

Official Journal

of the European Communities

ISSN 0378-6978

L 98

Volume 32

11 April 1989

English edition

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II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DIRECTIVE

of 13 March 1989

amending Directive 78/1015/EEC on the approximation of the laws of the Member States on the permissible sound level and exhaust systems of motorcycles

(89/235/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100a thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

In cooperation with the European Parliament ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee ⁽³⁾,

Whereas it is important to adopt measures with the aim of progressively establishing the internal market over a period expiring on 31 December 1992; whereas the internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured;

Whereas Directive 78/1015/EEC ⁽⁴⁾, as last amended by Directive 87/56/EEC ⁽⁵⁾, lays down limits for the sound level of motorcycles and provisions governing exhaust systems fitted as original equipment to motorcycles;

Whereas replacement exhaust systems very frequently differ from original equipment; whereas this situation therefore has, among other things, adverse effects on the sound emissions of motorcycles; whereas an EEC type-approval procedure for such replacement devices, making it possible to

establish that a type of device meets the technical requirements and checks laid down at Community level, is likely to be an adequate means of reducing the sound level of motorcycles in use and of affording the population additional protection against noise nuisances caused by such vehicles;

Whereas, to that end, Directive 78/1015/EEC should be amended by including provisions on exhaust systems as separate technical units to be marketed and used as replacement parts, so that such equipment may be regulated by Community requirements for ensuring effective protection against noise nuisances,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Directive 78/1015/EEC is hereby amended as follows:

1. Article 2 is replaced by the following:

'Article 2

For the purposes of this Directive:

- (a) "national type-approval" means the administrative procedure known as:
- "agr ation par type" and "aanneming", in Belgian law,
 - "standardtypegodkendelse", in Danish law,
 - "allgemeine Betriebserlaubnis", in German law,
 - " γκριση τυπου" in Greek law,

⁽¹⁾ OJ No C 44, 17. 2. 1988, p. 5.

⁽²⁾ OJ No C 262, 10. 10. 1988, p. 86 and OJ No 47, 27. 2. 1989.

⁽³⁾ OJ No C 175, 4. 7. 1988, p. 8.

⁽⁴⁾ OJ No L 349, 13. 12. 1978, p. 21.

⁽⁵⁾ OJ No L 24, 27. 1. 1987, p. 42.

- “homologación de tipo”, in Spanish law,
 - “réception par type”, in French law,
 - “type-approval”, in Irish law,
 - “omologazione” or “approvazione del tipo”, in Italian law,
 - “agrégation”, in Luxembourg law,
 - “typegoedkeuring”, in Dutch law,
 - “aprovação de marca e modelo”, in Portuguese law,
 - “type-approval”, in United Kingdom law;
- (b) “EEC type-approval of replacement exhaust systems or components thereof as separate technical units” means the measure whereby a Member State established that a type of replacement exhaust system or type of component thereof meets the technical requirements and successfully undergoes the checks set out in Annex II.’
2. In the second subparagraph of Article 3 (1), the reference to Annex II is replaced by a reference to Annex III.
3. The following Article is inserted:
- ‘Article 6a
- Articles 3 to 6 shall apply *mutatis mutandis* to the EEC type-approval of replacement exhaust systems or components thereof as separate technical units as defined in Article 2 (b).
- In such cases, the model certificate referred to in Article 3 shall be replaced by the model EEC type-approval certificate set out in Annex IV and the modification of one of the components or characteristics mentioned in Annex I, section 1.1, as referred to in Article 6, shall be replaced by the modification of one of the characteristics referred to in Annex I, section 1.3.’
4. The Annexes are amended and supplemented in accordance with the Annex hereto.
- Article 2
1. As from 1 October 1989:
- (a) no Member State may, on grounds concerning the permissible sound level and the original equipment exhaust system, refuse national type-approval for a type of motorcycle or EEC type-approval or national type-approval for a type of replacement exhaust system or type of component of such a system where such systems or components are regarded as separate technical units:
- if the motorcycle complies with the requirements of Annex I to Directive 78/1015/EEC, as amended by this Directive, regarding the sound level and original equipment exhaust system,
 - if the replacement exhaust system or components thereof as separate technical units comply with the requirements of Annex II to Directive 78/1015/EEC, as amended by this Directive;
- (b) no Member State may, on grounds concerning the permissible sound level and the original equipment exhaust system, refuse or prohibit the sale, registration, putting into service or use of motorcycles, or refuse or prohibit the placing on the market or use of replacement exhaust systems or components thereof as separate technical units:
- if the motorcycles comply with the requirements of Annex I to Directive 78/1015/EEC, as amended by this Directive, regarding the sound level and original equipment exhaust system,
 - if the replacement exhaust systems or components thereof as separate technical units comply with the requirements of Annex II to Directive 78/1015/EEC, as amended by this Directive.
2. As from 1 October 1990:
- (a) Member States may no longer issue the certificate provided for in Article 3 (1) of Directive 78/1015/EEC for a type of motorcycle regarding the permissible sound level and original equipment exhaust system, nor the certificate provided for *mutatis mutandis* in that same paragraph of the Directive concerned, for a type of replacement exhaust system or component thereof as separate technical units, if they do not comply with the provisions of Directive 78/1015/EEC, as amended by this Directive;
- (b) — Member States may, on grounds concerning the permissible sound level and original equipment exhaust system, refuse national type-approval for a type of motorcycle or type of replacement exhaust system or type of component of such a system as separate technical units, if they do not comply with the provisions of Directive 78/1015/EEC, as amended by this Directive,
- Member States may, on grounds concerning the permissible sound level and the original equipment exhaust system, refuse or prohibit the sale, registration, putting into service or use of motorcycles, or the placing on the market and use of replacement exhaust systems or components thereof as separate technical units, if they do not comply with the provisions of Directive 78/1015/EEC, as amended by this Directive.
3. As from 1 October 1991, Member States may prohibit the initial putting into service of motorcycles the sound level

and original equipment exhaust system of which do not comply with the provisions of Annex I to Directive 78/1015/EEC, as amended by this Directive.

Article 4

This Directive is addressed to the Member States.

Article 3

By 1 October 1989, Member States shall adopt and publish the provisions necessary to comply with this Directive. They shall forthwith inform the Commission thereof.

They shall apply those provisions from 1 October 1989.

Done at Brussels, 13 March 1989.

For the Council

The President

P. SOLBES

ANNEX

Annex I is amended as follows:

Sections 3.2 to 3.4.3 are replaced by the following:

- 3.2. A diagram of the exhaust system must be attached to the certificate referred to in Annex III.
- 3.3. Every silencer must bear markings and inscriptions that comply with point 3 of Annex II.
- 3.4. Fibrous absorbent material must be asbestos-free and may be used in the construction of silencers only if suitable devices ensure that the fibrous absorbent material is kept in place for the whole time that the silencer is being used and it meets the requirements of any one of sections 3.4.1, 3.4.2 or 3.4.3.
- 3.4.1. After removal of the fibrous material, the sound level must comply with the requirements of 2.1.1.
- 3.4.2. The fibrous absorbent material may not be placed in those parts of the silencer through which the exhaust gases pass and must comply with the following requirements.
- 3.4.2.1. The material must be heated at a temperature of 650 ± 5 °C for four hours in a furnace without reduction in average length, diameter or bulk density of the fibre.
- 3.4.2.2. After heating at 650 ± 5 °C for one hour in a furnace, at least 98 % of the material must be retained in a sieve of nominal aperture size 250 µm complying with ISO standard 3310/1 when tested in accordance with ISO standard 2599.
- 3.4.2.3. The loss in weight of the material must not exceed 10,5 % after soaking for 24 hours at 90 ± 5 °C in a synthetic condensate of the following composition:
- 1 N hydrobromic acid (HBr): 10 ml
1 N sulphuric acid (H₂SO₄): 10 ml
Distilled water to make up to 1 000 ml.
- Note:* The material must be washed in distilled water and dried for one hour at 105 °C before weighing.
- 3.4.3. Before the system is tested in accordance with section 2.1 of this Annex, it must be put into a normal state for road use by one of the following conditioning methods:
- 3.4.3.1. conditioning by continuous road operation
- 3.4.3.1.1. according to the classes of motorcycles, the minimum distances to be completed during conditioning are:

Class of motorcycle according to cylinder capacity in cm ³	Distance (km)
1. ≤ 80	4 000
2. $> 80 \leq 175$	6 000
3. > 175	8 000

- 3.4.3.1.2. 50% $\pm$ 10% of this conditioning cycle consists of town driving and the remainder of long-distance runs at high speed; the continuous road cycle may be replaced by a corresponding test-track programme.
- 3.4.3.1.3. The two speed regimes must be alternated at least six times.
- 3.4.3.1.4. The complete test programme must include a minimum of 10 breaks of at least three hours' duration in order to reproduce the effects of cooling and condensation.

3.4.3.2. Conditioning by pulsation

- 3.4.3.2.1. The exhaust system or components thereof must be fitted to the motorcycle or to the engine. In the former case, the motorcycle must be mounted on a roller dynamometer. In the second case, the engine must be mounted on a test bench.

The test apparatus, a detailed diagram of which is shown in Figure 1, is fitted at the outlet of the exhaust system. Any other apparatus providing equivalent results is acceptable.

- 3.4.3.2.2. The test equipment must be adjusted so that the flow of exhaust gases is alternatively interrupted and restored 2 500 times by a rapid-action valve.

- 3.4.3.2.3. The valve must open when the exhaust gas back-pressure, measured at least 100 mm downstream of the intake flange, reaches a value of between 0,35 and 0,40 bar. Should such a figure be unattainable because of the engine characteristics, the valve must open when the gas back-pressure reaches a level equivalent to 90 % of the maximum that can be measured before the engine stops. It must close when this pressure does not differ by more than 10 % from its stabilized value with the valve open.

- 3.4.3.2.4. The time-delay switch must be set for the duration of exhaust gases calculated on the basis of the requirements of 3.4.3.2.3.

- 3.4.3.2.5. Engine speed must be 75 % of the speed (S) at which the engine develops maximum power.

- 3.4.3.2.6. The power indicated by the dynamometer must be 50 % of the full-throttle power measured at 75 % of engine speed (S).

- 3.4.3.2.7. Any drainage holes must be closed off during the test.

- 3.4.3.2.8. The entire test must be completed within 48 hours. If necessary, a cooling period must be allowed after each hour.

3.4.3.3. Conditioning on a test bench

- 3.4.3.3.1. The exhaust system must be fitted to an engine representative of the type fitted to the motorcycle for which the system is designed, and mounted on a test bench.

- 3.4.3.3.2. Conditioning consists of the specified number of test bench cycles for the class of motorcycle for which the exhaust system was designed. The number of cycles for each class of motorcycle is:

Class of motorcycle according to cylinder capacity in cm ³	Number of cycles
1. ≤ 80	6
2. > 80 ≤ 175	9
3. > 175	12

- 3.4.3.3.3. Each test-bench cycle must be followed by a break of at least six hours in order to reproduce the effects of cooling and condensation.

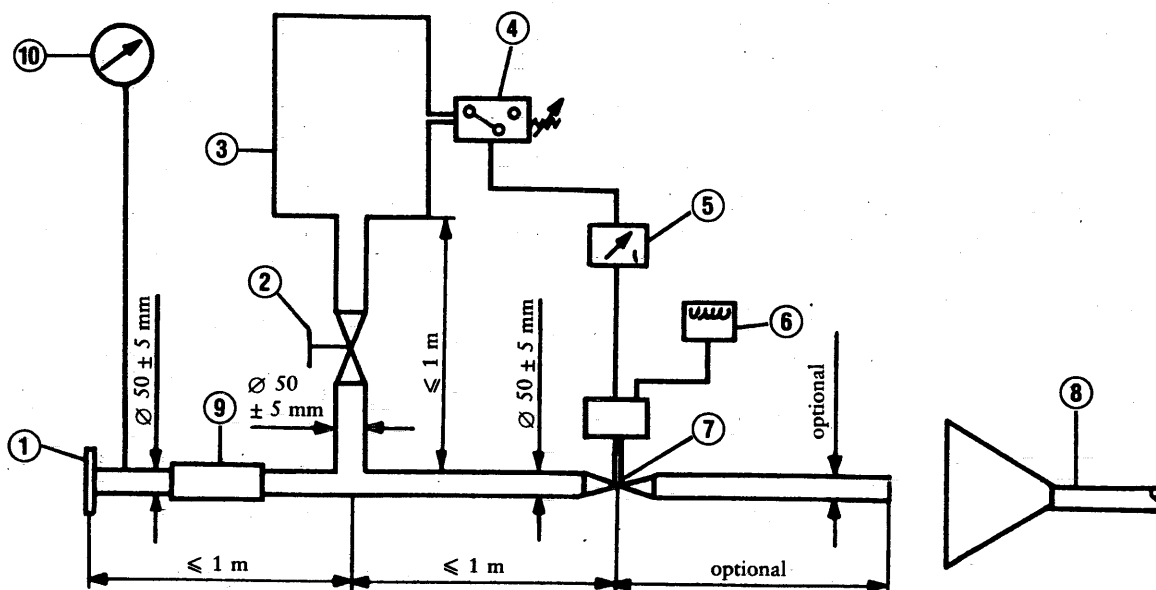
- 3.4.3.3.4. Each test-bench cycle consists of six phases. The engine conditions for and the duration of each phase are:

Phase	Conditions	Duration of phase	
		Engines of less than 175 cm ³	Engines of not less than 175 cm ³
1	Idling	(minutes) 6	(minutes) 6
2	25 % load at 75 % S	40	50
3	50 % load at 75 % S	40	50
4	100 % load at 75 % S	30	10
5	50 % load at 100 % S	12	12
6	25 % load at 100 % S	22	22
Total time		2,5 hours	2,5 hours

- 3.4.3.3.5. During this conditioning procedure, at the request of the manufacturer, the engine and the silencer may be cooled in order that the temperature recorded at a point not more than 100 mm from the exhaust gas outlet does not exceed that measured when the motorcycle is running at 110 km/h or 75 % S in top gear. The engine and/or motorcycle speeds are determined to within $\pm 3\%$.

Figure 1

Test apparatus for conditioning by pulsation



1. Inlet flange or sleeve for connection to the rear of the test exhaust system.
2. Hand-operated regulating valve.
3. Compensating reservoir with a maximum capacity of 40 l and a filling time of not less than 1 second.
4. Pressure switch with an operating range of 0,05 to 2,5 bar.
5. Time delay switch.
6. Pulse counter.
7. Quick-acting valve, such as exhaust brake valve 60 mm in diameter, operated by a pneumatic cylinder with an output of 120 N at 4 bar. The response time, both when opening and closing, must not exceed 0,5 second.
8. Exhaust gas evaluation.
9. Flexible pipe.
10. Pressure gauge.

The following new Annex II is inserted after Annex I:

'ANNEX II

EEC TYPE-APPROVAL OF REPLACEMENT EXHAUST SYSTEMS OR COMPONENTS THEREOF AS SEPARATE TECHNICAL UNITS

0. SCOPE

This Annex applies to the EEC type-approval, as separate technical units within the meaning of Article 2 (b) of the Directive, of exhaust systems or components thereof intended to be fitted to one or more types of motorcycle as replacement parts.

1. DEFINITION

- 1.1. "Replacement exhaust system (silencer) or component thereof" means any exhaust system component as defined in section 1.2 of Annex I intended to be fitted to a motorcycle to replace that of the type fitted to the motorcycle when the certificate provided for in Article 3 was issued.

2. APPLICATION FOR EEC TYPE-APPROVAL

- 2.1. Applications for the EEC type-approval of replacement exhaust systems or components thereof as separate technical units are submitted by the manufacturer of the device or by his authorized representative.

- 2.2. For each type of replacement exhaust system (silencer) or component thereof for which EEC type-approval is requested, the application for type-approval must be accompanied by the following documents in triplicate, and by the following particulars:

- 2.2.1. — description, in respect of the characteristics referred to in section 1.1 of Annex I, of the type(s) of motorcycle for which the device(s) or component(s) is/are intended.

The numbers and/or symbols specific to the type of engine and motorcycle must be given,

- 2.2.2. — description of the replacement exhaust system stating the relative position of each of its components, together with the fitting instructions,

- 2.2.3. — drawings of each component in order to ease their location and identification, and statement of materials used. These drawings must also indicate the intended location of the mandatory EEC type-approval number.

- 2.3. The applicant must submit, at the request of the technical authority:

- 2.3.1. — two samples of the device for which EEC type-approval is requested,

- 2.3.2. — an exhaust system conforming to that originally fitted to the motorcycle when the certificate provided for in Article 3 was issued,

- 2.3.3. — a motorcycle representative of the type to which the exhaust system is to be fitted, supplied in such a condition that, when fitted with a silencer of the same type as was originally fitted, it meets the requirements of either of the following two sections:

- 2.3.3.1. if of a type which has been granted type-approval pursuant to Directive 78/1015/EEC:

- during the test in motion, it does not exceed by more than 1 dB(A) the limit value laid down in section 2.1.1.1 of Annex I applicable to that type of motorcycle when it was type-approved, nor exceeds by more than 3 dB(A) the value obtained when the certificate stipulated in Article 3 (1) was issued,

- during the stationary test, it does not exceed by more than 3 dB(A) the value obtained when the certificate stipulated in Article 3 (1) was issued;

- 2.3.3.2. if not of a type which has been granted type-approval, it does not exceed by more than 1 dB(A) the limit value laid down in section 2.1.1.1 of Annex I which would have applied to that type of motorcycle when it was first put into service;

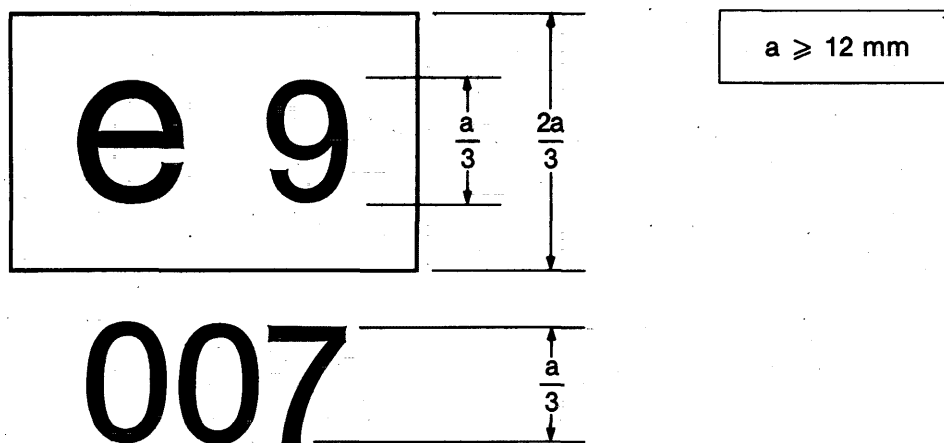
- 2.3.4. — a separate engine identical to that fitted to the motorcycle referred to above, where the competent authorities consider it necessary.

3. MARKINGS AND INSCRIPTIONS

- 3.1. The replacement exhaust system or components thereof, but not the mounting parts and pipes, must bear:

- 3.1.1. — the trade name or mark of the manufacturer of the exhaust system and its components,
- 3.1.2. — the trade name given by the manufacturer,
- 3.1.3. — the EEC type-approval number composed of a rectangle surrounding the letter "e" followed by the distinguishing number or letters of the Member State which issued the type-approval:
- 1 for Germany,
 - 2 for France,
 - 3 for Italy,
 - 4 for the Netherlands,
 - 6 for Belgium,
 - 9 for Spain,
 - 11 for the United Kingdom,
 - 13 for Luxembourg,
 - 18 for Denmark,
 - 21 for Portugal,
 - EL for Greece,
 - IRL for Ireland.

It must also include an EEC type-approval number corresponding to the number of the EEC type-approval certificate issued for the type of exhaust system in question.



Graphics: The exhaust system or component thereof bearing the EEC type-approved mark shown above is a system or component type-approval in Spain (e 9) under the number 007.

- 3.2. The marks referred to in 3.1.1 and 3.1.3 and the name referred to in 3.1.2 must be indelible and clearly legible even when the exhaust system is fitted to the motorcycle.
- 3.3. A component may bear several type-approval numbers if it has been type-approved as a component of several replacement exhaust systems.
- 3.4. The replacement exhaust system must be supplied with packaging or labelling bearing the following:
- 3.4.1. the trade name or mark of the manufacturer of the replacement silencer and its components;
 - 3.4.2. the address of the manufacturer or his authorized representative;
 - 3.4.3. a list of the motorcycle models to which the replacement silencer is intended to be fitted.

- 3.5. The manufacturer must supply the following:
- 3.5.1. instructions describing in detail the correct methods of fitting to the motorcycle;
 - 3.5.2. instructions on how the silencer should be maintained;
 - 3.5.3. a list of component parts with the corresponding part numbers, excluding mounting parts.

4. EEC TYPE-APPROVAL

- 4.1. Where an application within the meaning of 2.1 is accepted, the competent authority prepares a certificate corresponding to the model shown in Annex IV. The type-approval number must be preceded by a rectangle surrounding the letter "e" followed by the distinguishing number or letters of the Member State which issued or refused the EEC type-approval.

5. SPECIFICATIONS

5.1. General specifications

The silencer must be designed, constructed and capable of being mounted so that:

- 5.1.1. — the motorcycle complies with the requirements of the Directive under normal conditions of use, and in particular regardless of any vibrations to which it may be subjected;
- 5.1.2. — it displays reasonable resistance to the corrosion phenomena to which it is exposed, with due regard to the normal conditions of use of the motorcycle,
- 5.1.3. — the ground clearance provided by the silencer originally fitted, and the possible inclined position of the motorcycle, are not reduced,
- 5.1.4. — unduly high temperatures do not exist at the surface,
- 5.1.5. — its edges are not sharp or jagged,
- 5.1.6. — adequate clearance of spring parts is provided,
- 5.1.7. — adequate safety clearance of pipes is provided,
- 5.1.8. — it is tamper-resistant in a way that is compatible with clearly-defined maintenance and installation requirements.

5.2. Specifications for sound levels

- 5.2.1. The acoustic efficiency of the replacement exhaust system or component thereof is checked in accordance with the methods described in sections 2.1.2, 2.1.3, 2.1.4 and 2.1.5 of Annex I.

If the replacement exhaust system or component thereof is fitted to the motorcycle referred to in section 2.3.3 of this Annex, the sound level values obtained must meet the following conditions:

- 5.2.1.1. it does not exceed the sound level values measured, in accordance with the provisions of 2.3.3, with the same motorcycle fitted with the original equipment silencer both during the test in motion and during the stationary test.

5.3. Checking of motorcycle performance

- 5.3.1. The replacement silencer must be such as to ensure that motorcycle performance is comparable to that achieved with the originally fitted silencer or component thereof.
- 5.3.2. The replacement silencer must be compared with an originally fitted silencer, also in new condition, fitted in turn to the motorcycle referred to in 2.3.3.
- 5.3.3. This check is carried out by measuring the engine power curve. The maximum power and the maximum power speed measured with the replacement silencer must not exceed the maximum power and maximum power speed measured under the same conditions with the original equipment exhaust system by more than 5%.

5.4. Additional provisions relating to silencers as separate technical units containing fibrous material

Fibrous material may not be used in the construction of these silencers unless the requirements set out in section 3.4 of Annex I are met.

6. CONFORMITY OF PRODUCTION

- 6.1. All silencers bearing the EEC type-approval mark in pursuance of the Directive must conform to the silencer type that has been approved and meet the requirements of section 5.
- 6.2. In order to check the conformity required in 6.1, a sample silencer bearing the EEC type-approval mark is taken from the production run. The production run is considered to comply with the provisions of the Directive if the sound levels measured in accordance with 5.2 do not exceed by more than 1 dB(A) the level measured during the EEC type-approval of that type of silencer.'

The following new Annex III is substituted for the former Annex II:

ANNEX III

MODEL

Name of administration

SOUND LEVEL MEASUREMENT CERTIFICATE — MOTORCYCLE

(in accordance with Council Directive 78/1015/EEC of 23 November 1978 on the approximation of the laws of the Member States on the permissible sound level and exhaust system of motorcycles)

Drawn up on the basis of:

Report No of the technical service Date

1. Motorcycle:
 - 1.1. Manufacturer:
 - 1.1.1. Authorized agent:
 - 1.2. Type:
 - 1.3. Model:
 - 1.3.1. Version:
 - 1.4. Frame No:
2. Engine:
 - 2.1. Manufacturer:
 - 2.2. Type:
 - 2.3. Model:
 - 2.4. Maximum output (indicate standard used): . . . (kW) at . . . r/min
 - 2.5. Maximum design speed:
3. Gears: non-automatic gearbox/automatic gearbox ⁽¹⁾
4. Fitted with:
 - 4.1. Exhaust silencer: Manufacturer or authorized agent:
 - Model:
 - Type: According to drawing No:
 - EEC type-approval number:
 - 4.2. Intake silencer: Manufacturer:
 - Model:
 - Type: According to drawing No:
 - EEC type-approval number:
 - 4.3. Type size

⁽¹⁾ Delete whichever is inapplicable.

5. Measurements:

5.1. Sound level of motorcycle in motion:

	Measurement results		Position of gear change
	left dB(A) ⁽¹⁾	right dB(A) ⁽¹⁾	
First measurement			
Second measurement			
Third measurement			
Fourth measurement			
Test result:	dB(A)/E ⁽³⁾		

5.2. Sound level of stationary motorcycle:

	dB(A)	Test engine speed r/min	Test conditions (²)
First measurement			$n = \frac{S}{2}$ $n = \frac{3}{4} S$
Second measurement			
Third measurement			
Test result:			dB(A)/E (³)

6. The type of motorcycle conforms/does not conform ⁽²⁾ with the requirements of Council Directive 78/1015/EEC.

7. Place:

8. Date:

9. Signature:

⁽¹⁾ The values indicated are the measurements obtained minus 1 dB(A).

⁽²⁾ Delete whichever is inapplicable.

⁽³⁾ "E" indicates that measurements have been taken in accordance with Directive 78/1015/EEC.

The following new Annex IV is inserted after Annex III:

ANNEX IV

MODEL

Maximum size: A4 (210 × 297 mm)

Name of administration

**EEC TYPE-APPROVAL CERTIFICATE FOR A MOTORCYCLE REPLACEMENT EXHAUST SYSTEM
OR COMPONENT(S) THEREOF AS SEPARATE TECHNICAL UNIT(S)**

Technical unit: exhaust system

EEC type-approval number of the technical unit ⁽¹⁾:

1. Trade name or mark:

2. Type:

⁽¹⁾ Preceded by the rectangle surrounding the letter "e" followed by the distinguishing number or letters of the Member State which issued or refused the EEC type-approval.

3. Manufacturer's name and address:
4. Where applicable, name and address of the manufacturer's authorized representative:
5. Composition of the technical unit:
6. Trade name or mark of the type(s) of motorcycle to which the silencer is to be fitted ⁽¹⁾:
7. Type(s) of motorcycle ranging from serial No:
to serial No:
8. Engine:
 - 8.1. Cycle: two-stroke, four-stroke ⁽²⁾:
 - 8.2. Total cylinder capacity:
 - 8.3. Maximum engine power (indicate the standard used): kW at rev/min.
9. Number of gear ratios:
10. Gear ratios employed:
11. Final drive ratio(s):
12. Sound-level values:
 - moving motorcycle dB(A), speed stabilized before acceleration at km/h,
 - stationary motorcycle dB(A) at rev/min.
13. Any restrictions in respect of use and fitting requirements:
14. Date on which the replacement exhaust system or component(s) thereof was submitted for EEC type-approval as a separate technical unit:
15. Technical service:
16. Date of the test report issued by that technical service:
17. Number of test report issued by that technical service:
18. EEC type-approval of the technical unit is hereby granted/refused ⁽²⁾:
19. Place:
20. Date:
21. Signature:
22. The following documents bearing the abovementioned EEC type-approval mark of the technical unit are attached to this communication (to be completed if necessary):
23. Remarks:

⁽¹⁾ If several types are indicated, sections 7 to 14 inclusive must be completed in respect of each type.

⁽²⁾ Delete where inapplicable.

COUNCIL DECISION

of 14 March 1989

on a specific research and technological development programme in the field of energy —
non-nuclear energies and rational use of energy — 1989 to 1992
(Joule)

(89/236/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130 q (2) thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

In cooperation with the European Parliament ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee ⁽³⁾,

Whereas Article 130k of the Treaty states that the framework programme is to be implemented through specific programmes developed within each activity;

Whereas, by Decision 87/516/Euratom, EEC ⁽⁴⁾, as amended by Decision 88/193/Euratom, EEC ⁽⁵⁾, the Council adopted a framework programme for Community activities in the field of research and technological development (1987 to 1991) defining energy projects on non-nuclear energies and the rational use of energy;

Whereas that Decision provides that a particular aim of Community research shall be to strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at the international level and that Community action is justified where research contributes *inter alia* to the strengthening of the economic and social cohesion of the Community and the promotion of its overall harmonious development, while being consistent with the pursuit of scientific and technical quality; whereas it is intended that the Joule (Joint Opportunities for Unconventional or Long-term Energy supply) programme should contribute to the achievement of these objectives;

Whereas on 16 September 1986 the Council adopted resolution 86/C 241/01 ⁽⁶⁾ concerning new Community energy policy objectives for 1995 and convergence of the policies of the Member States;

Whereas the implementation of an energy strategy for the Community calls for the strengthening of research, development and demonstration projects at Community level;

Whereas the energy research and development programmes adopted by Decisions 75/510/EEC ⁽⁷⁾, 79/785/EEC ⁽⁸⁾ and 85/198/EEC ⁽⁹⁾ produced favourable results and opened up promising prospects as regards the objectives pursued;

Whereas the research and development projects covered by this Decision appear necessary and are a suitable means of continuing the activities already undertaken and of launching new activities to achieve the objectives pursued;

Whereas a large number of small and medium-sized enterprises (SMEs) are involved in research and development into non-nuclear energy, particularly in the field of renewable energies;

Whereas Regulation (EEC) No 3640/85 ⁽¹⁰⁾ provides for the granting of financial support to demonstration projects in the exploitation of alternative energy sources, energy saving and the substitution of hydrocarbons and to industrial pilot projects and demonstration projects in the field of solid fuel liquefaction and gasification; whereas such support should be granted only to projects based on completed research and development work;

Whereas Regulation (EEC) No 3639/84 ⁽¹¹⁾ provides for the granting of financial support for Community technological development projects in the hydrocarbons sector; whereas such support is granted only to projects for which the research stage is completed;

Whereas on 26 November 1986 the Council adopted resolution 86/C 316/01 ⁽¹²⁾ on a Community orientation to develop new and renewable energy sources;

⁽¹⁾ OJ No C 221, 25. 8. 1988, p. 8 and OJ No C 329, 22. 12. 1988, p. 6.

⁽²⁾ OJ No C 326, 19. 12. 1988, p. 147 and OJ No C 69, 20. 3. 1989.

⁽³⁾ OJ No C 23, 30. 1. 1989, p. 19.

⁽⁴⁾ OJ No L 302, 24. 10. 1987, p. 1.

⁽⁵⁾ OJ No L 89, 6. 4. 1988, p. 35.

⁽⁶⁾ OJ No C 241, 24. 9. 1986, p. 1.

⁽⁷⁾ OJ No L 231, 2. 9. 1975, p. 1.

⁽⁸⁾ OJ No L 231, 13. 9. 1979, p. 30.

⁽⁹⁾ OJ No L 83, 25. 3. 1985, p. 16.

⁽¹⁰⁾ OJ No L 350, 27. 12. 1985, p. 29.

⁽¹¹⁾ OJ No L 350, 27. 12. 1985, p. 25.

⁽¹²⁾ OJ No C 316, 1. 12. 1986, p. 1.

Whereas on 19 October 1987 the Council adopted resolution 87/C 328/01 ⁽¹⁾ on the continuation and implementation of a European Community policy and action programme on the environment (1987 to 1992);

Whereas the protection of the environment should play a major role in the definition of energy research programmes;

Whereas the implementation of the environment policy involves the development of clean technologies, especially for particularly polluting energy sources, amongst other things by suitable research programmes;

Whereas the Scientific and Technical Research Committee (Crest) has expressed its opinion on the Commission proposal,

HAS ADOPTED THIS DECISION:

Article 1

A specific research and technological development programme for the European Economic Community in the field of energy — non-nuclear energies and rational use of energy, known as Joule — as defined in Annexes I and II is hereby adopted for a period of three years and three months from 1 January 1989.

Article 2

The funds estimated as necessary for the execution of the programme amount to ECU 122 million, including expenditure on a staff of 34.

An indicative allocation of these funds is set out in Annex II.

Article 3

Detailed rules for the implementation of the programme and the rate of the Community's financial participation are set out in Annex III.

Article 4

During the second year of implementation, the Commission shall review the programme and send a report on the results

of its review to the European Parliament and the Council. This report shall be accompanied where necessary by proposals for the amendment or extension of the programme.

At the end of the programme, an evaluation of the results achieved shall be conducted by the Commission which shall report thereon to the European Parliament and the Council.

The abovementioned reports shall be established having regard to the objectives set out in Annex I to this Decision and in accordance with Article 2 (2) of the framework programme set out in Decision 87/516/Euratom, EEC.

Article 5

The Commission shall be responsible for the execution of the programme.

The Commission shall be assisted by a committee of an advisory nature, hereinafter referred to as 'the Committee', composed of the representatives of the Member States and chaired by the representative of the Commission.

Contracts concluded by the Commission shall govern the rights and obligations of each party, in particular arrangements for the dissemination, protection and exploitation of research results.

Article 6

1. The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion within a time limit which the Chairman may lay down according to urgency of the matter, if necessary by taking a vote.

2. The opinion shall be recorded in the minutes of the Committee; in addition, each Member State shall have the right to have its opinion recorded in the minutes.

3. The Commission shall take the utmost account of the opinion delivered by the Committee. It shall inform the Committee of the manner in which its opinion has been taken into account.

Article 7

1. Where framework agreements for scientific and technical cooperation between non-Community European countries and the European Communities have been concluded, organizations and enterprises established in those

⁽¹⁾ OJ No C 328, 7. 12. 1987, p. 1.

countries may, under conditions to be laid down in accordance with the procedures set out in Article 6 and on the basis of the criterion of mutual advantage, become partners in a project undertaken within the programme.

2. No contractor based outside the Community and participating as a partner in a project undertaken under the programme may benefit from the Community financing of the programme. The contractor shall contribute to the general administration costs.

Article 8

This Decision is addressed to the Member States.

Done at Brussels 14 March 1989.

For the Council

The President

J. SOLANA MADARIAGA

ANNEX I

PROGRAMME OBJECTIVES

The objective of developing energy technologies is directly linked to the Community's energy strategy, the aim of which is to increase security of supply in the long term and to reduce energy imports to a reasonable cost, bearing in mind the environment. As far as the technologies involved are concerned, this objective requires the contribution of solid fossil fuels and of new and renewable sources of energy to be increased in the medium and long term and energy efficiency and the rational use of energy to be greatly improved.

This primary objective must be accompanied by a research effort to reduce significantly nuisance and pollution caused by the production and use of energy.

The development of advanced energy technologies should stimulate and improve industrial competitiveness, including that of small and medium-sized enterprises in the Community, and, as a consequence, help to enhance the economic and social cohesion of the Community.

These objectives can be achieved through progress in the development and availability of techniques, process and products allowing the rational use of energy, in the non-polluting use of solid fuels and hydrocarbons, in the efficient and economic use of renewable energy sources and in the development of models for energy and the environment.

ANNEX II

PROGRAMME CONTENTS AND INDICATIVE INTERNAL ALLOCATION OF FUNDS

	Funds estimated as necessary for the execution of the programme (in millions of ecus)
1. MODELS FOR ENERGY AND ENVIRONMENT	6
2. RATIONAL USE OF ENERGY	35
2.1. Conservation in end-use sectors	
2.1.1. buildings	
(a) energy conservation	
(b) solar energy applications	
2.1.2. combustion technology	
2.1.3. industry	
2.2. Energy conversion and storage	
2.2.1. fuel cells	
(a) for large-scale power applications	
(b) for small-scale applications	
2.2.2. high-temperature superconductors	
2.2.3. storage	
3. ENERGY FROM FOSSIL SOURCES	34
3.1. Hydrocarbons	
3.1.1. techniques for exploration and reconnaissance	
3.1.2. research on drilling problems	
3.1.3. production techniques	
3.1.4. supporting studies for offshore production	
3.1.5. natural gas development and conversion	
3.1.6. hydrocarbon conversion	
3.2. Solid fuels	
Combined cycle techniques	
3.2.1. pressurized fluidized bed combustion combined cycle	
3.2.2. afterburner combined cycle	
3.2.3. circulating atmospheric fluidized bed combustion combined cycle	
3.2.4. coal gasification combined cycle	
3.2.5. generic R&D	
4. RENEWABLE ENERGIES	47
4.1. Solar-derived energy sources	
4.1.1. wind energy	
4.1.2. solar photovoltaic	
4.1.3. hydraulic energy	
4.1.4. biomass	
4.2. Geothermal energy and deep geology	
4.2.1. geothermal energy	
4.2.2. deep geology	
TOTAL	122 ⁽¹⁾

(¹) Of which ECU 13 727 million are foreseen for staff and administrative costs, including the cost of coordination activities and staff engaged in 'intra muros' research for subprogramme 1.

ANNEX III

IMPLEMENTATION OF THE PROGRAMME AND THE COMMUNITY'S RATE OF FINANCIAL PARTICIPATION

The programme consists of activities carried out by means of shared-cost research contracts to be awarded following a selection procedure based on a call for proposals published in the *Official Journal of the European Communities*. The programme may also be carried out by means of study contracts, coordination projects and awards of training and mobility grants.

The participants may be industrial companies — including small and medium-sized enterprises — research institutions, universities, individuals or any combination thereof established in the Community.

Shared-cost research projects should, in general, be carried out by participants from more than one Member State.

For shared-cost contracts, the Community participation will in principle be 50 % of the total expenditure. Alternatively, in respect of universities and research institutes carrying out projects, the Community may bear up to 100 % of the additional expenditure involved.

COUNCIL DECISION

of 14 March 1989

on a specific research and technological development programme in the field of industrial manufacturing technologies and advanced materials applications (Brite/Euram) (1989 to 1992)

(89/237/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community and in particular Article 130q (2) thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

In cooperation with the European Parliament ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee ⁽³⁾,

Whereas Article 130k of the Treaty states that the framework programme is to be implemented through specific programmes developed within each activity;

Whereas, by its Decision 87/516/Euratom, EEC ⁽⁴⁾, as amended by Decision 88/193/EEC, Euratom ⁽⁵⁾, the Council adopted a framework programme for Community research and technological development (1987 to 1991) providing for activities in the field of science and technology for manufacturing industry and advanced materials;

Whereas that Decision provides that a particular aim of Community research shall be to strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at the international level and that Community action is justified where research contributes *inter alia* to the strengthening of the economic and social cohesion of the Community and the promotion of its overall harmonious development, while being consistent with the pursuit of scientific and technical quality; whereas it is intended that the Brite/Euram programme should contribute to the achievement of these objectives;

Whereas by Decision 85/196/EEC ⁽⁶⁾, as amended by Decision 88/108/EEC ⁽⁷⁾, the Council adopted the first multiannual research and development programme for the European Economic Community in the fields of basic technological research and the application of new technologies (Brite) (1985 to 1988);

Whereas by Decision 86/235/EEC ⁽⁸⁾ the Council adopted a research programme on materials (raw materials and advanced materials) (1986 to 1989);

Whereas in cases where industrial progress is hampered by lack of basic knowledge, it is necessary to support focused fundamental research projects;

Whereas it is necessary to react adequately to the interest shown by the industry in transnational cooperation;

Whereas it is necessary to involve small and medium-sized enterprises (SMEs) to the maximum extent possible in the development of industrial technologies by taking into account their particular and specific requirements while respecting the objective of the scientific and technical quality of the programme;

Whereas it is appropriate to undertake precompetitive research in aeronautics in order to meet medium and long-term technology requirements; whereas such research should take particular account of economic, safety and environmental aspects;

Whereas it is necessary to underline the industrial and transnational nature of the programme by requiring applied research projects with at least two industrial partners from two different Member States;

Whereas it is necessary to ensure the industrial nature of the programme by requiring focused fundamental research projects with industrial endorsement from at least two independent enterprises;

Whereas organizations from non-Community European countries which have concluded scientific and technical cooperation agreements with the Community in industrially-oriented research and development projects may, by participating under appropriate conditions, contribute to the competitiveness of manufacturing industry as a whole;

Whereas the implementation of concerted actions in the COST framework is an essential element to complement industrially-oriented research and development projects;

Whereas the Scientific and Technical Research Committee (Crest) has expressed its opinion on the Commission proposal,

⁽¹⁾ OJ No C 228, 3. 9. 1988, p. 3 and OJ No C 19, 25. 1. 1989, p. 10.

⁽²⁾ OJ No C 326, 19. 12. 1988, p. 5 and OJ No 69, 20. 3. 1989.

⁽³⁾ OJ No C 56, 6. 3. 1989, p. 14 and opinion delivered on 22 February 1989 (not yet published in the Official Journal).

⁽⁴⁾ OJ No L 302, 24. 10. 1987, p. 1.

⁽⁵⁾ OJ No L 89, 6. 4. 1988, p. 35.

⁽⁶⁾ OJ No L 83, 25. 3. 1985, p. 8.

⁽⁷⁾ OJ No L 59, 4. 3. 1988, p. 23.

⁽⁸⁾ OJ No L 159, 14. 6. 1986, p. 36.

HAS ADOPTED THIS DECISION:

Article 1

A specific research and technological development programme for the European Economic Community in the fields of industrial manufacturing technologies and advanced materials applications, as defined in Annex I, is hereby adopted for a period of four years, from 1 January 1989.

Article 2

The funds estimated as necessary for the execution of the programme amount to ECU 499,5 million, including expenditure on staff whose cost shall not exceed 4,5 % of the Community contribution.

An indicative internal allocation of these funds is set out in Annex IV.

Article 3

1. Detailed rules for the implementation of the programme and the rate of the Community's financial participation are set out in Annex II.

Article 4

1. During the third year of the implementation, the Commission shall review the programme and send a report on the results of its review to the European Parliament and to the Council. This report shall be accompanied, where necessary, by proposals for the amendment or extension of the programme.

In respect of research relating to aeronautics, a review will be carried out during the second year.

2. At the end of the programme, an evaluation of the results achieved shall be conducted by the Commission which shall report thereon to the European Parliament and to the Council.

3. The abovementioned reports shall be established having regard to the objectives set out in Annex III to this Decision and in accordance with Article 2 (2) of the Framework Programme set out in Decision 87/516/Euratom, EEC.

Article 5

1. The Commission shall be responsible for the execution of the programme.

2. The Commission shall be assisted by a Committee, hereinafter referred to as 'the Committee', composed of the representatives of the Member States and chaired by the representative of the Commission.

3. Contracts concluded by the Commission shall govern the rights and obligations of each party, in particular arrangements for the dissemination, protection and exploitation of research results.

Article 6

1. In respect of research to be undertaken under Areas 1 to 4 of Annex I, the following procedure shall apply:

- (i) the representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion within a time limit which the Chairman may lay down according to urgency of the matter, if necessary by taking a vote;
- (ii) the opinion shall be recorded in the minutes of the Committee; in addition, each Member State shall have the right to have its opinion recorded in the minutes;
- (iii) the Commission shall take the utmost account of the opinion delivered by the Committee. It shall inform the Committee of the manner in which its opinion has been taken into account.

2. In respect of research to be undertaken under Area 5 of Annex I, the following procedure shall apply:

- (i) the representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit which the Chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148 (2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The Chairman shall not vote;
- (ii) the Commission shall adopt the measures envisaged if they are in accordance with the opinion of the Committee;
- (iii) if the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority;
- (iv) if, on the expiry of a period which may in no case exceed two months from the date of referral to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

Article 7

The procedures laid down in Article 6 (1) and (2), shall apply, subject to the provisions of those paragraphs, in particular to:

- the establishment of the work plan for research to be carried out under Area 5 of Annex I,
- the scientific and technical assessment of proposals received,
- any departure from the rules for implementation set out at Annex II,
- the participation in any project by non-Community organisations or enterprises referred to in Article 8,
- any adaptation of the internal indicative allocation of funds set out in Annex IV,
- the measures to be undertaken to evaluate the programme,
- arrangements for the dissemination, protection and exploitation of the results of research carried out under the programme.

Article 8

1. Where framework agreements for scientific and technical cooperation between non-Community European countries and the European Communities have been concluded, organizations and enterprises established in those countries may, on the basis of the criterion of mutual advantage, become partners in a project undertaken within the programme.

2. No contractor based outside the Community and participating as a partner in a project undertaken under the programme may benefit from the Community financing of the programme. The contractor shall contribute to the general administration costs.

Article 9

The Commission shall ensure that procedures are set up to allow for appropriate cooperation with COST activities related to the areas of research covered by the programme, by ensuring regular exchanges of information between the Committee and the relevant COST Management Committee.

Article 10

This Decision is addressed to the Member States.

Done at Brussels, 14 March 1989.

For the Council

The President

J. SOLANA MADARIAGA

ANNEX I

PROGRAMME SUMMARY AND OBJECTIVES

1. ADVANCED MATERIALS TECHNOLOGIES

The work in this area will focus on the development of improved or new materials and material processing for a wide range of possible applications except those directly related to information technology (IT) covered in Esprit ⁽¹⁾ adopted by Decision 84/130/EEC ⁽²⁾,

including in particular:

1.1. Metallic materials and metallic matrix composites

Objectives:

- extended working life of components,
- higher operating temperatures for increased thermal efficiency,
- better and more effective material processing techniques.

1.2. Materials for magnetic, optical, electrical and superconducting applications

Objectives:

- improved materials and materials processing for optical magnetic, electrical and superconducting applications.

1.3. High temperature non-metallic materials

Objectives:

- design methodologies for products based on ceramics, glasses and amorphous materials,
- improved monolithic and ceramic composites and metal/ceramic interfaces for industrial applications,
- better processing techniques and quality control strategies.

1.4. Polymers and organic matrix composites

Objectives:

- development of polymers for specific applications,
- more cost effective process techniques for parts made from polymer and polymer matrix composites,
- design rules for the specification and manufacture of engineering polymers and composites,
- new polymers with improved recycling attributes,
- improved product assurance techniques.

1.5. Materials for specialized applications

Objectives:

- improved materials and their processing for specialized applications.

2. DESIGN METHODOLOGY AND ASSURANCE FOR PRODUCTS AND PROCESSES

The development of techniques to improve product quality and the reliability and maintainability of structures and manufacturing systems by clarification of the design aims for both product and process, and by refinement of the criteria against which the attributes are measured. The exploitation of materials for application in sensors, and the reduction in the whole life costs of sensors are also included in this section.

⁽¹⁾ Developments of materials already covered by Esprit are, for instance, dealing with magnetic, magneto-optical, optical thin films for sensors, recording media and heads, optical layers and specific materials for opto-electronics, ceramics and polymers for IC packaging and specific substrates, superconducting thin films for low current applications and devices.

⁽²⁾ OJ No L 67, 9. 3. 1984, p. 54.

This will complement work in Community IT programmes, where on-line control is treated, including monitoring and diagnostics, predictive maintenance and quality assurance,

including in particular:

2.1. Quality, reliability and maintainability in industry

Objectives:

- improved performance measurement for manufacturing operations in a wide variety of industries,
- improved and more predictable physical and environmental behaviour of products,
- improved quality control strategies,
- design rules for reliability and maintainability of components, structures and systems including machinery operating under varying conditions.

2.2. Process and product assurance

Objectives:

- reduction of whole life costs of sensor systems for process control,
- exploitation of materials properties for applications in sensors,
- use of advanced measurement techniques for more cost-effective examination of topology,
- improved energy control for industrial applications,
- improved non-destructive testing methods for product assurance.

3. APPLICATION OF MANUFACTURING TECHNOLOGIES

Here the task is to identify and address the needs of manufacturing industry and particularly the less advanced sectors, many of which have a major part made up of SMEs. It is to be expected that modelling of physical processes will be a valuable instrument for progress. Also addressed is the challenge to the industries based on the use of flexible materials. The work will mainly focus on product and process development, transferring and adapting technology already used in other sectors. This should complement work in Esprit where IT systems for advanced manufacturing and CIM are being developed,

including in particular:

3.1. Advancing manufacturing practices

Objectives:

- identifying means for improving manufacturing practices in specific sectors,
- transfer and adaptation of technology already used in other sectors.

3.2. Manufacturing process for flexible materials

Objectives:

- increased process flexibility,
- reduced waste of material,
- improved process and product quality.

4. TECHNOLOGIES FOR MANUFACTURING PROCESSES

Improved techniques for shaping, joining and assembly, surface treatment, chemical processes and particle technology are fundamental needs for industry. Advancement of these processes is essential for securing manufacturing competitiveness,

including in particular:

4.1. Surface techniques

Objectives:

- cost-effective surface treatments for industrial applications,
- techniques for quality assurance and control of the treatment process.

4.2. Shaping, assembly and joining

Objectives:

- improved methodologies for shaping processes and assembly,
- improved joining techniques to improve reliability and reduce defect levels,
- methods for testing welded and bonded joints to improve reliability of results and service predictability,
- design methodology for joining,
- better understanding of beam/workpiece interactions for industrial power beam processes.

4.3. Chemical processes

Objectives:

- improved predictability and yield in chemical processes,
- membrane materials with improved characteristics,
- improved performance of membrane processes,
- new systems for separation in hostile environments.

4.4. Particle and powder processes

Objectives:

- improved techniques for particle production to optimize produce shape, structure and stability,
- cost-effective techniques for particle categorization and process performance,
- better approaches to handling and separation,
- cost-effective routes for small lots of high quality powder.

5. SPECIFIC ACTIVITIES RELATING TO AERONAUTICS

This section covers precompetitive research in technological areas which are of primary relevance to aeronautics (in particular aeroplanes and helicopters) and are not yet covered in other programme areas.

5.1. Aerodynamics

Objectives:

- analysis and optimization of configurations for supersonic aircraft, including an estimation of aerothermodynamic heat loads,
- investigation of laminar flow technology,
- development of numerical methods,
- integration of computerized design technologies.

5.2. Acoustics

Objectives:

- noise source identification, prediction and reduction,
- basic investigation of acoustic fatigue and related damage tolerance on advanced composites,
- investigation of different construction methods,
- development and application of simulation models for response calculations under selected acoustic loads.

5.3. Airborne systems and equipment*Objectives:*

- integration and operation of modern systems and equipment and corresponding new architectures,
- investigations concerning the use of onboard intelligent knowledge based systems (IKBS),
- investigations into the concept of the 'All Electric Aircraft'.

5.4. Propulsion Systems*Objectives:*

- integration of advanced propeller and propeller-rotor systems,
 - provision of mathematical models for different design evaluation,
 - specification and design of wind tunnel models and their components,
 - specific aspects of air-breathing engine combustion.
-

ANNEX II

RULES FOR IMPLEMENTATION OF THE PROGRAMME AND THE COMMUNITY'S RATE OF FINANCIAL PARTICIPATION

The Commission shall implement the programme on the basis of the scientific and technical content set out in detail in Annex I.

The Commission shall distribute, in all Community languages, information packs to accompany the invitation to participate in order to guarantee equal opportunities for the undertakings, universities and research centres in the Member States.

The programme is carried out principally by means of shared-cost research contracts to be awarded following a selection procedure based on calls for proposals published in the *Official Journal of the European Communities*.

Participants may be industrial organizations, research institutes and universities, established in the Community. Each contractor will be expected to make a significant contribution to projects. The contractors shall be expected to bear a substantial proportion of the costs, 50 % of which shall normally be borne by the Community.

Industrial applied research

The principal form of support for industrial applied research of a precompetitive character will be through shared-cost action. At least two industrial enterprises from different Member States and independent of each other must take part in each project. Each party is expected to make a significant contribution to the project. The contracting parties shall bear a substantial part of the costs, up to 50 % of which shall, as a rule, be borne by the Community. Alternatively, in respect of universities and research institutes carrying out projects, the Community may, within the abovementioned limits of its financial contribution, bear up to 100 % of the additional expenditure involved.

Recognizing the important role of SMEs in developing the manufacturing base of the Community and the merits of their participation in the programme, the Commission will examine in consultation with the Committee how research organizations can best act within the programme to meet the R & D needs of SMEs. Projects should include at least 10 man-years of activity, the realistic minimum for an effective collaborative project, and the total projects costs should fall in the range ECU 1 to 3 million.

Focused fundamental research

Focused fundamental research projects shall involve at least two partners established in different Member States. When the partners are universities or research institutes, the project should be endorsed by at least two legally independent industrial enterprises and the Community could bear up to 100 % of the marginal costs of universities and research institutes. Projects should include at least 10 man-years of activity and fall in the range of ECU 0,4 to 1 million total project costs.

Feasibility awards for SMEs

The Commission will introduce a pilot scheme of feasibility awards aimed at assisting SMEs establish the feasibility of a device, process or concept as a means of enhancing their stature in finding a partner in a subsequent call for proposals under the shared cost action. The Commission will support up to 75 % (maximum ECU 25 000) of the cost of research lasting up to six months. High standards of evaluation will ensure that the awards are highly competitive and recognised as prestigious.

Coordinated activities

In cases where work, supported by national funds or entirely privately funded, is already going on, the Commission's role may be limited to simply organizing the coordination of the work and the Community funding confined to covering the cost of such coordination activities. However, in certain cases where it is clear that strategically important work requires more than simply coordination, the Commission could, in consultation with the Committee, consider a higher Community funding.

Research relating to aeronautics

A work programme will be established to define precise objectives and determine priority themes for research in Area 5 of Annex I.

The Commission shall establish calls for proposals for projects in this area on the basis of the work programme.

Projects in the field of aeronautics must include two industrial enterprises from different Member States. Particular attention will be paid to ensuring:

- the complementarity of research carried out in this area with activities carried out under the programmes of the Member States and those carried out in other fora of European transnational cooperation, including Eureka,
- the participation of research institutes, universities and small and medium-sized enterprises,
- the maximum benefit to technological areas outside the aeronautics sector.

The rules relating to the financing of industrial applied research and focused fundamental research shall apply as appropriate to the financing of research projects relating to aeronautics.

ANNEX III

PROGRAMME EVALUATION OBJECTIVES AND CRITERIA

The results against which the programme should be evaluated must reflect its objectives and the wider objectives of the framework programme.

1. As the principal objective is to enhance the competitive position of the Community's manufacturing industries, the evaluation should determine:
 - the extent to which the projects were selected against credible and measurable industrial criteria,
 - the extent to which substantial product or process development has resulted from the work supported.
2. A further objective is to encourage trans-frontier collaboration in strategic industrial research. The evaluation should determine:
 - to what extent, before and after project completion, there were continuing links between partners for research, development, manufacturing, marketing or staff training.
3. A further programme objective is to encourage transfer of technology across Community frontiers and between sectors, particularly those with a high predominance of SMEs. The evaluation should determine:
 - the extent to which SMEs have exploited technologies and new materials arising from successfully completed projects,
 - the extent to which accomplishments are protected by patent action or are disseminated to raise awareness in the European research and technology Community.

As far as research relating to aeronautics is concerned, the evaluation will also include, in particular, the following criteria:

- the contribution of such research to the technological competitiveness of the European aeronautical industry,
 - the benefits accruing to technological areas other than aeronautics,
 - the added value of dedicated Community research in this area.
4. In the wider context of the framework programme, the evaluation shall be conducted in the light of all the selection criteria set out in Annex III of the framework programme set out in Decision 87/516/Euratom, EEC which include that of contributing to the strengthening of the economic and social cohesion of the Community.

This evaluation will be undertaken by independent evaluators.

ANNEX IV

INDICATIVE INTERNAL ALLOCATION OF FUNDS

	%
I. RESEARCH AND DEVELOPMENT SECTORS	
1. Advanced materials technologies	28
2. Design methodology and assurance for products and processes	19
3. Application of manufacturing technologies	19
4. Technologies for manufacturing processes	20
5. Specific activities relating to aeronautics	7
II. STAFF AND ADMINISTRATIVE COSTS	
Staff costs	4,5
Administrative costs	2,5
	100,0

Between 7 % and 10 % of the budget shall be available for fundamental research in the above areas where industrial progress is impeded by gaps in basic scientific knowledge.

Up to 0,45 % of the available budget may be devoted to the feasibility awards referred to in Annex II.

COUNCIL DECISION

of 14 March 1989

adopting an experimental Community plan to support and facilitate access to large-scale scientific and technical facilities and installations of European interest

(89/238/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAS ADOPTED THIS DECISION:

Having regard to the Treaty establishing the European Economic Community, and in particular Article 130q (2) thereof,

Having regard to the proposal from the Commission,

In cooperation with the European Parliament ⁽¹⁾,

Having regard to the opinion of the Economic and Social Committee ⁽²⁾,

Whereas Article 130k of the Treaty states that the framework programme is to be implemented through specific programmes developed within each activity;

Whereas Council Decision 87/516/Euratom, EEC of 28 September 1987 concerning the framework programme for Community activities in the field of research and technological development (1987 to 1991) ⁽³⁾, as amended by Decision 88/193/EEC, Euratom ⁽⁴⁾, includes the use of major installations amongst the activities it provides for;

Whereas one of the objectives of the Community R & D efforts for 1987 to 1991 is to promote better use of human resources in the Community as a whole and to improve the utilization of large-scale scientific and technical installations through the addition of a European dimension;

Whereas the present plan, whilst being consistent with the pursuit of scientific excellence, will help to improve the Community's competitiveness in the field of research and at the same time strengthen economic and social cohesion in the Community;

Whereas the Commission will ensure that the research carried out under this plan falls solely within the scope of the Treaty, even in cases where the facility or installation used may not be wholly or partially covered by that Treaty;

Whereas the Scientific and Technical Research Committee (Crest) has expressed its opinion on the Commission proposal,

⁽¹⁾ OJ No C 167, 27. 6. 1988, p. 1 and OJ No 69, 20. 3. 1989.

⁽²⁾ OJ No C 35, 8. 2. 1988, p. 1.

⁽³⁾ OJ No L 302, 24. 10. 1987, p. 1.

⁽⁴⁾ OJ No L 89, 6. 4. 1988, p. 35.

Article 1

An experimental Community plan to support and facilitate access to large-scale scientific and technical facilities and installations situated in the Community, hereinafter referred to as 'the Plan' and as defined in the Annex, is hereby adopted for a four-year period commencing on 1 January 1989.

Article 2

1. The Plan shall consist of temporary financial support measures designed to facilitate access to, and thereby develop the exploitation of, large-scale scientific facilities situated in the Community.

2. To achieve this objective, the Community shall provide financial support for operations chosen on the basis of their scientific and technical quality. Such operations, which will be selected in conformity with the procedure laid down in Article 3, shall be based on joint proposals from the institutions or bodies responsible for the facilities and from the scientists or research workers wishing to acquire access to them.

3. Community financial support for the operations shall be used to contribute, as necessary, to:

- the operating costs of the facilities and, if necessary, the cost of adaptations and/or special features to meet the objectives set out in paragraph 1,
- incidental expenditure arising from the operations,
- expenditure incurred by the scientists or research workers, including expenditure on mobility and travel.

4. The scientists or research workers acquiring access to a facility as a result of Community financial support under the Plan shall be nationals of a Member State. Financial support under the Plan shall be granted only to provide access to a scientific facility for scientists or research workers not normally enjoying access to the facility in question.

5. The Commission shall notify the European Parliament and the Council, within a maximum period of three months from their selection, of the list of beneficiaries (scientific installations and researchers) of the Plan.

6. The precise objectives of the Plan, together with its implementation procedures, are set out in the Annex.

Article 3

1. The Commission shall be responsible for implementing the Plan.

2. The Commission shall be assisted by a committee of an advisory nature composed of the representatives of the Member States and chaired by the representative of the Commission.

3. The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft, within a time limit which the Chairman may lay down according to the urgency of the matter, if necessary by taking a vote.

The opinion shall be recorded in the minutes; in addition, each Member State shall have the right to ask to have its position recorded in the minutes.

The Commission shall take the utmost account of the opinion delivered by the Committee. It shall inform the Committee of the manner in which its opinion has been taken into account.

Article 4

The funds estimated as necessary for the execution of the Plan amount to ECU 30 million, including expenditure on a staff of three.

Article 5

The Commission shall address a report to the European Parliament and the Council after 30 months on the basis of an evaluation of the results so far achieved. This report shall be accompanied by suggestions for changes which may be necessary in the light of these results.

After completion of the Plan, the Commission shall send to the European Parliament and the Council a report on the performance and results of the Plan.

The reports referred to in the first and second subparagraphs will be carried out in relation to the precise objectives set out in the Annex to this Decision and in conformity with Article 2 (2) of Decision 87/516/Euratom, EEC.

Article 6

This Decision is addressed to the Member States.

Done at Brussels, 14 March 1989.

For the Council
The President

J. SOLANA MADARIAGA

ANNEX

OBJECTIVES AND IMPLEMENTATION PROCEDURES

The Plan takes the form of a number of temporary financial support measures, aimed at encouraging access to large-scale scientific and technical facilities and installations within the Community. It is of potential benefit to all researchers in the exact and natural sciences who are nationals of one of the Member States.

1. OBJECTIVES

The precise objectives of the plan take the following form:

- to encourage access by researchers who are nationals of Member States to major scientific and technical installations within the Community to which they would not normally enjoy access,
- to increase training opportunities available to European researchers so as to enable them to make better use of major scientific and technical installations,
- to develop the use of large-scale scientific and technical facilities within the Community, where necessary by adaptation and/or the addition of special features.

2. POTENTIAL BENEFICIARIES

Community financial support may be made available to:

- any organization within the Community which possesses major scientific and technical equipment or an installation of interest to the exact and natural sciences,
- any researcher or engineer who is a national of one of the Member States and is currently working in a public or private sector laboratory in one of the Member States. All fields of the exact and natural sciences are eligible.

3. PROCEDURAL ARRANGEMENTS

3.1. Call for proposals and selection procedure

- (a) The Commission will publish a call for preliminary proposals from organizations or groups of organizations within the Community having one or more major scientific and technical installation with experimental and/or test facilities which could be made available to scientists or research workers who have hitherto been unable to use them.

The Commission will also ensure that scientists and research workers who could potentially benefit under the Plan from access to the facilities in question are informed of the possibilities likely to become available. The preliminary proposals received from those responsible for the large-scale facilities should be accompanied by a written statement of interest expressed by potential new users.

All information regarding the call for proposals and the selection procedure shall be published simultaneously in all the official languages of the Community in order to ensure that the opportunity to participate in the Plan is available on equal terms in all the Member States.

- (b) The Commission will draw up a draft preselection list of preliminary proposals to be retained. The Committee referred to in Article 3 of the Decision will be informed of the proposals received and will give an opinion on the draft preselection list according to the procedure set out in Article 3 (3). The Commission will then establish a preselection list of facilities which will be published in the *Official Journal of the European Communities*.
- (c) On the basis of the preselection list, the Commission will ask for 'joint proposals' from the installations and potential users concerned. The Commission may, if necessary, assist in the organization of meetings between those responsible for the installations and potential users (financing of joint meetings, etc.).
- (d) The Commission will submit the list of joint proposals received to the Committee, which shall, in accordance with the procedure set out in Article 3 (3) of the Decision, give an opinion on the operations with a view to financial support from the Plan. The Commission will then proceed to the final selection of the operations to benefit from Community support.

3.2. Choice of installations to receive Community support

Criteria of selection

The assessment of the value of Community support will be based upon an evaluation of the proposal put forward, on the basis of the following criteria:

- (a) *Quality of the facility:*
 - specific characteristics,
 - originality or uniqueness,
 - up-to-dateness,
 - range of experiments or tests possible,
 - back-up and technical support available.
- (b) *Interest shown by potential users:*
 - priority will be given to researchers from Member States other than that in which the major installation is situated.
- (c) *Cost/benefit ratio of Community support:*
 - the number and quality of opportunities made available at the facility in return for Community support.
- (d) *Value to the Community:*
 - importance of the facility in respect of the Community's overall scientific and technical potential,
 - value of the experimental opportunities made available in terms of achieving the Community's scientific and technical objectives (potential links with sectoral R & D objectives),
 - value of the facility in terms of strengthening the scientific and technical potential of certain countries or regions of the Community.

3.4. Mechanisms for giving Community support to selected installations

The Commission will conclude an agreement with the recipient organization or institution which will set out:

- the level of Community funding,
- the uses to which it may be put, including a quantification of the opportunities for access to visiting scientists,
- the obligations imposed upon the recipient organization.

The obligations imposed on the recipient organization include:

- making possible the use of the equipment and installations forming the subject of the agreement at no extra charge by researchers not belonging to the recipient organization or institution, this being for a fixed period of time over the year,
- ensuring access by visiting scientists to the scientific and technical back-up services on site.

The contracts will also specify:

- the payment from Community funds to visiting scientists and research workers of all eligible expenditure covered by the Plan,
- the methods by which the results arising from research carried out under the agreement are to be protected, disseminated and exploited.

Finally, the Commission will, in cooperation with the installations concerned, take all appropriate measures to ensure the best possible implementation of the operations selected (programming, availability of machine time, etc.).

3.4. Implementation report

At the end of each year of Community support, the beneficiary organization or institute will make a report to the Commission on the use to which the funds awarded to them were put and the results arising from the use which outside researchers made of the facilities made available to them in the context of the agreement signed with the Commission.

COUNCIL DECISION

of 14 March 1989

adopting a research and technological development programme for the European Atomic Energy Community in the field of the decommissioning of nuclear installations (1989 to 1993)

(89/239/Euratom)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

HAS ADOPTED THIS DECISION:

Having regard to the Treaty establishing the European Atomic Energy Community, and in particular Article 7 thereof,

Having regard to the proposal from the Commission, submitted after consulting the Scientific and Technical Committee ⁽¹⁾,

Having regard to the opinion of the European Parliament ⁽²⁾,

Having regard to the opinion of the Economic and Social Committee ⁽³⁾,

Whereas certain parts of nuclear installations inevitably become radioactive during operation; whereas it is therefore essential to find effective solutions which are capable of ensuring the safety and protection of both mankind and the environment against the potential hazards involved in the decommissioning of these installations;

Whereas the research programme concerning the decommissioning of nuclear installations, adopted by Decision 84/60/Euratom ⁽⁴⁾, has yielded positive results and opened up encouraging prospects;

Whereas the scientific and technical basis necessary to strengthen the safety and protection aspects and the economic evaluation of decommissioning should be further reinforced, namely by demonstration of relevant techniques;

Whereas the experience to be gained from the dismantling of the first large-scale nuclear installation in the Community should be made available to all Member States, subject to the provisions of Title Two, Chapter II, of the Treaty;

Whereas, by its Decision 87/516/Euratom, EEC ⁽⁵⁾, as amended by Decision 88/193/EEC, Euratom ⁽⁶⁾, the Council adopted a framework programme for Community research and technological development (1987 to 1991) which, inter alia, acknowledged the need for a further action on the decommissioning of nuclear installations,

Article 1

A research and technological development programme for the European Atomic Energy Community in the field of the decommissioning of nuclear installations, as defined in Annex I, is hereby adopted for a period of five years from 1 January 1989.

Article 2

The funds estimated as necessary for the execution of the programme shall amount to ECU 31,5 million, including expenditure on a staff of five.

The indicative internal allocation of these funds is set out in Annex I.

Article 3

The detailed rules for the implementation of the programme and the rate of the Community's financial participation are set out in Annex II.

Article 4

The Commission shall be responsible for the execution of the programme. It shall be assisted by the Management and Coordination Advisory Committee CGC6 'Nuclear fission energy — Fuel cycle/processing and storage of waste', set up by Council Decision 84/338/Euratom, ECSC, EEC of 29 June 1984 dealing with structures and procedures for the management and coordination of Community research, development and demonstration activities ⁽⁷⁾.

The contracts concluded by the Commission shall govern the rights and obligations of each party, in particular arrangements for the dissemination, protection and exploitation of research results.

Article 5

In the third year of the programme, the Commission shall undertake a review of the programme and shall report to the European Parliament, the Council, and the Economic

⁽¹⁾ OJ No C 250, 24. 9. 1988, p. 7.

⁽²⁾ OJ No C 69, 20. 3. 1989.

⁽³⁾ Opinion delivered on 22 February 1989 (not yet published in the Official Journal).

⁽⁴⁾ OJ No L 36, 8. 2. 1984, p. 23.

⁽⁵⁾ OJ No L 302, 24. 10. 1987, p. 1.

⁽⁶⁾ OJ No L 89, 6. 4. 1988, p. 35.

⁽⁷⁾ OJ No L 177, 4. 7. 1984, p. 25.

and Social Committee on the results thereof, together, if necessary, with a proposal for modification or prolongation.

At the end of the programme, an evaluation of the results achieved shall be conducted by the Commission, which shall report thereon to the European Parliament and the Council.

The reports referred to in the first and second subparagraphs shall be established having regard to the criteria set out in Annex III to this Decision and in conformity with Article 2 (2) of Decision 87/516/Euratom, EEC.

Article 6

The Commission is authorized to negotiate, in accordance with Article 101 of the Treaty, agreements or contracts with

a third State, an international organization or a national of a third State, with a view to associating them wholly or partly with this programme.

Article 7

This Decision is addressed to the Member States.

Done at Brussels, 14 March 1989.

For the Council

The President

J. SOLANA MADARIAGA

ANNEX I

PROGRAMME CONTENTS AND INDICATIVE INTERNAL ALLOCATION OF FUNDS

The aim of the programme is the joint development of a system of management of nuclear installations finally shut down and of the radioactive wastes produced in their dismantling which, at its various stages, will provide mankind and the environment with the best protection possible. The programme will involve demonstration of relevant technologies.

	Indicative allocation of funds including staff and administrative costs (million ecus)
The programme covers the following areas:	
A. Research and development projects concerning the following subjects:	8,4
No 1: Long-term integrity of buildings and systems	
No 2: Decontamination for decommissioning purposes	
No 3: Dismantling techniques	
No 4: Treatment of specific waste materials: steel, concrete and graphite	
No 5: Qualification and adaptation of remote-controlled semi-autonomous manipulator systems	
No 6: Estimation of the quantities of radioactive wastes arising from the decommissioning of nuclear installations in the Community	
B. Identification of guiding principles relating to:	1,1
— the design and operation of nuclear installations with a view to simplifying their subsequent decommissioning,	
— the decommissioning operations with a view to making occupational radiation exposures as low as reasonably achievable,	
— the technical elements of a Community policy in this field.	
C. Testing of new techniques in practice:	
— pilot projects	16,6
— alternative tests	4,3
— staff secondment	1,1
	22,0
TOTAL	31,5
(of which ECU 3 million relate to staff and administrative costs)	

ANNEX II

IMPLEMENTATION OF THE PROGRAMME AND RATE OF THE COMMUNITY'S FINANCIAL PARTICIPATION

The programme consists of activities carried out by means of shared-cost research contracts with competent public organizations or private firms established in the Member States. The participation of SMEs in the programme will be encouraged.

The Commission shall distribute, in all the official languages of the Community, information packs to accompany the invitation to participate in order to guarantee equal opportunities for the undertakings, universities and research centres in the Member States.

In addition to shared-cost research contracts, the programme may also be carried out by means of study contracts, coordination projects and awards of training and mobility grants. Such contracts and grants shall, where appropriate, be awarded following a selection procedure based on calls for proposals published in the *Official Journal of the European Communities*.

Participants in shared-cost contracts may be industrial organizations, research institutes and universities, established in the Community. Each contractor will be expected to make a significant contribution to projects. The contractor shall be expected to bear a substantial proportion of the costs, 50 % of which shall normally be borne by the Community. Alternatively, in respect of universities and similar organizations carrying out projects, the Community may bear up to 100 % of the additional expenditure involved.

Shared-cost research projects should, where appropriate, be carried out by participants from more than one Member State.

Where an opportunity for large scale cooperation involving different Member States exists, the programme may also be carried out through concerted action. This concerns in particular the selected pilot dismantling projects. In these cases, the Community would participate through shared-cost contracts in specific parts of the projects and organize, by means of concerted action, an exchange of information relating to the other parts. The secondment of research staff from, wherever possible, all Member States to the pilot dismantling projects will be encouraged.

The information resulting from the implementation of the shared-cost activities shall be made accessible on an equal basis to all Member States. Licences and/or other rights developed in the framework of the programme will be subject to the normal contractual conditions of the Community.

ANNEX III

EVALUATION CRITERIA

The programme is to be evaluated by independent experts in accordance with the Community plan of action relating to the evaluation of Community research and development activities. The following criteria are to be considered in the evaluation:

- the extent to which research proposals were selected against relevant criteria,
- the extent to which substantial development of knowledge, techniques and equipment has resulted from the work supported,
- the potential relevance of the results with regard to industrial decommissioning operations,
- the potential relevance of the results with regard to safety and protection aspects of decommissioning and in particular to occupational radiation exposure of decommissioning workers,
- the potential relevance of the results with regard to the reliability of estimates for decommissioning costs,
- the extent to which information exchange and cooperation across the borders of Member States have been promoted.