

SPECIAL REPORT No 17/98

on support for renewable energy sources in the shared-cost actions of the JOULE-THERMIE Programme and the pilot actions of the Altener Programme together with the Commission's replies

(Submitted pursuant to Article 188c(4)(2) of the EC Treaty)

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1. SCOPE OF THE AUDIT

1.1. Within the *JOULE-THERMIE* programme (ECU 1 039 million) the shared-cost actions⁽¹⁾ for renewable energy sources represent approximately 35 % of the programme's budget. The *Altener* pilot projects (ECU 28,8 million), representing approximately 66 % of the programme's budget (ECU 44 million) cover actions similar to those of *JOULE-THERMIE*.

1.2. The aim of the Court's audit was to determine whether the objectives, as defined by the respective Council Decisions, are met in an efficient and effective way. This involved an examination of the programme and project management structures and procedures of the Commission's Directorate-General for Science, Research and Development (DG XII) and of the Directorate-General for Energy (DG XVII). To examine the execution of the *JOULE-THERMIE* programme, 19 contractors in six Member States (Belgium, France, Germany, Spain, Sweden and the United Kingdom), involved in 30 out of a total of approximately 300 projects, were selected for audit. The selection focused on solar energy and biomass projects, although some projects from other areas were included. Selection of the organisations and projects audited was primarily based upon the size of Community contributions, but also meant to include different types of beneficiaries (universities, research institutes and private companies, including SMEs). The audit of the *Altener* programme was based upon file reviews at DG XVII.

2. SUMMARY OF THE MAIN AUDIT OBSERVATIONS

2.1. Despite the Council decision to merge the Research and Technological Development Programme *JOULE* and the Demonstration Programme *THERMIE*, neither the project selection, nor the project management procedures in the two managing DGs have been harmonised. The fundamental objective of the merger — to bridge the gap between Research and Demonstration — has not been achieved (see paragraphs 3.04, 3.16, 3.24 and 3.29).

2.2. While the project selection process of *THERMIE* lacks clarity, progress has been noted in the *JOULE* part of the programme, since the first call for proposals (see paragraphs 3.15 and 3.16).

2.3. Many of the *THERMIE* demonstration projects were found to lack a major innovative element; they had only a limited European dimension and their funding did not meet the requirement of balanced participation of partners (see paragraphs 3.22, 3.23 and 3.24).

2.4. Scientific and financial management and monitoring of the projects were weak in both areas although the widespread use of external assistance in *THERMIE* ensures a closer supervision than realised in *JOULE* (see paragraphs 3.26, 3.27, 3.28 and 3.29).

2.5. Incompatibilities could arise in the areas of project selection, project management and project supervision in both *JOULE* and *THERMIE* (see paragraphs 3.17, 3.18, 3.30 and 3.31).

2.6. The Commission does not collect and evaluate information on the costs of the management of the programme or the costs of the selection and management of the projects. In DG XII more than 50 % of the posts financed through the budget appropriations for *JOULE-THERMIE* were occupied by staff working on tasks outside the *JOULE-THERMIE* programme (see paragraphs 3.21, 3.41, 3.42 and 3.43).

2.7. A large number of *THERMIE* projects, especially in the biomass area, are seriously delayed or even abandoned (see paragraphs 3.56 to 3.58).

2.8. There were numerous problems in the contractor's costs claims and insufficient checking by the Commission services (see paragraphs 3.32, 3.48 to 3.55).

2.9. Financing decisions for the *Altener* programme have not been properly taken (see paragraphs 4.11 to 4.12).

2.10. Delegation of part of the selection process in the *Altener* programme to the Member States is neither coordinated, guided nor monitored by the Commission. This means that the process is not transparent and that fair selection is not ensured (see paragraphs 4.08 to 4.10).

2.11. The large number of parallel information networks and points disseminating information on the audited programmes adversely affects the efficiency and effectiveness of the information policy (see paragraphs 5.01 to 5.02).

2.12. The lack of a comprehensive inventory of all Community supported RES projects, in particular in the Structural Funds, is an obstacle to efficient coordination between programmes and services (see paragraphs 6.2 to 6.4).

⁽¹⁾ Shared cost actions are RTD or demonstration projects whereby the Commission reimburses part of the costs of the project contractors.

3. THE JOULE-THERMIE PROGRAMME

Legal and organisational framework

3.1. Prior to 1994 the type of support provided by *JOULE-THERMIE* was delivered through two separate programmes. The *JOULE* programme, one of the specific programmes of the Third Research and Technological Development (RTD) Framework Programme supported the research actions (DG XII), whilst the demonstration activities were financed by the *THERMIE* programme, as part of the Energy policy (DG XVII).

3.2. Under paragraph 3 of Article 130f of the Maastricht Treaty, demonstration projects became part of Title XV which governed Research and Technological Development. A logical consequence of this was that demonstration projects were incorporated in the RTD Framework Programme. This meant that from the commencement of the Fourth Framework Programme (4th FWP), the demonstration part of *THERMIE* was merged with *JOULE* in *JOULE-THERMIE*.

3.3. *JOULE-THERMIE* (1994 to 1998) is governed by the decision regarding the 4th FWP⁽²⁾ and by the decision concerning the specific programme for research and technological development, including demonstration, in the field of non-nuclear energy⁽³⁾.

3.4. Although *JOULE-THERMIE* has become one programme in the Regulations, within the Commission's organisation chart the two original parts (*JOULE* and *THERMIE*) are still managed by two DGs, XII and XVII, under the authority of two Commissioners. In DG XII the programme is managed in Directorate F-Energy, where a separate unit is responsible for the renewable energy area. In DG XVII the programme is managed in Directorate D-Energy Technology, where unit D3 is in charge of renewable energy related projects.

⁽²⁾ Decision No 1110/94/EC of the European Parliament and of the Council of 26 April 1994 concerning the Fourth Framework Programme of the European Community activities in the field of research and technological development and demonstration (1994 to 1998) (OJ L 126, 18.5.1994, p. 1).

⁽³⁾ Council Decision 94/806/EC of 23 November 1994 adopting a specific programme for research and technological development, including demonstration, in the field of non-nuclear energy (1994 to 1998) (OJ L 334, 22.12.1994, p. 87).

Programme description and objectives

3.5. The supported shared-cost actions are generally projects, executed by a consortium of contractors from several Member States with the aim of researching or building a demonstration installation in one of the following areas;

- (a) integration of renewable energies (research only);
- (b) solar photovoltaic;
- (c) renewable energies in buildings;
- (d) wind energy;
- (e) energy from biomass and waste;
- (f) hydro-electric plants (demonstration only);
- (g) geothermal energy;
- (h) energy storage and further options (e.g. fuel cells, solar thermal energy).

3.6. The general objectives of *JOULE-THERMIE* are to encourage energy security, sustainable development, clean and efficient energy technologies, industrial competitiveness and social cohesion. For the Renewable Energy Sources (RES) area the main objective is to increase the cost-competitiveness and reliability of RES as well as the confidence of the relevant operators with a view to introducing RES into the energy supply system at a significant level. An additional objective is to enhance the integration of RES into the economy and everyday life of society.

3.7. While these objectives are valid for the whole programme, the Council Decision also sets separate objectives for all components of the programme mentioned above. For *JOULE* emphasis is on state of the art technologies which, except for a few cases, are still far from the market. The objective of the *THERMIE* demonstration projects is to prove the technical viability of a new technology, together with, as appropriate, its possible economic advantages.

3.8. These objectives are integrated and translated into tasks in the Commission's work programme for *JOULE-THERMIE*, which is part of the basic documentation provided to all parties who are interested in submitting a project proposal.

3.9. The objectives for specific areas and energy sources are reasonably precise and specific. However, the more strategic objectives such as improvement of the

competitiveness of European industries or improvement of economic and social cohesion are so vague that they cannot be used as a basis against which the actual outcome of the programme can be assessed.

Budgetary execution

3.10. *Table 1* illustrates that although the 1995 commitment appropriations were practically fully used in the first year of the programme, payments started to flow slowly. This was a consequence of the duration of the project selection and contract negotiation procedure. The first call for proposals was published on 15 December 1994, with as deadline for receipt of proposals 24 March 1995. The first contracts were signed only in December 1995 and therefore most advances were only paid in the financial year 1996.

3.11. The Council Decision which governs *JOULE-THERMIE* gave an indicative breakdown of the programme's budget to the *JOULE* and *THERMIE* parts and, within each part, to the main supported areas. It also dedicated a share of the budget to accompanying measures and to administrative expenses. *Table 2* shows whether the actual commitments until 31 December 1997 have respected the distribution indicated by the Council ⁽⁴⁾.

3.12. The indicative allocation of the budget to the different areas (RES, Fossil Fuels and Rational Use of Energy) could not be realised immediately because of the lack of acceptable RES projects in the first general call for proposals in 1995. Therefore, strongly supported by the European Parliament, at the end of 1995 an additional call for proposals, only open to RES projects was launched. *Table 2* illustrates that as a result of this call, at 31 December 1997, the percentage allocated to

RES is getting in line with the Council's indicative target. This is not the case for specific SME support measures, which with a mere 1,28 %, stay far below the limit of 5 %.

3.13. The distribution of funds to the different subjects within *JOULE* and *THERMIE* is shown in *Tables 2, 3* and *4*. One ECU 4,5 million *JOULE* contract, selected for audit, was found to have been reclassified in the project lists from the Fossil Fuel area to the RES area in November 1996, 11 months after the start of the project. The project concerned coal-biomass co-combustion, which in the work programme, as well as the Council Decision, is clearly mentioned under Fossil Fuels (Work programme 1994 to 1995, chapter 4. Fossil Fuels: 4.1.1.A.2 Fuel mixtures: combined combustion of coal blends and coal with biomass, residues and/or wastes. High biomass or waste to electricity conversion efficiencies should be targeted (i.e. above 40 %) for commercial scale plants, at economically attractive conditions along with reduced levels of emissions of CO₂ and other gaseous or solid matter and with neutral or useful solid residues. Council Decision 94/806/EC: Fossil Fuels: 3.1 R & D — Development of processes for the combined gasification (or combustion) of coal with biomass). The reclassification of this single project caused a reduction of the commitments in the *JOULE* Fossil Fuels area by 9 % and an increase of the commitments in the *JOULE* RES area by 3 %.

Programme management and control

Project selection

3.14. The preparation of a project proposal involves a significant investment of the applicant's time and money. Information provided to potential applicants on how to write a proposal has improved since the start of the programme, especially in *JOULE*, and contractors indicated that an extensive proposal was required to enable a fair evaluation. However, the creation of standard electronic forms for proposals as is already the case in other programmes, could improve the efficiency of the process.

3.15. The selection process in *JOULE*, which is described in detail in *Annex 2*, follows the standards of the 4th FWP, depending heavily on the judgment of external experts. During the first call for proposals for *JOULE* in 1995 the original consensus report proposed classifications for 143 out of 563 proposals in the RES area which were reclassified downwards by the Programme management before submission to the *JOULE* Committee. Although the changes were justified as harmonising classifications for individual criteria from

⁽⁴⁾ Unfortunately, the Commission's reports and financial system do not allow the monitoring of the adherence to the limits set by the Council in a satisfactory way, because not all categories defined by the Council have their own sub-account number. In addition the classification of costs in the categories administration, dissemination, SME support or projects leaves much room for interpretation. Therefore, the figures presented in *Table 2* may not be completely reliable. For example, the costs of the experts who assist the Commission in the selection or management of the projects are recorded under projects, instead of administration. Therefore, although the percentage of 2 %, which is mentioned for administrative expenditure is below the limit of 2,15 %, the figure is not complete. The expenditure classified in the table under 'other', 2,07 %, which is a selection of entries recorded in SINCOM under projects, also concerns mainly administrative costs. The two items combined exceed the limit of 2,15 %.

individual experts and the final consensus marks, the need for this harmonisation implies that the instructions to evaluators and to the Commission staff who chaired the panel discussions, were not sufficiently clear. In order to avoid the recurrence of the problems of the first call, the Commission clarified the written instructions for evaluators and Commission staff.

3.16. Although *THERMIE* is part of the 4th FWP it does not apply the same standard procedures. Its selection procedure was less formalised, less documented and hence less clear than for *JOULE*. Instead of the six external experts who evaluate a *JOULE* proposal, *THERMIE* proposals are examined by two external experts, one or two scientific officers at the Commission and, in theory, by all members of the relevant *THERMIE* Technical Committee. The members of the *THERMIE* Committees are representatives of the Member States. Their participation is not limited to a supervisory role, as in the *JOULE* Committee, but involves actual participation in the technical evaluation of specific projects. As a selection process which aims to evaluate proposals only on their scientific merits without being influenced by political pressure, the *JOULE* system appears preferable.

3.17. In the *JOULE* as well as the *THERMIE* Committees, some Member States were represented by staff members of public or semi-public research institutes that also participated as contractors in the programme. Although the scientific hands-on experience of these experts is certainly valuable in the discussions, a position on the committees may give their institutes an unfair 'information' advantage over their competitors.

3.18. Another incompatibility may arise in a contract where the external expert who evaluated the proposal was also assigned by the Commission to do the scientific monitoring of the project as a *THERMIE* Technical Manager (TTM). If an expert first evaluates a proposal positively it could be difficult for the same expert to be critical about the execution of the same project.

3.19. From the receipt of proposals until the Commission Decision to fund projects takes on average four months. The negotiation phase between the decision and the actual signature of the contracts adds another four to five months, during which specific terms and conditions (mainly financial) of the contract are negotiated. Although all parties consider the negotiation

period to be too long, in many cases discussions within project consortia or the late replies of individual partners in consortia to Commission queries were themselves a cause of delay. Significant shortening of the negotiation period might be achievable by revision of procedures, in particular a clarification and simplification of the standard contract.

3.20. One of the *JOULE* Solar Thermal projects audited was the first phase of a much larger project. The next phases of this project will be entered for evaluation in subsequent calls for proposals, where they risk not being selected. As the project can only produce relevant results if all phases are executed, the Commission takes a considerable risk of wasting money. In the information presented to the *JOULE* Committee, the priority list contains no reference to the fact that the ECU two million project concerns only the first two years of a six year project. While the proposal summary mentions this fact, it neither explains which technical part is covered by the first phase, nor what the total financial value of the whole project will be. This means that the information provided to the *JOULE* Committee was inadequate to assess the proposal in the proper context. The *JOULE* Committee should be informed in more detail about proposals for parts of projects. A Solar Thermal project in *THERMIE* was divided into phases in a similar way, but the *THERMIE* Committee had been informed adequately.

3.21. The average cost of experts for evaluating one *JOULE* proposal was approximately ECU 655, which represents for each contract almost ECU 2 600, 3,2 % of the average project contribution. The average cost of experts per proposal for *THERMIE* was higher than for *JOULE* although a *THERMIE* proposal is reviewed by only two external experts, instead of a maximum of six experts in *JOULE*. The Commission did not monitor or evaluate the costs of the procedure. Detailed information on its related internal costs for staff and infrastructure was not available. This lack of cost information and awareness was not limited to the selection procedure, but was found in the entire programme management, no attempt being made to determine best practice.

3.22. The audit of 13 *THERMIE* projects showed that the application or interpretation of several selection criteria raised fundamental questions. Six out of 13 projects, in the areas of both solar-photovoltaic and biomass, showed only limited innovative elements. While the *THERMIE* information brochure 1994 to 1995 defines eligible costs as the costs related to the innovative part of the project, the Commission had also funded the non-innovative parts. This led to the conclusion that these projects were more like RES promotion or investment projects than true demonstration projects as

defined in the Council Decision and the *THERMIE* work programme. In two of the 13 projects the only project partner not coming from the same Member State as the other partners in the consortium was found to be an affiliated company with a negligible role in the project. In another six projects the only 'foreign' project partner was merely a normal supplier of standard parts who did not participate in the innovative part of the project, as far as any innovation existed. The lack of real, new international cooperation shows that these projects lack a European added value. This implies that the projects should have been supported on a national level.

3.23. The eligibility criteria, specified in the *THERMIE* Information Brochure 1996, explain under 'transnational collaboration' that 'the collaboration must be more than symbolic and the proposal must show a significant and balanced participation between project partners'. On the financial level this rule is not applied. Whilst in *JOULE* projects all industrial project partners contribute 50 % towards their own costs, in *THERMIE* this was not the case. In all projects the funding structure was such that the future owner/user of the installation paid the full difference between the total project costs, including the costs of all project partners, and the Commission contribution. Therefore the costs of the partners who built the installations were fully reimbursed and they did not contribute financially to the project. In two projects it was found that a partner had even charged commercial prices for the execution of his tasks instead of cost price.

3.24. As indicated above six of the 13 audited *THERMIE* projects do not have an innovative character and therefore are not eligible under the *JOULE-THERMIE* programme. They would have fitted in the energy technology promotion programme, which the Commission proposed to the Council under the name *THERMIE-II* ⁽⁵⁾, but which was not approved. Even the

proposal evaluation forms show that in the selection procedure the innovation aspects are considered less essential than would be expected from an RTD programme. Although the forms, which are filled out by external experts, require the expert to summarise 'aim description and innovation aspects of the project', the form's section on 'project appraisal' does not require the expert to appraise the innovation aspects. The criteria which have to be appraised are: previous activities, technical and financial risk, replication potential, economic viability, environment and safety aspects and dissemination capability. The Council's objective with the merger of *JOULE-THERMIE* — to integrate the RTD and demonstration phases — has not been realised. While *JOULE* has increased the involvement of industrial project partners, *THERMIE* did not take truly innovative results of *JOULE* projects to the demonstration phase. *THERMIE* continues to support installations which are hardly innovative, but which need public support because they are not economically viable. Only one project was the follow-up of a prior *JOULE II* (3rd FWP) project.

3.25. The application of selection criteria for photovoltaic (PV) projects revealed a specific problem. One of the main *THERMIE* eligibility criteria is economic viability, as one of the objectives of *THERMIE* is to show the economic advantages of new technology. The standard project proposal evaluation forms therefore include the pay-back period of a project. In all PV proposals the pay-back period or other financial indicators were disclosed by the applicants, but the PV evaluation summaries did not include this information. Some PV proposals had pay-back periods as high as 77 or even 121 years, which far exceed the expected lifetimes of the installations. The fact that grid-connected PV-installations are not financially viable should not be neglected. It raises the question whether the focus in the area of photovoltaics should not be more towards basic research than towards the demonstration of uneconomic installations which need massive public support.

⁽⁵⁾ OJ C 158 of 9.6.1994, p. 7. *THERMIE II*:

Art. 2.1. For the purposes of this Regulation, 'projects for the promotion of energy technology', hereinafter referred to as 'projects', means projects which are not eligible for the specific programmes of the fourth framework programme and which are designed to advance, implement and/or promote innovative technologies in the field of energy, implementation of which entails a large element of economic risk, such that those projects would in all likelihood not be executed without Community financial support.

Art. 2.2. Community financial support may be granted for projects designed to promote with a view to their broader utilization, either under different economic or geographical conditions or with technical modifications, innovative techniques, processes or products which have already been applied once but, owing to residual risk, have not yet penetrated the market.

Project management and control

3.26. The distribution of projects over the scientific officers, who are responsible for the scientific management and monitoring of projects, is very uneven. The number of projects, including on-going contracts from the previous programmes, allocated to one scientific officer varied in *JOULE* from five to 90 and in *THERMIE* from six to 41 while the average number of projects managed per officer was in both areas

approximately 30 projects. As a consequence the actual follow-up by officers who are in charge of more than the average number of projects is very limited, especially in *JOULE*.

3.27. Visits to contractors by the scientific officers are very rare and the departments have no target number or percentage of contractors to be visited during a year. None of the 19 contractors audited by the Court had been visited for the selected project. Only 22 of 125 *JOULE RES* projects, signed by 30 September 1997, had been visited, as well as 14 of 182 *THERMIE RES* projects, as at 31 December 1997. Contractors meet the scientific officer in Brussels, mainly during mid-term reviews, at which all projects of one area meet. The time for discussion per project was found to be unreasonably short by the contractors.

3.28. Even though the scientific officers did not visit many projects, project monitoring in *THERMIE* is closer than in *JOULE* because for 257 projects the scientific officers are assisted by 16 *THERMIE* Technical Managers (TTM). This does not only mean that the number of projects managed by the scientific officers is smaller, the TTMs also visit their projects more often and therefore provide closer supervision. In general their role is appreciated by the contractors as well as by the scientific officers, even though every TTM has to be directed and supervised by the scientific officer who is in charge of the technology area.

3.29. The *JOULE* programme management only started to introduce external support for their scientific officers in 1997. The first so-called 'cluster managers' were selected after a call for tender and each will have the responsibility for the monitoring of a number of projects in one technical area. As the role of the cluster managers is very similar to the role of the TTMs the question is raised why the two types of external assistants have not been harmonised or merged. If both *JOULE* and *THERMIE* would use one group of external experts this might help to reduce the gap between research and demonstration.

3.30. In *JOULE* and *THERMIE* at least three scientific officers with temporary contracts were responsible for projects in which their previous employers were involved. Although there were no indications that this had influenced the management and control of these projects, conflicts of interest could be created.

3.31. At one *THERMIE* contractor the office of the TTM (a semi-public technical monitoring agency) not only worked for the Commission but also provided a technical supervision service, on the same project, to the beneficiary. In the case mentioned in paragraph 3.18 the project proposal had been evaluated by the same TTM who was later assigned to monitor the project. Both situations could result in conflicts of interest, and should have been avoided.

3.32. Financial checks are limited to the reasonableness of contractors' cost claims and review of project budget outturn. The high number of problems encountered in the cost statements of the audited contractors clearly indicates that a serious review of the costs is not performed. None of the contractors selected by the Court had been audited by the Commission. According to the Commission, during the earlier *JOULE II* programme, only 5 % of the contractors had been audited. This means that the chance of being audited (1:20) is very small for *JOULE* contractors. In the previous *THERMIE* programme a higher number of contractors was audited than in *JOULE*. The results of the Court's audits imply that the number of audits should be extended in the present programme, especially in the *JOULE* area.

3.33. The information system AMPERE-AQUA which is used in *JOULE* for the monitoring of the programme and project execution is an inadequate tool for day to day management. Because the system is not 'user-friendly', important data like the receipt of technical reports, required to control the project's progress and adherence to actual contract terms, had not been entered. Other data for monitoring the Commission's own performance, such as the delay between the receipt of a cost claim and the actual payment, were not available.

3.34. The local information system which supports the management of the *THERMIE* side of the programme and projects in DG XVII (PROMAN) is even weaker than the *JOULE* system. Information regarding the execution of individual projects was often not available in the system, but required the examination of the project files. Whereas the *JOULE* system was at least able to provide information regarding the actual distribution of the EC contribution to the individual partners in a contract, in *THERMIE* the contribution was only recorded as a total amount for the whole project. One of the consequences of this is that within *THERMIE* the Commission is incapable of presenting reliable figures regarding the actual contribution a particular contractor received in all projects he is involved in. The system is also incapable of showing the contribution to all partners in a certain region or Member State.

3.35. In the framework of a pilot study for DG XII to implement a Quality Management Manual for RTD projects, the unit responsible for *JOULE* is recording and reconsidering all administrative and management procedures. This major effort includes a project for the improvement and development of the supporting information systems. The quality management approach is certainly an important step towards improving the efficiency and effectiveness of programme management. However, the fact that within *JOULE-THERMIE* only half of the programme is involved in this development is unsatisfactory. To manage and monitor the whole *JOULE-THERMIE* programme in a truly harmonised way, the two parts of the programme must move in the same direction.

3.36. Although both *JOULE* and *THERMIE* apply the same model contract, an important difference remains. *JOULE* contracts provide for annual cost claims whereas *THERMIE* contracts require six monthly claims. Only seven out of 13 audited *THERMIE* projects actually fulfilled this obligation so the utility of two claims per year is questionable. It also shows that adherence to contractual deadlines is not closely monitored. Harmonisation between the *THERMIE* contract and the *JOULE* standard seems desirable.

3.37. In two out of 13 audited *THERMIE* projects, one of the contract partners filed for bankruptcy. Although there were no significant consequences for the Community budget this illustrated the risk in projects where large advances are often paid to relatively small companies. These cases also revealed that the Commission lacks a standardised quick procedure to react to notifications regarding bankruptcies. A standard procedure, involving the legal service, should be designed to ensure that the Commission immediately takes the necessary steps to reduce the risks for the Community and for the other project partners in the same consortium.

Programme monitoring

3.38. *JOULE-THERMIE* is monitored annually by a panel of external experts, as required by the Council Decision. Whereas the first (1995) monitoring report focused on the launching of the first call for proposals and the selection procedure, the 1996 report also evaluated the Commission's project management and monitoring activities.

3.39. In accordance with Article 4.2 of the Council Decision a more extensive monitoring exercise was executed in the 'five-year assessment of the non-nuclear energy programmes' which was published in December 1996. This report contained an evaluation of the previous *JOULE* and *THERMIE* programmes, as well as the first year of the current *JOULE-THERMIE* programme. The five-year assessment panel and the annual monitoring panel had different members, but the conclusions and recommendations concerning the management were similar.

3.40. The observations and recommendations of the monitoring reports regarding the implementation of the programme confirm the observations of the Court. The recommendations can be valuable during the implementation of the Fifth Framework Programme.

3.41. Although assessment of the cost-effectiveness of the programme implementation is clearly mentioned as one of the objectives of the monitoring exercises, the annual and the five-year reports only make very general comments. Under the heading 'Cost effectiveness of running the programmes' the five-year assessment states that as the number of Commission staff which has to manage all projects is relatively small and as the original budget allocation is respected, the programme management and administration is considered cost-effective. Neither report contains a single cost figure.

Programme management costs

3.42. Control of programme management costs depends on knowledge of cost elements. The Commission's departments responsible for the implementation of the programme, have no overview of the administrative costs of their actions. The total management costs of the programme or more specific indicators like the costs per proposal, the total management costs per project or the mission expenses per project, which would be essential to assess whether the costs of the present programme management structure are in reasonable proportion to the total Community contribution, are not calculated by the Commission. This reduces their possibilities of optimising use of resources.

3.43. The annual provisional repartition of the administrative costs in the programme's budget (part B of the budget), between the various cost categories (non-statutory personnel, missions and meetings, informatics, publications, statutory personnel) is not complemented by an appropriate allocation of the related costs in the same categories covered by part A of the budget. Although the Commission monitors adherence to

the limits for the personnel costs (2,85 % of the budget) and the administrative costs (2,15 % of the budget), defined in Annex II of the Council Decision regarding *JOULE-THERMIE*, this is only a budget-control procedure for part B, without any element of cost-efficiency analysis. The Court also found that in DG XII at 31 December 1997, 26 out of 48 posts financed through the budget appropriations for *JOULE THERMIE* were occupied by staff working on tasks outside the *JOULE-THERMIE* programme. It can be concluded that the annual overall administration and management costs of the programme remain unknown.

Project execution

Project coordination by European Economic Interest Groupings (EEIGs)

3.44. The Commission promotes the possibility of using a European Economic Interest Grouping (EEIG) as a mechanism for participating in RTD programmes. According to the Commission the use of an EEIG as a coordinator, entering project proposals on behalf of consortia consisting of members of the EEIG, can help in dealing quickly with the procedural stages prior to the beginning of the project, and in the management of the project.

3.45. Out of the 17 audited *JOULE* projects, six were coordinated by three different EEIGs. Although the consortium partners were satisfied that the administrative tasks were delegated to a separate entity, which in two cases was located close to the Commission, in none of the cases had the use of an EEIG resulted in easier or faster contract negotiations. On the contrary, there were several additional problems.

3.46. Contracts coordinated by an EEIG are signed by the EEIG on behalf of all members. The actual members are only mentioned in the technical annex. However, the technical annex gives no information regarding the distribution of the Community contribution between the members. This means that the only sources of information regarding the 'budgets' of the individual members, are the contract negotiation forms. As these forms are not part of the actual contract, the members could change the distribution amongst themselves without the Commission's approval. This situation may reduce the authority of the Commission and it certainly reduces the transparency of the contracts. The Commission should extend the table 'Estimated breakdown of allowable costs' in all contracts with EEIGs to include the distribution of funds between the participating EEIG members.

3.47. The Commission's internal negotiation guidelines for EEIGs show that it does not accept that within one

contract some EEIG members would work under the additional cost model ⁽⁶⁾, while others apply the full cost model ⁽⁷⁾. This does not allow a university (which uses the additional cost model) and a private company (which is obliged to adopt the full cost model) to participate as members of the same EEIG. If the contract with the EEIG discloses the actual distribution of the contribution over the participating members, this rule would seem superfluous.

Difficulties in producing correct cost statements

3.48. The system of real cost contracts requires analytical accounts to be kept in order to complete cost statements and avoid the misuse of Community funds. In the *JOULE* and *THERMIE* contracts audited the justification of claimed costs was often unsatisfactory. The findings confirmed prior reports of the Court on RTD programmes, which use the same model contract.

3.49. Eight out of 19 contractors had claimed budgeted instead of actual costs for labour and overhead rates. In general it is acceptable to apply budgeted rates during the course of the year, as long as these are adjusted to actual rates, once the financial year is closed and the actual rates are calculated. However, in most cases reviewed, the contractors did not intend to adjust their previous claims and in two cases they were either incapable or unwilling to calculate overhead rates based upon actual costs.

3.50. A fundamental problem was found to be the calculation and justification of the overhead rates charged under a full cost contract. For universities who have no cost-accounting system this problem is settled by the fact that their additional cost contracts have a fixed overhead rate set at 20 % of direct costs. All others have to calculate an actual rate. The model contract only gives limited and vague guidance as to which method to use and which costs are allowable or not allowable in the overhead rate. The audited contractors used overhead rates between 12 % and 210 % of personnel costs. Some contractors included costs in their overhead basis which

⁽⁶⁾ The additional cost model is a cost reimbursement system whereby the Commission reimburses 100 % of the 'additional' costs which are caused directly by the project and which are not covered by recurrent university funds. In addition the Commission pays an amount equal to 20 % of the direct costs to cover overhead costs. This model is restricted to universities who have no cost-accounting system.

⁽⁷⁾ The full cost model is the usual cost reimbursement system whereby the Commission reimburses 50 % of the 'full' costs of the project, including actual overhead costs.

were under the terms of the contract clearly ineligible, such as marketing costs, but many others were found to be very creative in including costs which were not specifically mentioned as non-eligible in the model contract, but which inflated the rates to an excessive level. Examples of these costs were non-project man-hours and depreciation costs for production equipment which is also used for RTD projects.

3.51. Two contractors had no system for recording time worked on projects at all. Another five had systems which fulfilled the conditions set by the contract, but were not fully reliable. One contractor had claimed an important number of man-hours which was performed outside of the eligible contract period, during the preparation of the project proposal.

3.52. Four contractors had unsatisfactory accounting systems, in which the allocation of cost elements to projects was not transparent and six contractors had claimed costs for which no justification existed or which were not directly related to the project.

3.53. In two cases the amounts claimed for travel included costs for trips to the United States of America for which no written prior approval from the Commission had been obtained.

3.54. The Court's audit revealed errors and inaccuracies for 10 out of 19 contractors of approximately ECU 0,6 million in cost claims for a total of ECU 4 million.

3.55. The high number of errors, inaccuracies or overcharging in cost claims, as well as the fundamental problems regarding the interpretation of the model contract where eligible overhead costs are concerned, leads to the conclusion that an increase in the financial control effort, including on-the-spot audits, as well as a clarification and simplification of the model contract are required. The Commission should either introduce a fixed overhead rate for all contractors or define exactly which overhead calculation method it accepts.

Risk of abandoned projects

3.56. In the biomass area of *THERMIE* in particular the number of abandoned projects was found to be excessive. Three out of six projects selected in 1995 had been

abandoned and were even suppressed from the project lists, while a fourth project was severely delayed. Out of the six projects selected in 1996, one was abandoned, a second was frozen and two were heavily delayed. The reasons for abandonment as well as the delays were in most cases the absence of building permits or difficulties with the private funding of the installations. Although biomass as a RES is promoted as an environmentally friendly source, some of the problems with building permits were related to problems with the emissions of the installations.

3.57. The PV area of *THERMIE* had similar cases, although the percentage was smaller. Delays appeared to be caused by private funding problems, the denial of a building permit to install PV-modules on a 'protected' façade, or delays in the construction of the structure on which the PV-modules were to be mounted.

3.58. Whilst these problems cannot usually be influenced by the responsible Commission service, they clearly result in unnecessary blocking of funds. Therefore, a closer monitoring of project delays and faster decisions to close 'frozen' projects, in order to allow the funds to be decommitted, is required.

4. THE ALTENER PROGRAMME

Legal and organisational framework

4.1. Whilst *JOULE-THERMIE*, as an RTD programme, is part of the 4th FWP, the *Altener* programme stands alone. It is the consequence of the shift in the 1980s from a purely economy oriented energy policy towards a policy which leaves room for environmental issues. The purpose of this ECU 44 million programme is to promote renewable energy sources in the Community.

4.2. The first *Altener* programme (1993 to 1997) was governed by the Council Decision of 13 September 1993 (93/500/EEC) ⁽⁸⁾. A follow-up programme under the name *Altener II* (1998 to 1999) is in the process of being adopted by the Council ⁽⁹⁾, with a budget of ECU 22 million for the first two years.

⁽⁸⁾ OJ L 235, 18.9.1993, p. 41.

⁽⁹⁾ Common Position (EC) No 9/98 adopted by the Council on 19 January 1998 with a view to adopting a Council Decision concerning a multiannual programme for the promotion of renewable energy sources in the Community (*Altener II*) (OJ C 62, 26.2.1998, p. 31).

4.3. Within DG XVII, *Altener* is managed by a separate section in unit C2, which is part of the 'Industries & Markets II: Non-Fossil Energy' Directorate.

Programme description and objectives

4.4. The *Altener* programme is designed to support four categories of actions to promote RES;

- (a) studies, market strategies and technical evaluations for defining technical standards or specifications;
- (b) measures to support Member States' initiatives to extend or create infrastructures which include training and information activities as well as a variety of sectoral actions (pilot projects);
- (c) measures to help create an information network to promote better coordination between national, Community and international activities and at evaluating the impact of the various actions;
- (d) studies, evaluations and other measures to assess the technical feasibility and advantages for both the economy and the environment of the industrial exploitation of biomass for energy purposes.

4.5. The Community contributions towards the actions were generally 100 % for studies, 60 % for information dissemination and between 30 % and 50 % of the project costs for pilot actions. The average contribution for a pilot project is approximately ECU 95 000.

4.6. The audit focused on category (b) of the support measures, the pilot actions. The definition of this category in the Council Decision mentioned training and information activities and sectoral actions. These latter are grouped into four themes; tools, planning, information/training and financial. An examination of the list of project titles revealed that it often concerned the development of implementation plans for RES or strategy or feasibility studies for the use of certain RES types in specific areas, regions or industries. Many of these titles could also have come under the *JOULE* component of *JOULE-THERMIE* in the field of 'integration of Renewable Energies', or as a type B action in the *THERMIE* component. More transparency and efficiency could be achieved by concentrating the support given to a certain type of action in one programme.

4.7. The distribution of the *Altener* funds between the Member States shows that there is no correlation

between the level of the contribution from *JOULE-THERMIE* and the level of the *Altener* contribution. That is to say that some Member States which are hardly involved in any *JOULE-THERMIE* funded RTD or demonstration projects receive substantial support for the promotion of RES from *Altener*.

Programme management and control

Project selection

4.8. The selection procedures in *Altener* for the pilot projects, which represent 66 % of all contributions, are completely different from the *JOULE* and *THERMIE* procedures. Instead of publishing calls for proposals in the *Official Journal of the European Communities*, the *Altener* proposals have to be brought forward by Member State representatives in the *Altener* Management Committee. The categories or types of proposals which can be entered each year are defined in annual guidelines, which are established by the Commission in cooperation with the committee. These guidelines do not contain any directives on the way Member States have to collect proposals or whether they should pre-select proposals or not. The Commission services had no information on how different Member States dealt with this matter.

4.9. Every proposal is subsequently evaluated by two Commission officials who draft a concise consensus report. On the basis of the consensus reports the programme management establishes a priority and reserve list, in which it proposes projects for funding to the *Altener* Committee.

4.10. The selection procedure lacks transparency and cannot guarantee that potential proposers from different Member States will enjoy fair and equal chances of access to Community funding. The introduction of published calls for proposals, the harmonisation of pre-selection procedures in all Member States and a close supervision by the Commission is essential.

Formal decision procedure

4.11. Under Articles 5 and 7 of the Council Decision, the *Altener* Committee gives its opinion on the proposed project list and the Commission decides on the Community contribution. However, once the *Altener* Committee has given its opinion, DG XVII's Director-General decides the financing of the selected projects, without a formal financing decision by the Commission. As at 31 December 1996, ECU 26,1 million had been committed for pilot projects, without a sufficient legal basis.

4.12. In paragraph 13-53 of its annual report on the year 1992⁽¹⁰⁾ and in paragraph 13-57 *et seq* of its annual report on the year 1993⁽¹¹⁾ the Court drew attention to this irregularity, underlining that the Court of Justice had clearly distinguished in paragraph 17 of its judgment concerning case 16/88 Commission v. Council between the decision-taking power of an Institution and the powers of an authorising officer.

Project management

4.13. The 273 pilot actions (situation at 19 November 1997) are managed by three scientific officers, including the programme manager. Project progress and results are monitored on the basis of interim and final reports. No contractors have been visited during the programme.

4.14. Significant weaknesses were revealed in the organisation of the project files and the project information system. The use of different identification codes for each project by the technical, financial and information-system departments makes it very difficult to obtain an overview of the background and current position of a project. Most pilot projects are run by consortia with several partners but the *Altener* information system registers only the coordinator of each project. Therefore, the Commission has no overview of all subsidies awarded to a contractor.

4.15. Although the pilot actions were found to be quite similar to *JOULE* projects, the standard contract differs. The Community contribution is paid in three stages: an advance, a payment on acceptance of the interim report and the final payment on acceptance of the final report, accompanied by a statement of expenditure. The cost-reimbursement contract contains no definition of eligible costs or acceptable cost-allocation methods. Cost statements are not accompanied by any supporting documentation and no contractors claims were audited by the Commission.

4.16. It would be more appropriate to use the *JOULE-THERMIE* model contract, including Annex 2 which specifies the eligible costs, for *Altener*. Because contracts are relatively small, the Commission could also consider simplification by the introduction of flat rates for overheads.

5. INFORMATION DISSEMINATION

5.1. The Commission has made considerable efforts to disseminate information about the *JOULE-THERMIE*

and *Altener* programmes. Potential beneficiaries can receive information from many different sources; focal points (specifically for SMEs), Euro-Infocentres, Innovation Relay Centres, national *JOULE* contact points, OPETs (Offices for the Promotion of Energy Technologies), European Energy Network contact points (*Altener*), and CORDIS (Internet). However, apart from CORDIS, most of these sources were neither familiar to nor used by the contractors audited by the Court.

5.2. Most of the audited contractors were well informed about the programme, but they used direct contacts at the Commission or had special departments who collected information from various sources. Hence the large number of different information points, which exist in parallel, do not notably contribute to an efficient and effective information policy⁽¹²⁾. As many of the different 'information points' are located in the same semi-public energy agencies, the situation is even more confusing. Each programme maintains its own information network in the Member States, without a harmonised and coordinated information policy.

6. COORDINATION OF *JOULE-THERMIE* AND *ALTENER* WITH OTHER EUROPEAN UNION AND MEMBER STATE SUPPORT MEASURES IN THE AREA OF RENEWABLE SOURCES OF ENERGY

6.1. References in the Council Decision and work-programme for *JOULE-THERMIE* to other programmes like *Altener* or AIR⁽¹³⁾ already indicated that similar objectives and subjects exist in several programmes. Amongst the audited projects one *JOULE* project was found to be an extension of a previous BRITE-EURAM⁽¹⁴⁾ project, whilst another followed a prior AIR project. In addition, within *JOULE*, the subject of biomass arises both in RES and in the fossil fuel area. Whilst the Commission's inter sectoral consultation procedure should eliminate the risk that the same activity is funded by two programmes, the imprecise definition of the boundaries between programmes may

⁽¹²⁾ Similar observations were made in the Court's annual report concerning the financial year 1996, paragraph 10.14.

⁽¹³⁾ Council Decision 94/802/EC of 23 November 1994 adopting a specific programme of research, technological development and demonstration in the field of agriculture and fisheries (including agro-industry, food technologies, forestry, aquaculture and rural development) (OJ L 334, 22.12.1994, p. 73).

⁽¹⁴⁾ Council Decision 94/571/EC of 27 July 1994 adopting a specific programme of research, technological development and demonstration in the field of industrial and materials technologies (OJ L 222, 26.8.1994, p. 19).

⁽¹⁰⁾ OJ C 309, 16.11.1993.

⁽¹¹⁾ OJ C 327, 24.11.1994.

still be a risk element. In addition, it creates confusion amongst potential contractors and it multiplies the management resource needs.

6.2. Although the Structural Funds (mainly ERDF and EAGGF)⁽¹⁵⁾ in their regional support to energy infrastructure projects significantly contribute to RES installations (e.g. biomass and waste-powered electricity stations in Objective 1 and 5b regions), the Commission was unable to provide an overview of supported RES projects in the various regions of the European Union. Global figures⁽¹⁶⁾ were available only for five regions of Italy, Spain, Portugal, Greece and Ireland who benefit from a specific energy programme. (For the 1992 to 1997 period the total support for RES under specific energy programmes in the Structural Funds was: ECU 341,17 million out of a total of ECU 3 000 million for energy (11,4 %). In the previous programming period from 1989 to 1993, the Valoren Community initiative⁽¹⁷⁾ contributed ECU 293,75 million to the enhancement of endogenous energy potential, out of a total of ECU 2 331 million granted in the field of energy (12,6 %)).

6.3. As an entire category of measures within the *Altener* programme is dedicated to supporting the creation of an information network to promote the coordination of national, Community and international activities, it is unacceptable that by the end of *Altener* I no overview exists of all RES projects supported by the various Commission programmes, including the Structural Funds.

6.4. Although the DGs responsible for the Structural Funds are consulted by DG XVII prior to a decision to support *THERMIE* projects, the lack of detailed project information at these DGs means that no full assurance can be obtained that a *THERMIE* demonstration project is not funded a second time from the Structural Funds⁽¹⁸⁾. For this purpose a database with all RES projects supported by the Structural Funds would be indispensable.

6.5. In its proposal for a Council Decision regarding a multi-annual framework programme for the actions in the energy sector (1998 to 2002)⁽¹⁹⁾ the Commission

proposes to integrate the follow-up programme of *Altener* (*Altener* II) in an energy framework programme. This is to contain current energy policy programmes like Synergy, SAVE and *Altener* II. It also envisages improving coordination between all other energy related programmes or policies, including *JOULE-THERMIE*, other RTD programmes, international cooperation (PHARE, TACIS, MEDA) and the Structural Funds. This Commission initiative indicates that more extensive coordination and harmonisation is envisaged. However, a more fundamental restructuring of the programmes, creating clear responsibilities and boundaries and avoiding overlap could reduce the need for coordination and increase the efficiency and effectiveness of the programmes.

6.6. The coordination of the programmes with Member States own support measures is supposed to be assured by the representation of the Member States in the management committees and by the work of the *ad hoc* Committee on coordination of Member States' and Community non-nuclear energy RTD programmes, which reports to the Scientific and Technical Research Committee (CREST). The coordination task is supported, within the *Altener* programme, by major studies such as The European Renewable Energy Study (TERES), which gives an overview of the status of RES and the policies affecting the development of RES in 30 European countries.

6.7. Although differences between the Member States and the Commission as to the degree, methods or priorities of support for RES are substantial, they must not influence the Commission's measures. However, where a Member State's objectives are opposed to the Commission's objectives, this must be taken into account. In the case of support to grid-connected photovoltaic installations by *THERMIE*, the success of these installations very much depends on the political will, within the Member States, to allow the installations on the electricity grid and to offer favourable electricity buy-back rates. In one of the Member States visited the national policy was against grid-connected PV-installations. Under such circumstances it appears inappropriate for *THERMIE* to support such installations, as the chances that the demonstration will be replicated on a large scale are too low.

6.8. A notable difference between the Commission's and the Member States' support measures is that while *THERMIE* continues to provide grants for demonstration projects, national support is increasingly taking the form of fiscal incentives, soft loans and guaranteed electricity buy-back rates. Although these incentives are often not limited to innovative installations, they create favourable conditions that stimulate innovation. Considering the success of specific

⁽¹⁵⁾ European Regional Development Fund and European Agricultural Guarantee and Guidance Fund.

⁽¹⁶⁾ Source: Answer to written parliamentary question No E-1996/97.

⁽¹⁷⁾ Council Regulation (EEC) No 3301/86 of 27 October 1986 instituting a Community programme for the development of certain less-favoured regions of the Community by exploiting endogenous energy potential (Valoren programme) (OJ L 305, 31.10.1986, p. 6).

⁽¹⁸⁾ See also the Court's comment in its Annual Report concerning the financial year 1996, paragraph 10.12.

⁽¹⁹⁾ COM(97) 550 final, 18.11.1997, p. 16.

schemes, such as the guaranteed buy-back rate for wind-generated electricity in several Member States, the possibility of a harmonisation of successful incentive schemes throughout the European Union could be envisaged. The Commission's report to the Council and the European Parliament⁽²⁰⁾ on the requirements for harmonisation of incentives to RES within the internal electricity market is a first step in this direction.

7. CONCLUSION AND RECOMMENDATIONS

7.1. A general conclusion as to the success or failure of *Altener* and the RES component of *JOULE-THERMIE* cannot be reached because the overall objectives were insufficiently precise to be used as benchmarks against which the actual outcome of the programmes can be assessed. The absence of clear and quantified objectives increases the risk that a programme will be continued for an extended period regardless of its real economic value or potentiality (see paragraph 3.09).

7.2. The merger between *JOULE* and *THERMIE*, which was intended to integrate the RTD and demonstration phases into a coherent strategy covering the whole innovation process, from scientific breakthrough all the way to dissemination, has not been fully achieved. The gap between RTD and demonstration still exists, mainly because *THERMIE* supports the construction of large production units rather than of genuine innovative installations. The lack of harmonised project selection, management and administrative procedures in both areas underlines the problem (see paragraphs 3.02, 3.16, 3.24, 3.29, 3.35 and 3.36).

7.3. Many of the *THERMIE* demonstration projects were found to lack a major innovative aspect; they had only a limited European dimension and their funding structure could not guarantee equal participation by all contractors. As a consequence they would have been better placed in the energy technology promotion programme (*THERMIE II*), proposed by the Commission in 1994, but not adopted by the Council (see paragraphs 3.22, 3.23 and 3.24).

7.4. Proper scientific and financial management, monitoring and control of all projects under *JOULE*, *THERMIE* and *Altener* is not guaranteed. The widespread use of external assistance by DG XVII has made it possible for supervision to be closer than for *JOULE*. The introduction of external cluster managers to supervise *JOULE* projects in 1997 may improve the situation. Both DGs should try to harmonise the role of

external assistants. It remains vital that the Commission ensures the adequate monitoring of the experts (see paragraphs 3.26 to 3.35, 4.13 to 4.16).

7.5. The annual and five-year external evaluations⁽²¹⁾ of the *JOULE-THERMIE* programme confirm many of the observations of the Court and should be followed closely by the Commission, as far as management is concerned, during the implementation of the Fifth Framework programme. The technical and scientific evaluation in the reports should however be strengthened (see paragraphs 3.38 to 3.41).

7.6. The Commission should avoid conflicts of interest in the fields of project selection, management and supervision (see paragraphs 3.17, 3.18, 3.30, 3.31).

7.7. The large number of problems with cost claims shows that the Commission must increase the number of audits carried out at contractors by its own departments and by external auditors. The Commission should also consider introducing a policy whereby contractors provide a certificate from an external audit firm to confirm the accuracy of the cost claims, exceeding a certain amount. The audit fees could then be accepted as eligible project expenses (see paragraphs 3.48 to 3.55).

7.8. Especially in the case of smaller contracts, such as under *Altener*, the Commission could consider a different funding procedure. Possibilities include using a simplified contract, for example by introducing flat rates for overheads⁽²²⁾ (see paragraphs 3.55, 4.16).

7.9. Coordination between all services of the Commission involved in the funding of RTD and demonstration measures in the area of RES is insufficient and needs to be strengthened. Boundaries between programmes should be clarified to avoid overlap, to focus and streamline the European Union's work in this field, and to avoid confusion among potential participants. This includes in particular the Structural Funds' area, and the information dissemination policy (see paragraphs 5.01 to 5.02, 6.01 to 6.08).

⁽²¹⁾ Source: External monitoring report for the specific non-nuclear energy programme (*JOULE-THERMIE*) covering the period January to December 1995, December 1995; External monitoring report for the specific non-nuclear energy programme (*JOULE-THERMIE*) covering the period January to December 1996, July 1997; Five-year assessment of the non-nuclear energy programmes, report by the assessment panel, December 1996.

⁽²²⁾ See also the Court's comments in its:
Annual Report concerning the financial year 1996, paragraph 10.53;
Annual Report concerning the financial year 1995, paragraph 9.8;
Annual Report concerning the financial year 1993, paragraph 11.17;
Annual Report concerning the financial year 1990, paragraph 11.6.

⁽²⁰⁾ COM(1998) 167 final, 16.3.1998.

This report was adopted by the Court of Auditors in Luxembourg at its meeting of 23 September 1998.

For the Court of Auditors

Bernhard FRIEDMANN

President

Table 1
Budgetary Execution Total JOULE-THERMIE 1994 to 1998

Year	Budget ⁽¹⁾		Implementation ⁽¹⁾			
	Commitments ECU	Payments ECU	Commitments		Payments	
			ECU	%	ECU	%
1995	320 098 000	62 870 000	319 781 647	99,90	32 032 258	50,95
1996	171 000 000	130 000 000	170 888 266	99,93	105 923 000	81,48
1997	288 000 000	192 080 000	287 523 000	99,83	162 909 000	84,81
1998	260 330 000	148 771 000				
Total	1 039 428 000	533 721 000	778 192 913		300 864 258	

⁽¹⁾ Budget and implementation exclude the contribution from the European Economic Area Member States.

Source: Commission (unaudited).

Table 2
Breakdown of JOULE-THERMIE to the principal supported areas

Area	Indicative Budget JOULE ⁽¹⁾	Indicative Budget THERMIE ⁽¹⁾	Indicative Total ⁽¹⁾	Indicative %	Indicative enlarged Budget JOULE- THERMIE ⁽³⁾	Committed ⁽⁴⁾ JOULE until 31.12.1997	Committed ⁽⁴⁾ THERMIE until 31.12.1997	Committed ⁽⁴⁾ Total until 31.12.1997	Area distribution
	ECU million	ECU million	ECU million	%	ECU million	ECU million	ECU million	ECU million	%
Rational use of energy	96	115,5	211,5	21	219,3	104,9	109,7	214,7	27,58
Renewable energies	225	130,6	355,6	35	368,7	153,3	122,6	275,9	35,46
Fossil fuels	40	177,6	217,6	22	225,6	46,8	133,7	180,4	23,19
RTD energy strategy	26	34	60	⁽²⁾	62,2	14,5	15,7	30,2	3,88
Staff expenditure ⁽⁵⁾	27,6	⁽⁷⁾	27,6	⁽²⁾	28,6	14,5		14,5	1,86
Administrative expenditure	20,8	⁽⁷⁾	20,8	⁽²⁾	21,6	3,4	12,1	15,6	2,00
Dissemination	4	20	24,0	⁽²⁾	24,9		20,9	20,9	2,68
SME support ⁽⁶⁾	22	28	50	⁽²⁾	51,8	1,9	8,1	9,9	1,28
Specific RTD programme	35	⁽⁷⁾	35	⁽²⁾	36,3	⁽⁶⁾	⁽⁶⁾	⁽⁶⁾	
Other ⁽⁶⁾						2,2	14,0	16,1	2,07
Total	496,4	505,6	1 002	100	1 039	341,4	436,8	778,2	100,00

⁽¹⁾ Based upon the Council Decision 94/806/EC of 23 November 1994 and Commission information.

⁽²⁾ Annex II of Council Decision 94/806/EC of 23 November 1995 sets an indicative limit of 2,85 % for personnel, 2,15 % for administrative expenditure, 6 % for strategic issues, 5 % for specific SME, ECU 24 million for dissemination of results and ECU 35 million for the specific RTD programme, to be carried out on the one hand by means of direct action (JRC), and on the other by means of activities within the framework of a competitive approach and intended for S/T support to Community policies (1995 to 1998).

⁽³⁾ Increased budget after the enlargement of the European Union and the European Parliament's supplement (distribution estimated).

⁽⁴⁾ Budget and implementation exclude the contribution from the European Economic Area Member States.

⁽⁵⁾ Staff expenditure includes under JOULE the THERMIE staff; it only includes statutory staff as non-statutory staff is recorded under administration.

⁽⁶⁾ These items are in SINCOM integrated in the first four categories which makes it very difficult to get a clear and reliable overview. 'Other' is a mixture of administration costs, evaluations, publications, promotion activities, etc.

⁽⁷⁾ These items include the THERMIE side of the programme under JOULE.

Source: SINCOM and Commission (unaudited).

Table 3

Breakdown of *JOULE* support in the renewable energy area to the various categories

Area	Committed until 31.3.1997 ECU million ⁽¹⁾	Resulting Distribution % ⁽²⁾	Paid on contracts signed per 31.3.1997 until 31.12.1997 ECU million ⁽¹⁾	Number of Projects Supported 31.3.1997	Average contribution per project ECU million
Integration of renewable energies	5,41	5	3,56	10	0,54
Solar Photovoltaics	26,66	26	14,70	23	1,16
RE in buildings	14,04	14	7,16	21	0,67
Wind energy	22,78	23	14,29	40	0,57
Biomass	22,07	22	12,82	21	1,05
Geothermal energy	2,62	3	1,96	1	2,62
Solar Thermal/Energy Storage	7,10	7	4,59	9	0,79
Total	100,68	100	59,07	125	0,81

⁽¹⁾ The Commission's DG XII was unable to provide figures as at 31.12.1997.

⁽²⁾ The distribution over the RES categories is for information only, it does not refer to limits indicated in the Council Decision.

Source: Commission (unaudited).

Table 4

Breakdown of *THERMIE* support in the renewable energy area to the various categories

Area	Committed ⁽¹⁾ until 31.12.1997 ECU million	Resulting Distribution % ⁽²⁾	Paid until 31.12.1997 ECU million	Number of Projects Supported	Average contribution per project ECU million
Solar Photovoltaics	23,9	20	6,5	52	0,46
RE in buildings	6,4	5	0,6	9	0,71
Wind energy	27,1	22	8,1	38	0,71
Energy from Biomass and Waste	34,2	28	6,6	22	1,56
Small scale hydro-electric plants	10,6	9	3,2	34	0,31
Geothermal energy	16,8	14	5,4	24	0,70
Solar Thermal	3,5	3	1,4	3	1,18
Total	122,6	100	31,8	182	0,67

⁽¹⁾ Commitments exclude the contribution from the European Economic Area Member States.

⁽²⁾ The distribution over the RES categories is for information only, it does not refer to limits indicated in the Council Decision.

Source: Commission (unaudited).

ANNEX 1

POSITION OF RENEWABLE ENERGY SOURCES IN THE COMMUNITY POLICIES

'Renewable Energy Sources' (RES) is the term used to describe those forms of energy in which resources are naturally and endlessly available: energy from the sun, the wind, the oceans and the earth, and from plants and the fall of water. Energy produced from waste is also regarded as being renewable. The share of renewable energy sources in Gross Inland Consumption varies widely in the Community. However, the total share in 1994 was calculated as 5,4 %. In the area of electricity production from sources of renewable energy, the share of hydro-energy was 91,1 %, biomass 6,8 % and wind 1,1 %. The share of the other sources was an insignificant 1 % ⁽¹⁾.

Promotion of RES has been a central objective of Community energy policy for a considerable period of time. The Council Resolution of 16 September 1986 ⁽²⁾, places the promotion of RES among the central objectives for examining the convergence and the cohesion of the Member States' energy policies. This central objective was confirmed by the Council's recommendation of 9 June 1988 ⁽³⁾ and the Council Decision of 13 September 1993 ⁽⁴⁾. An ambitious quantified objective for RES was set by the European Commission in its 1997 White paper for a Community Strategy and Action Plan 'Energy for the future: renewable sources of energy' ⁽⁵⁾, where it set as an indicative objective a contribution from RES of 12 % to the European Union's gross inland energy consumption by 2010.

The importance of RES in the Commission's energy policy is also reflected in the research area. In Council Decision 94/806/CE of 23 November 1994 ⁽⁶⁾, concerning the specific research programme for non-nuclear energy within the Fourth Research and Technological Development (RTD) Framework Programme (*JOULE-THERMIE* 1994 to 1998), 45 % of the funds (ECU 435 million) are allocated to renewable energy. The other areas supported by *JOULE-THERMIE* are the rational use of energy and fossil fuels.

Whilst the primary objective of the Commission's energy policy had been the reduction of the dependency of energy imports through the reduction of fossil energy consumption, the Convention of Rio de Janeiro of 1992 on the reduction of CO₂ emissions has caused more emphasis to be placed on environment protection. In 1996 the Green paper 'Energy for the future: renewable sources of energy' the Commission mentions employment creation, regional development and export stimulation as additional objectives ⁽⁷⁾.

In the European Community framework the subject of renewable energy can be found in the energy policy area (DG XVII) as well as in research (DG XII). These programmes include research, development, demonstration and support actions. Other areas of the Commission with direct or indirect involvement in renewable energy matters are the Structural Funds, International Cooperation, Environment, Agriculture, and European Coal and Steel Community actions.

⁽¹⁾ Energy for the future: renewable sources of energy, Green paper for a Community strategy, COM(96) 576, 20.11.1996, p. 12 and 49.

⁽²⁾ OJ C 241, 25.9.1986, p. 1.

⁽³⁾ OJ L 160, 28.6.1988, p. 46.

⁽⁴⁾ OJ L 235, 18.9.1993, p. 41.

⁽⁵⁾ COM(97) 599 final, 26.11.1997.

⁽⁶⁾ OJ L 334, 22.12.1994, p. 87 to p. 108.

⁽⁷⁾ COM(96) 576 final, 20.11.1996, p. 3, 4.

ANNEX 2

SELECTION PROCEDURES IN THE *JOULE* PART OF THE *JOULE-THERMIE* PROGRAMME

The selection process in *JOULE* is a major centralised action involving important Commission resources and between 90 (1997) and 170 (1995) external experts per call. After formal eligibility checks by the Commission, each formally acceptable proposal is submitted for technical and financial evaluation to at least three experts, without the proposer being identified. Following the individual evaluations the experts form a panel, according to the research theme, chaired by the Commission as moderator, which drafts a 'pre-consensus' report. Proposals which are considered to be of sufficient technological merit are passed on to an extended panel of experts, chaired by the Commission as moderator, for strategic evaluation of economic, social and environmental benefits. The chairperson of each extended panel completes a consensus report with a final ranking⁽⁸⁾. Results are harmonised across all programme areas and coordination possibilities are examined by a coordinator group composed of the Director and Heads of Units of the programme concerned.

The Commission then verifies the financial capability of partners, and performs an inter-programme consultation to check, in particular for any overlap of proposals with existing projects in other programmes.

The final results of the process are summarised in a complete overview of all evaluations and a shortlist of proposals which the Commission puts forward for support. The *JOULE* Committee, which is composed of representatives of all Member States, discusses these documents and forms an opinion, after which the Commission decides.

⁽⁸⁾ The applied rates are A1, A, B or C, A1 being the highest ranking and C meaning a rejection.

COMMISSION'S REPLIES

INTRODUCTION

JOULE

- (a) It should be stressed that the JOULE and Thermie sections of the specific non-nuclear energies programme within the fourth framework programme emerged from widely differing historical backgrounds displaying a variety of management practice characteristics. It should also be stressed that the Council Decision of 23 November 1994 sets up two programme committees with two budget breakdowns (point 2.1).
- (b) As regards coordination with the other policies one should remember the major tools provided by the interdepartmental consultations and the new monitoring and information dissemination activities provided for in the White Paper on renewable energy sources. That coordination is intended to be boosted under the fifth framework programme (point 2.12).
- (c) The Commission is required to monitor the cost of all of the programmes closely. The Commission carefully examines whether the programmes are managed within the limits of the administrative spending percentages laid down by the Council. The fact of reducing management costs to one amount per project, as performed by the Court, does not reflect the will of the legislative authority. The Commission is in no way obliged to keep accounts per project, and moreover this is not a significant instrument in measuring the quality of the programme management (point 2.6).

In its management the Commission also stresses the auditing activities. In line with the commitments entered into the Commission has greatly increased the number of its audits, including those while projects are in progress.

- (d) Experts in their fields are responsible for the scientific monitoring of the contracts. Once appointed by means of general selection procedures that have been widely advertised the Commission's administrators are required to abide by all of the terms of employment relating to discretion and confidentiality. The Commission will ensure that all conflicts of interest are avoided and shall take any prior action that is needed (point 2.5).

A certain number of regular staff in DG XII paid under Item B6-7 1 5 1 (non-nuclear energy sources or JOULE/Thermie) have been seconded to those

departments in order to implement a policy aimed at ensuring the proper functioning of the Directorate-General's horizontal services. In addition, following internal redeployments and mobility regular staff working on the programmes are paid by JOULE and, to offset this, staff assigned to the JOULE programme are paid via other programmes. That situation will be rectified with a view to launching a fifth framework programme in 1999 (point 2.6).

- (e) The Commission must point out, with regard to the information networks, that, in order better to coordinate the various sources of information, the Directorates-General (DGs) for Research and Technological Development (RTD) intend to forge a partnership with the Member States that is based on the creation of national contact points (point 2.11).
- (f) Finally, the Commission feels that the Court's main comments applying to both JOULE and Thermie or else just to JOULE apply to different aspects of the programme without calling into question the quality of the Commission's management.

THERMIE

Throughout the various framework programmes the Commission has developed a common set of procedures to be used in selecting projects and negotiating contracts. In addition to these common procedures, specific evaluation manuals describe, in detail, the selection and decision processes, as well as the role of the various actors participating therein. The clarity, quality and accuracy of these processes have been widely recognised by the proposers and by the external panels of independent experts who have annually monitored the various specific programmes (points 2.1. and 2.2).

Among the various evaluation criteria, the innovative nature of the proposal is a prerequisite for support. Notwithstanding, the Commission views the innovative application of mature technologies as important as technological development itself. This explains the support which has been given to a number of projects which demonstrate the innovative integration of existing energy components into business and public environments (point 2.3).

In addressing these issues, the Commission takes into account the potential impact of the project's results on the market (i.e. its future implementation and exploitation) and whether this can be provided by the proposed partnership team. When assessing the proposals, the Commission also considers the European dimension and the relevance of the technical problems being addressed, as well as the capacity and technical credibility of the partners to find solutions to these problems which can be adopted on a Europe-wide basis (point 2.3).

The Commission recognises that there is scope for further integration between the research and demonstration phases. However, the Commission views the problem of integration as something that requires a novel solution which goes far beyond possible re-definitions of the concept of innovative installations. In its plans for the fifth framework programme, the Commission propagates this novel approach by concentrating activities in the field of non-nuclear energy on two key areas, in which upstream and downstream developments are aimed at solving a common set of problems (point 2.1).

RENEWABLE ENERGY SOURCES NOT COVERED BY RESEARCH

The Court of Auditors' report analyses a period where the legal basis, i. e. the Council's Decision concerning the (1993 to 1997) Altener programme, first of all provided support for promotion activities at Member-State level without, however, placing stress on genuine coordination at Community level. At the time this was not considered to be genuinely urgent.

The lessons learned from the Altener programme and the European Parliament's activities in this area led to the adoption of the Green Paper on Renewable Energy Sources in 1996 and the adoption, in late 1997, of the White Paper in which the Commission puts forward a Community strategy and an action plan for 2010 while insisting on the need for closer coordination and on monitoring of the activities, and of the action taken at both Community and Member State level.

In addition the Council Decision on Altener II, which was adopted on 18 May 1998, introduced far-reaching changes: monitoring and coordinating tools, new project selection procedures, targeted dissemination of information, etc. (point 2.10).

The Commission feels that the financing decisions under the Altener programme were taken correctly.

The rewriting of the financial Regulation that is currently taking place should be able to clarify the responsibilities in this area (point 2.9).

The Commission will redouble its efforts concerning possible overlaps between the Altener and JOULE-Thermie programmes as regards information dissemination in order to ensure rigorous targeting of the information in terms both of its contents and of the audience to which it is addressed. However, it feels that the use of common information networks for differing programmes is quite compatible with the stringent targeting mentioned above. The use of one and the same network is thus not synonymous with overlap (point 2.11).

THE FIFTH FRAMEWORK PROGRAMME

The Commission has opted for tackling a large number of the points raised by the Court of Auditors during the fifth framework programme: coordination of JOULE and Thermie, project assessment and negotiation deadlines, simplification of the model contract, payroll costs and project overheads, and an expert selection procedure for monitoring, and information networks.

- (a) Purely as a result of its structure, the Commission advocates, in its proposal concerning the fifth framework programme, the incorporation of the two factors R& D/demonstration, especially in view of the content of the two key projects concerning non-nuclear energy that involve a problem-solving approach. Harmonisation of rules and procedures across the various departments will ensure that the programme is homogeneous.
- (b) In order to launch the fifth framework programme, the Commission will examine all possible ways of shortening the project assessment and negotiation deadlines. The work currently in progress on contracts within the Commission is intended to clarify the contractual terms while avoiding conflict with the legal texts which form their main bases; by way of an example the proposals concerning the new rules for involvement and dissemination provide scope for using flat rates for the overheads.
- (c) The Commission is examining the scope for devising a common procedure for selecting the experts responsible for the technical monitoring of the projects for the R&D sections of the programme. However, that procedure in itself will not guarantee any narrowing of the gap between research and demonstration mentioned by the Court of Auditors.
- (d) In order better to coordinate the various sources of information, the RTD DGs are contemplating the building-up, together with the Member States, of a

partnership based on the creation of national contact points. That body would be designated by the Member States and would be made responsible for disseminating information above and beyond the direct services provided under the programmes, such as help desks. It would thus also be responsible for coordination within a Member State, more particularly with the regional and local authorities responsible for assisting applicants, especially small and medium-sized businesses (SMBs) in drafting research proposals.

a new range of technologies which will enable biomass to be used ...'.

The Commission wishes to point out that the 3 % increase referred to by the Court applies only to commitments in the field of renewable energy up to 31 December 1997 and not to the entire duration of the programme.

3. THE JOULE/Thermie PROGRAMME

Budgetary execution

3.10. Use of the appropriations for payments in 1995 varies in accordance with the programme sections. The use of appropriations for payment may be affected by various factors, including the heterogeneity of the partnerships as far as demonstration is concerned, which may lead to a longer contract negotiation phase. The problem of obtaining building permits must also be highlighted.

3.12. The budget targets set out in detail in Annex II to the Council Decision are intended to cover the entire implementation of the programme and must not be reached with each call for proposals.

The support for SMBs began with the phase involving the exploratory awards committed in 1995 and 1996, with reduced amounts for each award. The Commission forecasts that the 5 % guide percentage for SMBs will be reached on completion of the programme.

3.13. Given the complexity of the issues involved and the inclusion of coal and biomass, the Commission was not able to state its views on the definitive nature of the project mentioned by the Court until it was being implemented.

The reclassification of that Court-audited contract from fossil fuels towards renewable energy sources was prompted by the main aim of this contract, which is to solve the problems of fouling, corrosion and pollutant emissions caused by the burning of biomass together with coal, thus enabling biomass to be used as a raw material for energy.

For the record the aim of the biomass sub-area is to 'increase the use of biomass in the supply of energy in the European Union (EU) ... the R&D will aim to devise

Programme management and control

Project selection

3.14. The Commission shares the opinion of the Court of Auditors as regards making forms available electronically: nowadays that practice is spread among several programmes including JOULE/Thermie.

3.16. The Commission has established a set of common features that are used in the selection process for determining which proposals are suitable for European Union support. These features — such as the use of external experts to assess proposals, discussion of the results of each individual assessment at consensus meetings, and the publication of the criteria which will be used in assessing proposals — reflect the need for quality and accuracy in the selection procedure. Given the diversity of the RTD programmes, it is reasonable to accept a certain degree of differentiation in the selection procedures, as long as these do not deviate from the set of common features and they are formally and clearly described in the specific programme assessment manuals. The Thermie programme meets all of these conditions.

3.17. The Member States nominate the members of the programme committee. Under Article 6, footnote 4 of the committee's rules, 'When an opinion of the Committee is requested ..., the members of the European Union Member States delegations should not have an interest in or connection with the legal entities involved'. That rule is still invoked by the committee's chair, which is occupied by the Commission.

3.18. Assessors are selected on the basis of demonstrated technical expertise and they work under the appropriate confidentiality arrangements. Once the independence of an assessor has been established and his technical expertise recognised, the Commission sees no problem in assigning to him the technical supervision of any project that falls within his area of expertise and, in particular, to any project that he might have helped to assess.

3.19. In order to launch the fifth framework programme the Commission is examining every possible means of shortening the assessment and project negotiation period. The Commission favours a simplification of the model contract.

3.20. The division of the project into three stages has a sound scientific basis, leaves no room for uncertainty as to its genesis, and enables the Community's financial interests to be defended in the best possible manner.

This is a top-quality wide-ranging research project costing an estimated total of roughly ECU 12 million and involving three European research centres, three European industrial bodies, and three industrial users.

The consortium has opted to introduce a project in three phases in order to reflect the nature of the work in the light of the different types of project supported by the Commission. The first two phases are more R&D in nature, while the latter is close to demonstration activities.

Subdivision of the project will enable the Commission to move on to a subsequent phase on the basis of the results and progress achieved during the preceding phase. The Commission may thus lower the risk attached to its financial commitment.

Since Community financing is based on proposal quality, the Commission does not guarantee that any consortium will receive its financial support forever.

In addition the JOULE committee has obtained all of the information on the projects, including the fact that this project formed an initial phase of the research to be carried out.

3.21. For each specific RTD programme the legislative authority adopts a maximum guide percentage for administrative spending. The Commission closely monitors the programmes in order to ensure that these are managed within those percentage limits. Studies by outside experts have shown that the cost of managing Community RTD projects compares favourably with that of managing organisations carrying out comparable projects in the Member States.

The Commission is required closely to monitor the overall cost of the programmes. Reducing management costs to one amount per project, as the Court has in fact done, does not reflect the will of the legislative authorities. The Commission is in no way obliged to keep accounts per project. In any case these are not a significant tool for measuring the quality of a programme's management.

The Commission has in its possession precise information on the various cost components of its assessments. The Court compares the assessment cost per proposal with an assessment cost per contract signed. That calculation is not justified in that the expert assessors are not involved at the contract-signing stage. Their purpose is to examine all of the proposals and to rank these on the basis of previously-established selection criteria. Only the best proposals are likely to lead to the signing of contracts.

3.22. In its comments, the Court suggests that demonstration projects cannot be considered to include sufficient innovation. The Commission wishes to emphasise that the requirements set out in the information pack include a number of innovative aspects of technology that are not specifically related to the equipment itself. The Commission certainly welcomes innovation in materials, equipment and components provided that they are consistent with the other requirements given in the information pack, such as the potential for cost reduction, long term reliability, and environmental friendliness. However, equally important to the future development of the sectors under audit is the innovative integration of mature technologies into the overall energy system.

In conclusion, the Commission considers that a project can be considered innovative if the total energy system (energy sources, components and their integration) meets the innovative requirements referred to in the information pack accompanying the call for proposals, whether or not the standard components are used.

As far as partnership is concerned, the Commission does not regard cooperation and European added value as being directly proportional to the participation of the various Member States. The Commission takes into account the potential impact of the project on the market (i.e. future implementation and exploitation of results) and whether this can be assured by the proposed partnership team. Furthermore, when assessing the strength of a partnership, the Commission considers the technical problems being addressed by the project and the capacity and technical credibility of the partners to find solutions to these problems which can be adopted on a European-wide basis.

3.23. The fact of having a sole contractor who is a financial contributor as well as the Commission (e.g. the final user) does not conflict with the Council Decision on the adoption of the programme concerned, nor the Council Decision of 21 November 1994 on the rules governing the involvement of companies, research centres and universities in European-Community research, technological development and demonstration projects.

It is also stressed that in many cases the contractors are broken down into:

- users who directly benefit from an installation once the demonstration is over,
- producers who will have acquired the know-how deriving from the project and will be responsible for disseminating this.

The importance of the presence of contractors, even where these do not directly contribute to project funding, resides in their commitment to meet the contractual obligations in terms of turning the results of this project to account and disseminating them.

This aspect is an essential feature of any research and demonstration programme.

Nevertheless the Commission duly notes the Court of Auditors' findings when auditing contractors, particularly with regard to invoicing, and will take any action that is necessary.

3.24. The Commission does not share the Court's view on the innovative character of six out of the 13 Thermie projects audited. In fact, throughout the selected phase, the Commission is assisted by independent and technically-qualified external experts who routinely advise on the innovative nature of each proposal and on its compliance with the general aims of the programme. Only those proposals which fulfil the above eligibility criteria are considered for selection. All of the projects audited were considered to be innovative and suitable for support by the outside experts, the Commission's technical staff, and all members of the programme committee.

The Commission also refutes the statement that Thermie did not make good use of the technologies developed under JOULE, since various supported projects are demonstrating the results of the innovative integration of these technologies into business and public environments.

3.25. The Commission does not use pay-back time as a selection criterion in the PV sector and, for this reason, values for this parameter are not included in the assessment summary sheets. In fact there is a general consensus among decision makers and experts in the sector that pay-back time does not provide a sufficiently accurate basis for assessing PV projects. This is due to the pre-competitive nature of the PV technologies which, at present, are less cost effective than conventional energy sources. However, the huge potential of market deployment in the future is recognised and the main assessment parameters (e. g. installation costs and services provided) reflect this.

With regard to the Court's question over the focus in the area of photovoltaics, the Commission views the JOULE

research projects as being centred on the innovative development of components whilst the Thermie demonstration activities are focused on reducing the total cost of the integrated PV system. A simple concentration of efforts just on basic research developments would put aside more than 50 % of the cost reduction potential that results from the innovative integration of existing components.

Project management and control

3.26. JOULE temporarily had to cope with a substantial increase in the workload of the unit that is responsible for managing renewable-energy contracts. Therefore (a) additional staff were engaged without delay within the existing procedure and (b) the selection of 11 'cluster coordinators' per contact procedure was initiated as quickly as possible. This is why, with the new staff and support of the cluster coordinators, no scientific manager was responsible for more than 26 projects in mid-1998.

3.27. In order to optimise the human and financial resources the JOULE quality management manual states that, as a rule, the scientific managers attend three meetings: start-up, mid-term and end of project. The contractors' meetings are mainly held in Brussels, unless an equipment inspection is necessary.

On-site visits are not the only means of monitoring a project: they are useful at critical points in the project but may not always be necessary or may not be enough.

35 JOULE projects were inspected either at the start-up stage (12) or as the projects were in progress (23). Meetings should automatically be held *in situ* for project start-up, as they facilitate subsequent monitoring of the most complex projects in particular. Likewise for project monitoring meetings held in conjunction with conferences, which reflect better management of missions by Commission staff.

14 Thermie projects had been visited by June 1998. This represents an acceptable rate since the first project began in late 1995 and lasted four or five years.

In addition, 37 % (68 projects) of the contracts signed since 1990 have so far been visited.

3.29. The Commission is examining the scope for devising a common selection procedure for the experts who are responsible for the technical monitoring of the projects. However, that procedure would not in itself guarantee the narrowing of the gap between research and demonstration mentioned by the Court of Auditors.

3.30. The Commission is aware of the risks referred to by the Court and has taken all necessary action to counter these. Operators who are experts in their fields have been made responsible for the scientific monitoring of contracts. In many cases the specialist experience of those administrators coincides with the professional profiles sought by the Commission, and their expert knowledge forms an essential component of the scientific-monitoring quality of the projects. Moreover, from the time of their appointment via general, widely-publicised selection procedures, the Commission's administrative staff are required to obey all of the staff rules concerning discretion and confidentiality.

3.31. In its comments, the Court makes reference to a project in which a large group performed the acceptance test on the equipment used in the project. The outside expert involved is employed by an associated company. However, the Commission does not see any conflict of interest between the actual technical follow-up of the project under the responsibility of the expert and the quality checking of equipment which was performed by an associated company.

3.32. The systematic examination of the cost reports by the Commission's departments means a lot more than a simple examination of the costs declared and of their breakdown in terms of the initial budget. Indeed, the examination is intended to analyse the correspondence of the costs to the work carried out.

In line with the commitments entered into with the budgetary authority DG XII increased the number of staff in its audit department. The new audit strategy based on an analysis of risk indicators is being finalised at the moment and will enable the impact of the inspections to be improved. Against this background a call for proposals was made on 27 May 1998 in order to select outside auditors.

The very large number of contracts managed by the same financial manager for Thermie, and the constraints as

regards processing deadlines, do not enable checks to be carried out on items greatly exceeding the current inspection threshold without threatening to jam the programme completely.

However, the number of *in situ* audits should increase significantly once a contract-audit unit has been fully constituted.

3.33. DG XII's AMPERE/AQUA management information system is tailored to a project's daily management needs. An assessment aimed at developing management tools, such as 'instrument panels' enabling that management to be perfected, is currently under way.

As part of that special report the Commission has provided the Court of Auditors with very generous amounts of information and has carried out *ad hoc* work for the Court requiring major staff input.

3.34. The weaknesses of the Proman system are well known.

The Commission is already designing a new tool (Project Management System) in order better to meet the needs of comprehensive contract and contractor monitoring.

3.36. Harmonising the frequency of the financial reports under the fifth framework programme is envisaged.

3.37. One of the main aims of research policy is to encourage participation by SMBs. Payment in advance is a key factor in achieving that aim. It is clear that in order to ensure that the Commission's financial interests are protected any advances granted will receive particular attention by the Commission's departments. However, this will not enable the detection of any future bankruptcies to be guaranteed.

A computerised alert system was introduced at the Commission in January 1998. Where contractors are brought before the Courts (as in the case of bankruptcies), the system immediately records such instances in a register that is available to all of the DGs in such a way that these are informed of the matter.

Programme management costs

3.42. to 3.43. The RTD programmes have an integrated budget structure, i. e. the Council adopts a maximum percentage for staff and administrative spending for each specific programme. Every year, as an annex to the budget, the budgetary authority adopts a correspondence table which, for each programme, gives a breakdown of the budget between action spending and five categories of

administrative spending, including payroll. When that correspondence table is drawn up it does not exceed the ceilings set by the Council. The implementation of the programme budgets is precisely planned in accordance with the principles of good financial management and is accompanied by regular monitoring by the Commission's departments.

The Commission's operating-budget appropriations (Section A of the budget) are not distributed per RTD programme but per DG. Thus DG XII and DG XVII also receive an allocation from that budget that mainly covers infrastructure spending. That allocation is monitored in detail by DG X, in cooperation with all of the Commission's departments.

A certain number of regular staff in DG XII paid under Item B6-7 1 5 1 (non-nuclear energy sources or JOULE/Thermie) have been seconded to those departments in order to implement a policy aimed at ensuring the proper functioning of the Directorate-General's horizontal services. In addition, following internal redeployments and mobility regular staff working on the programmes are paid by JOULE and, to offset this, staff assigned to the JOULE programme are paid via other programmes. That situation will be rectified with a view to launching a fifth framework programme in 1999.

Project execution

Project coordination via European economic interest groupings (EEIG)

3.45. During the contract negotiations the EEIG must submit its negotiating forms, and those of all its members. The negotiations are identical to direct participation by those members. However, the contact-signing procedure is speeded up since only the EEIG is a signatory.

3.46. The Commission would again point out that the parties to a contract are legally authorised to depart from the estimated table of costs and to conduct transfers among themselves without prior Commission authorisation, the only restriction being that of meeting the aims of the project (Article 18.(2)). An amendment to the technical Annex would be necessary if the aims of the project were to be altered.

Inclusion in the contract of information on the distribution of a member of an EEIG's contribution no doubt holds appeal in information terms. However,

unless the contract were amended accordingly this would not increase the Commission's authority.

When the interim and final reports are examined the Commission will check that the work carried out does indeed meet the aims of the contract.

Difficulties in producing correct cost statements

3.48. to 3.55. The Commission has available to it four levels of inspection, namely:

- prior inspection during the negotiating stage,
- analysis of the cost breakdowns in relation to the technical report concerned,
- a request, where appropriate, for additional evidence concerning the cost breakdowns,
- *in-situ* inspections, if necessary.

On 27 May 1998 the Commission made a call for proposals for the selection of external auditors. The selection of the audits to be carried out in this instance will be, in particular, based on a risk analysis.

With regard to justifying the expenses charged by contractors the model contract provides for an obligation that all contractors keep appropriate accounts and documentation. Additional evidence may be required by the Commission, both to support and certify the costs set out in the statements, and during *in situ* inspections.

Article 19(1)(1) of the model contract provides that a participant shall enter average payroll costs, provided that these are drawn up in accordance with its habitual practice and do not diverge significantly from actual costs.

It must be pointed out as regards payroll costs that the labour time sheets do not constitute absolute proof. They are only one means of assessment among others and may not lead to automatic acceptance of the costs claimed purely as a result of their existence.

When the overheads were monitored a prior examination was carried out of the rates suggested by the contractors during the negotiation. Those rates are generally based on calculated forecasts using the contractors' accounting figures, more particularly in accordance with their own conventions, policies and accounting principles while following national accounting practice. They are nevertheless informed that the criteria adopted must be in line with the terms of the contracts. They must, in particular, have appropriate documentation in their possession which enables them to vouch for and certify all of the costs that they declare. That documentation

must be available at all times. The exactness of that rate may only be fully confirmed via an audit at the contractor's.

The points raised by the Court in connection with payroll charges and overheads are discussed within the various working parties preparing the fifth framework programme. These working parties have acquired a great deal of experience on research contracts and aim, more especially, to optimise the management and inspection procedures for the next framework programme. The work on contracts currently in progress within the Commission is intended to clarify the contractual provisions while complying with the legal texts which lay down their basic principles. For example, the proposals concerning the new participation and dissemination rules offer scope for using flat rates for the overheads.

Risk of abandoned projects

3.56. to 3.57. The rate of abandoned and cancelled Thermie projects in the photovoltaic sector is approximately 10 % whilst, in the case of biomass, this rate is 24 %. The main reasons for cancelling the biomass projects mentioned by the Court were the change in national buy-back rate tariff and the inherent high technical risk. Taking into account that Thermie supports projects entailing technology risks, in application areas which lack harmonised legislation, this rate can be considered acceptable.

4. THE ALTENER PROGRAMME

Programme management and control

Project selection

4.8. and 4.10. Pursuant to Article 5(2) of the Council Decision of 13 September 1993, the draft initiatives referred to in Article 3(b) and the list of bodies who would be called upon to implement these are put to the Commission by the Member States each year. The Commission then decides upon the Community's financial participation and on the conditions attached to this in accordance with the procedure provided for in Article 7(1).

The Council's Decision does not describe the procedure which the Member States must follow.

Nevertheless, the Commission has always taken steps to ensure that the Member States put forward:

- a sufficient number of proposals in order to make a stringent selection,

- projects in all of the priority areas included in the annual guidelines,
- projects covering their entire territory in a balanced manner,
- projects whose proposing bodies represent a balance between the public and private sectors, agencies, institutes, universities, etc.

With regard to the annual guidelines and the dissemination of information concerning the programme, attention should be drawn to the fact that, independently of what has been done directly by the Ministries concerned, the Commission has supported systematic activities in the 15 Member States and at Community level as part of the information-dissemination activities provided for by the Council Decision in order to disseminate targeted information on the programme and on its activities (in particular the annual guidelines).

The wording of the Decision does not provide for any need to carry out public call-for-proposals procedures, particularly since pursuant to Article 5(2) they will have to have been national, and the guidelines require the projects to be multinational except in highly precise cases such as regional plans.

In any case, the Article 5(2) referred to above is no longer contained in the Altener II programme approved by the Council Decision of 18 May 1998 (L 159, 3.6.1998) which follows on from the first Altener programme. Calls for proposals have already been published in the *Official Journal of the European Communities* and will henceforth continue to be so.

Formal decision procedure

4.11. and 4.12. The procedure followed by the Commission is covered by the internal budget implementing rules.

Article 5(5) of those rules requires the authorising agency (the Commission) or its duly empowered agent (the Director-General of DG XVII for a Altener heading) may commit the institution with regard to third parties in contractual terms. In turn the acting authorising agency has subdelegated its powers to a certain number of officials who have been empowered in pursuance of those same internal rules to implement the budget.

It is also pointed out that all commitments by DG XVII are covered by an internal decision signed by the authorising officer himself.

The Commission is thus not able to agree with the Court's statement that ECU 26,1 million have been committed without an adequate legal basis, to pilot projects funded under the programme.

Conversely, it should be noted that in the internal rules already referred to for Article B5-7 1 0 'Financial support for energy infrastructures' of which DG VII is also the manager, the Commission has been clearly named as the authorising officer for that spending. That being the case a Commission Decision is required.

It must nevertheless be stressed that the current rewriting of the financial Regulation should be able to clarify this point.

Project management

4.13. Those of the *in situ* financial checks made since 1997 intended for Research projects have been extended to the programmes covered by energy policy.

These measures will not be visibly turned to practical account until 1998, bearing in mind the human resources available.

4.14. A new numbering system has been introduced in an attempt to make up for the deficiencies of the existing data-processing system. Since the test proved to be inconclusive this double numbering system was abandoned in late October 1997.

Since the financial managers are aware of the difficulties they are experiencing because of a lack of efficient user-friendly packaged computer software, the design of a new tool has been initiated in order better to meet current management needs and also to monitor all of the contracts and contractors.

4.15. and 4.16. It should be borne in mind as regards eligible costs that the structure of current contracts, which is fairly simple, had been devised in order to take account of the particular nature of the projects having specific characteristics that had been awarded a contribution under the Altener programme, i. e. projects that were great in number but relatively low in cost and, as a general rule, only contained payroll and overhead charges.

In future the management of the Altener programme should move towards the adoption of projects that are more restricted in number but greater in terms of costs. The model contract used for that programme will thus be amended. It will be more structured and substantial, particularly as regards spending breakdowns.

The use of fixed-price contracts for financial contributions of less than ECU 100 000 could also be considered.

Applying the model research contract and its Annex unchanged would seem to be inappropriate. Indeed, in view of its non-technological nature the Altener programme cannot be treated on the same basis as a research programme.

5. PROJECT MANAGEMENT

5.1. More than 90 % of the Thermie presentations throughout Europe involve or are organised by OPETs (Offices for the Promotion of Energy Technologies) and agencies that are members of the European energy network. A wide spread of information tools and in particular web pages have been successfully used by the contractors (e. g. application forms can be automatically downloaded from the DG XVII's World Wide Web page).

5.2. The Commission would point out with regard to information networks that in order better to coordinate the various information sources the RTD DGs contemplate the creation of a partnership with the Member States that is based on the provision of a network of national contact points.

That body would be appointed by the Member States and would be made responsible for disseminating information as a bonus to the direct programme services, such as the help desks. It would also be responsible for ensuring coordination within a Member State, and more particularly with the regional and local authorities that were responsible for assisting applicants, and especially SMBs, in drawing up research proposals.

6. COORDINATION OF JOULE-THERMIE AND ALTENER PROGRAMMES AND OF OTHER COMMUNITY AND NATIONAL SUPPORT MEASURES IN THE FIELD OF RENEWABLE ENERGY SOURCES

6.1. The Commission has clearly informed those submitting proposals concerning biomass that their proposals could be eligible under two programmes (Joule-Thermie and FAIR), but that they should be submitted to one or other of those programmes in the light of their ultimate aim. Indeed, it is stated in the work programme that 'biomass R&D projects could be eligible under both the JOULE-Thermie and FAIR (agro-industry) programmes. The FAIR programme addresses the production, management and processing of

raw materials. JOULE-Thermie will concentrate on solid-biomass conversion and use processes. They will be submitted to either JOULE-Thermie or to FAIR, depending upon the project's main approach'.

In those sectors where there could be programme overlaps the JOULE-Thermie programme will take steps to provide coordination via the following means:

- communication among scientific managers and exchanges of information,
- involvement of scientific managers from another programme in order to fill the role of assessment-panel moderator,
- formal inter-departmental consultation.

Internal coordination in the bioenergy sector is currently covered by several programmes (BRITE, EURAM, FAIR, JOULE-Thermie, Altener) and managed by various Directorates-General (VI, XII, XVI). The officers of the various programmes have already recommended the creation of an informal working group whose purpose is to hold regular meetings (twice a year) of all officers in order to establish clear boundaries amongst the programmes and the priorities in the various calls for proposals.

6.2. As a result of the Council resolution on the White Paper on a Community strategy and action plan for renewable energy sources, the Commission will introduce specific monitoring which should enable figures to be provided on the funding granted, particularly with regard to the regions concerned. It is, however, pointed out that this resolution is not binding on the Member States.

6.3. Only a comprehensive survey could provide an overview of the NRES projects that are funded by the Structural Funds. However, this lay outside the scope of Altener I. Conversely Altener II — which is the White Paper's main monitoring tool for a Community strategy and action plan for renewable energy sources up to 2010 — has provided for specific monitoring and follow-up activities. Since the programme was adopted on 18 May 1998 that permanent activity will begin in late 1998.

6.4. Before any decision is taken to fund projects the Commission will set up interdepartmental consultation machinery which includes the DGs managing the Structural Funds, which will inform the departments receiving the projects that are likely to be funded.

In addition the Commission's future contractors will have to declare the various sources of funding, and especially public sources, for the project receiving a financial contribution.

6.5. The Commission's proposal introducing an energy framework programme is covered by Articles 130s and 235 and is actually aimed at better coordination of various activities relating to energy. However, the research activities are coordinated under the fifth RTD framework programme in accordance with Article 130f of the Treaty.

The RTD activities, as applying to energy, cannot be reduced solely to the scale of energy policy. The results of this research will help to clarify and support other Community policies and activities such as the environment and the internal market.

The Commission feels that the multiannual framework programme for action on energy mentioned by the Court represents a satisfactory initial response as regards defining responsibilities and the overlap between non-research programmes.

6.7. The Commission shares the view of the Court that national objectives should be taken into account. However, in the specific case of grid-connection, there is a Council Recommendation 88/611/EEC that promotes cooperation between public utilities and in-house producers of electricity that the Commission also has to take into account.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. RTD projects are assessed in the light of a certain number of criteria, and in particular their coincidence with the programmes' prospects and aims. The programmes are also monitored and subjected to a systematic assessment every five years. The Commission is assisted in this by independent experts who provide competence and neutrality. The Commission takes account of the assessments made when it proposes new framework programmes and specific programmes.

7.2. The Commission recognises that there is scope for further coordination between the JOULE and Thermie sections of the programme. However, the Commission views the problem of integration as something that requires a novel problem-solving approach. In its plans for the fifth framework programme, the Commission centres the non-nuclear energy research, development

and demonstration on two key action areas in which upstream and downstream developments are aimed at solving a combined set of problems. Harmonisation of the management procedures was a constant concern of the Commission's departments throughout the preparatory work on the fifth framework programme.

7.3. The Commission does not share the views of the Court as regards the lack of innovation in some of the projects audited. It draws the attention of the Court to the fact that the innovative application of mature technologies is, nowadays, also considered to be an important technology innovation in itself. Moreover, the compliance of the projects selected with the aims and objectives of the programme — in which innovation is a prime criterion — have been checked by recognised independent experts in the field, technical Commission staff and representatives of the Member States.

7.4. The additional staff needed to manage and supervise contracts under JOULE were engaged as quickly as possible in line with the procedures. Moreover the selection of the 11 cluster coordinators on a contractual basis was launched as soon as possible.

The Commission is examining the scope for organising a common procedure for selecting the experts to be responsible for technical project monitoring.

7.6. The Commission is aware of the risks mentioned by the Court and has taken all action needed in order to counter these. Once they have been appointed by means of general competitions that have been widely advertised Commission staff, whatever their past experience, are required to obey all of the staff rules as regards discretion and confidentiality.

7.7. The Commission is in the process of upgrading its data-processing and administrative systems, and its human resources, and of introducing a new audit system based on risk analysis. The Commission made a call for proposals for the selection of external auditors on 27 May 1998.

The Court of Auditor's suggestion with regard to certification of the costs submitted by contractors via external auditing firms was interesting. Among other methods this will be examined within the *ad hoc* working party preparing the fifth framework programme.

7.8. The Altener contracts will indeed be significantly amended.

Two compatible outline solutions can be contemplated:

- financial contributions to a more restricted number of projects, but which individually cost more.
- In this case the model contract will be more structured and substantial, particularly as regards spending records,
- the use of flat-rate contracts for financial contributions of less than ECU 100 000.

7.9. There is already coordination among the Commission departments involved in RTD and demonstration funding, more particularly by means of interdepartmental consultation.

This coordination is intended to be stepped up with a view to the fifth framework programme.

The new monitoring and information-dissemination activities provided for in the White Paper on renewable energy sources should also be mentioned.
