

EUROPEAN PARLIAMENT

Working Documents

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DOCUMENT 1-808/83

Report

drawn up on behalf of the Committee on Energy,
Research and Technology

on the proposal from the Commission of the
European Communities to the Council
(Doc. 1-596/83 - COM(83) 311 final)

for a decision adopting a research and development
programme in the field of non-nuclear energy
(1983-1987)

Rapporteur: Mr J. VANDEMEULEBROUCKE

By letter of 11 July 1983, the President of the Council of the European Communities requested the European Parliament to deliver an opinion on the proposal from the Commission to the Council for a decision adopting a research and development programme in the field of non-nuclear energy (1983-87).

On 12 September 1983, the President of the European Parliament referred this proposal for a decision to the Committee on Energy, Research and Technology.

On 21 June 1983, the Committee on Energy, Research and Technology appointed Mr VANDEMEULEBROUCKE rapporteur.

The committee considered the Commission's proposal at its meeting of 11 July 1983 and the draft report at its meetings of 21 and 29 September 1983.

At the last-mentioned meeting, the committee adopted the motion for a resolution together with explanatory statement unanimously.

The following took part in the vote: Mr Seligman, acting chairman; Mr Adam, Mr Bernard, Mr Flanagan, Mr K. Fuchs, Mr Gauthier, Mr Linkohr, Mr Markopoulos, Mr Moreland, Mr Normanton, Mr Pedini, Mr Petronio, Mrs Phlix, Mr Purvis, Mr Rinsche, Mr Sassano, Mr Salzer, Sir Peter Vanneck and Mr Veronesi.

The opinion of the Committee on Budgets in the form of a letter is annexed to this report.

This report was tabled on 4 October 1983.

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Annex: Opinion of the Committee on Budgets

A

The Committee on Energy, Research and Technology hereby submits to the European Parliament the following motion for a resolution, together with explanatory statement:

MOTION FOR A RESOLUTION

on a proposal from the Commission of the European Communities for a Council decision adopting a research and development programme in the field of non-nuclear energy (1983-87)

The European Parliament,

- having regard to the proposal from the Commission to the Council Com(83) 311 final¹,
 - having been consulted by the Council (Doc. 1-596/83),
 - having regard to the report of the Committee on Energy, Research and Technology and the opinion of the Committee on Budgets (Doc. 1-808/83),
 - having regard to the result of the votes on the Commission's proposal,
- A. Drawing attention to the need to increase the Community's indigenous energy production capability in anticipation of the exhaustion of the world's gaseous and liquid hydrocarbon reserves,
- B. Believing that a mix of economic energy production techniques is essential to the security of the Community's energy supplies of which the non-nuclear energies are potential components,
- C. Having regard to its previous resolutions concerning the promotion of the use of non-nuclear energy,
1. Endorses and supports the proposal for a coherent and coordinated R & D programme covering the whole non-nuclear energy sector to enable the Council, in accordance with numerous Commission proposals and Parliament resolutions,

¹ OJ No. C 218 of 13.8.1983, p. 4

to undertake a serious examination of its own declarations concerning the promotion of long-standing energy policy objectives, in particular the reduction of energy imports and diversification of energy supplies;

2. Stresses, moreover, the positive effects to be gained from implementation of the programme with regard to employment, regional policy, export potential and, not least, the developing countries;
3. Considers it is regrettable for the programme to have been submitted late as this may well result in unacceptable budgetary consequences;
4. Calls on the Commission to examine the costs and potential of the programme for the training of scientists and engineers from the ACP States and to report to Parliament's competent committees and to Council appropriately;
5. Emphasizes the importance of integrating the Community's research and development programme in the field of non-nuclear technologies with research, development and demonstration group strategy of the International Energy Agency, particularly in identifying collaborative project priorities;
6. Instructs its President to forward to the Commission and the Council, as Parliament's opinion, the Commission's proposal as voted by Parliament and the corresponding resolution.

EXPLANATORY STATEMENT

I. INTRODUCTION

1. The Research and Development Programme on Non-Nuclear Energy submitted by the Commission to the Council on 16 June 1983¹ is the third in a series. The first ran from 1975 to 1979, the second from mid-1979 to mid-1983. The new programme as proposed would cover the four and a half years from mid-1983 to the end of 1987. It falls within the "Framework programme for Community scientific and technical activities 1984-1987", currently awaiting a Council decision.

2. The programme covers indirect action, by partial financing of research contracts and pilot projects; within the "framework programme" it is complementary to direct action (by the Joint Research Centre) and to demonstration projects. The aim, as with past programmes, is to stimulate research activity, promote coordination and the exchange of information, and ensure optimum use of Community resources. Past programmes referred to "renewable energy sources": this programme brings together research and development of all non-nuclear energy sources, including solid fuels. It comprises eight sub-programmes, namely:

- (i) solar energy
- (ii) energy from biomass
- (iii) wind energy
- (iv) geothermal energy
- (v) energy conservation
- (vi) use of solid fuels
- (vii) production and use of new energy vectors
- (viii) energy modelling

3. There is every reason for the European Parliament to welcome and support the research and development programme for non-nuclear energy. It is fully in line with the ideas and recommendations expressed in a number of resolutions adopted by the Parliament². This report will underline briefly the most important aspects of the programme.

¹ COM(83) 311 final

² OJ No. C 334 of 16.11.82, PETERSEN and OJ No. C 304 of 28.11.82; NORMANTON: both on demonstration projects concerning alternative energy resources and energy saving, OJ No. C 267 of 16.9.82: SELIGMAN on 'Use of Biomass for Energy Purposes' and OJ ibid, VANDEMEULEBROUCKE on solar energy.

4. On the other hand, as regards the timing of the proposal, the procedure for its adoption, and the likely level of financing, there are grounds for dissatisfaction and concern. This will be explained in the second part of this report.

II. THE CONTENT AND PRIORITIES OF THE PROGRAMME

5. There is no doubt about the value of the research and development work on non-nuclear energies promoted by the Commission over the past eight years, nor about the importance of continuing and expanding it. Although the Community started relatively late in this field, under the impetus of the abrupt rise in oil prices in the early seventies, and although the resources devoted to it so far have been relatively modest, the progress achieved has been impressive. It is to be measured in the widespread involvement of researchers, research institutions, private companies and government experts in joint efforts in a wider range of sectors; in the steady flow of information that has emerged; and in the clearly identifiable stimulus given to industrial activity, with beneficial effects for the competitiveness of Community firms in areas with a major potential for expansion.

6. The new programme shows a shift of priorities in the light of experience gained and results achieved. It is reassuring to observe that the Commission shows flexibility in scaling-down its effort in areas where prospects are not good (e.g. thermomechanical solar power), in deepening and reinforcing its work in the most promising areas (e.g. photovoltaic energy, biomass, etc.), and in identifying sectors with major long-term potential which merit a major input (e.g. geothermal power from hot dry rocks). The rate of expansion proposed - from 50 mi EAUs in the first programme to 105 in the second and 379 for the third - is probably as high as is compatible with responsible management of a programme of this kind.

III. NON-NUCLEAR ENERGY POTENTIAL

7. The broad reasons advanced by the Commission for this programme are unquestionably valid. Non-nuclear energy forms have the potential to make a major contribution to the Community's energy requirements in the period up to the end of the century, as the Commission pointed out in its review of Member States' energy policy programmes and progress towards 1990 objectives³ in a Communication to the Council that new energy sources should by 1990 be providing 6% of incremental energy supply. By the year 2000, solar energy, biomass and wind should be providing, on conservative estimates 13.5% of

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COM (82) 326 final

total primary energy demand. More rational use of existing energy sources (energy conservation, improved use of solid fuels) offers additional advantages.

8. Both renewable energy sources and rationalisation of energy use contribute to the major political goal of reducing the Community's dependence on imported energy supplies. Non-nuclear energy technologies, elaborated or improved through the R & D programme, can constitute valuable aid for the third world, seeking to exploit the same energy sources. They can also open up important export markets. Within the Community, the development of new energy sources can be a driving force behind regional expansion or revival.

9. Of particular importance, in the current context, is the employment potential. This does not lie in the R & D programme itself, and the Commission is rightly cautious as regards estimates of possible job-creation. However, the employment effect is a dimension that should never be lost sight of.

10. In view of all the above considerations, the programme as proposed remains a modest one. The sum of 379 mi EAUs spread (effectively) over four years would represent only 10% of what the Commission is proposing for the overall framework programme. In relation to its potential impact, the share of the Community budget requested is reasonable, to say the least. It is hoped, therefore, that even in the present context of budgetary stringency the budgetary authority will not impose drastic cuts, which could endanger the positive effects of this on-going Community effort.

SUB-PROGRAMMES - COMMENTS

The various sub-programmes call for the following comments:

A. Solar energy

11. The Commission proposes to pursue work on the application of solar energy in buildings. With active solar space heating systems not likely to be cost-effective for a decade or more, the main R & D effort will go into making solar water heating cost-competitive in central and northern Europe, thus permitting a further expansion of the new industry which has begun to establish itself.

12. Photovoltaics is one of the areas where the past programmes have had the biggest impact, contributing to the emergence of comprehensive expertise and pulling together all the main photovoltaic interests in the Community. The effort planned for the coming period will be vital if the Community is to maintain and extend its position in the photovoltaic field.

13. The "Eurelios" thermomechanical solar power plant has not proved successful enough to justify major new investment and the Commission proposes to do no more than maintain it as a research tool, undertaking only minor modifications.

B. Biomass

14. The Commission considers biomass to have the biggest short-term potential of all the new and renewable energy sources. It is indeed generally accepted that it offers good prospects for energy production at costs competitive with conventional fuels. The implications for the agricultural sector are far-reaching, both in terms of energy self-sufficiency, reducing overall costs, and in terms of alternative use of resources. The employment potential, involving jobs which do not require high levels of qualification, is not queried.

15. However, the essential cost-effective practices and technologies are not yet available, (e.g. for high-yield energy plantations, harvesting and storage of biomass conversion), and further R & D thus remains the key to successful exploitation of biomass. The Commission seeks to expand its level of activity, which involved the spending of 10 mi ECU in the first two programmes.

C. Wind energy

16. The Commission did not start R & D activities on wind energy until 1980, with an assessment of wind energy potential in the Community. The preliminary conclusion was that with 400,000 potential sites for multi-megawatt turbines, annual production could potentially attain three times current electricity consumption. However, R & D efforts so far have been very limited in relation to the potential.

17. The Commission's intention, in the non-nuclear energy programme, is to concentrate on R & D for turbines in the range of 1 MW and above, suitable for integration into the electricity networks. The aim would be to achieve a network of experimental plants across Europe, echoing the approach that has been successful with photovoltaic power plants.

18. The Community is starting with a considerable time-lag in this area, and it is particularly vital that the sub-programme in question should receive adequate financing.

19. The Commission's decision to opt for R & D on turbines in the 1MW range results also from the fact that a considerable market is developing, largely without any stimulus from public funding for R & D, in smaller machines for direct electricity supply to individual users - farms, groups of dwellings. The expansion of these small machines in Denmark is particularly striking, and the Commission could perhaps render a useful service by seeking to spread knowledge and experience of construction and operation already required in this area.

D. Geothermal energy

20. R & D on the use of geothermal sources was included in the first two Community programmes. As a result of this, the Commission was able to identify the potential for the use of energy from hot dry rock, provided the technical challenges could be overcome. The way that contracts were used to bring in mining engineers, with the necessary experience of excavation and explosion work deep underground, was typical of the role of catalyst which the Commission can play through the R & D programme. Progress so far seems to justify the Commission's decision to devote a sizeable share of the resources of the new non-nuclear energy programme to hot dry rock development. It is estimated that if the technical problems can be mastered it will increase the Community's geothermal energy potential by an order of magnitude.

E. Energy conservation

21. The Commission has estimated that by 1990 the Community could be saving 150 million tons oil equivalent per year, or 12-14% of gross energy consumption at that time. To achieve this will require not only research and development but also adequate legislation and financial incentives. The R & D contribution will take the form partly of developing energy-saving technologies in all energy-intensive sectors, partly of support for energy-saving techniques.

22. The Commission already has an impressive record, with 110 projects completed in the first and second programmes and over 90 of them judged successful. The area is so vast that the function of the Community's R & D programmes remains that of stimulating national efforts in selected fields. The range of projects in which the Community has been or plans to be involved is extremely wide. The third programme will cover four main areas: buildings; transport; industry; storage of secondary energy.

F. Solid fuels

23. As part of the new approach whereby all R & D work on non-nuclear energy is grouped, the Commission is proposing a sub-programme on solid fuels which will constitute a new departure, (the limited Community research so far, under ECSC having concerned itself with the problems of production of solid fuels rather than their use). The Commission's reasoning is that with reserves of hard coal, lignite and peat much larger at the world level than those of other fossil fuels (petroleum, natural gas), their use will expand considerably. In 1980 solid fuels accounted for 23% of community gross domestic energy consumption. Hard coal consumption could rise from 314 mi t in 1980 to 500 mi t by 2000.

24. Among the main obstacles to expanded use of solid fuels, reducing dependence on imported oil, and the image of such fuels as bulky, inconvenient to handle, dirty, and environmentally harmful. The proposed R & D programme would be devoted to techniques which would lessen these handicaps.

25. The effort that the Commission proposes to make is proportional to the potential market involved, and this would be the most costly single sub-programme on non-nuclear energy. This seems fully justified, given the potential saving on oil, and the importance of ensuring adequate environmental protection if there is a massive shift to solid fuels.

G. New energy vectors

26. Matching its effort on non-nuclear energy sources with relatively sure short or medium-term potential, the Commission has included proposals for R & D on "new vectors". The priority would go to the development of non-petroleum-based synthetic fuels, derived from either coal or biomass. The long-term target is to ensure that these fuels can cover a substantial part of the liquid fuel requirements of the Community, which are expected to continue to run at the same rate for the next two decades. Some 10% of these might be met by synthetic fuels in 1990 and 35% by 2000, if the necessary R & D can be carried out.

27. One of the renewable energy sources significantly absent from the proposed non-nuclear energy R & D programme is wave energy. This seems particularly regrettable for a number of reasons: the volume of work already done, essentially in the United Kingdom, from which the Community as a whole could benefit (Ireland, France, Denmark, and in the future Spain and Portugal, are all potential users of the technology); the fact that competitors, notably the Japanese, are continuing their research and development; the very considerable job-creation impact, in key industries such as steel, ship-building and engineering, which would result if this source could be developed.

28. The fact that the present UK Government has decided not to promote research and development on wave energy means that the Commission lacks the basis for its usual role of contributing and coordinating. It would however surely be of long-term value if a minimal sum (comparable to the 1 MUC in the second programme for wind energy) could be set aside or an assessment of the state of R & D in the Community and elsewhere and of the energy potential of this source.

TIMING, PROCEDURE, AND PROSPECTS FOR FINANCING

29. The third R & D programme on new energies should normally have come into operation in 1983. To ensure maximum continuity the proposals would have had to be elaborated in the course of 1981, and tabled early in 1982, permitting a Council decision in the first half of the year and a budgetary commitment, in the 1983 Budget, on the basis of the programme as approved.

30. There is reason to believe the non-nuclear programme could have been presented earlier, if the Commission had not delayed it until the Council had received and deliberated upon the Framework Programme for Community

Scientific and Technical Activities, first tabled on 21 December 1982. The Council, after examining that programme in February 1983, sought further information, and a new text was tabled only in May 1983, in the hope (not to be realised) that the Council would deliberate again before the Summer.

31. Whatever the reasons, the draft Council decision for the non-nuclear R & D programme for 1983-1987 was not tabled until 16 June 1983. The Commission, in its preliminary draft general budget for 1984, included a single line (7305) for the non-nuclear programme. This included an unexpectedly low figure (55 MUC) for 1984. Understandably in the absence of any decision on the non-nuclear programme, the Council in establishing the draft budget for 1984 declined to write in commitment appropriations for this or other programmes falling within the framework programme. Instead it set aside a sum in Chapter 100 (reserve) equivalent to almost precisely half of what the Commission had included in its proposals.

32. It is to be hoped that when the programme is adopted the Council will nevertheless accept with minimal change the Commission's proposed four-year total outlay. In that case, either additional sums in a 1984 supplementary budget, or larger commitments in subsequent budgets, would be needed to achieve the desired level of finance.

33. As regards timing, the non-nuclear R & D programme has undergone a delay (the need for which is not obvious) of over a year. The earliest at which it can be examined by the Research Council is its session in October, and a decision is unlikely before December 10-12, always assuming that the Athens summit some days earlier was successful in finding solutions to EEC's budgetary crisis.

34. The initial delay in tabling will thus have been compounded by missing the boat in budgetary terms. The outcome cannot fail to be difficulties in maintaining the impetus of the Community's programme. Added to the prospects about levels of financing which are not encouraging, this gives cause for great concern about the future in this vital area. There is a risk of throwing away the advantage obtained in some field in terms of competitiveness, and endangering its leadership in others.

OPINION OF THE COMMITTEE ON BUDGETS

Letter from the Vice-President of the Committee to the
Chairman of the Committee on Energy, Research and Technology

Dear Mrs Walz,

Re: Proposal for a Council Decision adopting a research and development
programme in the field of non-nuclear energy (1983-87)

The Committee on Budgets considered this proposal on 22 September 1983.¹ Earlier in the year it had approved the Commission's framework programme which provided an overall view of the Communities' research activities, and the concept of research action programmes corresponding to the main themes of the framework programme; it will be recalled that these research action programmes cover direct actions and shared cost actions in a particular field. In view of the continuing need to limit energy consumption and to develop new sources of energy supply, the Committee welcomed in principle this programme concerning non-nuclear energy, which logically follows on from two previous 4-year programmes. It also notes with approval that the Commission has proposed criteria for Community involvement in research in this field. Nevertheless, a number of critical observations were made during the discussion, as follows:

With regard to the appropriations proposed, the Committee on Budgets notes that these are estimated at 418 m ECU in total for the period 1 July 1983 to 31 December 1987, the previous programme having ended on 30 June 1983, this total comprising 39 m ECU for direct action and 379 m ECU for shared cost action. Of the total figure, 209 m ECU is foreseen for rational use of energy programmes and 248 m ECU for renewable energy programmes.

(a) This total of 418 m ECU compares with a total foreseen in the framework programme of 830 m ECU. Even allowing that the amounts in the framework programme were indicative only, such a drastic reduction upsets the general balance of expenditure on which Parliament judged the framework programme.

¹ There were present: Mrs BARBARELLA, Acting Chairman; Mr ADAM (deputizing for Mr BALFE), Mr BALFOUR, Mr BARBI (deputizing for Mr ADONNINO), Mr D'ANGELOSANTE (deputizing for Mr GOUTHIER), Mr FICH, Mr LOUWES, Mr NEWTON DUNN, Mrs SCRIVENER and Mr WOLTJER (deputizing for Mr ARNDT).

- (b) Within the framework total of 830 m ECU, 60% was earmarked for rational use of energy programmes and 40% for renewable energy programmes. In the proposal now being discussed, these percentages are inverted, and the emphasis is on the renewable energy programme, and this again is a significant deviation from the framework programme adopted only a few months ago.
- (c) The previous programme (1979-83) was allocated 218 m ECU. Even allowing for some inflation, the total for the new programme of 418 m ECU implies a real increase of around 75%, which translates into an average additional expenditure of 40 m ECU.
- (d) The Commission's proposal does not contain a year by year breakdown of likely future expenditure, but the total of 418 m ECU would imply annual appropriations of around 100 m ECU. The small portion for the JRC is likely to continue at the same level as before, and a substantial expansion will be for shared cost actions (line 7340). The 1984 budget does not contain appropriations which can support any substantial growth on this line, nor is Parliament's margin for manoeuvre adequate to redress the balance.¹

Given the present budgetary situation of exhaustion of own resources and uncertainty about the provision of new own resources, it would be irresponsible to suggest that this programme could necessarily be funded at the level suggested.

With regard to staff, the Committee on Budgets noted that the Commission proposed a staff complement of 63. This compares with 38 for the previous programme and 27 for the first programme. The cost of this staff complement is not separately shown, but amounted to around 7% of the cost of the previous programme, and the increase now asked for is proportionately less than the increased appropriations sought.

With regard to the form of the decision, a number of observations might be made:

- i) the text is not final in that firstly it is dependent on a decision setting up a Management and Coordinating Consultative Committee (CGC), a proposal on which Parliament has yet to pronounce, and secondly because the bracketed portions of Articles 3 and 5 create ambiguity.

¹ In 1983, budget line 7340 contained 2 m ECU in commitments and 30 m ECU in payments. The 1984 PDB contained 55 m ECU in commitments and 29 m ECU in payments, reduced by Council in its draft budget to a token entry in commitments and 30 m ECU in payments.

- ii) Article 5 provides for a mid-term review of the programme, but unlike the previous decision (79/785/EEC) no report of this review is sent to Parliament, nor is Parliament consulted about any resulting changes.
- iii) Article 4 provides for the Commission to transfer appropriations between sub-programmes. Before doing so it has to consult the management committee but not the budgetary authority. It should be noted that this power to make transfers is unlimited, whereas the earlier decision allowed transfers which did not affect the estimated amounts by more than 10%.

There are thus certain reservations that must be made about the possibility of funding this programme, about reporting to Parliament, and about the licence given to the Commission to make budgetary transfers.

Yours sincerely,

(sgd) Carla Barbarella,
Vice-Chairman,
Committee on Budgets

