions. According to the PRC's company law, a CCP organisation is to be established in every company (with at least three CCP members as specified in the CCP Constitution ⁽³⁶⁾) and the company shall provide the necessary conditions for the activities of the party organisation. In the past, this requirement appears not to have always been followed or strictly enforced. However, since at least 2016 the CCP has been reinforcing its claims to control business decisions in companies as a matter of political principle ⁽³⁷⁾, including exercising pressure on private companies to put 'patriotism' first and to follow party discipline ⁽³⁸⁾. In 2017, it was reported that party cells existed in 70 % of some 1,86 million privately owned companies, with growing pressure for the CCP organisations to have a final say over the business decisions within their respective companies ⁽³⁹⁾. These rules are of general application throughout the Chinese economy, across all sectors, including to the producers of the product under review and the suppliers of their inputs.

(79) In addition, on 15 September 2020 a document titled General Office of CCP Central Committee's Guidelines on stepping up the United Front work in the private sector for the new era (the Guidelines) ⁽⁴⁰⁾ was released, which further expanded the role of the party committees in private enterprises. Section II.4 of the Guidelines state: '[w]e must raise the Party's overall capacity to lead private-sector United Front work and effectively step up the work in this area'; and Section III.6 states: '[w]e must further step up Party building in private enterprises and enable the Party cells to play their role effectively as a fortress and enable Party members to play their parts as vanguards and pioneers.' The Guidelines thus emphasise and seeks to increase the role of the CCP in companies and other private sector entities ⁽⁴¹⁾.

(80) The investigation confirmed that overlaps between managerial positions and CCP membership/Party functions are commonplace in the melamine sector. Indeed, the respective chairmen of the board of directors of Henan Zhongyuan Dahua Co., Ltd., Henan Haohua Junhua Co., Ltd., Sichuan Golden Elephant Sincerity Co., Ltd. and Xinjiang Xin Lian Xin Chemical Energy Co., Ltd. are also Party Committees Secretaries in their respective companies.

⁽³⁴⁾ See at: <http://www.cpcif.org.cn/detail/40288043661e27fb01661e386a3f0001?e=1> (accessed on 2 May 2023).

⁽³⁵⁾ Report – Chapter 5, p. 100–1.

⁽³⁶⁾ Report – Chapter 2, p. 26.

⁽³⁷⁾ See for example: Blanchette, J. – Xi's Gamble: *The Race to Consolidate Power and Stave off Disaster*; Foreign Affairs, Vol. 100, No 4, July/August 2021, pp. 10–19.

⁽³⁸⁾ Report – Chapter 2, p. 31–2.

⁽³⁹⁾ Available at: <https://www.reuters.com/article/us-china-congress-companies-idUSKCN1B40JU> (accessed on 2 May 2023).

⁽⁴⁰⁾ General Office of CCP Central Committee's Guidelines on stepping up the United Front work in the private sector for the new era. Available at: www.gov.cn/zhengce/2020-09/15/content_5543685.htm (accessed on 15 November 2022).

⁽⁴¹⁾ Financial Times (2020). Chinese Communist Party asserts greater control over private enterprise, available at: <https://on.ft.com/3mYxP4j> (accessed on 2 May 2023).

- (81) The state's presence and intervention in the financial markets (see also Section 3.2.2.1.8 below) as well as in the provision of raw materials and inputs further have an additional distorting effect on the market ⁽⁴²⁾. Thus, the state presence in firms, in the melamine and other sectors (such as the financial and input sectors) allow the GOC to interfere with respect to prices and costs.

3.2.2.1.5. Significant distortions according to Article 2(6a)(b), third indent of the basic Regulation: public policies or measures discriminating in favour of domestic suppliers or otherwise influencing free market forces

- (82) The direction of the Chinese economy is to a significant degree determined by an elaborate system of planning which sets out priorities and prescribes the goals the central, provincial and local governments must focus on. Relevant plans exist at all levels of government and cover virtually all economic sectors. The objectives set by the planning instruments are of a binding nature and the authorities at each administrative level monitor the implementation of the plans by the corresponding lower level of government. Overall, the system of planning in the PRC results in resources being driven to sectors designated as strategic or otherwise politically important by the government, rather than being allocated in line with market forces ⁽⁴³⁾.
- (83) The Chinese authorities have enacted a number of policies guiding the functioning of the sector of the product under review.
- (84) To start with, the 14th FYP on raw materials ⁽⁴⁴⁾ outlines that 'the intensive development of chemical industrial parks will be significantly improved, thus giving rise to a group of petrochemical industrial bases' ⁽⁴⁵⁾. The plan further urges the industry to 'strictly control the new production capacity of urea', one of the main components of melamine, and 'increase the standards for eliminating obsolete production capacity, and use comprehensive standards to promote the exit of obsolete production capacity in accordance with laws and regulations' ⁽⁴⁶⁾. Furthermore, 'all localities need to strengthen compliance with this Plan and integrate the Plan's main contents and major projects into in their key local tasks. Petrochemical and chemical, [...] shall formulate specific implementation opinions focussing on the objectives and tasks of this Plan and taking into account the actual conditions prevailing in the aforesaid sectors' ⁽⁴⁷⁾. Moreover, the 14th FYP on the green development of industry ⁽⁴⁸⁾ outlines that 'new capacity should be brought under strict control in industries such as urea' ⁽⁴⁹⁾. This is in line with the 2019 Guiding Catalogue for industry structural adjustment ⁽⁵⁰⁾, which lists Urea production facilities among the facilities 'to be eliminated' and thus kept under control ⁽⁵¹⁾. On the province level, the Jiangsu 14th FYP on high-end development of chemical industry ⁽⁵²⁾ outlines the local authorities' intention to 'continue to control new production capacity in excess industries such as oil refining, urea, ammonium phosphate, caustic soda, polyvinyl chloride, soda ash, calcium carbide, and yellow phosphorus' ⁽⁵³⁾. The Shandong 14th FYP on the development of chemical industry ⁽⁵⁴⁾ specifies to 'improve the added value and refinement of products, and accelerate the formation of a coal-based chemical industry system with three main categories: coal-based oxygen-containing chemicals, coal-based chemical intermediates, and coal-based chemical new materials' as well as to 'focus on developing the industrial chain of coal-based fine chemicals' ⁽⁵⁵⁾.

⁽⁴²⁾ Report – Chapters 14.1 to 14.3.

⁽⁴³⁾ Report – Chapter 4, p. 41–42, 83.

⁽⁴⁴⁾ 14th FYP on raw materials. Available at: https://www.miit.gov.cn/zwgk/zcwj/wjfb/tz/art/2021/art_2960538d19e34c66a5eb8d01b74cbb20.html (accessed on 2 May 2023).

⁽⁴⁵⁾ Ibid., Section II.3.

⁽⁴⁶⁾ Ibid., Section IV.I.

⁽⁴⁷⁾ Ibid., Section VIII.1.

⁽⁴⁸⁾ 14th FYP on the Green Development of Industry. Available at: http://www.gov.cn/zhengce/zhengceku/2021-12/03/content_5655701.htm (miit.gov.cn) (accessed on 2 May 2023).

⁽⁴⁹⁾ Ibid., Section III.2.

⁽⁵⁰⁾ See Section I.1.39., as well as Section I.1.56. of the Annex to the Guiding Catalogue, available at: www.gov.cn/xinwen/2019-11/06/5449193/files/26c9d25f713f4ed5b8dc51ae40ef37af.pdf (accessed on 2 May 2023).

⁽⁵¹⁾ Section III of the Guiding Catalogue.

⁽⁵²⁾ Jiangsu 14th FYP on high-end development of chemical industry. Available at: <https://huanbao.bjx.com.cn/news/20210906/1175114.shtml> (accessed on 2 May 2023).

⁽⁵³⁾ Ibid. Section 2.2.2.

⁽⁵⁴⁾ The Shandong 14th FYP on the development of chemical industry. Available at: <https://huanbao.bjx.com.cn/news/20211201/1191133.shtml> (accessed on 2 May 2023).

⁽⁵⁵⁾ Ibid., Section III.4.

- (85) In addition, the Guiding Opinion to promote the high-quality development of the petrochemical and chemical industries during 14th FYP ⁽⁵⁶⁾ quantifies further parameters of the sector's planned development: 'By 2025, the petrochemical and chemical industry will basically form a high-quality development pattern with strong indigenous innovation capabilities, a reasonable structural layout, a green, safe, low-carbon development. It will also greatly improve capabilities to ensure high-end product, significantly enhance core competitiveness, and take resolute steps towards high-level self-reliance and self-improvement' ⁽⁵⁷⁾ and several targets for the chemical sector: '[t]he production concentration level of bulk chemicals production will be further increased, and the capacity utilization rate will reach more than 80 % [...] about 70 chemical industry parks with competitive advantages will be established' ⁽⁵⁸⁾. It also emphasizes the need to: 'strengthen the coordination of fiscal, financial, regional, investment, import and export, energy, ecological environment, price and other policies with industrial policies' as well as to '[g]ive full play to the role of the national industry-finance joint cooperation platform, and promote bank-enterprise connections and industry-finance cooperation' ⁽⁵⁹⁾.
- (86) The Notice on Doing a Good Job in the Signing and Performance of Mid- and Long-Term Coal Contracts in 2021 ⁽⁶⁰⁾ of the National Development and Reform Commission further requires that the relevant market players: 'strengthen the construction of industry self-discipline. All relevant industry associations should guide enterprises to strengthen self-discipline, implement the requirements of medium and long-term contracts, and may not sign unfair contracts by taking advantage of the market supply and demand situation and the industry's dominant position. Large-scale enterprises should play an exemplary role and consciously regulate their decisions to sign contracts' ⁽⁶¹⁾. Through these and other means, the GOC therefore directs and controls virtually every aspect in the development and functioning of the sector, as well as the upstream inputs.
- (87) In sum, the GOC has measures in place to induce operators to comply with the public policy objectives concerning the sector of melamine. Such measures impede market forces from operating freely.

3.2.2.1.6. Significant distortions according to Article 2(6a)(b), fourth indent of the basic Regulation: the lack, discriminatory application or inadequate enforcement of bankruptcy, corporate or property laws

- (88) According to the information on file, the Chinese bankruptcy system delivers inadequately on its own main objectives such as to fairly settle claims and debts and to safeguard the lawful rights and interests of creditors and debtors. This appears to be rooted in the fact that while the Chinese bankruptcy law formally rests on principles that are similar to those applied in corresponding laws in countries other than the PRC, the Chinese system is characterised by systematic under-enforcement. The number of bankruptcies remains notoriously low in relation to the size of the country's economy, not least because the insolvency proceedings suffer from a number of shortcomings, which effectively function as a disincentive for bankruptcy filings. Moreover, the role of the state in the insolvency proceedings remains strong and active, often having direct influence on the outcome of the proceedings ⁽⁶²⁾.

⁽⁵⁶⁾ Guiding Opinion to Promote the High-Quality Development of the Petrochemical and Chemical Industries during 14th FYP. Available at: http://www.gov.cn/zhengce/zhengceku/2022-04/08/content_5683972.htm#msdyntrid=WRmyf07ph0z74SHmXoOLKjRWl09BdZ4lGdYp9fiI9xU (accessed on 2 May 2023).

⁽⁵⁷⁾ Ibid., Section I.3.

⁽⁵⁸⁾ Ibid.

⁽⁵⁹⁾ Ibid., Section VIII.

⁽⁶⁰⁾ Notice on Doing a Good Job in the Signing and Performance of Mid- and Long-Term Coal Contracts in 2021. Available at: http://www.gov.cn/zhengce/zhengceku/2020-12/09/content_5568450.htm (accessed on 2 May 2023).

⁽⁶¹⁾ Ibid.

⁽⁶²⁾ Report – Chapter 6, p. 138–149.

- (89) In addition, the shortcomings of the system of property rights are particularly obvious in relation to ownership of land and land-use rights in the PRC ⁽⁶³⁾. All land is owned by the state (collectively owned rural land and State-owned urban land) and its allocation remains solely dependent on the state. There are legal provisions that aim at allocating land use rights in a transparent manner and at market prices, for instance by introducing bidding procedures. However, these provisions are regularly not respected, with certain buyers obtaining their land for free or below market rates ⁽⁶⁴⁾. Moreover, authorities often pursue specific political goals including the implementation of the economic plans when allocating land ⁽⁶⁵⁾.
- (90) Much like other sectors in the Chinese economy, the producers of the product under review are subject to the ordinary rules on Chinese bankruptcy, corporate, and property laws. That has the effect that these companies, too, are subject to the top-down distortions arising from the discriminatory application or inadequate enforcement of bankruptcy and property laws. Those considerations, on the basis of the evidence available, appear to be fully applicable also in the melamine sector. The present investigation revealed nothing that would call those findings into question.
- (91) In light of the above, the Commission concluded that there was discriminatory application or inadequate enforcement of bankruptcy and property laws in the sector of the product under review.

3.2.2.1.7. Significant distortions according to Article 2(6a)(b), fifth indent of the basic Regulation: wage costs being distorted

- (92) A system of market-based wages cannot fully develop in the PRC as workers and employers are impeded in their rights to collective organisation. The PRC has not ratified a number of essential conventions of the International Labour Organisation (ILO), in particular those on freedom of association and on collective bargaining ⁽⁶⁶⁾. Under national law, only one trade union organisation is active. However, this organisation lacks independence from the state authorities and its engagement in collective bargaining and protection of workers' rights remains rudimentary ⁽⁶⁷⁾. Moreover, the mobility of the Chinese workforce is restricted by the household registration system, which limits access to the full range of social security and other benefits to local residents of a given administrative area. This typically results in workers who are not in possession of the local residence registration finding themselves in a vulnerable employment position and receiving lower income than the holders of the residence registration ⁽⁶⁸⁾. Those findings lead to the distortion of wage costs in the PRC.
- (93) No evidence was submitted to the effect that the melamine sector would not be subject to the Chinese labour law system described. The sector is thus affected by the distortions of wage costs both directly (when making the product concerned or the main raw material for its production) as well as indirectly (when having access to capital or inputs from companies subject to the same labour system in the PRC).

3.2.2.1.8. Significant distortions according to Article 2(6a)(b), sixth indent of the basic Regulation: access to finance granted by institutions which implement public policy objectives or otherwise not acting independently of the state

- (94) Access to capital for corporate actors in the PRC is subject to various distortions.
- (95) Firstly, the Chinese financial system is characterised by the strong position of state-owned banks ⁽⁶⁹⁾, which, when granting access to finance, take into consideration criteria other than the economic viability of a project. Similarly to non-financial SOEs, the banks remain connected to the state not only through ownership but also via personal relations (the top executives of large state-owned financial institutions are ultimately appointed by the CCP) ⁽⁷⁰⁾ and,

⁽⁶³⁾ Report – Chapter 9, p. 216.

⁽⁶⁴⁾ Report – Chapter 9, p. 213–215.

⁽⁶⁵⁾ Report – Chapter 9, p. 209–211.

⁽⁶⁶⁾ Report – Chapter 13, p. 332–337.

⁽⁶⁷⁾ Report – Chapter 13, p. 336.

⁽⁶⁸⁾ Report – Chapter 13, p. 337–341.

⁽⁶⁹⁾ Report – Chapter 6, p. 114–117.

⁽⁷⁰⁾ Report – Chapter 6, p. 119.

again just like non-financial SOEs, the banks regularly implement public policies designed by the GOC. In doing so, the banks comply with an explicit legal obligation to conduct their business in accordance with the needs of the national economic and social development and under the guidance of the industrial policies of the state ⁽⁷¹⁾. This is compounded by additional existing rules, which direct finances into sectors designated by the government as encouraged or otherwise important ⁽⁷²⁾.

- (96) While it is acknowledged that various legal provisions refer to the need to respect normal banking behaviour and prudential rules such as the need to examine the creditworthiness of the borrower, the overwhelming evidence, including findings made in trade defence investigations, suggests that these provisions play only a secondary role in the application of the various legal instruments.
- (97) For example, the GOC has clarified that even private commercial banking decisions must be overseen by the CCP and remain in line with national policies. One of the state's three overarching goals in relation to banking governance is now to strengthen the Party's leadership in the banking and insurance sector, including in relation to operational and management issues ⁽⁷³⁾. Also, the performance evaluation criteria of commercial banks have now to, notably, take into account how entities 'serve the national development objectives and the real economy', and in particular how they 'serve strategic and emerging industries' ⁽⁷⁴⁾.
- (98) Furthermore, bond and credit ratings are often distorted for a variety of reasons including the fact that the risk assessment is influenced by the firm's strategic importance to the GOC and the strength of any implicit guarantee by the government. Estimates strongly suggest that Chinese credit ratings systematically correspond to lower international ratings ⁽⁷⁵⁾.
- (99) This is compounded by additional existing rules, which direct finances into sectors designated by the government as encouraged or otherwise important ⁽⁷⁶⁾. This results in a bias in favour of lending to SOEs, large well-connected private firms and firms in key industrial sectors, which implies that the availability and cost of capital is not equal for all players on the market.
- (100) Secondly, borrowing costs have been kept artificially low to stimulate investment growth. This has led to the excessive use of capital investment with ever lower returns on investment. This is illustrated by the growth in corporate leverage in the state sector despite a sharp fall in profitability, which suggests that the mechanisms at work in the banking system do not follow normal commercial responses.

⁽⁷¹⁾ Report – Chapter 6, p. 120.

⁽⁷²⁾ Report – Chapter 6, p. 121–122, 126–128, 133–135.

⁽⁷³⁾ See official policy document of the China Banking and Insurance Regulatory Commission ('CBIRC') of 28 August 2020: *Three-year action plan for improving corporate governance of the banking and insurance sectors (2020-2022)*, available at: <http://www.cbirc.gov.cn/cn/view/pages/ItemDetail.html?docId=925393&itemId=928> (accessed on 2 May 2023). The Plan instructs to 'further implement the spirit embodied in General Secretary Xi Jinping's keynote speech on advancing the reform of corporate governance of the financial sector'. Moreover, the Plan's Section II aims at promoting the organic integration of the Party's leadership into corporate governance: 'we shall make the integration of the Party's leadership into corporate governance more systematic, standardised and procedure-based [...] Major operational and management issues must have been discussed by the Party Committee before being decided upon by the Board of Directors or the senior management.'

⁽⁷⁴⁾ See CBIRC's *Notice on the Commercial banks performance evaluation method*, issued on 15 December 2020. Available at http://jrs.mof.gov.cn/gongzuotongzhi/202101/t20210104_3638904.htm (last viewed 2 May 2023).

⁽⁷⁵⁾ See IMF Working Paper 'Resolving China's Corporate Debt Problem', by Wojciech Maliszewski, Serkan Arslanalp, John Caparusso, José Garrido, Si Guo, Joong Shik Kang, W. Raphael Lam, T. Daniel Law, Wei Liao, Nadia Rendak, Philippe Wingender, Jiangyan, October 2016, WP/16/203.

⁽⁷⁶⁾ Report – Chapter 6, p. 121–122, 126–128, 133–135.

- (101) Thirdly, although nominal interest rate liberalization was achieved in October 2015, price signals are still not the result of free market forces but are influenced by government-induced distortions. The share of lending at or below the benchmark rate still represented at least one-third of all lending as of the end of 2018 ⁽⁷⁷⁾. Official media in the PRC have recently reported that the CCP called for 'guiding the loan market interest rate downwards' ⁽⁷⁸⁾. Artificially low interest rates result in under-pricing, and consequently, the excessive utilization of capital.
- (102) Overall credit growth in the PRC indicates a worsening efficiency of capital allocation without any signs of credit tightening that would be expected in an undistorted market environment. As a result, non-performing loans have increased rapidly, with the GOC a number of times opting to either avoid defaults, thus creating so called 'zombie' companies, or to transfer the ownership of the debt (e.g. via mergers or debt-to-equity swaps), without necessarily removing the overall debt problem or addressing its root causes.
- (103) In essence, despite the steps that have been taken to liberalize the market, the corporate credit system in the PRC is affected by significant distortions resulting from the continuing pervasive role of the state in the capital markets. Therefore, the substantial government intervention in the financial system leads to the market conditions being severely affected at all levels.
- (104) No evidence was submitted in the present investigation demonstrating that the sector of the product under review is not affected by the government intervention in the financial system in the sense of Article 2(6a)(b), sixth indent of the basic Regulation. Therefore, the substantial government intervention in the financial system leads to the market conditions being severely affected at all levels.

3.2.2.1.9. Systemic nature of the distortions described

- (105) The Commission noted that the distortions described in the Report are characteristic for the Chinese economy. The evidence available shows that the facts and features of the Chinese system as described above in Sections 3.2.2.1.2 to 3.2.2.1.5 as well as in Part I of the Report apply throughout the country and across the sectors of the economy. The same holds true for the description of the factors of production as set out above in Sections 3.2.2.1.6 – 3.2.2.1.8 and in Part II of the Report.
- (106) The Commission recalls that in order to produce the product under review, certain inputs are needed. When the producers of melamine purchase/contract these inputs, the prices they pay (and which are recorded as their costs) are clearly exposed to the same systemic distortions mentioned before. For instance, suppliers of inputs employ labour that is subject to the distortions. They may borrow money that is subject to the distortions on the financial sector/capital allocation. In addition, they are subject to the planning system that applies across all levels of government and sectors.
- (107) As a consequence, not only the domestic sales prices of the product under review are not appropriate for use within the meaning of Article 2(6a)(a) of the basic Regulation, but all the input costs (including raw materials, energy, land, financing, labour, etc.) are also affected because their price formation is affected by substantial government intervention, as described in Parts I and II of the Report. Indeed, the government interventions described in relation to the allocation of capital, land, labour, energy and raw materials are present throughout the PRC. This means, for instance, that an input that in itself was produced in the PRC by combining a range of factors of production is exposed to significant distortions. The same applies for the input to the input and so forth. No evidence or argument to the contrary has been adduced by the GOC or the exporting producers in the present investigation.
- (108) The Commission received comments from the CCCMC, representing three Chinese melamine producers Sichuan Golden-Elephant Sincerity Chemicals Co., Ltd, Shandong Holitech Chemical Industry Co., Ltd and Henan Junhua Development Ltd ⁽⁷⁹⁾.

⁽⁷⁷⁾ See OECD (2019), OECD Economic Surveys: China 2019, OECD Publishing, Paris. p. 29. Available at: https://doi.org/10.1787/eco_surveys-chn-2019-en (accessed on 2 May 2023).

⁽⁷⁸⁾ See: http://www.gov.cn/xinwen/2020-04/20/content_5504241.htm (accessed on 2 May 2023).

⁽⁷⁹⁾ Henan Haohua Junhua holds 81 % of Henan Junhua Development. See https://aiqicha.baidu.com/company_detail_31229783116721 (last viewed 5 June 2023).

- (109) First, CCCME submitted that Article 2.2 of the WTO Antidumping Agreement ('ADA') does not recognize the concept of significant distortions. Moreover, even if the concept of significant distortions would fall under Article 2.2 ADA, which is not the case in CCCMC's view, the EU's calculation of the constructed normal value would also need to be in conformity with Article 2.2.1.1 of the ADA and with the Appellate Body's interpretation thereof, provided in the *EU – Biodiesel (Argentina)* (DS473) case. Accordingly, constructing normal value would, according to CCCMC, only be permitted in the situations of no sales of the like product in the 'ordinary course of trade' or of a 'particular market situation'. The alleged significant distortions in the exporting country would therefore need to fall under one of those categories for the Commission to be able to proceed with the expiry review according to Article 2(6a) of the basic Regulation. This is not the case in CCCMC's view, since the methodology pursuant to 2(6a) of the basic Regulation allows the construction of the normal value upon finding significant distortions rather than in line with the concepts foreseen by Article 2.2 ADA. Moreover, CCCMC submitted that there is no article in the ADA allowing use, for the purposes of determining the normal value, of data from a third country which does not appropriately reflect the prices or cost level in the country of origin. The normal value in anti-dumping investigations is required to be determined based on the sales prices or costs of the companies in the country of origin or at least based on prices or costs that can reflect the price or cost level in the country of origin. In this respect, CCCMC pointed in particular to the WTO Panel report in the *EU – Cost Adjustment Methodologies II (Russia)* (DS494) case as an example of a successful legal challenge to the WTO compatibility of the methodology under Article 2(6a) of the basic Regulation. For all the reasons above, CCCME considered that Article 2(6a) of the basic Regulation was inconsistent with the ADA and should not be applied in this case.
- (110) Concerning CCCMC's arguments of WTO compatibility of the methodology pursuant to Article 2(6a) of the basic Regulation, the Commission considers that the provisions of Article 2(6a) are fully consistent with the European Union's WTO obligations and the jurisprudence cited by CCCMC. At the outset, the Commission notes that the existence of significant distortions renders costs and prices in the exporting country inappropriate for the construction of normal value. In these circumstances, Article 2(6a) of the basic Regulation envisages the construction of costs of production and sale on the basis of undistorted prices or benchmarks, including those in an appropriate representative country with a similar level of development as the exporting country. Moreover, the WTO Report on *EU – Biodiesel* did not concern the application of Article 2(6a) of the basic Regulation, but of a specific provision of Article 2(5) of the basic Regulation. In any event, WTO law as interpreted by the Appellate Body in *EU – Biodiesel*, allows the use of data from a third country, duly adjusted when such adjustment is necessary and substantiated. Furthermore, in relation to the *EU – Cost Adjustment Methodologies II* dispute, the Panel Report specifically considered the provisions in Article 2(6a) of the basic Regulation to be outside the scope of the dispute. Moreover, the Commission recalls that both the EU and the Russian Federation appealed the findings of the Panel, which are not final and therefore, according to standing WTO case-law, have no legal status in the WTO system, since they have not been endorsed by the Dispute Settlement Body through a decision by the WTO Members. Consequently, CCCMC's arguments could not be accepted.
- (111) Second, concerning the evidence demonstrating the existence of significant distortions, CCCMC alleged that the applicants has provided inadequate evidence to justify any findings of 'significant distortions' in the Chinese melamine industry and that the Commission's own analysis in the course of the investigation would therefore require significantly greater substantiation, not least to complement the allegation distortions by the Union industry which, according to CCCMC could not be verified due to their general nature without inadequate citation of underlying sources. As an example, CCCMC refers to the fact that the Union industry's reference to the 14th FYP merely claims that it 'aims to create Chinese national champions'. Similarly, CCCMC criticizes the Union industry' reference to Guiding Opinions on promoting the high-quality development of the petrochemical and chemical industry during the 14th FYP. According to CCCMC, the Guiding Opinions are a guiding document not setting out binding rules, which in addition states a number of goals not mentioned by the Union industry, including the goals to 'give full play to the decisive role of the market in resource allocation, better play to the role of the government' and to 'create a market-oriented, legalized and internationalize business environment [...], promote efficient global allocation of factor resources, and strengthen upstream and downstream coordination of the industrial chain and coupled development between related industries'. Against this background, CCCMC drew a parallel between the Guiding Opinions and the current EU industrial policy initiatives.
- (112) In this connection, CCCMC also emphasized that the Report is no longer up to date, in particular given the substantial economic developments both in the EU and in China since its publication. CCCMC pointed out the obligation by the Commission pursuant to Article 2(6a)(c) of the basic Regulation to regularly update the Report and submitted that repeated slavish references to the Report – whether by the EU industry or in Commission's

determinations – would not be adequate. The CCCME referred in this respect to the WTO Appellate Body's ruling in the *US – Countervailing Measures* (DS437) case, stating that the claim on prices being distorted must be on a case-by-case basis and must be established and adequately explained in the investigating authority's report.

- (113) As for CCCMC's arguments related to analysis of sufficiency of evidence, the Commission disagreed. First, concerning the alleged inadequacy of evidence in the Union industry's submission(s), in the course of the present investigation, the Commission has been indeed collecting further information to complement the available sources, including the request and the Report, in order to verify the allegations made at initiation and, ultimately, to determine whether significant distortions in the sense of Article 2(6a) of the basic Regulation Commission are present in the melamine sector. The results of the Commission's investigation are laid out in recitals (67) to (104) and interested parties have the opportunity to further comment on them. In any event, concerning sufficiency of evidence at initiation stage, the Commission recalls that point 4.1 of the Notice of Initiation referred to a number of elements in the Chinese melamine market, to substantiate that the market was affected by distortions. The Commission considers that the evidence listed in the Notice of Initiation was sufficient to warrant initiation of an investigation on the basis of Article 2(6a) of the basic Regulation. Indeed, while the determination on the actual existence of significant distortions and the consequent use of the methodology prescribed by Article 2(6a)(a) of the basic Regulation only occurs at the time of the final disclosure, Article 2(6a)(e) of the basic Regulation lays down an obligation to collect the data necessary for the application of this methodology when the investigation has been initiated on this basis. In this case, the Commission deemed the evidence submitted in the request sufficient to initiate the investigation on this basis. Therefore, the Commission took the steps necessary to enable it to apply the methodology under Article 2(6a) of the basic Regulation in case the existence of significant distortions would be confirmed during the investigation.
- (114) Second, concerning the argument on the Chinese policy documents, the Commission points out, that the Chinese economy is covered by a complex web of FYPs, driving decisions by public authorities at all levels. Contrary to the argument put forward by the CCCMC, the Commission considers FYPs binding documents, as the national 14th FYP dedicates, for example, a whole section to 'improving the planning implementation mechanism' stating that: 'As regards the binding indicators, major engineering projects, and tasks in public services, environmental protection, safety, and other fields set out in this Plan, it is necessary to clarify the responsibilities parties and schedule requirements, to allocate public resources, guide and control social resources, and ensure completion as scheduled. As regards the expected indicators and tasks in the fields of industrial development and structural adjustment set out in this Plan, it is necessary to mainly rely on the role of market players to achieve them. Governments at all levels must create a favourable policy environment, institutional environment, and legal environment' ⁽⁸⁰⁾. Furthermore, the Guiding Opinion on promoting the high-quality development of the petrochemical and chemical industry during the 14th FYP, does also point towards concrete state intervention, further to the argument brought forward in the request, outlining that Chinese enterprises shall 'accelerate the transformation and upgrading of traditional industries, and vigorously develop new chemical materials and fine chemicals. Accelerate the digital transformation of the industry, improve the level of intrinsic safety and clean production, accelerate the quality, efficiency and power transformation of the petrochemical industry, and promote China's progress from a large petrochemical country to a strong petrochemical country' ⁽⁸¹⁾.
- (115) Third, concerning the alleged similarities of the current EU industrial policies with policies in China, the Commission failed to see the relevance of this point in the context of assessing the existence of significant distortions in China in accordance with Article 2(6a) of the basic Regulation.
- (116) Fourth, with regard to the claim concerning the outdated character of the evidence contained in the Report, the Commission noted that the Report is a comprehensive document based on extensive objective evidence, including legislation, regulations and other official policy documents published by the Chinese authorities, third party reports from international organisations, academic studies and articles by scholars, and other reliable independent sources. As it was made publicly available already in December 2017, any interested party had ample opportunity to rebut, supplement or comment on it and the evidence on which it is based, and no parties have submitted arguments or evidence rebutting the sources and information included in the Report.

⁽⁸⁰⁾ 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035. Available at: http://www.gov.cn/xinwen/2021-03/13/content_5592681.htm (accessed on 2 May 2023).

⁽⁸¹⁾ Ibid., Section 1.1.

- (117) Fifth, with respect to *US – Countervailing Measures (China)*, the Commission recalls that it did not concern the application of Article 2(6a) of the basic Regulation which is the relevant legal basis for the determination of normal value in this investigation. That dispute concerned a different factual situation and concerned the interpretation of the WTO Agreement on Subsidies and Countervailing Measures.
- (118) Finally, the Commission recalled that the GOC had the opportunity to comment on the alleged distortions described in the Report and in the expiry review and provide evidence countering the allegations. As explained in recital (47), the GOC failed to reply to the respective questionnaire and thus the Commission based its findings concerning the existence of significant distortions on the Chinese market on facts available pursuant to Article 18 of the basic Regulation.
- (119) Upon disclosure, CCCMC reiterated its arguments, making explicit reference to its previous submission. Moreover, Xinjiang XLX submitted identical arguments to those of CCCMC.
- (120) First, CCCMC and Xinjiang XLX insisted that Article 2(6a) of the basic Regulation is inconsistent with WTO law and inconsistent specifically with Article 2.2 ADA and they criticized the Commission for not explaining how its practice in applying Article 2(6a) of the basic Regulation accords with the reasoning set out in several consistent WTO Appellate Body determinations that have found similar EU and other members' practices in constructing normal value to be inconsistent with the obligations of Article 2.2 ADA. Moreover, CCCMC and Xinjiang XLX requested the Commission not to merely dismiss their argument by claiming that the WTO allows the use of data from a third country, but instead to explain how the Commission carried out the adaptation required by Article 2.2 ADA to arrive at the cost of production 'in the country of origin'. CCCMC and Xinjiang XLX referred in that respect to the Appellate Body's findings in the *EU – Biodiesel (Argentina)* (DS473) and in the *Ukraine – Anti-Dumping measures on ammonium nitrate* (DS493) disputes. Consequently, as long as the Commission constructed normal value based on cost of production in Turkey without any adjustment or explanation how that data has finally been adapted to reflect the cost of production in the country of origin – China, CCCMC and Xinjiang XLX argued the methodology applied by the Commission in the present investigation is incompatible with the EU's obligations under Article 2.2 ADA. According to CCCMC and Xinjiang XLX, it is thus incumbent on the Commission to fundamentally revise its normal value methodology and related conclusions.
- (121) These arguments cannot be accepted. As the Commission recalled already in recital (110) above, the Appellate Body jurisprudence invoked by CCCMC and Xinjiang XLX does not relate to the application of Article 2(6a) of the basic Regulation. Consequently, the argument that the Commission's methodology to construct normal value pursuant to that Article would not be compatible with WTO law in view of the Appellate Body reasoning is therefore misplaced. In that respect, the Commission is not merely dismissing the parties' arguments but expressing its legal position that the provisions of Article 2(6a) are fully consistent with the European Union's WTO obligations. Consequently, the Commission cannot agree with CCCMC and Xinjiang XLX in their request to revise the methodology mandated by Article 2(6a) of the basic Regulation.
- (122) Second, CCCMC and Xinjiang XLX considered the Commission's reasoning concerning significant distortions and the related evidence referred to by the Commission inadequate. More specifically, CCCMC and Xinjiang XLX expressed their concern that the Commission continues to substantially rely on the Report which was published in December 2017 and which, consequently, is now quite dated, with the world economy, including notably both the EU and Chinese economies, experiencing substantial economic upheaval and already implementing important policy and structural changes intended to adapt to the new domestic and global circumstances. CCCMC and Xinjiang XLX pointed out in this connection that the EU's own industrial strategy, adopted in March 2020, had to be updated already in May 2021 to take account of the new 'crisis' circumstances. Accordingly, CCCMC and Xinjiang XLX took the view that the elements described in the Report as relevant for finding significant distortions must now be re-examined and updated with specific new conclusions as to whether they remain valid today. CCCMC and Xinjiang XLX referred in this context also to Article 2(6a)(c) of the basic Regulation according to which the Commission is, inter alia, obliged to regularly update the Report.

- (123) Moreover, with respect to the ‘Guiding Opinions on promoting the high-quality development of the petrochemical and chemical industry during the 14th Five Year Plan’, CCCMC and Xinjiang XLX submitted that the Commission failed to take into account that (i) this document is a guidance document, not a binding regulation setting out detailed obligations or rules for the sectors concerned, as well as that (ii) it includes aims or goals – goals such as ‘give full play to the decisive role of the market in resource allocation, better play the role of the government’ or ‘create a market-oriented, legalized, and internationalized business environment’ – which are at odds with the Commission’s conclusions on distortions. Similarly, with respect to the FYPs quoted by the Commission, CCCMC and Xinjiang XLX contested the Commission’s interpretation of the system of plans in China, pointing out that those FYPs do not show that public authorities would drive binding decisions but rather that the FYPs seek to clarify the respective responsible parties whereas the role of governments is separately specified to be to ‘create a favourable policy environment, institutional environment, and legal environment’ – which is the role of governments everywhere including in the EU. In the same vein, CCCMC and Xinjiang XLX reiterated the argument that the Guiding Opinions on promoting the high-quality development of the petrochemical and chemical industry during the 14th FYP leave it to the Chinese enterprises to take the appropriate actions to transform and upgrade the sector, in a fashion similar to the EU industrial policies. Further, CCCMC and Xinjiang XLX submitted that the Commission did not address the argument raised earlier, namely that according to the Appellate Body’s finding in US – Countervailing Measures, the existence of price distortion resulting from government intervention has to be established and adequately explained by the investigating authority in its report. CCCMC and Xinjiang XLX understand this to be a requirement for the Commission to bring forward current factual data and detailed analysis of the alleged Chinese government intervention which results in consequent market effects and bears on behaviour at the producer level. Finally, CCCMC and Xinjiang XLX emphasized their position that Commission is bound to produce evidence of specific governmental exercise of any alleged powers to intervene in the melamine market and which has resulted in actual and demonstrable distortion of the respective melamine producers’ pricing and that the Commission’s references to Chinese government plans, guiding opinions or other Chinese government policy initiatives cannot be equated to actual government intervention.
- (124) These arguments could not be accepted. As to the Commission’s reliance on the Report and the fact that it was published in 2017, the Commission reiterates its position explained in recital (116). Moreover, the Commission recalls that a determination concerning the presence of significant distortions pursuant to Article 2(6a) of the basic Regulation is not conditional upon the existence of the Report, let alone on the date of its publication. The Commission notes further that the basic axioms of the Chinese economy, such as the paradigm of Socialist Market Economy, the system of planning or the CCP leadership over the economy – combined with the Party’s presence within individual market operators entailing the power to interfere with managerial decisions – have not changed since the publication of the Report, other than being arguably even more distinct. While the findings of the Report therefore remain largely valid, the Commission has in any event supplemented them in the present investigation by further evidence, as described in detail for example in recitals (76), (77), (79), (80) and (84) – (86) above. In view of this, also the argument of CCCMC and Xinjiang XLX concerning the Commission’s obligation to update the Report in line with Article 2(6a)(c) of the basic Regulation is groundless, as the Commission has indeed examined the relevant circumstances concerning the presence of significant distortions specifically for the purposes of this investigation, taking into account the most recent evidence available ⁽⁸²⁾.
- (125) As to the parallels which CCCMC and Xinjiang XLX draw between the Chinese policy documents and the EU’s industrial strategies, the Commission notes that the parties do not adduce any additional arguments, other than insisting on the alleged relevance of the EU’s industrial policies in the context of the assessment of significant distortions pursuant Article 2(6a) of the basic Regulation in China. Consequently, the Commission reiterates its position expressed already in recital (115).
- (126) Concerning the set of arguments on to what extent the Chinese policy documents referred to by the Commission, such as those quoted in recitals (84) – (86) above, are guidance document, how much the nature of the Chinese planning system and economic setup results in the public authorities binding decisions and to what extent the relevant policy document leave it to individual enterprises to take appropriate actions, the Commission notes that CCCMC and Xinjiang XLX disregard the unequivocal requirements contained in the relevant Chinese policy

⁽⁸²⁾ Such approach was confirmed by the General Court in its judgement of 21 June 2023, *Guangdong Haomei New Materials and Guangdong King Metal Light Alloy Technology v Commission*, T-326/21, EU:T:2023:347, para. 104.

documents to be implemented by the recipient authorities, as described for example in recital (84) above. In combination with the existence of specific numerical targets on how a sector should develop ⁽⁸³⁾, it remains largely irrelevant whether individual market operators, in order to achieve the set policy objectives and development goals, can choose the operational methods and therefore pursue those policy objectives in an efficient, 'market-based' manner. The Commission further recalls the structures in place in China for an all-encompassing environment of government interventions into the economy, comprehensively described in Sections 3.2.2.1.1 to 3.2.2.1.9 above. In that environment, individual market operators, such as Xinjiang XLX, as well as industry associations pledge their allegiance to the CCP and to the development goals set by the Party/state ⁽⁸⁴⁾ and, in exchange, they can expect support in their business operation, including through fiscal, financial, investment, zoning and other policies by the government authorities, state-controlled banks, etc. Consequently, the state authorities exercise their power to shape the melamine market, including within individual economic operators. This conclusion holds true irrespective of the specific legal nature of individual policy documents, such as the Guiding Opinions on promoting the high-quality development of the petrochemical and chemical industry during the 14th FYP.

(127) As to the reference by CCCMC and Xinjiang XLX to the Appellate Body's finding in US – Countervailing Measures, the Commission notes that this argument was already addressed in recital (117).

(128) In view of the above, CCCMC's and Xinjiang XLX's arguments were rejected.

3.2.2.1.10. Conclusion

(129) The analysis set out in Sections 3.2.2.1.2 to 3.2.2.1.9, which includes an examination of all the available evidence relating to the PRC's intervention in its economy in general as well as in the sector of the product under review showed that prices or costs of the product under review, including the costs of raw materials, energy and labour, are not the result of free market forces because they are affected by substantial government intervention within the meaning of Article 2(6a)(b) of the basic Regulation as shown by the actual or potential impact of one or more of the relevant elements listed therein. On that basis, the Commission concluded that it is not appropriate to use domestic prices and costs to establish normal value in this case.

(130) Consequently, the Commission proceeded to construct the normal value exclusively on the basis of costs of production and sale reflecting undistorted prices or benchmarks, that is, in this case, on the basis of corresponding costs of production and sale in an appropriate representative country, in accordance with Article 2(6a)(a) of the basic Regulation, as discussed in the following section.

3.2.2.2. Representative country

(131) The choice of the representative country was based on the following criteria pursuant to Article 2(6a) of the basic Regulation:

- A level of economic development similar to the PRC. For this purpose, the Commission used countries with a gross national income per capita similar to the PRC on the basis of the database of the World Bank ⁽⁸⁵⁾;
- Production of the product under review in that country ⁽⁸⁶⁾;
- Availability of relevant public data in the representative country;
- Where there is more than one possible representative country, preference should be given, where appropriate, to the country with an adequate level of social and environmental protection.

⁽⁸³⁾ See for example recital (85) above.

⁽⁸⁴⁾ See recitals (75) and (76) above.

⁽⁸⁵⁾ World Bank Open Data – Upper Middle Income. Available at <https://data.worldbank.org/income-level/upper-middle-income> (last viewed 3 July 2023).

⁽⁸⁶⁾ If there is no production of the product under review in any country with a similar level of development, production of a product in the same general category and/or sector of the product under review may be considered.

- (132) As explained in recital (50), the Commission issued a Note on sources that described the facts and evidence underlying the relevant criteria, and informed interested parties of its intention to use Türkiye as an appropriate representative country in the present case if the existence of significant distortions pursuant to Article 2(6a) of the basic Regulation would be confirmed.
- (133) In the Note on sources, the Commission explained that, due to the absence of meaningful cooperation, it would rely on facts available according to Article 18 of the basic Regulation. The choice of representative country was based on the information contained in the expiry review request, combined with other sources of information deemed appropriate according to the relevant criteria laid down in Article 2(6a) of the basic Regulation in accordance with Article 18(5) of the basic Regulation, including import statistics, national statistics of the representative country, market intelligence sources, fees charged by suppliers of utilities in the representative country, and financial information of producers in the representative country.
- (134) Regarding production of the product under review, in the expiry review request, the applicants examined seven countries (India, Iran, Japan, Qatar, Russia, Trinidad & Tobago, and the United States of America) where production of melamine took place ⁽⁸⁷⁾.
- (135) Regarding the level of economic development, only Russia qualified as a country at a level of development similar to the PRC in the RIP. However, given the recent geopolitical and economic developments in Russia, together with the sanctions in force, as well as the fact that Russia decided not to publish detailed import and export data as from April 2022, the Commission did not consider that Russia would constitute a suitable representative country.
- (136) In this respect, the applicants identified Türkiye as a country at a level of economic development similar to the PRC with production in the same general category of products, namely products in the ammonia value chain, of which melamine is also a part ⁽⁸⁸⁾.
- (137) Regarding the availability of relevant public data in the representative country, according to the request, data on important factors of production was readily available with regard to Türkiye. Furthermore, relevant data on SG&A and profit was publicly available for the same general category of products. The applicants identified one producer in the same general category of products, the company Ege Gübre Sanayii A.Ş. ('Ege Gübre'). In the Note on sources, the Commission identified two other producers in the same general category of products, the companies Tekfen Holding A.Ş. ('Tekfen') and Bağfaş Bandırma Gübre Fabrikaları A.Ş. ('Bağfaş'). All three companies were producers of nitrogen fertilisers ⁽⁸⁹⁾, had publicly available financial information covering the review investigation period, and were profitable in that period.
- (138) In its comments on the Note on sources, CCCMC submitted that the Commission should take into account the various production processes and raw materials used in melamine production. In addition, CCCMC argued that the Commission should use the questionnaire reply by Xinjiang XLX as facts available.
- (139) The Commission noted that without cooperation from Chinese producers of melamine using the various production processes and raw materials referred to by CCCMC, it based its findings on facts available. As explained in recital (60), in the present case, the Commission found it more appropriate to base its findings on the information in the request rather than on the data of a single Chinese company. In addition, the Commission indeed used certain elements of the Chinese producer's questionnaire reply as facts available. The claims were, therefore, dismissed.

⁽⁸⁷⁾ Paragraphs 59 and 60, and Table 1 of the expiry review request.

⁽⁸⁸⁾ Section 5.2.3 of the expiry review request.

⁽⁸⁹⁾ The ultimate raw materials used in the production of melamine and nitrogen fertilisers are natural gas or coal. Natural gas or coal are used to make ammonia. Ammonia can be further processed into urea or nitric acid. Nitric acid is used to produce ammonium nitrate, which is a nitrogen fertiliser. It can be further mixed to make other types of nitrogen fertilisers, e.g. urea ammonium nitrate ('UAN'; ammonium nitrate mixed with urea) or calcium ammonium nitrate ('CAN'; ammonium nitrate mixed with calcium from limestone). Urea, with an addition of ammonia, can also be used to produce melamine. Nitrogen fertilisers, urea and melamine are often produced by the same vertically integrated companies.

3.2.2.3. Undistorted costs and benchmarks and sources used to establish them

- (140) Considering all the information in the expiry review request, and after analysing the comments from interested parties, the following factors of production, their sources and undistorted values have been identified in order to determine the normal value in accordance with Article 2(6a)(a) of the basic Regulation:

Table 1

Factors of production of melamine

Factor of Production	Commodity Code in Türkiye	Undistorted value (CNY)	Unit of measurement	Source of information
Raw materials				
Urea	310210	4,41	kg	Global Trade Atlas ('GTA') ⁽¹⁾
Ammonia	281410	5,91	kg	GTA
Energy/Utilities				
Electricity	n/a	0,56	kWh	Turkish Statistical Institute
Natural gas	n/a	53,58	GJ	Turkish Statistical Institute
Steam	n/a	199,04	tonne	Expiry review request
Water	n/a	9,78	m ³	Kocaeli City Water and Sewerage General Directorate
Labour				
Skilled and unskilled labour	n/a	35,53	hour	Turkish Statistical Institute
By-product				
Ammonia	281410	5,89	kg	GTA

⁽¹⁾ Available at <https://connect.ihsmarkit.com/gta/home> (last viewed 6 February 2023).

3.2.2.3.1. Raw materials

- (141) In order to establish the undistorted price of raw materials as delivered at the gate of a representative country producer, the Commission used as a basis the weighted average import price to the representative country as reported in GTA to which import duties ⁽⁹⁰⁾ and transport costs ⁽⁹¹⁾ were added. An import price in the representative country was determined as a weighted average of unit prices of imports from all third countries excluding the PRC and countries which are not members to the WTO ('non-WTO countries'), listed in Annex 1 of Regulation (EU) 2015/755 of the European Parliament and the Council ⁽⁹²⁾.

⁽⁹⁰⁾ International Trade Centre, Market Access Map. Available at <https://www.macmap.org/en/query/customs-duties> (last viewed 5 April 2023).

⁽⁹¹⁾ Doing Business 2020. Economy profile Turkey, p. 51. Available at <https://archive.doingbusiness.org/content/dam/doingBusiness/country/t/turkey/TUR.pdf> (last viewed 9 February 2023). Trading across Borders methodology. Available at <https://archive.doingbusiness.org/en/methodology/trading-across-borders> (last viewed 9 February 2023).

⁽⁹²⁾ Regulation (EU) 2015/755 of the European Parliament and of the Council of 29 April 2015 on common rules for imports from certain third countries (OJ L 123, 19.5.2015, p. 33). Article 2(7) of the basic Regulation considers that domestic prices in those countries cannot be used for the purpose of determining normal value.

- (142) The Commission decided to exclude imports from the PRC into the representative country as it concluded in Section 3.2.2.1 that it was not appropriate to use domestic prices and costs in the PRC due to the existence of significant distortions in accordance with Article 2(6a)(b) of the basic Regulation. Given that there is no evidence showing that the same distortions do not equally affect products intended for export, the Commission considered that the same distortions affected export prices. After excluding imports from the PRC and non-WTO countries into the representative country, the volume of imports from other third countries remained representative.
- (143) The Commission examined whether the inputs, for which import statistics were used as the source of undistorted cost, were subject in Türkiye to export restrictions that could potentially distort the domestic prices and therefore also the import prices ⁽⁹³⁾. The Commission found that Türkiye did not apply any export restrictions on exports of urea and ammonia in the RIP.
- (144) The Commission further examined whether the import prices might have been distorted by imports from the PRC and non-WTO countries ⁽⁹⁴⁾. The Commission found that less than 14,5 % of imports of urea originated in the PRC and non-WTO countries in the RIP. With regard to ammonia, the share of imports originating in the PRC and non-WTO countries did not exceed 0,01 % in the RIP. The Commission thus concluded that the import prices were likely not affected by imports from the PRC and non-WTO countries.
- (145) In its comments on the Note on sources, CCCMC argued that the Commission should not use import prices to establish the undistorted cost of raw materials in Türkiye as those prices were affected by various factors, e.g. imported quantity, distance to the country of origin, and thus did not reflect domestic prices of the raw materials in Türkiye.
- (146) The Commission disagreed. Imported raw materials compete in terms of price with domestic raw materials on Turkish market. Therefore, the Commission considered that the weighted average import price sufficiently reflected the domestic price of raw materials in Türkiye.
- (147) Furthermore, in its comments on the Note on sources, CCCMC submitted that if the Commission continued using import prices as a proxy to domestic prices of raw materials in the representative country, it should reduce their value by the value of ocean freight and insurance included in the import statistics recorded at CIF level.
- (148) The Commission disagreed. As established in recital (146), import prices reflect the price level prevailing on the domestic market of the representative country. Nevertheless, total cost of a raw material borne by a producer in the representative country includes all cost incurred for acquiring the raw material and transporting it to the gate of the factory. This is also the point where prices of imported and domestic raw materials compete. Therefore, the import price of raw material at CIF level was further increased by the applicable import duty and transport cost in the representative country as mentioned in recital (141).
- (149) Finally, in its comments on the Note on sources, CCCMC claimed that the weighed average import price of urea was not an appropriate benchmark and should be thus adjusted for the following three reasons:
- The weighted average import price of urea in Türkiye more than doubled during the period considered as a consequence of the Russia's unprovoked and unjustified war of aggression against Ukraine (from 264 USD/tonne in 2019 to 568 USD/tonne in the RIP ⁽⁹⁵⁾);
 - Imports from the United States of America ('the US') distorted the average import price with an excessively high unit price of approximately 1 500 CNY/kg. Imports from the US should thus be excluded ⁽⁹⁶⁾;

⁽⁹³⁾ Global Trade Alert. Available at https://www.globaltradealert.org/data_extraction (last viewed 6 February 2023).

⁽⁹⁴⁾ Azerbaijan, Belarus, North Korea, Turkmenistan, Uzbekistan.

⁽⁹⁵⁾ CCCMC used the UN Comtrade database.

⁽⁹⁶⁾ See Annex III to the Note on sources.

— Imports from Qatar distorted the average import price as they were subject to anti-dumping measures imposed by India. Similarly to the previous point, imports from Qatar should be excluded ⁽⁹⁷⁾.

- (150) With regard to the evolution of the import price of urea in Türkiye, the Commission found that it perfectly followed the evolution of the import price of urea in the top 5 markets importing urea (India, Brazil, the US, the Union, Australia) representing 60 % of world's imports of urea ⁽⁹⁸⁾. The import price of urea in those five markets first slightly decreased in 2020, then steadily grew in 2021 and in the RIP. In the RIP, it reached more than double the value of 2019.
- (151) Therefore, the Commission concluded that the import price of urea in Türkiye was not distorted. It rather followed the global price trends concerning urea.
- (152) With regard to the import price of urea originating in the US, the Commission noted that the excessively high unit price only concerned 8 kg out of almost 2 million tonnes of urea imported to Türkiye in the RIP. Therefore, it had no effect on the weighted average import price used as a benchmark for the undistorted value of urea.
- (153) With regard to imports originating in Qatar being subject to anti-dumping duties in India, the Commission noted that first, CCCMC did not provide any evidence proving that the findings of dumping made by Indian authorities should be extended to Qatar's exports to Türkiye. Second, the measures imposed by India concerned melamine and not urea, the raw material at issue.
- (154) Following the considerations recounted in recitals (150) to (153), the Commission dismissed CCCMC's claims described in recital (149).
- (155) Following final disclosure, CCCMC reiterated that imports from Qatar should be excluded from the calculation of undistorted cost of urea since Qatar's exports were subject to anti-dumping measures in India. The party referred to the expiry review of anti-dumping measures concerning imports of certain stainless steel tube and pipe butt-welding fittings originating in the PRC where the Commission rejected Malaysia as a potential representative country on the grounds that the US had anti-dumping measures in place on imports of such fittings originating in Malaysia ⁽⁹⁹⁾.
- (156) First, the Commission noted that each investigation has to be assessed on its own merits and a decision taken in one investigation does not create a precedent universally valid for any other subsequent investigation. Second, in the case, to which CCCMC referred, Malaysia was considered as one of the potential representative countries. Findings of dumping made by another jurisdiction were relevant since the pricing decisions of fittings producers in Malaysia, influenced by their dumping behaviour, might have distorted their SG&A and the profitability levels. In the present case, Qatar was not used as a source of financial information, i.e. SG&A and undistorted profit. It was merely one of the countries of origin of urea imported to Türkiye and as such contributed to the value of the undistorted cost of urea. It follows that the two situations were completely non-analogous. There was no indication (and no arguments put forward by the claimants to that effect) that the alleged dumping behaviour to a third market would have a distortive effect on the prices of Qatari exports of urea to Türkiye. Consequently, the claim was rejected.
- (157) Following final disclosure, CCCMC further reiterated that the Commission should deduct ocean freight and insurance from the import price of raw materials. According to CCCMC, the Commission failed to clarify why the import prices reflected the price level prevailing on the domestic market of the representative country. In this respect, CCCMC argued that the cost of a company in the representative country only included the cost of raw material and domestic freight.

⁽⁹⁷⁾ See <https://www.dgtr.gov.in/anti-dumping-cases/anti-dumping-investigation-concerning-imports-melamine-originating-or-exported> (last viewed 5 April 2023).

⁽⁹⁸⁾ Import statistics retrieved from GTA available at <https://connect.ihsmarkit.com/gta/home> (last viewed 4 April 2023).

⁽⁹⁹⁾ Recital (103) of Commission Implementing Regulation (EU) 2023/809 of 13 April 2023 imposing a definitive anti-dumping duty on imports of certain stainless steel tube and pipe butt-welding fittings, whether or not finished, originating in the People's Republic of China and Taiwan following an expiry review pursuant to Article 11(2) of Regulation (EU) 2016/1036 of the European Parliament and of the Council (OJ L 101, 14.4.2023, p. 22).

- (158) The Commission disagreed. When a producer of the product under review in the representative country examines whether it should source a raw material from a domestic or foreign supplier, it compares the total cost of the raw material at the gate of its factory. For a raw material supplied by a domestic supplier in the representative country, such total cost normally includes the price of the raw material and domestic freight. Where the raw material is supplied by a foreign supplier, the total cost normally includes the price of the raw material, domestic freight in the exporting country, handling and loading (i.e. price at FOB level), ocean freight and insurance (i.e. price at CIF level available in import statistics), import duty (i.e. landed price), and domestic freight. A producer in the representative country will generally decide to source from abroad only when the import price at the gate of its factory is competitive with the price of a domestic supplier. Therefore, the Commission considered that the import prices at CIF level, i.e. including ocean freight and insurance, of raw materials were a suitable proxy for domestic prices (at EXW level) of those raw materials in the representative country. Consequently, the Commission rejected the claim.

3.2.2.3.2. Energy/utilities

- (159) The Commission intended to use the average electricity prices applicable to industrial users in second half of 2021 and first half of 2022 as published by the Turkish Statistical Institute ⁽¹⁰⁰⁾. The Commission used tariffs applicable to consumption band 70 000 to 150 000 MWh. To determine the applicable consumption band, the Commission used the electricity consumption reported by Xinjiang XLX as facts available.
- (160) The electricity prices reported by the Turkish Statistical Institute included all taxes. Therefore, the Commission deducted the VAT of 18 % from the electricity price reported in the national statistics.
- (161) The Commission intended to use the average natural gas prices applicable to industrial users in second half of 2021 and first half of 2022 as published by the Turkish Statistical Institute ⁽¹⁰¹⁾. The Commission used tariffs applicable to consumption band 26 100 000 to 104 000 000 m³. To determine the applicable consumption band, the Commission used the natural gas consumption reported by Xinjiang XLX as facts available.
- (162) The unit of measurement used in the Turkish statistics was cubic meter. The consumption reported in the expiry review request was however measured in gigajoules (GJ). The Commission used the conversion factor of 0,0373 GJ/m³ to arrive at undistorted cost of one gigajoule in Türkiye.
- (163) The natural gas prices reported by the Turkish Statistical Institute included all taxes. Therefore, the Commission deducted the VAT of 18 % from the natural gas price reported in the national statistics.
- (164) To determine the undistorted cost of steam, the Commission applied the approach used in the expiry review request. The applicants determined the undistorted cost of steam by multiplying the undistorted cost of natural gas by a factor based on empirical relation between the cost of natural gas and the cost of steam observed by the applicants.
- (165) The Commission used the applicable prices of water in Türkiye as charged by the Kocaeli City Water and Sewerage General Directorate ⁽¹⁰²⁾, which is responsible for water supply, sewage collection and treatment in the Kocaeli province, to industrial users. The applicable prices were readily available on the website of the Turkish authority.

⁽¹⁰⁰⁾ Elektrik ve Doğal Gaz Fiyatları, I. Dönem: Ocak-Haziran 2022 (Electricity and Natural Gas Prices, First Semester: January-June 2022), Table 1. Available at <https://data.tuik.gov.tr/Bulten/Index?p=Elektrik-ve-Dogal-Gaz-Fiyatlari-I.-Donem:-Ocak-Haziran-2022-45567> (last viewed 20 January 2023).

⁽¹⁰¹⁾ Elektrik ve Doğal Gaz Fiyatları, I. Dönem: Ocak-Haziran 2022 (Electricity and Natural Gas Prices, First Semester: January-June 2022), Table 3. Available at <https://data.tuik.gov.tr/Bulten/Index?p=Elektrik-ve-Dogal-Gaz-Fiyatlari-I.-Donem:-Ocak-Haziran-2022-45567> (last viewed 20 January 2023).

⁽¹⁰²⁾ Available at <https://www.isu.gov.tr/sufiyatlari/> (last viewed 30 January 2023).

- (166) In its comments on the Note on sources, CCCMC argued that the cost of electricity and natural gas in Türkiye were distorted as they had been growing considerably throughout the review investigation period. CCCMC claimed the energy price hikes were caused by the natural gas price pressure following Russia's unprovoked and unjustified war of aggression against Ukraine quoting the Melamine (Europe) report published by the Independent Commodity Intelligence Services ('ICIS') ⁽¹⁰³⁾ on 23 March 2022.
- (167) At the outset the Commission noted that the report quoted by CCCMC did not provide any comprehensive analysis of the evolution of energy prices in Europe, in particular in comparison to the PRC. It merely mentioned the growing natural gas prices in the context of melamine price negotiations for second quarter of 2022, i.e. the last quarter of the RIP.
- (168) In addition, Russia's unprovoked and unjustified war of aggression against Ukraine disrupted the energy markets worldwide ⁽¹⁰⁴⁾. Therefore, the trend of growing energy prices in Türkiye could as such be hardly considered an isolated occurrence purely applicable to the Turkish market.
- (169) Although the initially determined undistorted cost of electricity and natural gas represented only 5 % of the constructed normal value, the undistorted cost of steam was linked to the cost of natural gas and it amounted to 15 % of the constructed normal value.
- (170) Therefore, the Commission further examined the evolution of energy prices paid by industrial users in Türkiye. The undistorted cost of electricity was initially determined at the level of 0,65 CNY/kWh and of natural gas at the level of 80,91 CNY/GJ.
- (171) The Commission found that in the review investigation period, the electricity and natural gas prices increased at a rate that by far outpaced the already high inflation rate (78,6 % ⁽¹⁰⁵⁾) in Türkiye. The energy prices grew in particular in the first half of 2022 where the electricity cost 3,5 times and the gas six times more than in the first half of 2021.
- (172) Therefore, taking into account the significant share of electricity, natural gas and steam on the constructed normal value, the Commission found it appropriate to adjust the initially determined undistorted cost of electricity and natural gas. The Commission used the price of electricity and natural gas applicable to Turkish industrial users in the second half of 2021 as the starting point and increased those tariffs in line with the energy price growth found at Xinjiang XLX ⁽¹⁰⁶⁾ to determine the benchmark for the first half of 2022. Subsequently, the Commission calculated average undistorted cost of electricity, gas and steam using the actual prices applicable in Türkiye in the second half of 2021 and the adjusted values for the first half of 2022. Following those adjustments, the share of electricity, natural gas and steam on the constructed normal value dropped to 15 %.

3.2.2.3.3. Labour

- (173) In the expiry review request, the applicants used information on salaries for skilled (engineer in industrial sector) and unskilled labour (factory worker) in Türkiye published by the Economic Research Institute ⁽¹⁰⁷⁾. However, the information available either in the open version of the expiry review request or at the respective website did not make it possible to confirm the period, which the data covered. Furthermore, the benchmark used by the applicants only contained salaries but no additional labour cost, e.g. social contributions.

⁽¹⁰³⁾ See <https://www.icis.com/explore/commodities/chemicals/melamine/> (last viewed 11 April 2023).

⁽¹⁰⁴⁾ See for example <https://www.weforum.org/agenda/2022/11/russia-ukraine-invasion-global-energy-crisis/> (last viewed 9 June 2023); <https://blogs.worldbank.org/developmenttalk/energy-shock-could-sap-global-growth-years> (last viewed 9 June 2023); <https://www.reuters.com/business/energy/year-russia-turbocharged-global-energy-crisis-2022-12-13/> (last viewed 9 June 2023).

⁽¹⁰⁵⁾ Consumer Price Index, March 2023, Table 2. Available at <https://data.tuik.gov.tr/Bulten/Index?p=Consumer-Price-Index-March-2023-49652&dil=2> (last viewed 11 April 2023).

⁽¹⁰⁶⁾ The Commission acknowledges that the evolution of energy prices observed in Xinjiang XLX was based on distorted costs and prices. Since in the present expiry review, the aim is not to calculate a precise dumping margin but to establish whether dumping continued, the Commission found it acceptable to use the increase in energy prices experienced by Xinjiang XLX as a conservative proxy for the adjustment of the undistorted cost of electricity and natural gas.

⁽¹⁰⁷⁾ Available at <https://www.erieri.com/salary> (last viewed 6 February 2023).

- (174) Therefore, the Commission decided to use the information on labour cost in the relevant industrial sector available from the Turkish Statistical Institute ⁽¹⁰⁸⁾. The Commission used the most recent hourly labour cost ⁽¹⁰⁹⁾ recorded in Division 20 – Manufacture of chemicals and chemical products of the Statistical classification of economic activities in the European Community (NACE Rev. 2) ⁽¹¹⁰⁾. Since the most recent data only covered year 2020, the Commission adjusted the labour cost using the labour cost index applicable to manufacturing in the third and fourth quarter 2021 and first and second quarter 2022 ⁽¹¹¹⁾ as published by the Turkish Statistical Institute.

3.2.2.3.4. By-products

- (175) According to the information in the expiry review request, only one by-product, ammonia, is obtained in the production of melamine. To establish its undistorted price, the Commission also added import duties and internal transport costs to the average import price to Türkiye, following the same methodology as for raw materials.
- (176) Ammonia obtained as by-product is reintroduced in the production process in the urea plant. According to the expiry review request, the efficiency of such ammonia in the urea plant is lower than the efficiency of ammonia originally produced to be used in the urea plant. Therefore, the applicants reduced the undistorted value of the by-product by a percentage based on their previous experience. The Commission applied the same adjustment coefficient.

3.2.2.3.5. Manufacturing overheads, SG&A, and profit

- (177) According to Article 2(6a)(a) of the basic Regulation, 'the constructed normal value shall include an undistorted and reasonable amount for administrative, selling and general costs and for profits'. In addition, a value for manufacturing overheads needs to be established to cover costs not included in the factors of production referred to above.
- (178) In the expiry review request, the applicants estimated fixed cost based on the fixed cost incurred by one of the applicants in the production of 1 tonne of melamine. The estimated fixed cost was adjusted downwards to reflect the difference in the level of development between Türkiye and the Member State where the applicant is located.
- (179) The Commission included those fixed cost in the calculation of the undistorted cost of production as manufacturing overheads following the methodology applied by the applicants. The actual value of fixed cost was updated based on the verified questionnaire reply submitted by the applicant mentioned in recital (178) and adjusted for the difference in the level of economic development.
- (180) As explained in recital (137), there were no producers of melamine in Türkiye. Therefore, SG&A and profit were established based on the financial information of three Turkish producers in the same general category of products. In the present investigation, this refers to producers of products in the ammonia value chain, of which melamine is also a part, namely nitrogen fertilisers.
- (181) The Commission used the financial information covering the RIP published by the companies Ege Gübre ⁽¹¹²⁾, Tekfen ⁽¹¹³⁾ and Bağfaş ⁽¹¹⁴⁾ on their websites or via an online public disclosure platform. Where available, the Commission relied on data reported for a segment closest to the product under review. Income and expenses from investment activities were disregarded.

⁽¹⁰⁸⁾ Available at <https://data.tuik.gov.tr/Kategori/GetKategori?p=istihdam-issizlik-ve-ucret-108&dil=2> (last viewed 6 February 2023).

⁽¹⁰⁹⁾ Table *Monthly average labour cost and components by economic activity, 2020* available at <https://data.tuik.gov.tr/Kategori/GetKategori?p=istihdam-issizlik-ve-ucret-108&dil=2> (last viewed 6 February 2023).

⁽¹¹⁰⁾ Statistical classification of economic activities in the European Community available at <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF> (last viewed 6 February 2023).

⁽¹¹¹⁾ Table *Labour Cost Indices (2015=100)* available at <https://data.tuik.gov.tr/Kategori/GetKategori?p=istihdam-issizlik-ve-ucret-108&dil=2> (last viewed 6 February 2023).

⁽¹¹²⁾ Available at <http://www.egegubre.com.tr/mali.html> (last viewed 7 February 2023).

⁽¹¹³⁾ Available at <https://www.tekfen.com.tr/en/financial-statements-4-22> (last viewed 7 February 2023).

⁽¹¹⁴⁾ Available at <https://www.kap.org.tr/en/sirket-finansal-bilgileri/4028e4a240f2ef4701410810f53601c4> (last viewed 7 February 2023).

- (182) All three companies had financial information available for periods covering the RIP. Moreover, all three companies were profitable in the RIP. Therefore, the Commission calculated a weighted average SG&A and profit to determine the undistorted SG&A and profit in the representative country.
- (183) The applicable weighted average SG&A and profit were established as a percentage of the cost of goods sold at 16,5 % and 21,6 % respectively.
- (184) In its comments on the Note on sources, CCCMC argued that nitrogen fertilisers represent a products with physical and chemical characteristics different from melamine, different final use and targeted customers. Therefore, financial data of melamine producers in Türkiye should be used. If such data is not available, the Commission should revert to SG&A and profit of the applicants as actual producers of melamine. And finally, should the Commission insist on using the financial information of the Turkish companies, only SG&A and profit of Tekfen should be taken into account as the other two companies did not have audited financial information.
- (185) The Commission noted that nitrogen fertilisers being produced in the ammonia value chain could be well considered in the same general category of products. SG&A and profit of the Union producers could not be used in the present case considering the different level of economic development between the PRC and the Union. Finally, neither the Commission, nor CCCMC could determine whether the financial information of Ege Gübre and Bağfaş were audited or not. Since in the present investigation, the Commission relied on financial information of companies that did not actually produce the product under review, a weighted average of all three producers was considered more appropriate and representative.
- (186) Consequently, the Commission dismissed CCCMC's claims concerning undistorted SG&A and profit.
- (187) Following final disclosure, Xinjiang XLX and CCCMC reiterated that the Commission should exclude Ege Gübre and Bağfaş from the determination of SG&A and profit, as it was not clear whether the financial statements of the two companies were audited.
- (188) In this respect, the Commission conducted further research and could confirm that the financial information of both companies, Ege Gübre ⁽¹¹⁵⁾ and Bağfaş ⁽¹¹⁶⁾, was audited in the periods used to establish the SG&A and profit. The claim is therefore rejected.

3.2.2.4. Calculation of the normal value

- (189) On the basis of the above, the Commission constructed the normal value on an ex-works basis in accordance with Article 2(6a)(a) of the basic Regulation.
- (190) Since melamine is a commodity without further product types, the normal value was constructed for one product (type) only.
- (191) The Commission established the undistorted cost of manufacturing. In the absence of meaningful cooperation by the exporting producers, the Commission relied on the information provided by the applicants in the expiry review request on the usage of each factor of production when manufacturing melamine using the Eurotecnica technology.
- (192) The undistorted cost of manufacturing was reduced by the undistorted value of by-product adjusted downwards for the loss of efficiency (see recitals (175) and (176)).
- (193) The Commission then added manufacturing overheads to the undistorted costs of manufacturing to arrive at undistorted cost of production. The applicants reported manufacturing overheads as fixed cost in the expiry review request. The value of fixed cost was updated in line with the injury questionnaire reply of the respective applicant and adjusted downwards for the difference in the level of economic development.

⁽¹¹⁵⁾ See audit reports for 1 January – 31 December 2021 and 1 January – 30 June 2022 available at <https://www.kap.org.tr/Bildirim/1004178> and <https://www.kap.org.tr/tr/Bildirim/1056023> (last viewed 28 June 2023).

⁽¹¹⁶⁾ See audit reports for 1 January – 31 December 2021 and 1 January – 30 June 2022 available at <https://www.kap.org.tr/tr/Bildirim/1007098> and <https://www.kap.org.tr/Bildirim/1057306> (last viewed 28 June 2023).

- (194) Further, the Commission added undistorted SG&A and profit at the level of 16,5 % and 21,6 % respectively to the undistorted cost of production (see recital (180) to (183)).
- (195) Finally, the Commission found that in the PRC, the value added tax ("VAT") applied on exports of melamine (13 %) was only refunded partially (10 %). The difference between the VAT paid or payable and the refund increased the cost of the producers in the PRC when producing melamine for exports. The Commission therefore added further 3 % to the undistorted value of melamine determined in line with recitals (191) to (194).
- (196) On that basis, the Commission constructed the normal value on an ex-works basis in accordance with Article 2(6a)(a) of the basic Regulation.

3.2.3. *Export price*

- (197) In the absence of meaningful cooperation by exporting producers from the PRC, the export price of all melamine imports was determined based on import data from Eurostat, which was recorded at CIF level, adjusted to ex-works level by deducting sea freight, insurance and domestic transport costs in the PRC.
- (198) The average sea freight and insurance cost was based on the analysis of import statistics available in GTA ⁽¹¹⁷⁾. The Commission established the value of sea freight and insurance as the difference between the unit import price in the Union of melamine originating in the PRC (recorded at CIF level) and the unit export price of melamine exported from the PRC to the Union (recorded at FOB level) in the review investigation period.
- (199) The domestic transport in the PRC was based on the country report of the PRC by Doing Business ⁽¹¹⁸⁾.

3.2.4. *Comparison and dumping margins*

- (200) The Commission compared the constructed normal value established in accordance with Article 2(6a)(a) of the basic Regulation and export price on an ex-works basis as established above. On this basis, the weighted average dumping margin, expressed as a percentage of the CIF Union frontier price, duty unpaid, was above 40 %.
- (201) Therefore, the Commission concluded that dumping continued during the review investigation period.

3.3. **Likelihood of continuation of dumping**

- (202) Further to the findings of the existence of dumping during the review investigation period, the Commission investigated, in accordance with Article 11(2) of the basic Regulation, the likelihood of continuation of dumping should the measures be repealed. The following additional elements were analysed: the production capacity and spare capacity in the PRC and the attractiveness of the Union market.

3.3.1. *Production capacity and spare capacity in the PRC*

- (203) In the absence of cooperation, the Commission established production capacity and spare capacity in the PRC on the basis of information provided in the expiry review request ⁽¹¹⁹⁾. The annual production capacity was estimated based on the production capacity in 2020 and capacity expansion projects ongoing in 2021 as reported by the applicants ⁽¹²⁰⁾. In addition, the Commission identified further capacity expansion projects (not included in the CEH report) based on information published by Eurotecnica ⁽¹²¹⁾. Consequently, the annual production capacity already available in the review investigation period of [2 600 000 – 2 800 000] tonnes is likely to increase to [3 000 000 – 3 200 000] tonnes in the upcoming years.

⁽¹¹⁷⁾ Available at <https://connect.ihsmarkit.com/gta/home> (last viewed 22 February 2023).

⁽¹¹⁸⁾ Economy Profile China. Doing Business 2020, p. 84, 88. Available at <https://archive.doingbusiness.org/content/dam/doingBusiness/country/c/china/CHN.pdf> (last viewed 22 February 2023).

⁽¹¹⁹⁾ Section 5.3.1, Annexes 8.1 and 8.2 of the expiry review request. Annexes 8.1 and 8.2 include *Chemicals Economics Handbook – Melamine 2020* ('CEH report') and the corresponding *Data Workbook*. Since the CEH report is covered by third party copyright, the information contained in the report and the Data Workbook is provided in ranges.

⁽¹²⁰⁾ Annex 8.2 of the expiry review request. See tables *China-Producers* and *China-Additional capacity*.

⁽¹²¹⁾ References list 2023. Available at <https://www.eurotecnica.it/images/PDF/reflist.pdf> (last viewed 12 April 2023).

- (204) Capacity utilisation was estimated at the level of [40 – 45] % in the RIP and is expected to increase to [45 – 55] % until 2025 ⁽¹²²⁾. Consequently, production volume amounted to [1 040 000 – 1 260 000] tonnes in the RIP and is likely to increase to [1 350 000 – 1 760 000] tonnes up to 2025.
- (205) The spare capacity in the PRC thus amounted to more than 1 500 000 tonnes in the RIP and could fluctuate between 1 400 000 and 1 600 000 tonnes in the near future. This is almost four times the Union consumption in the review investigation period.
- (206) Based on the above, the Commission concluded that Chinese exporting producers have significant spare capacities, which could be mobilised for exports to the Union, making an increase of exports at dumped prices highly likely were the measures allowed to lapse.

3.3.2. *Attractiveness of the Union market*

- (207) To determine the attractiveness of the Union market, the Commission examined the Chinese export prices to the Union as compared to the export prices to third country markets, the size of the Union market, and the existing measures imposed by third countries closing their markets to Chinese melamine.
- (208) In the absence of meaningful cooperation, the Commission used the GTA ⁽¹²³⁾ for Chinese exports under HS subheading 2933 61 (Melamine) to compare Chinese export prices to the Union with those to third markets as well as with the average sales price of the Union producers on the Union market.
- (209) In the RIP, Chinese producers exported 588 thousand tonnes of melamine, i.e. approximately half of their estimated production. The most important third country export markets were India (14 %), Türkiye (12 %), Russia (8 %), Brazil (8 %), Vietnam (6 %) and Thailand (6 %).
- (210) The weighted average Chinese export price (at FOB level) to the Union in the review investigation period was 10 % higher than the weighted average export price to the top six export destinations mentioned in recital (209). In addition, the export price to the Union was up to 12 % higher than the export price to India, the second most important export market (following the Union with a 15 % share).
- (211) The Commission further adjusted the Chinese export prices to third markets listed in recital (209) (at FOB level) to Union CIF border level by adding the average sea freight and insurance cost from the PRC to the Union (see recital (198)). Such export prices to third countries were 27 % lower than the average sales price of the Union producers on the Union market. Should the measures be repealed, the Chinese exporting producer would have an incentive to export to the Union at prices higher than those charged to customers in third countries, yet lower than the sales price of the Union producers thus, exerting additional pressure on the price in the Union.
- (212) Moreover, the Union consumption in the review investigation period amounted to approximately 430 thousand tonnes and thus represented [35 – 40] % of the estimated melamine production in the PRC.
- (213) The imports originating in the PRC held a significant market share on the Union market in the second half of the period considered. The market share increased in 2021 (6,4 %) and in the review investigation period (14,9 %) in particular. This evolution correlated with the surge in the price of melamine on the Union market showing that the combination of the Union market size and prices attracts an influx of Chinese melamine, which was found to be exported at dumped prices in the review investigation period.

⁽¹²²⁾ Annex 8.2 of the expiry review request. See table *China-Supply Demand*.

⁽¹²³⁾ Available at <https://connect.ihsmarkit.com/gta/home> (last viewed 12 April 2023).

- (214) Finally, two third country markets – the US and the Eurasian Economic Union ('EAEU') – maintained trade defence measures partially or entirely closing their markets to imports from the PRC. The US imposed anti-dumping and countervailing measures on imports of melamine originating in the PRC in 2015 and extended their application for another five years in 2021 ⁽¹²⁴⁾. Chinese exports of melamine to the US are subject to a country-wide anti-dumping duty of 363,31 % and a residual anti-subsidy duty of 154,58 %. In April 2022, the EAEU imposed definitive anti-dumping duties on melamine from the PRC ranging from 15,22 % to 19,08 % ⁽¹²⁵⁾.
- (215) The US and Russia (as the largest member of the EAEU) each represented [3–5] % of global melamine consumption in 2020 ⁽¹²⁶⁾. Considering the high level of the measures, Chinese melamine producers almost completely ceased to export to the US; the exports amounted to only 80 tonnes in the RIP and even less than 50 tonnes in the previous years of the period considered. Following the imposition of the measures by the EAEU, the average monthly volume of Chinese melamine exports to the region dropped from 3 900 tonnes in the RIP (3 360 tonnes in 2021, 2 200 tonnes in 2020, 2 950 tonnes in 2019) to approximately 230 tonnes in the second half of 2022.
- (216) As demonstrated in recitals (214) and (215), trade remedies had a deterring effect on Chinese exports of melamine to the US and Russia. It is likely that the Chinese producers would attempt to compensate the loss of the two export markets by seeking new export opportunities in the Union should the measures currently under review be terminated.
- (217) Consequently, the Commission concluded that the Union market would likely attract increased volumes of dumped imports of melamine originating in the PRC for the following reasons:
- The Chinese export price to the Union was higher than the export price to third countries in the RIP;
 - Were the exports to third countries redirected to the Union, the Chinese exporting producers would be able to charge higher export prices while still remaining below the sales prices of the Union producers on the Union market thus creating additional price pressure;
 - The Union market is attractive in terms of its size amounting to approximately [35 – 40] % of Chinese melamine production and representing the top export destination in the RIP;
 - The Chinese producers seek alternative export opportunities following the closure of two export markets after the US and the EAEU introduced trade remedies on imports of melamine from the PRC.
- (218) Following final disclosure, Xinjiang XLX and CCCMC pointed out that the finding of higher Chinese export price to the Union in comparison to third countries was factually correct, yet not particular to the exports of melamine. They argued that the higher export prices to the Union reflect the generally higher sales prices in the Union due to higher costs of production related to labour, energy and environmental costs. In addition, lower level of economic development of a third country would not permit high export price.
- (219) The Commission noted that, whatever the reasons for a higher export price to the Union, it did not change the fact that the Chinese producers of melamine were able to charge higher price on the Union market as compared to the other major export markets and thus achieve a higher profitability of sales. The Commission concluded that the parties did not present any arguments that would reverse its findings that the higher Chinese export price to the Union was an indicator of the attractiveness of the Union market. In fact, the comments from the parties confirmed the Commission findings in this regard.

⁽¹²⁴⁾ Melamine From the People's Republic of China: Antidumping Duty and Countervailing Duty Orders. Available at <https://www.federalregister.gov/documents/2015/12/28/2015-32632/melamine-from-the-peoples-republic-of-china-antidumping-duty-and-countervailing-duty-orders> (last viewed 10 May 2023).

⁽¹²⁵⁾ Notice of the Department for Internal Market Defence of the Eurasian Economic Commission 'On the application of anti-dumping measures against melamine originating from the People's Republic of China and imported into the customs territory of the Eurasian Economic Union'. Available at http://www.eurasiancommission.org/ru/act/trade/podm/investigations/PublicDocuments/AD34_notice_dated05042022.pdf (last viewed 10 May 2023).

⁽¹²⁶⁾ Annex 8.2 of the expiry review request. See tables 'World consumption of melamine by region and Central and Eastern European consumption of melamine by country'.

- (220) Following final disclosure, Xinjiang XLX and CCCMC further submitted that Chinese producers of melamine were not interested in redirecting their exports from third countries to the Union. According to the parties, over the years, Chinese producers developed sound export markets in a number of third countries and would not abandon existing customers in those markets, inter alia, for the sake of risk diversification. Even if some of the exports were redirected to the Union, the producers would not be motivated to decrease their export prices to the Union.
- (221) The Commission noted that the parties did not provide any evidence supporting their arguments. It considered that targeting a market with higher prices would be a sound business decision. Chinese producers would actually be able to increase their export prices (in comparison to the export prices to third countries) while staying below the prices in the Union, which would give them a competitive advantage. The Commission dismissed the claim.
- (222) In addition, following final disclosure, Xinjiang XLX and CCCMC confirmed that the Union market was attractive for Chinese melamine producers in terms of its size.
- (223) Finally, the parties disagreed that the closure of the US and EAEU/Russian markets following the imposition of anti-dumping measures by the respective jurisdictions would lead to increased exports to the Union. They referred to the fact that after the US measures were adopted in 2015, the Chinese export volumes to the Union remained rather low.
- (224) The Commission noted that when the US measures were introduced, the Union market was already protected by the minimum import price and/or the fixed residual duty. In addition, the prevailing international prices of melamine in that period ⁽¹²⁷⁾ did not create an opportunity for Chinese producers to penetrate the Union market in order to make up for the loss of the US market. As soon as the melamine price increased internationally well above the level of the minimum import price (2021 and the RIP), the Chinese exports of melamine to the Union surged. The period of 2021 and RIP effectively simulate to a situation where there are no anti-dumping measures applied to imports of melamine originating in the PRC for the three major exporting producers subject to the minimum import price.
- (225) Consequently, the Commission concluded that the imposition of the US measures did not lead to immediate increase in exports to the Union due to the low international price of melamine in that period, which enabled the protection of the Union market through the minimum import price and/or the fixed residual duty. Therefore, the Commission confirmed its findings with regard to the attractiveness of the Union market following the closure of the US and EAEU/Russian markets.

3.3.3. *Conclusion on the likelihood of continuation of dumping*

- (226) In view of its findings on the continuation of dumping during the review investigation period as established in recital (201) and on the likely development of exports should the measures lapse as explained in recitals (202) to (217), the Commission concluded that there is a strong likelihood that the expiry of the anti-dumping measures on imports from the PRC would result in the continuation of dumping.

4. INJURY

4.1. Definition of the Union industry and Union production

- (227) Based on the information available in the request, the like product was manufactured, during the review investigation period, by the three applicants and two other producers. They constitute the 'Union industry' within the meaning of Article 4(1) of the basic Regulation. The two other Union producers, BASF AG, Ludwigshafen/Germany and S.C. Azomures S.A., Targu Mures/Romania, remained silent.

⁽¹²⁷⁾ For example, the Chinese export prices to the six major export markets were in the range of approximately 750 EUR/tonne to 850 EUR/tonne in 2015 and 2016. Source: Global Trade Atlas. Available at <https://my.ihs.com/> (last viewed 28 June 2023).

(228) The total Union production during the review investigation period was established at 382 186 tonnes. The figure was computed on the basis of the questionnaire replies from the three sampled Union producers and the macro-indicators questionnaire reply submitted by the applicants.

(229) As mentioned in recital (24), sampling was applied for the determination of possible continuation of injury suffered by the Union industry. The Union producers selected in the sample represented approximately 82 % of the total estimated Union production of the like product. The three sampled producers are the applicants.

4.2. Union consumption

(230) The Commission established the Union consumption on the basis of: (a) The applicants' data concerning Union industry's sales of the like product, partly cross-checked with the sales volumes reported by sampled Union producers; and (b) imports of the product under investigation into the Union from all third countries as reported in the Comext database (Eurostat).

(231) Based on this, Union consumption developed as follows:

Table 2

Union consumption (tonnes)

	2019	2020	2021	RIP
Total Union consumption	390 729	364 168	427 309	432 773
Index (2019 = 100)	100	93	109	111

Source: Eurostat, Applicant.

(232) The review showed that Union consumption increased by 11 % during the period considered. Union consumption was negatively affected by the outbreak of the COVID-19 pandemics in 2020, but strongly rebounded in 2021 and in the review investigation period.

4.3. Imports from the country concerned

4.3.1. Volume and market share of the imports from the country concerned

(233) The Commission established the volume of imports from the country concerned based on Eurostat statistics, as duly explained in recital (229). The Chinese market share was established by comparing imports to the Union consumption as set out in Table 2.

(234) Imports from the PRC developed as follows:

Table 3

Import volume and market share

	2019	2020	2021	RIP
Volume of imports from the PRC (tonnes)	6 704	1 222	27 270	64 673
Index (2019 = 100)	100	18	407	965
Market share of imports from the PRC (%)	1,7	0,3	6,4	14,9
Index (2019 = 100)	100	20	372	871

Source: Eurostat.

- (235) The volumes of imports from China dropped significantly by 82 % from 2019 to 2020, which may be explained by the production halts in China following the outbreak of the COVID-19 pandemics and sharp decrease in Union consumption. The volume of Chinese imports rebounded exponentially in 2021 to a quantity more than four times greater than the quantity imported in 2019. The volume of imports rose significantly again in the review investigation period to a quantity more than twice greater than the quantity imported in 2021.
- (236) In their comment on the final disclosure, Xinjiang XLX and CCCMC claimed that the increase of Chinese imports into the Union was caused by supply shortages at the level of the Union industry combined with strong demand by users post COVID-19, i.e. in 2021 and the review investigation period. Therefore, the Union industry was not able to satisfy that demand and users had to shift to imports from China. Xinjiang XLX added that, in addition, the Union industry increased prices substantially in that period and that users therefore had to seek alternative sources of supply.
- (237) The Commission noted that spare capacities of the sampled Union producers amounted in each year of the period considered to at least 80 000 tonnes (see Table 6), clearly exceeding the total volume of Chinese imports into the Union (see Table 3). It follows that the Union industry was certainly able to replace the total imports from China observed and subsequently able to satisfy demand to that extent on the Union market during the period considered. With regard to the prices charged by the Union industry, the Commission noted that these price increases, as applied by the Union industry, were perfectly in line with market signals in a context of strong demand and significant cost increases as observed in 2021 and the review investigation period. The claims were therefore rejected.

4.3.2. *Prices of the imports from China and price undercutting.*

4.3.2.1. *Prices*

- (238) The Commission established the average prices of imports from China based on Eurostat statistics.
- (239) The weighted average price of imports from China developed as follows:

Table 4

Import prices (EUR/tonne)

	2019	2020	2021	RIP
China	1 155	958	1 627	2 224
<i>Index (2019 = 100)</i>	<i>100</i>	<i>83</i>	<i>141</i>	<i>193</i>

Source: Eurostat.

- (240) Average prices of melamine imports from China increased during the period considered by 93 %, showing that Chinese producers partly followed the generally positive price trend on the Union market, as shown by Table 8.

4.3.2.2. *Price undercutting*

- (241) Since the export prices of the sole cooperating exporting producer could not be considered representative given the underlying export quantities represented less than 3 % of the total exports from China into the Union during the review investigation period (see recital (27)), the Commission determined the price undercutting by comparing (a) the weighted average statistical prices of imports from the PRC during the review investigation period, as explained

in recital (196), established on a CIF basis, with appropriate adjustments for the conventional rate of customs duty, anti-dumping duty ⁽¹²⁸⁾ and post-importation costs; and (b) the weighted average sales prices of the three Union producers charged to unrelated customers in the Union market, adjusted to an ex-works level. The thus calculated undercutting margin amounted to 12,6 %.

4.4. Volumes and prices of imports from third countries

(242) The Commission established the volumes and prices of imports from third countries applying the same methodology as for the PRC (see Section 4.3.1).

(243) The volume of imports from third countries developed over the period considered as follows:

Table 5

Imports from third countries

Country		2019	2020	2021	RIP
Qatar	Import volume (tonnes)	33 941	26 256	35 622	31 725
	Index (2019 = 100)	100	77	105	93
	Market share (%)	8,7	7,2	8,3	7,3
	Index (2019 = 100)	100	83	96	84
	Average price (EUR/tonne)	1 011	824	1 548	2 479
	Index (2019 = 100)	100	81	153	245
Trinidad and Tobago	Import volume (tonnes)	13 719	8 370	14 112	12 507
	Index (2019 = 100)	100	61	103	91
	Market share (%)	3,5	2,3	3,3	3,0
	Index (2019 = 100)	100	65	94	84
	Average price (EUR/tonne)	1 091	850	1 572	2 485
	Index (2019 = 100)	100	78	144	227
Japan	Import volume (tonnes)	13 699	9 195	9 499	7 576
	Index (2019 = 100)	100	67	69	55
	Market share (%)	3,5	2,5	2,2	1,8
	Index (2019 = 100)	100	72	63	50
	Average price (EUR/tonne)	1 076	912	1 295	2 046
	Index (2019 = 100)	100	85	120	190

⁽¹²⁸⁾ With regard to the anti-dumping duty added, the measures consist of minimum import prices for three exporting producers and a fixed specific duty for all other exporting producers. The imports by the three parties with minimum import prices were, if above the minimum price, free of anti-dumping duty whereas the applicable anti-dumping duties on imports from these parties below the minimum import prices varied depending on the net invoice value before importation. There were also imports from other exporting producers to which the residual specific duty of EUR 415 per tonne applied. In view of this mixed picture, the amount of anti-dumping duties added was established on the basis of the melamine imports data reported by Member States pursuant to Article 14(6) of the basic Regulation, as that dataset included the amounts paid.

Other third countries	Import volume (tonnes)	37 825	28 238	22 673	21 480
	<i>Index (2019 = 100)</i>	100	75	60	57
	Market share (%)	9,7	7,8	5,3	5,0
	<i>Index (2019 = 100)</i>	100	80	55	51
	Average price (EUR/tonne)	940	816	1 671	2 447
	<i>Index (2019 = 100)</i>	100	87	178	260
Total imports excluding China	Import volume (tonnes)	99 183	72 059	81 907	73 288
	<i>Index (2019 = 100)</i>	100	73	83	74
	Market share (%)	25,4	19,8	19,2	17,0
	<i>Index (2019 = 100)</i>	100	78	76	67
	Average price (EUR/tonne)	1 004	835	1 557	2 427
	<i>Index (2019 = 100)</i>	100	83	155	242

Source: Eurostat.

- (244) The most important sources of imports outside China included Qatar, Trinidad and Tobago and Japan. Imports from each of these countries decreased during the period considered, by at least 7 % and up to 45 %, whereas the total imports from third countries, excluding China, decreased by 26 %.
- (245) In the review investigation period, the average import prices of the two countries other than China with an individual market share of more than 2 % during the review investigation period, Qatar (7,3 %) and Trinidad and Tobago (3 %), were more than EUR 200 per tonne above the average import prices from the PRC.
- (246) Xinjiang XLX and CCCMC claimed that the above table showed that the Commission had not assessed the role of Russia's imports of melamine into the Union. Russia's imports were significant up until Russia's unprovoked and unjustified war of aggression against Ukraine, and thereafter, Xinjiang XLX and CCCMC claimed, Russian imports were replaced by imports from China, a factor that would also explain the increase of Chinese imports since then.
- (247) The Commission disagreed. It certainly did individually assess Russia's imports as part of the imports made by 'other third countries' (see Table 5). However, Russian imports are not individually reported in the above table as Qatar, Trinidad and Tobago and Japan were the three export countries with the highest export volumes to the Union outside the country concerned during the review investigation period. The market share of Russia was, in the review investigation period, 1,4 % and its highest level in the period considered was in 2020, when they reached a market share of 4,3 %. The market share loss of Russia since that peak year (minus 2,9 percentage points) is thus dwarfed by the market share increase of China (plus 14,6 percentage points). The claim that the market share loss of Russian imports contributed to a significant extent to the market share increase of Chinese imports was therefore rejected.
- (248) After final disclosure, Xinjiang XLX and CCCMC observed that average prices of Chinese imports during the review investigation period were at levels above the corresponding prices from Japan and Russia and that all exporting countries largely followed the trend of increasing prices in 2021 and the review investigation period.

- (249) The Commission agreed that average prices of imports from Japan and Russia indeed were below the average prices of imports from China during the review investigation period according to Eurostat data. However, their combined market share of 3,2 % was much lower than that of imports from China. Furthermore, the Commission observed that the parties in question did not make any claims emanating from these facts. Consequently, the claim was rejected.
- (250) Based on the above, i.e. the development of import volumes from third countries and the prices of imports from the most important sources other than China, the Commission concluded that imports from third countries did not have an injurious effect on the Union industry.

4.5. Economic situation of the Union industry

4.5.1. General remarks

- (251) In accordance with Article 3(5) of the basic Regulation, the examination of the impact of the dumped imports on the Union industry included an assessment of all economic indicators having a bearing on the state of the Union industry during the period considered.
- (252) For the sake of assessing injury, the Commission distinguished between macroeconomic and microeconomic injury indicators. The Commission assessed the macroeconomic indicators based on data and information contained in the questionnaire reply of the applicants, duly cross-checked with the information in the request and the questionnaire replies of the sampled Union producers, and Eurostat statistics. The Commission assessed the microeconomic indicators based on data contained in the questionnaire replies from the sampled Union producers.
- (253) The macroeconomic indicators are: production, production capacity, capacity utilisation, sales volume, market share, growth, employment, productivity, magnitude of the dumping margin, and recovery from past dumping.
- (254) The microeconomics indicators are: average unit sales prices, unit cost, labour costs, inventories, profitability, cash flow, investments, return on investments, and ability to raise capital.

4.5.2. Production, production capacity and capacity utilisation

- (255) The total Union production, production capacity and capacity utilisation developed over the period considered as follows:

Table 6

Production, production capacity and capacity utilisation

	2019	2020	2021	RIP
Production volume (tonnes)	403 513	401 780	396 575	382 187
<i>Index (2019 = 100)</i>	100	100	98	95
Production capacity (tonnes)	480 383	480 578	477 621	472 494
<i>Index (2019 = 100)</i>	100	100	99	98
Capacity utilisation (%)	84,0	83,6	83,0	80,9
<i>Index (2019 = 100)</i>	100	100	99	96

Source: Applicants.

- (256) The production of the Union industry decreased by 5 % over the period considered. The production capacity of the Union industry remained almost stable over the period considered, with a minor decrease of 2 %. As a consequence, the capacity utilisation decreased by 4 %.

4.5.3. Sales volume and market share

(257) The Union industry's sales volume and market share developed over the period considered as follows:

Table 7

Sales volume and market share

	2019	2020	2021	RIP
Total sales volume on the Union market – unrelated customers	284 842	290 888	318 133	294 513
<i>Index (2019 = 100)</i>	100	102	112	103
Market share (%)	72,9	79,9	74,5	68,1
<i>Index (2019 = 100)</i>	100	110	102	93

Source: Eurostat, Applicants.

(258) Sales volumes of the Union industry to unrelated customers increased by 12 % from 2019 to 2021 but it fell by 9 percentage points between 2021 and the review investigation period to a level 3 % above the level in 2019.

(259) From 2019 to 2020, the Union industry could increase its market share by 10 %, filling the gap that lower import quantities from China had left subsequent to the COVID-19 pandemics (see recital (234) and Table 3). Between 2020 and the review investigation period, the Union industry lost significant market shares, close to 12 percentage points, and as compared to 2019 the Union industry lost 4,8 percentage points of market share in the review investigation period.

4.5.4. Growth

(260) During the period considered, the Union consumption increased by 11 % (see Table 2), whereas the Union industry's volume of sales to unrelated customers in the Union increased by 8 % (see Table 7). Consequently, the Union industry grew in absolute terms but it shrank in relative terms. In other words, the Union industry could not benefit from market growth to the same extent as imports from China did.

4.5.5. Prices and factors affecting prices

(261) The weighted average unit sales prices of the Union producers to unrelated customers in the Union and the unit cost of production developed over the period considered as follows:

Table 8

Sales prices in the Union and cost of production

	2019	2020	2021	RIP
Weighted average unit sales price in the Union	1 149	928	1 863	2 811
Weighted average unit sales price in the Union (<i>Index, 2019 = 100</i>)	100	81	162	245
Unit cost of production	980	906	1 611	2 250
Unit cost of production (<i>Index, 2019 = 100</i>)	100	92	164	230

Source: Sampled Union producers.

- (262) After a drop by 8 % from 2019 to 2020, unit cost of production grew exponentially to a level that was in the review investigation period 130 % above the level in 2019. This sharp increase in cost of production was caused by the very strong rise in gas prices starting in 2021.
- (263) Sales prices followed a similar trend. From 2019 to 2020, unit sales prices fell by 19 %, following the economic downturn in relation to the COVID-19 pandemics. However, from 2020 to the review investigation period, unit sales prices rose threefold.

4.5.6. Employment and productivity

- (264) Employment, productivity and average labour costs of the Union producers developed over the period considered as follows:

Table 9

Employment and productivity

	2019	2020	2021	RIP
Number of employees	647	632	642	641
<i>Index (2019 = 100)</i>	100	98	99	99
Labour Productivity (tonne/employee)	515	524	508	498
<i>Index (2019 = 100)</i>	100	102	99	97
Average labour costs per employee	71 772	73 491	77 431	76 913
Average labour costs per employee (<i>Index, 2019 = 100</i>)	100	102	108	107

Source: Applicants, Sampled Union producers.

- (265) The average labour costs increased by 7 % during the period considered. The number of employees and labour productivity remained stable during the period considered. The Union industry was employing close to 650 staff throughout the period considered, with an output per employee of around 500 tonnes.

4.5.7. Inventories

- (266) Stock levels of the Union producers developed over the period considered as follows:

Table 10

Inventories

	2019	2020	2021	RIP
Closing stocks	20 615	12 151	5 372	24 530
<i>Index (2019 = 100)</i>	100	59	26	119
Closing stocks as a percentage of production	5,2	3,1	1,4	6,3
<i>Index (2019 = 100)</i>	100	59	26	121

Source: Sampled Union producers.

- (267) Stock levels varied significantly over the period considered. In the review investigation period, the level was 19 % above the level in 2019. This is an additional indication that the Union industry had increasing difficulties towards the end of the period considered to sell its output in the face of dramatically increasing imports from China.

4.5.8. Profitability, cash flow, investments, return on investments and ability to raise capital

- (268) Profitability, cash flow, investments and return on investments of the Union producers developed over the period considered as follows:

Table 11

Profitability, cash flow, investments and return on investments

	2019	2020	2021	RIP
Profitability of sales in the Union to unrelated customers (%)	8,0	– 4,1	12,3	17,3
Profitability of sales in the Union to unrelated customers (<i>Index</i> , 2019 = 100)	100	– 51	154	216
Cash flow	46 403 891	12 158 042	95 868 270	118 352 455
Cash flow (<i>Index</i> , 2019 = 100)	100	26	207	255
Investments	42 800 119	25 704 881	32 880 347	33 110 890
Investments (<i>Index</i> , 2019 = 100)	100	60	77	77
Return on investments (%)	14,5	– 10,2	46,2	88,4
Return on investments (<i>Index</i> , 2019 = 100)	100	– 70	319	610

Source: Sampled Union producers.

- (269) The Commission established the profit of the sampled Union producers by expressing the pre-tax net profit of its melamine sales to unrelated customers in the Union as a percentage of the turnover of the underlying sales. The profitability thus established rose from 8 % in 2019 to 17,3 % in the review investigation period. In 2020, due to the economic downturn caused by the COVID-19 pandemics, the Union industry was heavily lossmaking, but subsequently it rapidly and strongly recovered.
- (270) The net cash flow is the ability of the Union producers to self-finance their activities. The cash flow development during the period considered was positive, with cash flow generated from its operations at 155 % higher during the review investigation period as compared to 2019.
- (271) The Union industry's level of investment was on a decreasing trend during the period considered (– 13 % between 2019 and the review investigation period). As seen above under capacity utilization (Table 6), the Union industry has no immediate need to invest in new production capacity.
- (272) The return on investments is the profit in percentage of the net book value of investments, and the trend followed that of the analysed profitability rates.
- (273) None of the sampled Union producers reported any difficulties in their ability to raise capital. As shown in Table 11, the available cash flow exceeded the investments made by far with the year 2020 being the only exception.

4.5.9. Conclusion on the situation of the Union industry

- (274) In a context of increasing consumption, the Union industry increased its sales volumes over the period considered. However, the Union industry lost significant market shares to the PRC in 2021 and the review investigation period, as a result of which its market share, at the end of the period considered, was close to 5 percentage points below its level at the beginning of it. Indeed, in view of the exceptionally favourable market conditions in the Union, caused by a catch-up effect after the due to COVID-19 pandemics sluggish demand year 2020, prices in the Union were significantly above the minimum import prices to which the exporting producers cooperating in the original investigation are subject. This resulted immediately in a return of high volumes of imports from those exporting producers. These imports undercut the Union industry prices significantly.

- (275) Whilst the Union industry thus lost significant market shares to China, its financial indicators did not suffer from this surge of Chinese imports as it could still obtain exceptionally good prices in 2021 and in the first half of 2022. Profits of the Union industry remained at healthy levels and reached a peak in the review investigation period, which shows that Union producers were able to pass on cost increases in their sales prices. Under these circumstances, the measures in force provided a floor when prices were still lower (in 2019 and 2020) and thus ensured a level playing field on the Union melamine market. When the prices subsequently reached unprecedentedly high levels, not observed since the original investigation, the Union industry lost significant market shares but it continued to enjoy healthy profits. As a matter of fact, the measures did not foreclose Chinese producers from the Union market, in particular when prices were surging, which therefore continued to be present and benefitted from growing consumption.
- (276) On balance, most injury indicators, such as production, sales, employment, profitability and cash flow developed positively and/or were at satisfactory levels. However, some indicators point to a less favourable situation of the Union industry. In particular, the Union industry lost market shares to the benefit of Chinese imports. Likewise, total production and capacity utilisation rates dropped during the period considered, and stock levels increased.
- (277) Based on the above, the Commission concluded that overall the Union industry did not suffer material injury within the meaning of Article 3(5) of the basic Regulation during the period considered.

5. LIKELIHOOD OF RECURRENCE OF INJURY IF THE MEASURES WERE TO BE REPEALED

- (278) As the Commission concluded that the Union industry did not suffer from material injury during the review investigation period (see recital (276)), the Commission assessed, in accordance with Article 11(2) of the basic Regulation, whether there would be a likelihood of recurrence of injury originally caused by the dumped imports from China if the measures were allowed to lapse.
- (279) In that regard, the Commission relied on the information made available by cooperating parties and any other information on the file on production capacity and spare capacity in China to examine the attractiveness of the Union market, and the likely impact of imports from China should the measures be allowed to lapse.
- (280) As concluded in recitals (204) and (205), spare capacities in China are significant and represent approximately four times the annual consumption in the Union. Moreover, as concluded in recital (216), the Union market is an attractive market for Chinese producers in view of the prices on the Union market and its size. Based on that, the expiry of the anti-dumping measures is very likely to result in an increase of Chinese exports to the Union.
- (281) In their comments on the final disclosure, Xinjiang XLX and CCCMC claimed that the Commission made no analysis of the likely scale of any increase of Chinese export sales to the Union nor the likely timeframe over which this increase is to incur although both factors would have a direct bearing on the magnitude of any resulting injury.
- (282) The Commission recalled that in accordance with Article 11(2) it is not necessary to establish the magnitude of continuing or recurring injury. It is sufficient to establish that based on such injury is likely to continue or to recur.
- (283) CCCMC added that the Commission did not address comments earlier submitted by CCCMC bearing directly on the non-likelihood of Chinese producers with new or increased capacity being able to quickly or easily exploit that capacity and begin exporting to the Union market. CCCMC also referred to its comments on likelihood of recurrence of dumping, which, according to CCCMC would also refute concerns about the arrival of new imports from China due to Chinese redirection from other existing export markets or from closure of other markets due to the imposition of anti-dumping measures.

- (284) The Commission clarified that it had addressed all comments made. Where comments concerned both the likelihood of continuation of dumping and recurrence of injury, they were addressed under Section 3.3 above and were valid *mutatis mutandis* for the recurrence of injury. With regard to the comments made by CCCMC pursuant to initiation, the Commission refers to the rebuttals under recital (22) above.
- (285) This notwithstanding, the Commission confirmed that the total spare capacities in China as specified under recitals (202) to (204) are of such magnitude as to make the recurrence of injury likely should measures be allowed to lapse.
- (286) As to CCCMC's claim refuting concerns about arrival of new imports from China, the Commission referred to its rebuttal under Section 3.3, recital (220).
- (287) The Commission analysed the likely effects of such increase of imports by examining their likely price levels should measures be allowed to lapse. In this regard, the Commission considered, with regard to China, the import price levels during the review investigation period to be a reasonable basis as Chinese imports held a significant market share of 14,9 % in the review investigation period. Based on that, and as explained in recital (240), the Commission established significant undercutting of the Union industry prices by 12,6 %. This undercutting would even be higher, that is 15,6 %, if the applicable anti-dumping duty is not added to the export price.
- (288) In their comments on the final disclosure, Xinjiang XLX claimed that the Commission should not have relied on the level of undercutting calculated for the period considered to justify likelihood of recurrence of injury because the Union industry prices were exceptionally high as of 2021 which in turn made the undercutting higher than without such a high level of prices.
- (289) The Commission recalled the notion of undercutting, as it is constantly used in anti-dumping investigations under the basic Regulation is objective by nature and consists of a simple comparison between the actual Union industry prices and the export prices from the country concerned, duly adjusted where warranted. Moreover, the claim by Xinjiang XLX was neither further substantiated nor quantified and was therefore rejected.
- (290) With regard to the volume and prices of imports from China, the Commission further noted that according to the latest statistical data available in Eurostat, Chinese import volumes continued to increase strongly, whereas prices of these imports started to drop significantly ⁽¹²⁹⁾. In the nine months following the review investigation period, that is from 1 July 2022 to 31 March 2023, Chinese export volumes to the Union reached a level of 93 345 tonnes, which is, extrapolated to 12 months, 92,4 % more than in the review investigation period ⁽¹³⁰⁾, at an average price of EUR 1 585, which is 28,8 % less than in the review investigation period.
- (291) In addition, the Commission analysed for the same periods the evolution of imports from third countries other than China. Imports from countries other than China amounted to 61 668 tonnes in the nine months following the review investigation period, which, extrapolated to 12 months, represents an increase by 12,2 % as compared to the review investigation period ⁽¹³¹⁾. Average prices of imports from third countries dropped by 20,4 % to EUR 1 931/tonne as compared to the review investigation period which is still significantly higher than the average price from China.
- (292) Consequently, in the nine months following the review investigation period, imports from the PRC increased dramatically and their prices dropped significantly, to a much greater extent than imports from third countries.
- (293) Following final disclosure, Xinjiang XLX claimed that the Commission's analysis on factors post period considered was deficient because it did not take into account the impact of a continuing energy crisis in the Union and the market effects of Russia's unprovoked and unjustified war of aggression against Ukraine.

⁽¹²⁹⁾ Full extraction available in TRON t23.002667.

⁽¹³⁰⁾ $93\,345/(9/12) = 124\,459$. $124\,459/64\,673 = 192,4\%$.

⁽¹³¹⁾ $61\,668/(9/12) = 82\,223$. $82\,223/73\,288 = 112,2\%$.

- (294) The Commission recalled that in the first place it is under no obligation to conduct any analysis on injury factors occurring after the period considered. In the present investigation, it chose to do so with regard to the import volumes and prices from the country concerned in order to complement the conclusions taken with regard to an analysis of all relevant injury factors during the period considered. In any event, the Commission noted that energy sources are commodities traded at world market price levels. Energy prices would therefore, to the extent that melamine producers paid undistorted world market prices, equally affect these producers worldwide.
- (295) On 23 May 2023, the Applicants submitted details regarding the development of the injury indicators after the review investigation period ⁽¹³²⁾. The provided data showed the immediate significant negative impact that the further strong increase of imports from the PRC and their market share, at rapidly declining prices, had on the situation of the Union industry. In particular, the data showed that this resulted in a very pronounced decline in sales volumes and strong price depression, resulting in loss of market share and profitability by the Union industry.
- (296) Based on the above, the Commission concluded that the absence of measures would in all likelihood result in a further significant increase of dumped imports from China at injurious prices, and material injury would be likely to recur.

6. UNION INTEREST

6.1. Introduction

- (297) In accordance with Article 21 of the basic Regulation, the Commission examined whether the maintenance of the measures would be against the Union interest as a whole. The determination of the Union interest was based on an appreciation of the various interests involved, namely those of the Union industry, of importers and users.
- (298) All interested parties were given the opportunity to make their views known pursuant to Article 21(2) of the basic Regulation.
- (299) On this basis, the Commission examined whether, despite the conclusions on the likelihood of continuation of dumping and the likelihood of recurrence of injury, compelling reasons existed which would lead to the conclusion that it was not in the Union interest to maintain the existing measures.

6.2. Interest of the Union industry

- (300) As concluded in recital (276), the Union industry is no longer suffering from material injury. However, as concluded in recital (295), the Union industry would not be able to cope with a removal of the measures, as that is likely to result in a strong increase of imports from China which undercut the Union industry's prices. A repeal of the measures would therefore put the industry's long term financial viability at stake. The continuation of the measures, therefore, is in the interest of the Union industry.

6.3. Interest of unrelated importers and users

- (301) All known unrelated importers and users were informed about the initiation of the review.
- (302) One unrelated importer in Italy replied to the sampling form but failed to provide a full questionnaire reply.
- (303) Three users provided questionnaire replies. These users' aggregate total purchases, including purchases from Union producers, imports from China and imports from other countries only represented around 3 % of the total consumption. Only one of the users concerned purchased melamine from China and in the review investigation period these imports represented only 1 % – 4 % (range given for reasons of confidentiality) of total Union imports from the PRC. Based on these purchase volumes, cooperation from users could not be considered as representative for all users.

⁽¹³²⁾ TRON reference: t23.002400 dated 23 May 2023.

- (304) Nevertheless, their replies were analysed. The reply of the user that also purchased small volumes from China did not provide key data needed, like purchase prices from China, sales prices of products with melamine content and customer names. On that basis, no meaningful conclusion could be drawn other than that the company was enjoying a very healthy profit and that its purchases of melamine, both from the Union (bulk) as from other countries, represented only a minor part of its raw material costs (< 5 %). The questionnaire replies of the two other users could not be meaningfully analysed, as they only submitted the requested tables and did not reply to the other questions.
- (305) One of these users urged not to extend the anti-dumping measures because manufacturing capacities in the Union were limited, current melamine price levels were jeopardising the particle board industry and therefore imports could stabilise the price situation and secure supply. The Commission rejected the claim. The measures in force are not such as to foreclose imports from China which is demonstrated by the Chinese market share in 2021 and the review investigation period.
- (306) Therefore, the Commission concluded that there were no indications that the maintenance of the measures would have a negative impact on the users and/or importers outweighing the positive impact of the measures.

6.4. Conclusion on Union interest

- (307) Based on the above, the Commission concluded that there were no compelling reasons showing that it was not in the Union interest to maintain measures on imports of melamine originating in China.

7. ANTI-DUMPING MEASURES

- (308) Based on the conclusions reached by the Commission on likelihood of continuation of dumping, likelihood of recurrence of injury and Union interest, the anti-dumping measures on melamine originating in the People's Republic of China should be maintained.
- (309) To minimize the risks of circumvention due to the difference in duty rates, special measures are needed to ensure the application of the individual minimum import prices. The companies subject to minimum import prices must present a valid commercial invoice to the customs authorities of the Member States. The invoice must conform to the requirements set out in Article 1(4) of this regulation. Imports not accompanied by that invoice should be subject to the anti-dumping duty applicable to 'all other companies'.
- (310) While presentation of this invoice is necessary for the customs authorities of the Member States to apply the minimum import prices, it is not the only element to be taken into account by the customs authorities. Indeed, even if presented with an invoice meeting all the requirements set out in Article 1(4) of this regulation, the customs authorities of Member States must carry out their usual checks and may, like in all other cases, require additional documents (shipping documents etc.) for the purpose of verifying the accuracy of the particulars contained in the declaration and ensure that the subsequent application of the minimum import prices is justified, in compliance with customs law.
- (311) Should the exports by one of the companies benefiting from minimum import prices increase significantly in volume after the imposition of the measures concerned, such an increase in volume could be considered as constituting in itself a change in the pattern of trade due to the imposition of measures within the meaning of Article 13(1) of the basic Regulation. In such circumstances and provided the conditions are met, an anti-circumvention investigation may be initiated. This investigation may, inter alia, examine the need for the removal of minimum import prices and the consequent imposition of a country-wide duty.

- (312) The minimum import prices provided in Article 1(2) of this Regulation are exclusively applicable to imports of the product under review originating in China and produced by the named legal entities. Imports of the product under review produced by any other company not specifically mentioned in the operative part of this Regulation, including entities related to those specifically mentioned, should be subject to the duty rate applicable to 'all other companies'.
- (313) A company may request the application of these individual anti-dumping duty rates if it changes subsequently the name of its entity. The request must be addressed to the Commission ⁽¹³³⁾. The request must contain all the relevant information demonstrating that the change does not affect the right of the company to benefit from the duty rate which applies to it. If the change of name of the company does not affect its right to benefit from the duty rate which applies to it, a regulation about the change of name will be published in the *Official Journal of the European Union*.
- (314) All interested parties were informed of the essential facts and considerations on the basis of which it was intended to recommend that the existing measures be maintained. All parties were also granted a period to make representations subsequent to this disclosure and to request a hearing with the Commission and/or the Hearing Officer in trade proceedings. The submissions and comments were duly taken into consideration.
- (315) In view of Article 109 of Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council ⁽¹³⁴⁾, when an amount is to be reimbursed following a judgment of the Court of Justice of the European Union, the interest to be paid should be the rate applied by the European Central Bank to its principal refinancing operations, as published in the C series of the *Official Journal of the European Union* on the first calendar day of each month.
- (316) The Committee established by Article 15(1) of Regulation (EU) 2016/1036 delivered a positive opinion,

HAS ADOPTED THIS REGULATION:

Article 1

1. A definitive anti-dumping duty is imposed on imports of melamine currently falling under CN code 2933 61 00 and originating in the People's Republic of China.
2. The rates of the definitive anti-dumping duty applicable to the net, free-at-Union-frontier price, before duty, of the product described in paragraph 1 and produced by the companies listed below shall be as follows:

Company	Minimum import price (EUR/tonne net product weight)	Duty (EUR/tonne net product weight)	TARIC additional code
Sichuan Golden-Elephant Sincerity Chemical Co., Ltd	1 153		A 986
Shandong Holitech Chemical Industry Co., Ltd	1 153		A 987
Henan Junhua Development Company Ltd	1 153		A 988
All other companies	—	415	A 999

⁽¹³³⁾ European Commission, Directorate-General for Trade, Directorate G, Rue de la Loi 170, 1040 Brussels, Belgium.

⁽¹³⁴⁾ Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012 (OJ L 193, 30.7.2018, p. 1).

3. For the individually named producers, the amount of the definitive anti-dumping duty applicable to the product described in paragraph 1 shall be the difference between the minimum import price and the net, free-at-Union-frontier price, before duty, in all cases where the latter is less than the minimum import price. For these individually named producers, no duty shall be collected where the net free-at-Union-frontier price, before duty, is equal to or higher than the corresponding minimum import price.

4. The application of the minimum import price specified for the companies mentioned in paragraph 2 shall be conditional upon presentation to the customs authorities of the Member States of a valid commercial invoice, on which shall appear a declaration dated and signed by an official of the entity issuing such invoice, identified by his/her name and function, drafted as follows: 'I, the undersigned, certify that the (volume) of melamine sold for export to the European Union covered by this invoice was manufactured by (company name and address) (TARIC additional code) in the People's Republic of China. I declare that the information provided in this invoice is complete and correct.' If no such invoice is presented, the duty rate applicable to 'all other companies' shall apply.

5. For the individually named producers and in cases where goods have been damaged before entry into free circulation and, therefore, the price actually paid or payable is apportioned for the determination of the customs value pursuant to Article 131 of Commission Implementing Regulation (EU) 2015/2447 ⁽¹³⁵⁾, the minimum import price set out above shall be reduced by a percentage which corresponds to the apportioning of the price actually paid or payable. The duty payable will then be equal to the difference between the reduced minimum import price and the reduced net, free-at-Union-frontier price, before customs clearance.

6. For all other companies and in cases where goods have been damaged before entry into free circulation and, therefore, the price actually paid or payable is apportioned for the determination of the customs value pursuant to Article 131 of Implementing Regulation (EU) 2015/2447, the amount of the anti-dumping duty, calculated on the basis of paragraph 2 above, shall be reduced by a percentage which corresponds to the apportioning of the price actually paid or payable.

Article 2

Unless otherwise specified, the provisions in force concerning customs duties shall apply.

Article 3

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 14 September 2023.

For the Commission

The President

Ursula VON DER LEYEN

⁽¹³⁵⁾ Commission Implementing Regulation (EU) 2015/2447 of 24 November 2015 laying down detailed rules for implementing certain provisions of Regulation (EU) No 952/2013 of the European Parliament and of the Council laying down the Union Customs Code (OJ L 343, 29.12.2015, p. 558).

COMMISSION IMPLEMENTING REGULATION (EU) 2023/1777
of 14 September 2023
introducing retrospective Union surveillance of imports of renewable ethanol for fuel

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2015/478 of the European Parliament and of the Council of 11 March 2015 on common rules for imports ⁽¹⁾, and in particular Article 10 thereof,

Having regard to Regulation (EU) 2015/755 of the European Parliament and of the Council of 29 April 2015 on common rules for imports from certain third countries ⁽²⁾, and in particular Article 7 thereof,

After consulting the Committee on Safeguards and Common Rules for Exports,

Whereas:

- (1) According to Article 10 of Regulation (EU) 2015/478 Union surveillance may be introduced where the trend in imports of a product threatens to cause injury to Union producers and where the interest of the Union so requires. Article 7 of Regulation (EU) 2015/755 allows for the possibility to introduce surveillance where the Union's interests so require. Retrospective surveillance, requiring each Member State to transmit import data to the European Commission shortly after actual importation has taken place, may be introduced under both Regulations, respectively pursuant to Article 10(1)(a) and Article 7(1)(a).
- (2) Based on information available to the Commission, imports of renewable ethanol for fuel have increased recently in significant amounts.
- (3) Imports of bioethanol for fuel from all origins increased by close to 80 % between 2021 and 2022 (in the absence of TARIC codes, these volumes are based on full CN codes and may also include other types of bioethanol). The most important exporting countries in terms of volumes in 2022 were Brazil, the United States, the United Kingdom and Peru.
- (4) Additional analysis, based on extrapolated TARIC data for the three most representative CN codes (i.e., more than 90 % of TARIC level imports), has shown that imports of bioethanol for fuel increased by 45 % between 2021 and 2022. Additionally, an increase of another 43,5 % is observed in the first five months of the year 2023 compared to the first five months of the year 2022.
- (5) The top three exporting countries into the Union on that extrapolated basis are the United States, Brazil, and Peru. Pakistan is the fourth most important country in terms of quantities imported, showing the highest increase of imports at 179 % between 2021 and 2022. For the same period, imports from the United States increased by 96 %, and from Brazil by 37 %. Imports from Peru decreased by 13 %.
- (6) The EU market appears very attractive due to its high prices. Import prices from Brazil and the United States are more than 15 % lower than EU prices ⁽³⁾. Furthermore, both countries have very large production capacities.
- (7) As shown in the table below, the United States and Brazil are producing much more than their own domestic consumption which means that they have excess capacity for export markets. The EU consumption is around 4,6 million tonnes and US and Brazilian producers have a combined excess capacity of 5,5 million tonnes available for export, therefore capable to meet Union demand.

⁽¹⁾ OJ L 83, 27.3.2015, p. 16.

⁽²⁾ OJ L 123, 19.5.2015, p. 33.

⁽³⁾ Data provided by European Industry.

Table 1

Production and consumption in the year 2022

Year 2022 (tonnes)	United States	Brazil	EU
Production	46 210 800	22 549 600	3 970 000
Consumption	41 685 000	21 517 400	4 605 200
Excess capacity	4 525 800	1 032 200	- 635 200

- (8) The increase of imports coincides with a 10 % decrease in the market share of EU industry. The ratio of imports as compared to EU production surged from 21 % in 2021 to 39 % in 2022.
- (9) It is recalled that retrospective surveillance concerning imports of renewable ethanol for fuel ('bioethanol') was first introduced in November 2020 with Commission Implementing Regulation (EU) 2020/1628 ^(*). The Regulation introduced certain TARIC codes for a duration of one year.
- (10) The Implementing Regulation (EU) 2020/1628 expired on 4 November 2021 and therefore the codes were de-activated in the customs system. In 2021, imports of bioethanol had decreased and therefore, there were no grounds to prolong surveillance at that time.
- (11) However, on the basis of recent import trends of renewable ethanol for fuel, the large available production capacities in particular in the US and Brazil as stated in recital (7), and the lower level of prices of imports into the Union, injurious effects to Union producers may therefore further worsen in the near future.
- (12) As provided by the Union Industry, since Q4 2021, most of the economic indicators have been deteriorating, showing signs of injury suffered by the sampled EU producers in the period from Q4 2021 to Q3 2022:
- Production (10 % decrease)
 - Capacity utilization (9 % decrease)
 - Union sales volume (6 % decrease)
 - Inventories (15 % increase)
 - Investment (44 % decrease)
 - Profitability (57 % decrease)
- (13) Thus, the Union interest requires that imports of renewable ethanol for fuel should be subject to retrospective Union surveillance in order to provide statistical information, before the issuance of official import statistics, permitting rapid analysis of import trends from all third countries. Rapid trade data is necessary to deal with the vulnerability of the Union market of renewable ethanol for fuel and to detect sudden changes on the world market.
- (14) Since ethanol for fuel can be classified in various CN headings containing other products, specific TARIC codes should be created in order to ensure adequate monitoring limited only to the relevant products. The scope of the retrospective surveillance shall include the products listed in the Annex to this Regulation.
- (15) In order to allow for a proper monitoring of import trends and to avoid that the relevant TARIC codes are de-activated again, retrospective surveillance should be introduced for a period of three years,

^(*) Commission Implementing Regulation (EU) 2020/1628 of 3 November 2020 introducing retrospective Union surveillance of imports of renewable ethanol for fuel (OJ L 366, 4.11.2020, p. 12).

HAS ADOPTED THIS REGULATION:

Article 1

1. The imports of renewable ethanol for fuel listed in the Annex to this Regulation shall be subject to retrospective Union surveillance in accordance with Regulations (EU) 2015/478 and (EU) 2015/755.
2. The classification of the products covered by this Regulation is based on TARIC. The origin of the products covered by this Regulation shall be determined in accordance with Article 60 of Regulation (EU) No 952/2013 of the European Parliament and of the Council ⁽³⁾.

Article 2

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall apply from the day following its publication in the *Official Journal of the European Union* and shall remain in force for three years.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 14 September 2023.

For the Commission
The President
Ursula VON DER LEYEN

⁽³⁾ Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (OJ L 269, 10.10.2013, p. 1).

ANNEX

List of products subject to retrospective Union surveillance

The product concerned subject to retrospective surveillance is renewable ethanol for fuel, i.e. ethyl alcohol produced from agricultural products (as listed in Annex I to the Treaty on the Functioning of the European Union), denatured or undenatured, excluding products with a water content of more than 0,3 % (m/m) measured according to the standard EN 15376, but including ethyl alcohol produced from agricultural products (as listed in Annex I to the Treaty on the Functioning of the European Union) contained in blends with gasoline with an ethyl alcohol content of more than 10 % (v/v) intended for fuel uses. The product concerned also covers ethyl alcohol produced from agricultural products (as listed in Annex I to the Treaty on the Functioning of the European Union) contained in Ethyl tert-butyl ether (ETBE).

The product scope is exclusively limited to renewable ethanol used for fuel applications. Thus, synthetic ethanol and renewable ethanol destined to applications other than fuel, i.e. industrial and beverage use, is not covered.

The product concerned currently falls under the following CN and TARIC codes:

CN Codes	TARIC Code extensions
ex 2207 10 00	11
ex 2207 20 00	11
ex 2208 90 99	11
ex 2710 12 21	10
ex 2710 12 25	10
ex 2710 12 31	10
ex 2710 12 41	10
ex 2710 12 45	10
ex 2710 12 49	10
ex 27101250	10
ex 2710 12 70	10
ex 2710 12 90	10
ex 2909 19 10	10
ex 3814 00 10	10
ex 3814 00 90	70
ex 3820 00 00	10
ex 3824 99 92	66

DECISIONS

COMMISSION IMPLEMENTING DECISION (EU) 2023/1778

of 12 September 2023

concerning certain interim emergency measures relating to African swine fever in Sweden

(notified under document C(2023) 6246)

(Only the Swedish text is authentic)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law') ⁽¹⁾, and in particular Article 259(2) thereof,

Whereas:

- (1) African swine fever is an infectious viral disease affecting kept and wild porcine animals and can have a severe impact on the concerned animal population and the profitability of farming causing disturbance to movements of consignments of those animals and products thereof within the Union and exports to third countries.
- (2) In the event of outbreaks of African swine fever in wild porcine animals, there is a serious risk of the spread of that disease to other wild porcine animals and to establishments of kept porcine animals.
- (3) Commission Delegated Regulation 2020/687 ⁽²⁾ supplements the rules for the control of the listed diseases referred to in Article 9(1), points (a), (b) and (c) of Regulation (EU) 2016/429, and defined as category A, B and C diseases in Commission Implementing Regulation (EU) 2018/1882 ⁽³⁾. In particular, Articles 63 to 66 of Delegated Regulation (EU) 2020/687 provide for certain measures to be taken in the event of an official confirmation of an outbreak of a category A disease in wild animals, including African swine fever in wild porcine animals. Notably, those provisions provide for the establishment of an infected zone and prohibitions on movements of wild animals of listed species and products of animal origin thereof.
- (4) Commission Implementing Regulation (EU) 2023/594 ⁽⁴⁾ lays down special disease control measures regarding African swine fever. In particular, in the event of an outbreak of that disease in wild porcine animals in an area of a Member State, Article 3, point (b), of that Implementing Regulation provides for the establishment of an infected zone in accordance with Article 63 of Delegated Regulation (EU) 2020/687. In addition, Article 6 of that Implementing Regulation provides that that area is to be listed as a restricted zone II in Part II of Annex I thereto

⁽¹⁾ OJ L 84, 31.3.2016, p. 1.

⁽²⁾ Commission Delegated Regulation (EU) 2020/687 of 17 December 2019 supplementing Regulation (EU) 2016/429 of the European Parliament and the Council, as regards rules for the prevention and control of certain listed diseases (OJ L 174, 3.6.2020, p. 64).

⁽³⁾ Commission Implementing Regulation (EU) 2018/1882 of 3 December 2018 on the application of certain disease prevention and control rules to categories of listed diseases and establishing a list of species and groups of species posing a considerable risk for the spread of those listed diseases (OJ L 308, 4.12.2018, p. 21).

⁽⁴⁾ Commission Implementing Regulation (EU) 2023/594 of 16 March 2023 laying down special disease control measures for African swine fever and repealing Implementing Regulation (EU) 2021/605 (OJ L 79, 17.3.2023, p. 65).

and that the infected zone, established in accordance with Article 63 of Delegated Regulation (EU) 2020/687, is to be adjusted without delay to comprise at least the restricted zone II. The special control measures for African swine fever laid down in Implementing Regulation (EU) 2023/594 include, inter alia, prohibitions on movements of consignments of porcine animals kept in restricted zones II and products thereof outside those restricted zones.

- (5) Sweden has informed the Commission of the confirmation, in the municipality of Fagersta, of one outbreak of African swine fever in wild porcine animals in Sweden on 6 September 2023. Accordingly, the competent authority of that Member State established an infected zone in accordance with Delegated Regulation (EU) 2020/687 and Implementing Regulation (EU) 2023/594.
- (6) In order to prevent any unnecessary disturbance to trade within the Union and to avoid unjustified barriers to trade by third countries, it is necessary to identify at Union level the infected zone for African swine fever in Sweden in collaboration with that Member State.
- (7) In order to prevent the further spread of African swine fever, pending the listing of the area of Sweden affected by the recent outbreaks in wild porcine animals as a restricted zone II in Part II of Annex I to Implementing Regulation (EU) 2023/594, the special control measures for African swine fever laid down therein, that apply to movements of consignments of porcine animals kept in restricted zones II and products thereof outside those zones, should also apply to movements of those consignments from the infected zone established by Sweden following that recent outbreak, in addition to the measures laid down in Articles 63 to 66 of Delegated Regulation (EU) 2020/687.
- (8) Accordingly, that infected zone should be listed in the Annex to this Decision and it should be subject to the special control measures for African swine fever that apply to restricted zones II laid down in Implementing Regulation (EU) 2023/594. However, due to this new epidemiological situation of African swine fever and taking account of the increased immediate risk of the further spread of the disease, movements of consignments of kept porcine animals and products thereof to other Member States and to third countries should not be authorised from the infected zone in accordance with that Implementing Regulation. The duration of that zoning should be also laid down in this Decision.
- (9) Therefore, in order to mitigate the risks arising from the recent outbreak of African swine fever in wild porcine animals in Sweden, this Decision should provide that the movements to other Member States and third countries of consignments of porcine animals kept in the infected zone and products thereof should not be authorised by Sweden until the expiry date of this Decision.
- (10) Given the urgency of the epidemiological situation in the Union as regards the spread of African swine fever, it is important that the measures laid down in this Implementing Decision apply as soon as possible.
- (11) Accordingly, pending the opinion of the Standing Committee on Plants, Animals, Food and Feed, the infected zone in Sweden should be established immediately and listed in the Annex to this Decision and the duration of that zoning fixed.
- (12) This Decision is to be reviewed at the next meeting of the Standing Committee on Plants, Animals, Food and Feed,

HAS ADOPTED THIS DECISION:

Article 1

Sweden shall ensure that an infected zone for African swine fever is established immediately by Sweden in accordance with Article 63 of Delegated Regulation (EU) 2020/687 and Article 3, point (b), of Implementing Regulation (EU) 2023/594, and that it comprises at least the areas listed in the Annex to this Decision.

Article 2

Sweden shall ensure that the special control measures for African swine fever applicable to restricted zones II laid down in Implementing Regulation (EU) 2023/594 apply in the areas listed as an infected zone in the Annex to this Decision, in addition to the measures laid down in Articles 63 to 66 of Delegated Regulation (EU) 2020/687.

Article 3

Sweden shall ensure that consignments of porcine animals kept in the areas listed as an infected zone in the Annex and products thereof are not authorised for movements to other Member States and to third countries.

Article 4

This Decision shall apply until 6 December 2023.

Article 5

This Decision is addressed to Kingdom of Sweden.

Done at Brussels, 12 September 2023.

For the Commission
Stella KYRIAKIDES
Member of the Commission

ANNEX

Areas established as the infected zone in Sweden as referred to in Article 1	Date until applicable
County of Västmanland: — 30 % of municipality of Surahammar down in the east by the road nr 66, — Total 100 % municipality of Fagersta, — 68 % of municipality of Norberg up in the north nearby the road 270 and nr 68, — 6 % of municipality of Skinnskatteberg down in the south by the road nr 250, — 0,4 % of municipality of Västerås down in the south-east by the road nr 685 — 12 % of municipality of Sala in the east by the road nr 681 County of Dalarna: — 1 % of municipalities of Avesta in the north-east by the road nr 693 — 6 % of municipalities of Smedjebacken in the west by the road nr 66	6.12.2023

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