



***ASSESSMENT OF THE DEVELOPMENT
OF THE EUROPEAN RESEARCH AREA
IN NON-NUCLEAR ENERGY
RESEARCH***

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to the EC Research Directorate General (Energy Programme)

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EXECUTIVE SUMMARY

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Executive Summary

Introduction

This study was initiated by DG RTD (non-nuclear energy) in order to:

- Obtain an independent assessment of the progress being made in that area towards the establishment of the European Research Area.;
- Assess the barriers to further development of the ERA in NNE research;
- Provide recommendations on actions that could be taken to stimulate the process.

The study was carried out during the summer of 2002, through assessment of written materials on 32 present or planned activities involving some form of preparatory actions for the ERA. Interviews were conducted with 21 members of Commission staff in DG RTD, and further information was gathered by questionnaire and/or telephone interview with 22 co-ordinators of relevant activities.

Non-nuclear energy: an assessment of progress

An assessment of each separate area within NNE was undertaken, and the results were synthesised into an overall assessment of non-nuclear energy in relation to establishment of the ERA. Although much of the work remains at an early stage, *good progress* is being made towards mapping centres of excellence; developing shared views of the strategic issues facing the various RTD topics within non-nuclear energy; and development of RTD strategies.

Further progress is needed in planning and undertaking prenormative research, and in benchmarking of RTD programmes, policies and technologies (the Commission should provide guidance here, to ensure that benchmarking in each technology area utilises the most appropriate approaches). The present Commission activity on science and technology references and indicators seems worthwhile and should continue. Further progress is also needed on developing structures for co-ordinating research in specific areas of NNE research. In some areas - for example, fuel cells/hydrogen - good progress has been made already. Elsewhere, there is a need to develop new structures and to ensure that present and future structures can be reconciled in some way.

In common with the ERA generally, *least progress* has been made in mapping national and regional RTD policies, programmes and priorities. Indeed, apart from some specific actions in specific areas, little appears to be being done at present on this. Lack of progress here could jeopardise the whole ERA ideal, and the Commission's present intention to launch a study is particularly welcome.

Barriers to further progress

During the study, views were collected on the barriers to further progress towards establishment of the ERA. These included the following:

- Gaps in present knowledge of the ERA and the instruments in FP6. There remains a lack of clarity among many RTD actors about the full implications of ERA concept, and about the instruments of FP6. This partly stems from gaps within the Commission itself (at the time of this study), and partly from a need for more targeted information provision.
- Fragmentation within NNE areas. The RTD community express concerns that it will be difficult to create suitable projects or networks capable of handling RTD areas where there are many different directions of possible technological advance. There is the danger

that some potential winners will be excluded. There is a particular need at this time for a strong Commission presence to guide existing networks and other activities.

- Present approaches to planning of RTD. RTD actors have to move rapidly towards a much longer term and more strategic approach to planning of RTD. Such activities require consultative, advisory and executive structures within each specific area of research, capable of planning and co-ordinating long term research programmes. In general, existing structures are inadequate because they are too fragmented. The Commission could encourage early action towards the development of suitable structures in each technology field.
- Industry/SME participation. Although in some areas there is already strong industry participation, in others this is a weakness at present. Many observers are concerned that SMEs, in particular, may find themselves effectively excluded from large NNE contracts.
- Mobility and training of researchers. The research community is all too aware of the need for mechanisms to facilitate the free movement of researchers from organisation to organisation, and from country to country, and this is seen as a major barrier. The new instruments in FP6 will place demands on contractors to spread excellence, and careful attention will be needed to ensure that adequate resources are allocated to training.
- Lack of involvement and co-ordination of Member States' administrations. Lack of engagement of Member States administrations in the development of the ERA represents a dangerous barrier to progress. Also, there is still inadequate knowledge of national RTD policies, programmes and priorities; knowledge such as this demands the allocation of adequate Commission resources to amassing it.
- The Commission's own role. There is a lack of clarity as to the Commission's own role in relation to the ERA, now and in the future. How involved should the Commission be, and how proactive? It is the view of this study that the greatest progress has always been made when the Commission has been highly proactive in an area of research, and that this will remain the case in the context of the ERA. There is also a need for the Commission to move firmly towards a more strategic, global view of RTD, with a greater allocation of Commission resources to support this role.

Recommendations

The principal recommendations arising from this study include the following:

- Increase stakeholders' real understanding of the ERA. Any gaps in information on how the new instruments will function now need to be plugged as urgently as possible. An "ERA Update" section on DG RTD's energy website could provide useful information, targeted specifically at the NNE research community. Consideration should also be given to special workshops with key stakeholders, to explore the ERA and its implications.
- Engage at a deep level with Member States' administrations. Targeted actions are recommended, with Commission Services identifying national administrations that are key to progress in each research area, and initiating in-depth dialogue on the implications of the ERA for long term RTD strategy in the given area. High priority should be given to mapping relevant national programmes and policies, with Commission staff undertaking this where existing actions do not address it adequately.
- Establish early foundations for an RTD strategy in each field. The Commission, working with key stakeholders, should contribute to developing outline strategies for each area within NNE RTD. At any rate, they should begin the process of mapping key strategic

data and issues on which RTD strategies and plans can be based. This work should be conducted in collaboration with existing activities and structures as far as possible.

- Build on existing RTD structures. There is a need to work towards adequate overarching structures which will facilitate European co-ordination of research in priority areas. These structures should build on existing ones, and should take account of the commitment of organisations to these.
- Target industry/SMEs. There is a need to target industry with accurate information on the ERA, and to engage in meaningful dialogue that will reassure industry that the new instruments can serve their needs. Early and close links with the programme “Specific research activities for SMEs” should be established.
- Ensure adequate coverage of important prenormative research. There is a need to map out the most important and urgent prenormative research in each area, with a view to ensuring that this is adequately addressed as soon as practicable.
- Make sure of ongoing links with areas not included from FP6. Some strategically relevant areas in NNE are not included as priorities in FP6. There is a need to ensure that adequate arrangements and resources are devoted to maintaining meaningful links with these areas, outside of the framework programme.
- Encourage mobility and training of researchers. This is an area that concerns the whole of the ERA and not just NNE. However, at the least there is a need to ensure that links are retained between NNE and schemes such as the Marie Curie Fellowships. The present workshops run on a regular basis for Marie Curie Fellows are a valuable means of keeping contact with these resources, and this should be continued if possible.
- Prepare Commission resources for FP6 and the ERA.
The establishment of the ERA, and the new approaches embodied in FP6, mean a major change for the whole of DG RTD, and the organisation has to respond and adapt to that change. Actions needed include organisation development and training aimed at (a) developing the new work role of Commission Services in developing the ERA and FP6; (b) exploring the changing role of DG RTD as it takes on the ERA; and (c) new skills and different emphases in staff roles in relation to ERA and FP6. It would also be important to ensure that existing expertise and competence in the Commission is not lost in moving to a more hands-off programme administration in FP6; this expertise is needed in order to develop the strategic role which the Commission will need as the ERA develops. Resource planning should take into account the urgent short term need for sufficient resources are kept with an outward focus on the RTD community and RTD actions at the present time, despite the need for substantial resources in preparing FP6. On an ongoing basis, adequate resources are needed to ensure that the Commission is capable of performing an overall strategic and policy function within European non-nuclear energy RTD.

Much has been achieved within the non-nuclear research area so far, in progressing toward the ERA. Some of the gaps and barriers identified here could hold back progress, and there is a need to have an overall plan for transformation both of European research and of the resources in the Commission charged with bringing this transformation about.

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