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** I

R E P O R T

on the proposal from the Commission to the Council for a decision adopting a specific research and technological development programme in the field of non-nuclear energies (1990-1994)
(COM(90) 0164 final - C3-0167/90 -SYN 269)

Rapporteur: Mr Charles-Alfred GASOLIBA I BÖHM

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PART A : Amendments
Draft legislative resolution

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A Series: Reports - B Series: Motions for Resolutions, Oral Questions - C Series: Documents received from other Institutions (e.g. Consultations)

* = Consultation procedure requiring a single reading

**II = Cooperation procedure (second reading) which requires the votes of a majority of the current Members of Parliament for rejection or amendment

**I = Cooperation procedure (first reading)

*** = Parliamentary assent which requires the votes of a majority of the current Members of Parliament

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By letter of 11 June 1990 the Council consulted the European Parliament, pursuant to Article 130q(2) of the Treaty, on the proposal from the Commission to the Council for a decision adopting a specific research and technological development programme in the field of non-nuclear energies (1990-1994).

At the sitting of 15 June 1990 the President of Parliament announced that he had referred this proposal to the Committee on Energy, Research and Technology as the committee responsible and to the Committee on Budgets, the Committee on Economic and Monetary Affairs and Industrial Policy and the Committee on the Environment, Public Health and Consumer Protection for their opinions.

At its meeting of 22 May 1990 the Committee on Energy, Research and Technology appointed Mr Gasoliba I Böhm rapporteur.

At its meetings of 19 and 20 June, 17 and 18 September, 16 and 17 October, 27 and 28 November, 19 and 20 December 1990 and 9, 10 and 11 January 1991 it considered the Commission proposal and draft report.

At the last meeting it adopted the draft legislative resolution unanimously.

The following took part in the vote: La Pergola, chairman; Lannoye, vice-chairman; Adam, vice-chairman; Gasoliba I Böhm, rapporteur; Anger, Bettini, Breyer, Chiabrando, Desama, Garcia Arias, Larive, Linkohr, Newman (for Ford), Puerta (for Porrazzini), Pompidou, Quisthoudt-Rowohl, Regge, Samland (for Schinzel), Sanz Fernandez, Schlee and Seligman.

The opinions of the Committee on Budgets, the Committee on Economic and Monetary Affairs and Industrial Policy and the Committee on the Environment, Public Health and Consumer Protection are attached.

The report was tabled on 10 January 1991.

The deadline for tabling amendments will appear on the draft agenda for the part-session at which the report is to be considered.

A
Proposal from the Commission to the Council for a decision adopting a
specific research and technological development
programme in the field of non-nuclear
energies (1990-1994)

Commission text¹

Amendments

(Amendment No. 1)

After the third recital, new recital

Whereas fundamental research must be specifically encouraged Community wide in each of the strategic research sectors of the Framework programme;

(Amendment No. 2)

After the third recital, new recital

Whereas, in addition to the specific programme on human capital and mobility, training of researchers in each of the strategic research sectors of the Framework programme must be ensured;

(Amendment No. 3)

Fourth recital

Whereas, pursuant to Article 4 and Annex I of Decision 90/221/EURATOM, EEC, the amount deemed necessary for the whole framework programme includes an amount of 57 million ECU for the centralized dissemination and exploitation of results, to be divided up in proportion to the amount envisaged for each activity; whereas in view of the importance of this specific programme within the 'Energy' action, the estimate of the financial resources needed by this programme is to be reduced by 1.57 million ECU, which amount is to be allocated to the centralized activities, in order to comply with the second sentence of Article 130p(2) of the Treaty;

Whereas, pursuant to Article 4 and Annex I of Decision 90/221/EURATOM, EEC, the amount deemed necessary for the whole framework programme includes an amount deemed necessary of 57 million ECU for the centralized dissemination and exploitation of results which is to be the subject of a decision of the Council in cooperation with Parliament; whereas, in view of the importance of the specific programme within the 'Energy' action a financial contribution to the centralized activities is required;

¹ - Full text COM(90) 0164 final - OJ No. C 0174, 16/7/1990, page 77

Commission text

Amendments

(Amendment No. 4)
Sixth recital

Whereas this programme must be implemented essentially by the selection of research and development projects to enable them to benefit from Community participation; whereas the Commission should encourage the submission of such projects by the usual means of publishing calls for proposals in the Official Journal of the European Communities; whereas a special procedure should also be devised so as to maintain a degree of flexibility enabling the Commission, in the face of the continuous evolution and gradual acceleration of technological progress, also to take into consideration spontaneous proposals consistent with the objectives of the programme;

Whereas this programme must be implemented essentially by the selection of research and development projects to enable them to benefit from Community participation; whereas the Commission should encourage the submission of such projects by the usual means of publishing calls for proposals in the Official Journal of the European Communities; whereas an exceptional procedure should also be devised so as to come into effect between calls for proposals to maintain a degree of flexibility enabling the Commission, in the face of the continuous evolution and gradual acceleration of technological progress, also to take into consideration spontaneous proposals consistent with the objectives of the programme;

(Amendment No. 5)
After tenth recital, new recital

Whereas the R & D activities under this programme are upstream of the projects backed by the programme for the promotion of energy technology in Europe (THERMIE); whereas such projects are eligible for financial support only where the R & D stage has for the main part been completed and whereas implementation of these two programmes therefore needs to be closely coordinated;

Commission text

Amendments

(Amendment No. 6)
Article 1

A specific research and technological development programme for the European Economic Community in the field of non-nuclear energies, as defined in Annex I, is hereby adopted for a period of five years as from 1 January 1990.

A specific research and technological development programme for the European Economic Community in the field of non-nuclear energies, as defined in Annex I, is hereby adopted for the period from the date of publication of this decision in the Official Journal to 31 December 1994.

(Amendment No. 7)
Article 2

1. The Community funds estimated as necessary for the execution of the programme under this Decision amount to 157 million ECU. Of this amount 1.57 million ECU is drawn for the centralized dissemination and exploitation of results. The amount thus reduced to 155.43 million ECU includes staff costs which may not exceed 7%. An indicative breakdown of expenditure is set out in Annex II.

1. The Community funds estimated as necessary for the execution of the programme under this Decision amount to 357 million ECU, including staff costs and a contribution to the centralized dissemination and exploitation of results. An indicative breakdown of expenditure for the implementation of this programme is set out in Annex II. The procedures for the dissemination and exploitation of results are set out in Annex III. An indicative breakdown of expenditure and the procedures concerning staff are set out in Annex II.

(Amendment No. 8)
Article 3

1. For the purpose of this decision, sub-programmes and projects in implementation of the Programme are defined as joint research and technological development actions designed to contribute to the development of new energy options that are both economically viable and environmentally safe, including energy-saving technologies.

2. Community financial support may be granted for

(a) technological projects; these are projects designed to explore, structure or test the technical feasibility of innovatory concepts prior to any industrial development.

(b) essential strategic research projects; these are projects which develop, through cross-border collaboration, new areas of basic knowledge likely to initiate industrial research.

3. Community financial support under this programme may in no case be granted to technology demonstration projects, as defined in Article 2.2 of Regulation 2008/90/EEC.

Rules for the implementation of the programme are set out in Annex III.

4. Rules for the implementation of the programme are set out in Annex III.

(Amendment No. 9)
Article 5(3)

3. The reports shall be drawn up having regard to the objectives set out in Annex I to this Decision and in accordance with Article 2(4) of Decision 90/221/Euratom, EEC.

3. The reports shall be drawn up having regard to the objectives set out in Annex I to this decision, in accordance with Article 2(4) of Decision 90/221/EURATOM, EEC and shall assess the coherence of the programme's measurable implementation with the six major concerns set out in Annex II of Council Decision 90/221/EURATOM, EEC,

(Amendment No. 10)
Article 6

1. The Commission shall be responsible for the execution of the programme. It shall be assisted by an advisory Committee, hereinafter referred to as "the Committee", composed of representatives of the Member States, and chaired by a representative of the Commission.

1. The Commission shall be responsible for the execution of the programme. It shall be assisted by an advisory Committee, hereinafter referred to as "the Committee", composed of representatives of the Member States, and chaired by a representative of the Commission.

The European Parliament shall be informed of the deliberations of the Committee in a comprehensive and timely manner.

2. The contracts concluded by the Commission shall govern the rights and obligations of each party, including the procedures for disseminating, protecting and exploiting the research results, in accordance with the arrangements adopted pursuant to the second paragraph of Article 130k of the Treaty.

2. The contracts concluded by the Commission shall govern the rights and obligations of each party, including the procedures for disseminating, protecting and exploiting the research results, in accordance with the arrangements adopted pursuant to the second paragraph of Article 130k of the Treaty and, where appropriate, procedures for training and evaluation.

Commission text

3. A work programme for each year shall be drawn up and updated where necessary. It shall set out the detailed objectives and types of projects to be undertaken, and the financial arrangements to be made for them. The Commission shall make calls for proposals for projects on the basis of the annual work programmes.

Amendments

3. A work programme shall be drawn up at the start of the programme and shall be regularly revised. It shall set out the detailed objectives and types of projects to be undertaken, and the financial arrangements to be made for them. The Commission shall make calls for proposals for projects on the basis of the work programme.

(Amendment No. 11)
Article 6(4) (new)

4. An annual progress report outlining programme developments and achievements will be prepared by the Commission for transmission to the Council and the European Parliament.

(Amendment No. 12)
Article 6

Paragraph 5 (new)

5. The Commission shall set up a European organization for renewable energy, to which regional, national or European associations which are already active in this field shall belong. The aim of the organization shall be to coordinate the work of such associations, to set up contacts and to provide financial support for initiatives.

(Amendment No. 13)
Article 7

Paragraph 4 (new)

4. The institutions of the European Community shall be urged to implement energy-saving measures in their construction projects, to use renewable energy sources and to base such action on the results of European research programmes.

(Amendment No. 14)

Article 8

1. The procedure laid down in Article 7 shall apply to:

- the preparation and updating of the work programmes referred to in Article 6(3),
- evaluation of the projects referred to in point 2 of Annex III, as well as the estimated amount of the Community's financial contribution when these projects are submitted through the ordinary procedure referred to in point 4 of Annex III and the above-mentioned amount is more than 5 million ECUs,
- evaluation of all projects submitted through the exceptional procedure referred to in point 4 of Annex III, as well as the estimated amount of the Community's financial contribution,
- measures for evaluating the programme.

1. The procedure laid down in Article 7 shall apply to:

- the preparation and updating of the work programme referred to in Article 6(3),
- the contents of calls for proposals, referred to in Annex III,
- the participation in any project by non-Community organisations and enterprises referred to in Article 10,
- any adaptation of the indicative breakdown of funds set out in Annex II,
- the measures to be undertaken to evaluate the programme and those projects submitted through the exceptional procedure,
- accompanying measures and arrangements for the dissemination, protection and exploitation of the results of the research, for encouraging fundamental research, training of researchers and technological assessment carried out under the programme,
- concerted actions referred to in point 2 of Annex III.

The Commission shall notify the European Parliament of draft decisions which, in the exercise of the Commission's implementing powers, are forwarded to the Committee.

2. The Commission may consult the Committee on any matter falling within the scope of the programme.

Commission text

Amendments

3. The Commission shall inform the Committee with regard to:

- the progress of the programme,
- planned calls for proposals, referred to in Article 6(3),
- projects, referred to in point 2 of Annex III, submitted through the ordinary procedure, for which the Community contribution is less than 5 million ECUs, and the results of their evaluation,
- accompanying measures, referred to in point 2 of Annex II,
- concerted actions, referred to in point 2 of Annex III.

(Amendment No. 15)
Article 10

Where co-operation with third countries and international organizations aiming at achieving the objectives of this programme requires legal undertakings between the Community and the third parties concerned, the Commission shall be authorized to negotiate, in accordance with Article 130n of the Treaty, international agreements laying down the terms for such cooperation.

Where co-operation with third countries aiming at achieving objectives of the programme, requires legal undertakings between the Community and the third parties concerned, the Commission shall be authorized to negotiate, in accordance with Article 130n of the Treaty, international agreements laying down the terms for such cooperation.

Priority will also be given to co-operation with regional groupings and European countries not members of the European Community and in accordance with the guidelines agreed between the Council and the European Parliament(1).

The negotiations for such international agreements may only be initiated with third countries who are already signatories of an Agreement with the Community which explicitly cites research and technological development or scientific progress as one of the objectives of cooperation.

(1) Drawn up during the conciliation on the Framework Programme for Community activities in research and technological development 1990-1994.

Commission text

Amendments

Decisions on the conclusion of such agreements shall be adopted in accordance with the procedure described in Article 130q(2) of the Treaty.

Decisions on the conclusion of such international agreements shall be adopted in accordance with the procedure described in Article 130q(2) of the Treaty.

(Amendment No. 16)

Annex I, preamble, third paragraph

Research into modelling is a horizontal research area which will be carried out to enable technological strategies to be assessed.

Research into modelling is a horizontal research area which will be carried out to improve control over the processes involved and to enable technological strategies to be assessed.

(Amendment No. 17)

Annex I, Area 1 'Analysis of strategies and modelling'

Insert a new paragraph after the first paragraph:

'In drawing up the above forecasts and evaluations, use must be made of regional energy agencies (where these exist), which may be given the principal tasks in the management of energy-saving policies and the use of alternative energy sources.'

Commission text

Amendments

(Amendment No. 18)
Annex I, Area 1, second paragraph

Models will be used to assess the strategic role of energy efficiency at demand and supply level and renewables towards a reduction of the damaging effect of energy production and utilization on the environment, emphasis being put on greenhouse gas emissions, in particular CO₂. Energy policy options taking into account different scenarios of CO₂ constraints will be made available.

Models will be used to assess the strategic role of energy efficiency at demand and supply level and renewables towards a reduction of the damaging effect of energy production and utilization on the environment, emphasis being put on greenhouse gas emissions, in particular CO₂. Energy policy options taking into account different scenarios of CO₂ constraints will be made available. A worldwide dimension will be included in the analyses carried out in this field, since third countries and, particularly, the countries of Eastern Europe will play an increasingly significant role in environmental problems and the greenhouse effect.

(Amendment No. 19)
Annex I, Area 2, first paragraph

This research aims at reducing the adverse effects on the environment from the widespread use of fossil fuels. The following two main lines of activities are planned, involving experimental work from the outset in the fields of advanced technologies for energy production and in fixation of CO₂. Technico-economic evaluation of the several possible routes will be performed in parallel with development of geophysical methods and tools. On the basis of the outcome of these technico-economic evaluations, further experimental work will be performed on the more promising high efficiency power producing systems with CO₂ capture and on CO₂ disposal.

Developing and extending the actions already undertaken within the context of the JOULE programme, this research aims at optimizing energy production from fossil sources and at reducing the adverse effects on the environment from the widespread use of fossil fuels. Two main lines of activities are planned, firstly in the fields of advanced technologies for energy production and secondly in removal and fixation of CO₂, and the development of combustion models. Technico-economic evaluation of the several possible routes and an assessment of the effects on the environment and consequent measures to reduce them will be performed in parallel with development of geophysical methods and tools. On the basis of the outcome of these technico-economic evaluations, further experimental work will be performed on the more promising high efficiency power producing systems with CO₂ capture and on CO₂ disposal.

Commission text

Amendments

(Amendment No. 20)
Annex I, Area 2, second paragraph

The objective is to increase the efficiency of energy production from fossil sources, by means of advanced technologies. The work will establish the technical feasibility and the costs - cost per unit kWh produced, capital cost - of these advanced technologies. The work will contribute to the development of high-efficiency multicycle conversion systems for electricity production from fossil fuels with a potential efficiency of 50% or more, as compared to the present 38% level, in order to reduce CO₂ emissions per kWh produced and to compensate for energy losses and expenses related to minimum measures. For this purpose the development of fossil fuel combustion with oxygen and CO₂ recirculation will be studied because of its potential impact on efficiency and on the limitation of emissions.

The objective is to increase the efficiency of energy production from fossil sources, by means of advanced technologies. The work, both theoretical and experimental, will establish the technical feasibility and the costs - cost per unit kWh produced, capital cost - of these advanced technologies. The work will contribute to the development of high-efficiency multicycle conversion systems including fluidized bed combustion systems for electricity production from fossil fuels with a potential efficiency of 50% or more, as compared to the present 38% level, in order to reduce greenhouse gas emissions per kWh produced and to compensate for energy losses and expenses related to minimum emission measures. For this purpose the development of fossil fuel combustion with oxygen and CO₂ recirculation will be studied because of its potential impact on efficiency and on the limitation of emissions.

Commission text

Amendments

(Amendment No. 21)
Annex I, Area 2, third paragraph

The objective is to reduce emissions through the capture and stable disposal of pollutants. This work comprises two elements: first, technico-economic evaluations and related engineering studies for minimizing emissions in fossil fuelled power production systems and in methanol and hydrogen production from fossil fuels. This work could also be relevant to R & D on catalysts which are used to reduce emissions from fossil fuelled power stations and from oil refineries. Second, the development of safe and stable geological disposal for CO₂ in new reservoirs, as well as in spent or operating oil and gas fields. This will entail research on the interaction of CO₂ with mineral materials in geological sites. CO₂ storage in the ocean depth will also be studied. In support to this part of the programme, advanced geophysical methods and tools will be developed for CO₂ storage assessment, hydrocarbons prospection and reservoir engineering. Scrubbing, absorption or other methods to separate CO₂ from flue gases with subsequent fixation of CO₂ will also be studied.

The objective is to reduce emissions through the capture and stable disposal of pollutants. This work comprises two elements: first, technico-economic evaluations, modelling studies and related engineering studies for minimizing emissions in fossil fuelled power production systems and in methanol and hydrogen production from fossil fuels. This work could also be relevant to R & D on appropriate techniques which are used to reduce emissions from fossil fuelled power stations and from oil refineries. Second, the development of safe and stable geological disposal for CO₂ in new reservoirs, as well as in spent or operating oil and gas fields. This will entail research on the interaction of CO₂ with mineral materials in geological sites. CO₂ storage in the ocean depth and the problems of siting large energy plants on the basis of the possibility of CO₂ storage, recycling and processing will also be studied. In support to this part of the programme, advanced geophysical methods and tools will be developed for CO₂ storage assessment, hydrocarbons prospection and reservoir engineering. Scrubbing, absorption or other methods to separate CO₂ from flue gases with subsequent fixation of CO₂ will also be studied.

(Amendment No. 22)
Annex I, Area 2, fourth paragraph (new)

Research and development actions in the field of hydrocarbons will be continued, focussing on technologies for the discovery, appraisal and exploitation of new fields and on the final use of fuels.

(Amendment No. 23)

Annex I, Area 3, first paragraph

The aim is to accelerate technological readiness and to prepare for early market integration of all the most promising technical options. Within a global systems approach, particular objectives are to increase the conversion efficiency of solar, wind, hydraulic, biomass and geothermal systems, decrease their costs and improve their attractiveness to developers, industry and consumers.

The aim is to accelerate technological readiness and to prepare for early market integration of all the most promising technical options. Within a global systems approach, particular objectives are to increase the conversion efficiency of solar, wind, hydraulic, wave-power, tidal, biomass and geothermal systems, decrease their costs and improve their attractiveness to developers, industry and consumers.

(Amendment No. 24)

Annex I, Area 3, second paragraph

Add:

'using either new materials or traditional materials derived from geological or botanical resources, or from their synthesis, available at regional level'

(Amendment No. 25)

Annex I, Area 3, third paragraph

Add:

'The proposal for standardizations to be incorporated into building and town planning regulations'

Commission text

Amendments

(Amendment No. 26)

Annex I, Area 3, fourth and fifth paragraphs

The objective is to develop renewable energies for future large scale applications in electric utility systems, such as the development of grid-connected solar power plants, wind generators, wave power systems, tidal power schemes and small hydro power systems, including environmentally acceptable storage and back-up systems e.g. solar hydrogen and power from biofuels.

Research will be carried out on the optimisation in size and technology of large wind generators, in order to effect further cost reduction. This will include work on new materials and components, e.g. composite blades, design criteria and eventually a set of new pilot systems.

The objective is to develop renewable energies for future large scale applications in electric utility systems, such as the development of grid-connected solar power plants, wind generators, wave power systems, tidal power schemes, small hydro power systems and cogeneration plants for heat and power based on biofuels and organic waste, including environmentally acceptable and safe storage and back-up systems, e.g. solar hydrogen.

Research will be carried out on the optimisation in size and technology of large wind generators in the MW-range, in order to effect further cost reduction. This will include work on new materials and components, e.g. composite blades, design criteria and eventually a set of new pilot systems suitable for large-scale utilisation on land and off-shore. A comparative assessment will be carried out of the costs, efficiency and environmental impact of the two different families of large wind generators (over 1 MW), as exemplified by the Eole-type (vertical axis) and Gamma-type (horizontal axis) generators.

Commission text

Amendments

(Amendment No. 27)

Annex I, Area 3, sixth paragraph

Research aimed at optimizing grid-connected photovoltaic systems and the associated components will be carried out. emphasis will be on further improvement of the efficiency and cost of solar cells. Work on solar thermal power, wave power and tidal schemes will be limited to studies and exploratory research. Analysis work will be devoted to the combined use of the various renewable power systems in future utility systems.

Research aimed at optimizing grid-connected photovoltaic systems and the associated components will be carried out. emphasis will be on further improvement of the efficiency and cost of solar cells. Work on solar thermal power, wave power and tidal schemes will be carried out in such a way as to allow the enormous potential of these energy sources to be harnessed as soon as possible. Analysis work will be devoted to the combined use of the various renewable power systems in future utility systems.

(Amendment No. 28)

Annex I, Area 3, paragraph 7a (new)

BIOMASS

The objective is to promote the development of energy from biomass through perfecting techniques for its production, conversion and utilization and including the testing of stand-alone regional power stations. Coordination with actions carried out under the specific programme for research in the field of agriculture and agro-industry will be ensured through integrated projects combining the objectives of both programmes, and agreed by the respective advisory committees. The advisory committee for the non-nuclear energy programme will have the final power of decision for the selection of such integrated projects.

Commission text

Amendments

(Amendment No. 29)

Annex I, Area 3, eighth paragraph

The main objective is the selection of a test site and the subsequent development of a single European prototype hot dry rock system; following site selection, the major task will be the creation and management of an artificial reservoir based on the pattern of natural fractures in the basement rock. Scientific studies will focus on fracture location, reservoir development and management and water-rock interactions.

Corrosion and scaling in conventional high- and low-enthalpy geothermal systems will also be studied, as will problems related to the reinjection of used fluids, with the objective of widening the availability of suitable geothermal resources.

The main objective is the selection of a test site and the subsequent development of a single European prototype hot dry rock system; following site selection and subject to satisfactory evaluation of results, the major task will be the creation and management of an artificial reservoir based on the pattern of natural fractures in the basement rock. Scientific studies will focus on fracture location, reservoir development and management and water-rock interactions.

Corrosion and scaling in conventional high- and low-enthalpy geothermal systems will also be studied, as will problems related to the reinjection of used fluids, with the objective of widening the availability of suitable geothermal resources.

(Amendment No. 30)

Annex I, Area 3, tenth paragraph

In addition, the deep geology of Europe will be studied in order to obtain a better understanding of the processes which have led to the development of geothermal and hydrocarbon reservoirs. New techniques of seismic wave generation and processing will be tested.

In addition, the deep geology of Europe will be studied in order to obtain a better understanding of the processes which have led to the development of geothermal and hydrocarbon reservoirs. Seismic reflection and electromagnetic surveys will be the main methods for the study. Other geophysical and geochemical methods will be integrated if necessary.

(Amendment No. 31)

Annex I, Area 4, fourth paragraph

Research will also be carried out on clean and energy saving production of hydrogen and methanol with SOFC based technologies, aiming at 40% electricity savings in the case of hydrogen. Industrial electrochemical reactors for production of chemical compounds by electrolysis and oxidation will also be considered.

Research will also be carried out on clean and energy saving production of hydrogen and methanol with SOFC based technologies, aiming at 40% electricity savings in the case of hydrogen. Industrial electrochemical reactors for production of chemical compounds or the treatment of effluent by electrolysis and oxidation will also be considered.

(Amendment No. 32)

Annex I, Area 4, first paragraph

The goal is to develop and improve technologies which are expected to have a major impact on heat and electricity savings and on a reduction of pollution. These technologies should lead to energy savings of 20-25% in new equipment, buildings and processes.

The goal is to develop and improve technologies and modelling tools which are expected to have a major impact on heat and electricity savings and on a reduction of pollution. These technologies should lead to energy savings of 20-25% in new equipment, buildings and processes.

(Amendment No. 33)

Annex I, Area 4, sixth and seventh paragraphs

Current work on energy saving in industry has allowed new goals to be determined. In particular, process intensification and process integration will be extended to include environmental aspects. As a result the following priorities have been established in close collaboration with industry: unit operations e.g. heat exchangers, process intensification, chemical reactors; process integration leading to energy saving and decreased pollution; energy conversion equipment such as catalytic combustion, industrial high temperature heat pumps for heating and refrigeration, addressing also the problem of CFC substitutes; electricity saving.

Current work on energy saving in industry has allowed new goals to be determined. In particular, process intensification and process integration will be extended to include environmental aspects. As a result the following priorities have been established in close collaboration with industry: unit operations e.g. separation techniques, heat exchangers, process intensification, chemical reactors; process integration leading to energy saving and decreased pollution; energy conversion equipment such as catalytic combustion, industrial high temperature heat pumps for heating and refrigeration, addressing also the problem of CFC substitutes; electricity saving.

Commission text

Research on energy saving in buildings will include passive cooling, aiming at reducing the electricity demand for cooling, in particular for southern European countries. New daylighting techniques will be developed to reduce lighting and cooling requirements. Work on heat pumps will in future be focused on integration of catalytic combustors and cheap compact heat exchangers. Aerogel research will be extended to the development of 'smart transparent foam' windows. Air management systems in buildings will also be considered. New energy saving design systems will be developed to provide architects with tools to introduce energy saving techniques in the building sector and urban planning.

Amendments

Research on energy saving in buildings will include in particular passive cooling, aiming at reducing the electricity demand for cooling, in particular for southern European countries. New daylighting techniques will be developed to reduce lighting and cooling requirements. Work on heat pumps will in future be focused on integration of catalytic combustors and cheap compact heat exchangers. Aerogel research will be extended to the development of highly insulating transparent and adaptable windows. Air management systems in buildings will also be considered. New energy saving design systems will be developed to provide architects with tools to introduce energy saving techniques in the building sector and urban planning.

The potential for energy savings and consequential reductions in greenhouse gas emissions through new and improved technologies in the domestic sector is recognized and R & D will be directed to realizing this potential.

(Amendment No. 34)
Annex I, Area 4

Paragraph 7a (new)

Special attention will be given to standardizing building design taking account of passive solar energy and making possible substantial energy savings. The programme will also seek to improve technology in the domestic sector, making possible both energy savings and a substantial reduction in greenhouse gas emissions.

Commission text

Amendments

(Amendment No. 35)
Annex I, Area 4, eighth paragraph

The aim is to develop advanced technologies which can lead to highly efficient and clean transport. This area, which will involve the participation of industry, deals with short, medium and long term research and includes both combustion engines and fuel cell and battery driven electric vehicles. It is complementary to transport activities carried out in the Industrial and Materials Technologies programmes.

The aim is to develop advanced technologies which can lead to highly efficient and clean transport. This area, which will involve the participation of industry, deals with short, medium and long term research and includes both combustion engines and fuel cell and battery driven electric vehicles. Complementarity with actions carried out in the Industrial and Materials Technologies programme will be ensured by means of integrated projects.

(Amendment No. 36)
Annex II

Indicative breakdown of expenditures

in %, for the period 1990-1994

Area 1. Analysis of strategies and modelling	5-7
Area 2. Minimum emission power production from fossil sources	20-30
Area 3. Renewable energy sources	30-40
Area 4. Energy utilization and conservation	30-40

The breakdown between different areas does not exclude the possibility that projects could cover several areas.

Indicative breakdown of expenditures for the period 1990-1994

Area 1 Analysis of strategies and modelling	5-7
Area 2 Minimum emission power production from fossil sources	20-30
Area 3 Renewable energy sources	<u>25-35</u>
Area 4 Energy utilization and conservation	<u>25-35</u>
<u>Integrated projects</u>	<u>10-12</u>

The breakdown between different areas does not exclude the possibility that projects could cover several areas.

Commission text

Amendments

(Amendment No. 37)
Annex II

After the heading 'Indicative breakdown of expenditures', add the following new paragraph:

The establishment plan deemed necessary for the duration of the programme consists of 36 statutory posts (A, B and/or C). The Commission shall indicate each year in the preliminary draft budget the number of staff deemed necessary and the corresponding expenditure. The budgetary authority shall decide on the appropriations.

(Amendment No. 38)
Annex III, paragraph 2

2. The rules for implementing the programme, referred to in Article 3, comprise research and technological development projects, accompanying measures and concerted actions.

The projects shall be the subject of shared-cost research and technological development contracts.

The accompanying measures consist of applying the means to ensure proper technical execution, management and evaluation of the programme as well as adequate dissemination and accessibility of the results, and co-ordination, training and consciousness-raising of the participants in the programme.

The concerted actions are those defined in the Financial Regulation.

2. The rules for implementing the programme, referred to in Article 3, include research and technological development projects, accompanying measures and concerted actions.

The projects shall be the subject of shared-cost research and technological development contracts.

The accompanying measures of applying the means to ensure proper technical execution, management and evaluation of the programme as well as adequate dissemination and accessibility of the results, and co-ordination, training and consciousness-raising of the participants in the programme.

The concerted actions are those defined in Article 92 of the Financial Regulation.

Commission text

Amendments

(Amendment No. 39)
Annex III, paragraph 3

3. The participants in the projects must be natural or legal persons established in the Community, such as universities, research organizations and industrial firms, including small and medium-sized enterprises, or associations thereof, in particular European Economic Interest Groupings (EEIGs).

Natural or legal persons established in countries which have concluded agreements with the Community foreseeing scientific and technical research, may, based on the criterion of mutual advantage, take part in the projects undertaken in the context of this programme. The contracting parties under such arrangements shall not benefit from Community funding. They shall contribute to the general administrative costs.

3. The participants in the projects must be natural or legal persons established in the Community, such as universities, research organizations and industrial firms, including small and medium-sized enterprises, or associations thereof, in particular European Economic Interest Groupings (EEIGs).

Natural or legal persons established in countries which have concluded co-operation agreements on scientific and technical research with the Community, may, on the principle of mutual benefit, participate in the projects undertaken in the framework of this programme. Such contracting parties will not benefit from Community funding under the Framework programme. They shall contribute to the general administrative costs.

(Amendment No. 40)
Annex III, paragraph 4, sub-paragraph 2a (new)

The Commission shall determine in each case whether the management of the programme, or parts thereof and the dissemination of programme results can be undertaken by organizations or institutions and it shall delegate the work accordingly.

(Amendment No. 41)
Annex III, paragraph 4, sub-paragraph 5

The exceptional procedure must be completed before the ordinary procedure in such a way that the available amount for the Community's financial participation in projects retained by the ordinary procedure can be determined precisely. The closing date for the exceptional procedure shall be published each year in the Official Journal.

The exceptional procedure shall come into effect after the first call for proposals and must be completed before the ordinary procedure in such a way that the available amount for the Community's financial participation in projects retained by the ordinary procedure can be determined precisely. The closing date for the exceptional procedure shall be published each year in the Official Journal.

Commission text

The amount of the financial participation of the Community for all the projects retained by the exceptional procedure will be decided each year, in relation to the projects selected according to particularly strict criteria of excellence. In any case this amount may not exceed 15%; it may be revised each year in the light of experience.

The Commission shall draw up a vade mecum setting out all the rules applicable to this exceptional procedure in order to guarantee full transparency.

Amendments

The amount of the financial participation of the Community for all the projects retained by the exceptional procedure will be decided each year, in relation to the projects selected according to particularly strict criteria of excellence. In any case this amount may not exceed 10%.

The Commission shall draw up a vade mecum setting out all the rules applicable to this exceptional procedure in order to guarantee full transparency.

(Amendment No. 42)
Annex III

Rules for Implementing the Programme and Activities for Dissemination and Exploitation of the Results

Paragraph 4, seventh sub-paragraph

Add a new paragraph:

It shall forward this vade mecum to Parliament at the latest before this Decision is adopted.

(Amendment No. 43)
Annex III

Paragraph 4a (new)

4a In selecting projects, the Commission shall give priority to projects which are incorporated in and may be associated with regional energy programmes'.

(Amendment No. 44)
Annex III, paragraph 4b (new)

4b No Member State may attribute to a national, regional, local, departmental or other governmental budget any Community funds allocated to organizations of that Member State in implementation of projects accepted under the terms of the project selection procedure described in paragraph 4 above.

(Amendment No. 45)
ANNEX III, paragraph 7

7. The knowledge acquired during the course of the projects shall be disseminated on the one hand within the specific programme and on the other hand by means of a centralized activity, pursuant to the decision referred to in the third paragraph of Article 4 of Decision 90/221/Euratom, EEC.
7. The knowledge acquired during the course of the projects shall be disseminated on the one hand within the specific programme and on the other hand by means of a centralized activity, pursuant to the decision referred to in the third paragraph of Article 4 of Decision 90/221/Euratom, EEC. The results of the programmes will be published in cooperation with organizations, agencies and cooperatives capable of making sure the projects are a commercial success and turning them into coherent industrial programmes.

DRAFT LEGISLATIVE RESOLUTION
(Cooperation procedure: first reading)
embodying the opinion of the European Parliament
on the proposal from the Commission to the Council
for a decision adopting a specific
research and technological development programme in the field of
non-nuclear energies (1990-1994)

The European Parliament,

- having regard to the Commission proposal to the Council (COM(90) 0164 final - SYN 269)¹,
 - having been consulted by the Council pursuant to Article 130q(2) of the EEC Treaty (C3-0167/90),
 - having regard to the report of the Committee on Energy, Research and Technology and the opinions of the Committee on Budgets, the Committee on Economic and Monetary Affairs and Industrial Policy and the Committee on the Environment, Public Health and Consumer Protection (A3-0005/91),
 - having regard to the Commission position on the amendments adopted by Parliament,
1. Approves the Commission proposal subject to Parliament's amendments and in accordance with the vote thereon;
 2. Calls on the Commission to amend its proposal accordingly, pursuant to Article 149(3) of the EEC Treaty;
 3. Calls for the conciliation procedure to be opened if the Council should intend to depart from the text approved by Parliament;
 4. Asks to be consulted again should the Council intend to make substantial modifications to the Commission proposal;
 5. Calls on the Council to incorporate Parliament's amendments in the common position that it adopts in accordance with Article 149(2)(a) of the EEC Treaty;
 6. Instructs its President to forward this opinion to the Council and Commission.

¹OJ NO. C 174, 16.7.1990. p. 77

