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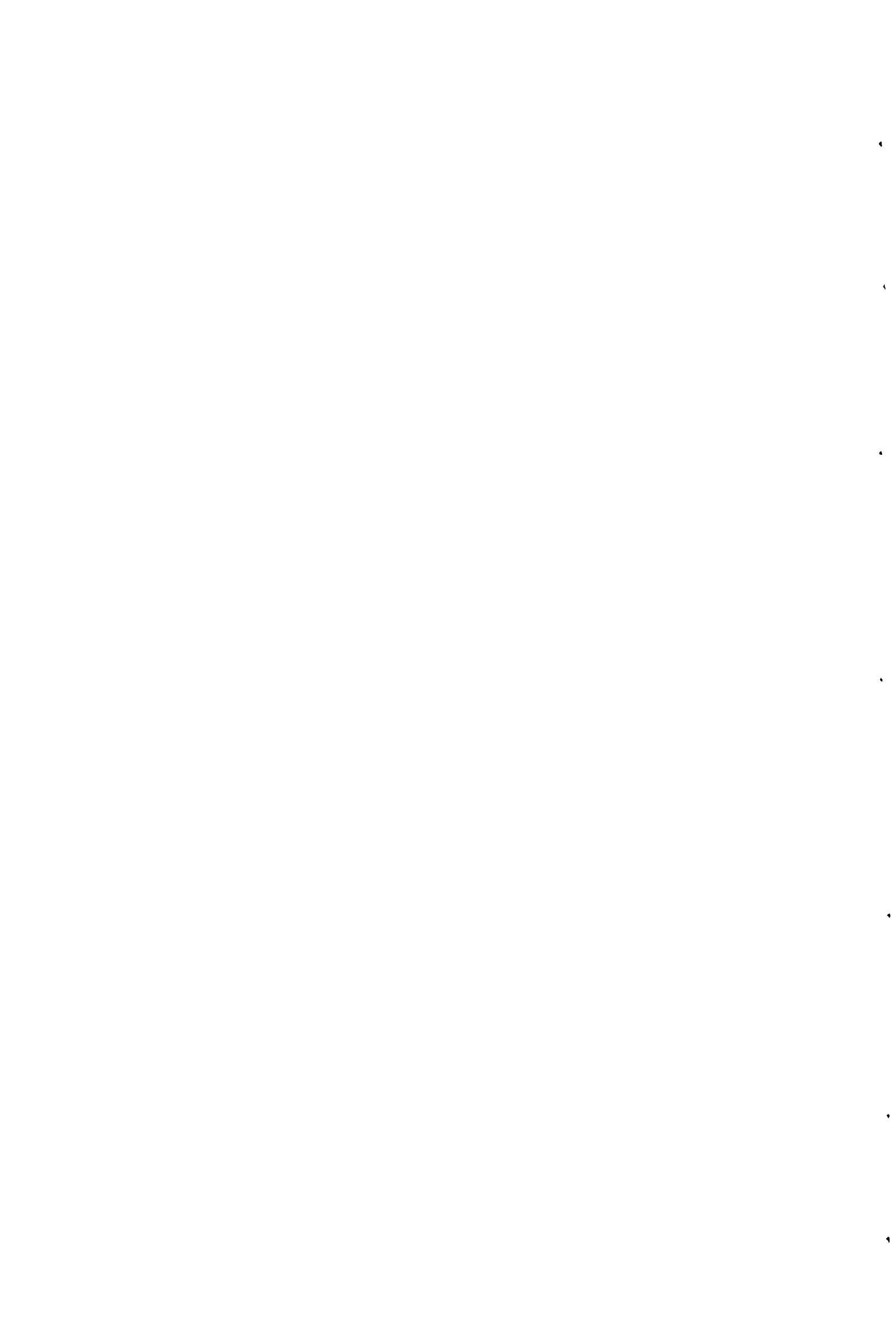
on behalf of the Committee on Energy, Research and Technology

on the conditions for a fresh start in Community research at the Joint Research
Centre (JRC)

Rapporteur: Mr G. FLÄMIG







By letter of 4 April 1973 the Committee on Energy, Research and Technology requested authorization to draw up a report on the progress necessary in Community research.

Authorization was given by the President of the European Parliament in his letter of 16 April 1973. On 17 May 1973 the committee appointed Mr Flämig rapporteur.

As part of this work, and following the three interim reports already drawn up (Doc. 219/73, Doc. 161/74 and Doc. 511/74), the Committee on Energy, Research and Technology instructed Mr Flämig on 19 November 1974 to draw up a final report on the conditions for a fresh start in Community research at the Joint Research Centre (JRC).

It considered this draft final report at its meetings of 21 November 1975, 22 December 1975, 20 February 1976 and 26 March 1976 and, at the latter meeting, adopted the motion for a resolution and the explanatory statement unanimously.

Present: Mr Springorum, chairman; Mr Flämig, vice-chairman and rapporteur; Mr Normanton, vice-chairman; Mr Behrendt (deputizing for Mr Rizzi), Mr Burgbacher, Mr Delmotte (deputizing for Mr van der Hek), Mr Frehsee, Mr Van der Gun (deputizing for Mr van der Mei), Mr Hansen (deputizing for Mr Schwabe), Mr Martens (deputizing for Mr Giraudo), Mr W. Müller, Mr K. Nielsen, Mr Noè, Mr Osborn, Mr Pisoni and Mr Vandewiele.

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

MOTION FOR A RESOLUTION

on the conditions for a fresh start in Community research at the Joint Research Centre (JRC)

The European Parliament,

- having regard to its previous resolutions on the situation and development of the Joint Research Centre, in particular
 - on the future of the Joint Research Centre and the establishment of a multiannual programme of research and training¹,
 - on the progress required in Community research and on the proposal from the Commission of the European Communities to the Council (Doc. 89/74) for a revision of the multiannual research programme²,
 - on the assessment of the activities of the Joint Research Centre from 1958 to 1972³,
- having regard to the communication from the Commission to the Council on the overall concept for the next multiannual research programme of the Joint Research Centre (COM(75) 529 final),
- having regard to the final report of the Committee on Energy and Research. (Doc. 49/76),
- having regard to the explanatory statement to the resolution and with particular reference to it,
 1. Points out that Community research undertaken at the Joint Research Centre must fit in with an overall concept of Community research and development policy, of which it is only one part;
 2. Stresses that the main shortcoming of the present multiannual research programme is that this condition has not been met;
 3. Considers that this shortcoming has been aggravated by the incorporation in the multiannual programme of a large number of diverse projects, leading to a dissipation of effort;
 4. Believes that the future multiannual research programme should be drawn up to suit the interests of the Community which are reflected in the following criteria:

¹ OJ No. C 112, 27.10.1972, p. 19

² OJ No. C 93, 7.8.1974, p. 85

³ OJ No. C 95, 28.4.1975, p. 6

- (a) the scope of the research should be large enough to justify pooling all intellectual and material capacity at Community level,
 - (b) the subject of the research must be relevant to the Community and, where possible, benefit the public services in the Community,
 - (c) the subject of the research must fall within the framework of Community policy;
5. Emphasizes the need to concentrate Community research undertaken at the JRC on a limited number of topics which satisfy the criterion of being in the interest of the Community;
 6. Considers that research activities in the energy sector should constitute a central element of the future multiannual programme;
 7. Believes that special consideration should be given to the following factors in the implementation of the future multiannual programme:
 - maximum flexibility, enabling the research to be adapted to suit the results obtained;
 - greater delegation of decision-making, in particular by making non-allocated research appropriations directly available to the JRC;
 - retrospective scrutiny of research activities;
 - greater involvement of the JRC in European research as a whole and consequently improved cooperation between the various European research centres;
 8. Feels that the level of efficiency in Community research is closely linked with a stable social climate within the JRC;
 9. Calls upon the Commission to promote greater mobility amongst the scientific staff of the JRC, taking into account both the interests of Community research and the position of the staff concerned;
 10. Approves the idea of a 'sliding programme' put forward by the Commission, insofar as this arrangement assures a smooth transition between two multiannual research programmes;
 11. Acknowledges the Commission's efforts to make the JRC more efficient than hitherto, already sees signs of success and hopes that the overall plan that has been submitted will further contribute to this;
 12. Calls on the Commission not to relax its efforts and to submit its proposals for the next multiannual research programme, taking account of what is said above, as soon as possible, while paying heed to an appropriate relationship between the resources available and the objectives aimed at;
 13. Instructs its President to forward this resolution and the report of its committee to the Council and Commission of the European Communities.

EXPLANATORY STATEMENTI. INTRODUCTION

1. The decisions taken by the Council of Ministers on 25 August 1975¹ mark an important step in Community research. By approving the revision of the multiannual programme proposed by the Commission, rectifying the funds allocated to this programme, assigning a programme to the Petten Centre, and releasing the financial resources needed to prepare the future multiannual programme, the Council has ensured the survival of Community research. The European Parliament has, on numerous occasions, stressed the urgency of these measures, notably on 7 April 1975 when it adopted the resolution tabled by the author of this report on behalf of the Committee on Energy, Research and Technology².

The committee clearly perceived nevertheless that however essential and necessary these measures might be, they resolved only the most immediate difficulties but did not offer any answer to the basic problems of Community research. This would require not just measures to ensure survival but decisions to promote recovery.

2. In the past year our committee has submitted three interim reports on Community research. In the most recent of these³, our committee assessed the period from 1958 to 1972, criticized the mistakes that had been made and pointed out clearly where the responsibility lay. Our task now, as we have already said elsewhere, is to make a careful study of the implementation of the multiannual research programme, including its administrative and management aspects, and on this basis to work out proposals for the future.

3. Although our committee and the European Parliament have always maintained that there is a need for Community research, it must meet certain requirements and criteria, otherwise it loses all justification.

When endorsing in 1972 the Commission's proposals on the multiannual research programme, our committee stressed that it was giving its approval more because it felt there was a need to ensure the future of Community research by means of a medium-term programme than because of the value or quality of the programme's content.

4. Faced with the well-nigh hopeless position of Community research prior to the Council decisions of May and June 1973, our committee took the view, subsequently endorsed by the European Parliament, that the main priority was to uphold the principle of Community research. We must now progress beyond this point by devising solutions designed to carry the concept of Community

¹OJ No. L 231, 2.9.1975

²Resolution: OJ No. C 95, 28.4.1975

³Doc. 511/74

research a stage further. This is what the committee proposes to do in this report.

5. At the time when our committee was discussing this matter, the Commission submitted to the Council a document entitled 'Overall concept for the next multiannual research programme of the Joint Research Centre'. The Council itself, at its meeting of 15 and 16 July 1975 on Community research, requested the Commission to submit an overall concept for the JRC's next multiannual programme as soon as possible.

The two documents (our committee's own-initiative report and the Commission document) were thus drawn up at the same time. It was clear, therefore, that the report should also express our committee's views on the 'overall concept.' The concept is part of a broader framework dealt with in another Commission document, 'Objectives, priorities and ways and means of a common research and development policy', on which our committee will report separately.

6. The committee based its assessment of Community research on the following considerations:

- does the research carried out at the JRC fulfil a Community role?
- is the JRC an appropriate and competent body to carry out this research?
- what is the value to the Community of the projects implemented or proposed in these areas?

In its enquiries the committee has been given valuable assistance by experts outside the Commission. The results of these enquiries are now submitted to the European Parliament for its consideration and assessment.

II. SHORTCOMINGS OF THE PRESENT MULTIANNUAL RESEARCH PROGRAMME (DIRECT ACTION PROJECTS)

(a) Lack of a clear-cut basic concept of Community research

7. The present programme is not part of an overall concept, a general plan for European research. This lack of a clear outline has an adverse effect on the conception, administration and implementation of the programme at all levels. Need we again point out that this failure to spell out an ultimate objective can only impair the JRC's efficiency and, in more general terms, the work of the Communities!

Since it has not been part of a broader policy (a Community research and development policy), the JRC's programme has so far lacked any guidelines or direct research objectives. The research programme could therefore only be regarded as a hotchpotch of half-baked projects with no direct or logical connection and an objective that was, to say the least, imprecise, if not incomprehensible.

8. In addition, as regards the Commission's administration, coordination between direct and indirect research was in need of improvement through closer organizational links.

As for the implementation of the programme, the fact that the JRC comprises a number of establishments suggest that there should be some structure for coordination. Unfortunately this existed only in embryonic form, which was a serious obstacle to the implementation of the programme.

9. Finally it should be pointed out that failure to spell out its position and role in Community research made it even more difficult for the JRC to coordinate its activities and cooperate actively with national or private research in the Community.

(b) Diversity of the programme

10. It has already been stated that the present programme was the product of a scheme to salvage the JRC. Like all such schemes, the final result reflects a difficult compromise in the Council. This partly accounts for the fragmented nature of the programme, which comprises no fewer than 25 projects in a wide variety of fields. This lack of uniformity is acknowledged by the Commission in its communication on the overall concept for the next multi-annual programme.

11. This situation is largely attributable to the decision to sacrifice the principle of priority for nuclear research (the result of a line of thinking prevalent towards the end of the sixties). In addition to projects in the nuclear sector, the programme covers research in energy, materials, the environment, new technologies, remote sensing of the earth's resources, data processing, standards and reference materials, training and high-temperature materials.

In view of the constraints imposed by staff numbers and a limited budget, the JRC lacks the operational strength to carry out some of these projects. For this very reason, research projects in the sectors concerned cannot be expected to produce worthwhile results.

(c) Lack of flexibility

12. One of the basic principles of research is that programmes should be amenable to review and adjustment after a comparatively short period. Drawing on past experience, the Council, on a proposal from the Commission, has stipulated that the 1973-1976 multiannual programme should be reviewed annually. The system of annual review decided by the Council has proved a failure. The proposals for the 1974 review have never been adopted by the Council. The 1975 proposals were not approved by the Council until July

this year. This amply proves that the programme lacks flexibility - a serious disadvantage, since any delay in reviewing the programme holds up its implementation.

13. It must also be pointed out that, although the proposal to set up a consultative management committee (composed of national research specialists) for each research project was a good idea in itself, its practical effect has been to stifle the implementation of the programme. Furthermore it has obliged certain JRC staff members to devote a great deal of their time to these committees, at the expense of the research itself.

(d) The programme's incompatibility with staff qualifications

14. The programme was adopted and assigned to the JRC without any prior assessment of staff skills and specialization. As a result, some members of staff were working in fields in which their specialized knowledge was completely wasted. While it is true that in certain areas of research staff mobility is possible because a lower degree of specialization is required, certain projects nevertheless call for highly specialized personnel. This requirement has been completely disregarded and it may justifiably be asked if it benefits Community research to assign projects to researchers not specialized in the area concerned.

15. As far as the staff structure is concerned, there is a noticeable lack of cohesion as a result of the disproportionate number of technicians in relation to researchers. One of the tasks of those responsible for implementing the proposed programme should be to restore the balance between technicians and researchers.

III. MANAGEMENT OF THE MULTIANNUAL RESEARCH PROGRAMME

16. If a research programme is to be successful, it must be given effective administrative and technical support. The plant and equipment at the JRC are of much the same standard as in most other centres of this kind. As for the management, our previous report drew attention to the mistakes of the past and described the reforms now being made.

At the present stage, the following shortcomings may be noted in programme management:

(a) Excessive bureaucracy

17. Research management calls for specific procedures which bear very little relation to the techniques applied in other sectors. Administrative structures, attitudes and methods are not suited to research. Greater flexibility is needed, and, above all, there must be scope for initiative if projects are not to get bogged down.

18. We find that the administrative rules applied by the Commission in other sectors, transposed to the JRC, have produced an excessively bureaucratic approach. This inevitably impairs management efficiency and hence research. In particular, decision-making channels are over-stretched. This means that more time is needed to introduce or adjust programmes and we would again stress here that any delay in the implementation of a programme reduces its value.

(b) Inappropriate budgetary structure

19. A study of the funds allocated each year in the budget to direct research shows that over 70% are earmarked for staff expenditure, investment expenditure being cut to a minimum. This is an unsound arrangement since it means that within a relatively short period equipment becomes obsolescent and the sector is no longer competitive. Furthermore, it is very difficult to attract competent researchers to a centre where the proper equipment is not available.

In an effective budgetary structure at least 40% of expenditure would be earmarked for operational costs.

(c) The JRC's 'image'

20. In the field of research, it is essential for a centre to have an image that distinguishes it from its competitors. The Community authorities are largely responsible for the fact that the JRC does not have such an image. They refuse to assign to the Centre a programme of European dimensions and the means to carry it out - essential if a centre is to establish a reputation. But the JRC management also **was in a difficult position in that it was unable** to keep the Centre open to outside ideas. A research centre that fails to maintain close and sustained contact with other research establishments soon becomes out of touch and its reputation suffers as a result.

(d) Still no climate of confidence

21. The previous report pointed out that the social climate within the JRC had deteriorated during the 1960s and the early 70s and mentioned what was being done to improve matters.

The existence of a climate of confidence and a favourable atmosphere for research depends mainly on the Community's political authorities. Only they can give the JRC and its staff the necessary guarantees for the future. But it is also up to the management of the JRC to take what steps are necessary to prevent any deterioration in the social climate and hence to avoid unrest.

22. Before concluding this section, we should like to point out that most of the experts consulted by our committee expressed doubts as to the advisability of recruiting JRC researchers as officials under the Staff Regulations. They considered that such an arrangement impairs the necessary mobility of scientists.

IV. PROPOSALS FOR A FUTURE MULTIANNUAL RESEARCH PROGRAMME

(a) Conditions under which direct Community research could be given a fresh start

23. It should be pointed out that, in the opinion of your committee, a research project should not be adopted by the Community unless it is intrinsically of benefit to the Community. This benefit may stem from three factors:

- either the scope of the research project requires a pooling of intellectual or material capacity at Community level,
- or the research project itself bears a Community stamp, particularly when undertaken as a public service to the Community,
- or it constitutes a necessary support for Community activities.

24. The future multiannual programme must be drawn up in accordance with these criteria and thus be clearly Community-oriented. Hence too the need:

- to concentrate Community research on a limited number of topics which meet those criteria. (This is also necessary in view of the actual constraints imposed by staff and budget limitations);
- to integrate Community research, including both direct and indirect actions, into the society which it is to serve. This in no way implies the abandonment of basic research which affects the quality of all research;
- to define closely the objectives of research activities, but with sufficient flexibility to allow adjustment as work progresses.

25. The new programme must be defined and implemented in collaboration with national and private research organizations through a policy of contacts and liaison. In this way, duplication would be avoided where it is not desirable, for example where a comparison of results is not required.

(b) Content of the future research programme

26. Bearing in mind the requirements which the future programme would have to satisfy, your committee considers that the research activities of the JRC must principally again be centred on energy utilization, especially nuclear research. In this field the JRC has an undeniable asset: the necessary infrastructure is available. Nuclear research is also of fundamental importance to the Community, especially at a time when this form of energy is undergoing substantial development.

27. Taking the present programme as a reference point, this research activity should cover:

- Research of Community interest

Reactor safety. Fuel cycle, e.g. for high-temperature reactors. Waste processing and storage. Control and management of fissile materials. Solution of technical problems arising from the operation of nuclear power plants. Plutonium and transplutonium elements. High-temperature materials. Research on nuclear fusion.

- Research as a European public service

Central Office for Nuclear Energy Data and Standards.

28. Among these various research projects, the study of reactor safety deserves particularly close attention. One of the objectives here could be to prepare for coordination of the safety regulations of the Member States.

29. The study of high-temperature materials, including alloys, as a Community development programme - again from the point of view of reactor safety - could remove a definite bottleneck if it were undertaken as an intensive, long-term basic programme. With such a programme the JRC would have the opportunity to make its mark in an area which has hitherto been neglected even outside the JRC. The essential equipment required has been available in Ispra for a long time. In the materials sector, a development-oriented project of this kind would seem urgently necessary, since the obvious discrepancies between safety requirements on the one hand and cost effectiveness on the other can only be satisfactorily resolved in the long term by new materials.

30. It is difficult to make out a case for sharing this project between the Ispra and Petten establishments. There is the additional disadvantage that it would not allow either Ispra or Petten to reach the efficiency threshold in this sector. Close coordination should at least be ensured.

31. Your committee considers that the new programme must include research on production of hydrogen by the decomposition of water using chemical cycles (use of nuclear energy for purposes other than electricity generation). This is a future-oriented area of research and, as such, of definite value to the Community. Your committee wishes to emphasize, however, that the JRC would be making a serious mistake if it attempted to select one or two chemical cycles to try out on a prototype. This would be repeating the mistake made with Orgel.

Instead, the JRC should indicate by what means the various cycles are to be classified and how the real technical efficiency of the whole process can be established, having regard to the thermodynamics of the individual stages.

32. Comparing such a programme with the present one, it will be seen that research projects such as protection of the environment, remote sensing of the earth's resources, new technologies (solar energy, recycling of raw materials), data processing and training are at the very least problematic as direct projects, as long as the necessary preconditions for successfully carrying them out are not provided.

In addition to the reasons already given for a certain scepticism, your committee would also like to emphasize once again that:

- the efficiency threshold has so far not been reached for any of these projects at the JRC,
- most research of this nature would frequently be undertaken at other centres, often at a more advanced level,
- the only effect of including them in the programme would be to disperse Community research objectives without increasing their efficiency.

33. If the Community's research departments have good reasons for holding that one or more of these projects should be continued under the new programme as direct projects, the following should be most carefully considered: firstly, the inclusion of such project or projects in the JRC programme should under no circumstances result in an increase in staff; secondly, the personnel assigned to such project(s) should possess the appropriate qualifications; and finally, the objective of direct action in these sectors should be limited to support for the other indirect actions.

34. Still on this assumption, the Commission must specify the precise ways and means by which the Joint Research Centre, through direct projects in these sectors, can support and promote the associated indirect research.

(c) Fusion and plasma physics - JET project

35. This research programme is at present carried out by means of contracts of association. 1976 should see the transition from the basic research stage to the construction of a prototype as part of the JET project (Joint European Torus). A proposal for a programme on those lines has been submitted to the Council (indirect action). In the report submitted by the rapporteur (PE 42.665) your committee approved the Commission's proposals. One of the major problems still outstanding is to decide which centre in the Community should be given the task of implementing this project.

In the motion for a resolution in Mr Flämig's report, the Committee on Energy, Research and Technology 'recommends that the site for the new fusion device and the corresponding central research station be an existing large research centre in this specific field, that has an attractive location for qualified researchers and a particularly favourable infrastructure'.

36. It is obvious that if it were given the assignment, the JRC would finally have the 'major project' which it has always lacked. Nevertheless, the site must be chosen not so much with the interests of the JRC in mind but rather to provide optimum guarantees for the success of the JET project. Such guarantees can only be achieved through the combination of a number of factors on which your committee is not competent to pass judgement. We would emphasize again, however, that this project is so important for the Community that it would be criminal to compromise its chances of success by a choice of site dictated by political rather than scientific considerations.

(d) The problem of management of the future programme and the JRC

37. We have already pointed to the efforts made in this area, compared with the situation in the past. In particular attempts have been made:

- to make the JRC more outward-looking by forming links with the other centres,
- to reorganize the administration of the JRC by setting up a genuine 'management team',
- to tackle a number of problems specific to staff policy (the problem of workers on contract and staff discriminated against).

38. As already pointed out in discussing the management of the current programme, your committee considers that further reforms should be undertaken:

- by revising the methods of programme management, especially at advisory committee level. Management is guided by research results, and new guidance must be given without delay;
- by decentralizing decision-making, particularly as regards those decisions which do not have major financial implications;
- by introducing retrospective scrutiny of research activities;
- by integrating the JRC to a greater extent in European research as a whole. The close links between research undertaken in the form of direct actions at the JRC with its own research staff and indirect actions undertaken by research groups in the Member States should provide a basis for this objective;
- by reconsidering the problem of the mobility of scientific staff (research workers and technicians).

39. On this last point, one worthwhile suggestion might be to draw up a standard contract guaranteeing that scientists from national or public centres would be reinstated after a period of duty with the JRC. The proposals for amendment of the Staff Regulations applicable to the JRC, which have now been submitted to the Council by the Commission (Opinion by Van der Gun, PE 43.448), should permit such a solution.

40. As regards budgetary aspects, your committee was interested to note that the Commission intends to earmark 30m u.a. in the future programme for new investments. The normal annual operating budget, according to the Commission, should be around 90m u.a. (at present 70m u.a.). However, apart from the figures involved, the ways in which this budget is implemented should also be examined. Your committee considers that considerable progress could be made towards greater flexibility of management, by placing 10% of the budget directly at the disposal of the JRC, to be used according to the way research develops.

41. Finally, as regards the duration of the programme, your committee approves the Commission's proposal for a 'sliding programme'. The programme would be adopted for an irrevocably fixed period of four years and reviewed by the Council during the third year of its implementation; at the same time, a new four-year programme would be adopted by the Council, the final year of the first programme thus becoming the first year of the new programme. Failing a decision by the Council on a new programme or on revision of the current programme, the latter would be implemented in accordance with the Council's initial decisions. This process would ensure that the JRC programmes were adapted to developments in research policy while ensuring greater continuity.

V. CONCLUSIONS

42. The sole aim of the Committee on Energy and Research in submitting these proposals for the Joint Research Centre is to serve the interests of Community research to the best of its ability. It has been examining the situation for more than a year. It now finds that several of the measures it has put forward for making a fresh start have in fact had some initial success. The committee is therefore more convinced than ever that direct Community research not only should, but can be revitalized. The means and methods are to hand; this has been demonstrated in the report. It is now a matter for those with the political, administrative and technical responsibility to utilize and apply these proposals sensibly.

43. Furthermore, the Committee on Energy and Research is of the opinion that the revitalization of Community research is more a matter of methods and the will to succeed on the part of all concerned than of material

facilities and finance, though heed should be paid to an appropriate relationship between the resources available and the objectives aimed at. The document submitted by the Commission of the European Communities partly accords with this view. Nevertheless, it was regrettable that the Commission did not always take its good intentions far enough. That the Commission recognizes the JRC is in a constrained situation is a positive factor, but the full inferences must be drawn from this. The same applies to the Commission's recognition that the future programme must be concentrated on a limited number of actions. It thus agrees with our views. The committee considers that these intentions must be reflected more accurately and more thoroughly in the choice of research activities for the future programme.

44. In conclusion, the Committee on Energy and Research notes that the Commission has been making progress for some time in direct Community research and that it intends to continue further along this path.

The committee reiterates that it in principle accepts that direct and indirect actions are needed under a Community research and development policy. It is in this spirit and in the hope that this area will in fact be revitalized that it has drawn up its proposals for reform and readjustment.

