

**Interim Evaluation
Seventh Framework Programme
(2007-2013)
Direct actions of the Joint Research Centre
In the Thematic area Energy and Transport**

Report
September 2010

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PREFACE

The Evaluation Panel later on referred to as “the Panel” bases its findings and recommendations on the written material, facility visits and oral presentations by the Thematic Area Energy and Transport (TA E&T) management listed in Annex IV.

The Panel expresses its appreciation for the timely provision of information and for the open and constructive dialogue with the management team and scientific staff.

INTRODUCTION TO THE EVALUATION REPORT

The evaluation of the JRC activities in the TA E&T (see Annex II for the Terms of Reference) resulted in a number of findings and recommendations for consideration by the JRC. These findings and recommendations relate to the TA E&T and the mission of the JRC (Chapter 1), the strategy and annual plan of the TA E&T (Chapter 2), the activities in the TA E&T (Chapters 3 and 4), and selected aspects of 'People and Organization' (Chapter 5). The Panel realizes that some of the findings and recommendations concern the boundary conditions of the TA E&T activities set by the JRC and the European Commission and that these observations have to be considered in the context of the meta-review of the JRC planned for later this year.

The Panel has developed a positive view of not only the achievements of the TA E&T in the past few years but also of the steps taken by management to further strengthen customer orientation, performance management and international partnerships and networks. The findings and recommendations must be read against this positive overall assessment of the TA E&T.

1. MISSION

The Panel has taken note of the mission of the JRC and considers this mission to be clear and relevant for the TA E&T activities under review.

"The mission of the JRC is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national."

In the opinion of the Panel, full alignment of the TA E&T activity portfolio with the mission of the JRC has a number of implications:

- a) Knowledge generation activities should focus on acquiring scientific insights needed to support present and future policies. These activities frequently involve desk top work and are better characterized by the word science than the word research.
- b) The TA E&T activities in the area of Referencing and Standardization are in support of Policy implementation and monitoring. Choices regarding the portfolio of referencing services are driven by the policy implementation need for referencing, the unavailability of suitable data from the industry and the uniqueness and cost effectiveness of the services provided by the TA E&T.
- c) The acquisition and execution of competitive work (to 15 % of total budget) aims to support the excellent reputation of the TA E&T and to maintain the scientific competences and infrastructure needed to meet present and future 'policy customer' needs.
- d) Accomplishing the Mission requires staff with a broad scientific background, strong scientific networks and a keen interest in not only techno-economic issues but also socio-economic issues. This requires attraction of seasoned science generalists in addition to the current practice of hiring young scientists.

Recommendation:

In line with the above, TA E&T management to articulate the implications of the JRC Mission for the activity portfolio, staff competences, and recruitment profiles & practices.

2. TA E&T STRATEGY AND ANNUAL WORK PLAN

The Panel concludes that the establishment of **Memorandums of Understandings** with the European Commission DG's and the use of a High Level User Group are instrumental for strengthening the links with the 'policy-customers'. The introduction of Thematic Areas Lead Directors (being single point contacts with the DG's) has the potential of further strengthening this important interface and enhancing the quality and cost effectiveness of the services provided. The Panel encourages management to develop five year strategic plans that not only address the current needs of the customers but also helps the TA E&T to respond to future needs of the customers. This will increase the robustness against changes in European priorities.

Points for consideration by management include:

1. Socio-economic factors play a very important role in the dissemination of new Energy and Transport technologies and in the creation of low carbon prosperity. Strong competences in this area will be an important element of the future value of the Thematic Area.
2. Being seen as impartial is important and deserves protection. However, this should not prevent the organization actively considering possibilities to partner with or to outsource work to commercial labs and to actively participate in open scientific networks.
3. To provide an active link with the JRC mission, it is advisable to set targets for (and to watch the balance of) the split of annual activities over the phases of the 'policy life cycle' (exploration of policy options, policy option selection, policy development, policy implementation, policy monitoring, policy evaluation).
4. The forward strategy needs to articulate implications for budgets, people, facilities, networks, and partnerships. Annual working plans need to ensure that actions in each of these areas are planned, executed and monitored.

Recommendation:

1. *In line with above, management to articulate a forward strategy for the TA E&T activities and to ensure that annual plans for activities, staff development/recruitment, facilities and external networks have a proper balance between meeting the present needs and the future needs of the customers.*
2. *To have a policy for identification of activities to be best executed by JRC, and those best delivered through partnerships/outourcing. This policy needs be underpinned by build up of competences in JRC to manage the interfaces with relevant external parties.*

3. REVIEW OF THE ACTIVITIES

The past and present activities of each unit were discussed with the unit managers. Questions were asked about how the work related to the policy cycle of the EU, what other benefits are created and the number and impact of publications in high ranked journals.

Quality of the work being good to excellent, the Panel limited itself to scoring the activities against the following criteria:

- policy support,
- added value (to the community)
- uniqueness of the contribution (are others doing similar work), and
- cost effectiveness (score reflects weighing of efficiency of work done by the unit, the possibility of sharing the work with others and the possibility to outsource the activity to others).

The result of the scoring exercise are documented in the following Table (3= very high; 2 good; 1 moderate to low).

Activities	Averages			
	Policy support	Added value	Uniqueness	Cost effectiveness
Photovoltaic (PV)	1,00	2,50	1,75	2,00
Transport	2,50	2,25	1,33	1,67
Energy Efficiency	2,50	2,75	1,25	2,33
Energy Security	2,75	2,75	2,25	2,50
Techno-Economic Modelling	2,25	1,75	1,00	2,33
SETIS *	1,75	2,25	2,50	2,25
Hydrogen & Fuel Cells	1,00	1,25	1,25	1,33
Biofuels	3,00	2,50	1,50	2,00
Overall Average	2,09	2,25	1,60	2,05

* Strategic Energy Technologies Information System

The scores in table I give rise to the following Panel comments.

1. As reflected by the scores for 'Policy support' and 'Added Value', the Panel appreciates the important and valuable role of the TA E&T units in providing essential scientific support to the EU policy makers and recognizes the importance of ensuring consistency of data provided by their national counterparts.
2. High scores for uniqueness and cost effectiveness reflect the Panel's appreciation for quality data and models that are highly regarded by external parties. The lower scores reflect the Panel's view that in a number of areas more use could be made of opportunities to participate in open scientific platforms, to share

expensive facilities/models with others, and to work more closely with National counterparts.

3. The low 'Policy Support' score for PV reflects the Panel's view that this work is indeed less relevant to EU policy development. The low scores for Hydrogen & Fuel Cells reflect that this work is not well aligned with the JRC mission and competes with massive efforts by academia and industry. For good order, the low scores do not reflect low appreciation of the work done or of the quality of staff and/or facilities.

4. INPUT TO FUTURE ACTIVITY PORTFOLIO

The Panel was invited by TA E&T management to contribute to the forward plans for each of the units and to identify additional areas of activities for inclusion in the TA E&T strategy. Key inputs can be summarized as follows.

1. Having a strong techno-(socio-)economic modelling/analysis competence is key to the future of the TA. This competence could also be leveraged by the Commission in identification of key areas for future policy.
2. The strong technology foresight capabilities of the TA E&T could be leveraged more to identify emerging important areas of research and innovation and also existing programs that may be de-emphasized.
3. In the area of smart grids (including energy storage) the Panel advises focusing on trans-national modelling of systems, alignment of national policies (including removing obstacles), and development of new business models to enable the development of smart grids;
4. In the area of Carbon Capture and Storage (CCS), we believe the focus should be CO₂ storage (monitoring of leakage, uniform European approach to CCS risk assessments) rather than support to CO₂ capture technology development. Hence, the current activities in the area of gasification and CO₂ capture could be de-emphasized.
5. TA E&T can play an important role in stimulating innovation through actively considering innovation aspects of norms, standards and policies. This role asks for more in-depth understanding of innovation theory and practices and for influencing science and technology development networks and consortia. Part of the competitive work program can also be driven by the innovation needs of its customers

Recommendation.

TA E&T management to consider the Panel's findings and observations in developing the TA E&T strategy and annual plans.

5. PEOPLE AND ORGANIZATION

New organization

The Panel is supportive of the new organization driven by thematic areas which will enable delivery of integrated and comprehensive support to 'policy customers' in complex policy areas. To make sure that the organization lives up to expectations, it is essential to have single point accountability of the TA lead for strategy implementation and for the interface with the customer (planning, delivery, evaluation of TA policy services). Recruitment and career development of staff has to be the co-responsibility of the TA lead and the Institute manager with roles being clearly defined and agreed. Experience with similar organizational changes teaches that change management is critical to winning the hearts and minds of staff.

Recommendation:

TA management work with JRC management to have clarity of critical rules, work processes and desired change in staff culture.

People

As argued in Chapter 1, accomplishing the Mission requires staff with strong and broad scientific backgrounds, strong scientific networks, and a keen interest in not only techno-economic issues but also socio-economic issues. This requires attraction of seasoned science generalists in addition to the current practice of hiring young scientists. Current recruitment procedures do not give the TA E&T enough flexibility to attract these generalists.

Recommendation:

- 1. TA E&T management to articulate the HR tools (attraction, retainment, training, re-deployment) it needs to effectively respond to the changing needs of its customers and of the wider group of stakeholders.*
- 2. JRC management to discuss these needs with the European Commission*

Performance indicators

IE management uses a system of performance indicators to track delivery of key aspects of its plans. It is recommended to add to these indicators objective measures of the quality of the output in particular in the areas of policy support and scientific knowledge (e.g. number of citations or impact factor in ISI registered journals). In addition, it is important to track the extent to which TA E&T wins the

hearts and minds of staff. It is also recommended to investigate benchmarking opportunities with other institutes.

Recommendation

IE management to extend the set of performance indicators such as to objectively measure progress against plan for all relevant aspects of the Annual Plan.

ANNEX I:

List of Actions in the Thematic Area Energy and Transport

Core Actions		
Energy	CLEANCAB	Clean Coal and Biomass
	ASSETS	Assessment of Energy Technologies and Systems
	FCPoint	Fuel Cell Power Chain Integration and Testing
	HYAST	Hydrogen storage and Safety
	BIOS	Quality and Performance of Biofuels
	SOLAREC	Photovoltaic Solar Electricity (Resource, Performance & Value)
	REEF	S&T Ref. System for Renewable Energy and End-Use Efficiency
	SES	Security of Energy Systems
	SOS	Security of Supply
	SYSTEM	Energy Systems Technology Modelling
Transport	CI-TRANS	Critical Infrastructures in Transport and Distribution Systems
	ETEA	Energy and Transport Economic Assessment
	TransTech	Transport Technologies and Emissions
	AIRMODE	Air Quality and Transport Modelling
	SusTrans	Sustainable Transport
Associated Actions (from other Thematic Areas)		
	APE	Air Pollution and Effects
	ECCAIRS	Multimodal Public Transport Safety

ANNEX II: Terms of Reference

TERMS OF REFERENCE

for the establishment of a panel of experts to carry out a thematic evaluation of the Joint Research Centre's activities in the area of *Energy and transport*

1 Introduction

The Seventh Framework Programme of the European Community (EC)¹, the Seventh Framework Programme of the European Atomic Energy Community (Euratom)² and in particular their two specific programmes^{3,4} for the direct actions carried out by the Joint Research Centre (JRC), specify the need to carry out interim and ex-post evaluations of the JRC's actions under these programmes.

Previous evaluations of the JRC targeted both EC and Euratom framework programmes at the same time with all scientific themes in one single exercise. Since the Ex-post FP6 evaluation of the JRC activities in 2008 recommended⁵ changing to smaller evaluations focusing at thematic level instead; the JRC decided to follow suit and organise its interim evaluations of FP7 based on a series of thematic evaluations.

The ex-post FP6 evaluation already pointed out that the policy-theme structure that FP7 uses for the JRC work programme is not appropriate for a thematic evaluation. Moreover, it

¹ Decision (1982/2006/EC) of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013), Official Journal of the European Union L 412/1;

² Council Decision (2006/970/Euratom) of 18 December 2006 Concerning the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011), Official Journal of the European Union L 400/60;

³ Council Decision (2006/975/EC) of 19 December 2006 concerning the Specific Programme to be carried out by means of direct actions by the Joint Research Centre under the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013), Official Journal of the European Union L 400/368;

⁴ Council Decision (2006/977/Euratom) of 19 December 2006 concerning the Specific Programme to be carried out by means of direct actions by the Joint Research Centre implementing the Seventh Framework Programme of the European Atomic Energy Community (Euratom) for nuclear research and training activities (2007 to 2011), Official Journal of the European Union L400/434;

⁵ Ex-post Evaluation, Joint Research Centre Direct Actions in the 6th Framework Programmes (2002-2006), Final Report September 2008 and the response from the Commission: "Ex-post evaluation of the Direct Actions under the Sixth Framework Programmes for Research Technology Development and Demonstration carried out by the Joint Research Centre", SEC(2008)3105

strongly suggested that the JRC should make “*smaller, competence or sector-oriented external evaluations*”. The JRC decided to follow this recommendation and introduced the term “thematic evaluations” for these smaller evaluations, to indicate a distinction from “programme evaluation”.

The JRC is currently developing a corporate strategy around a number of core themes as recommended in the ex-post FP6 evaluation and the organisation is gradually converging towards a future programme structure. Without pre-empting the structure of the corporate strategy, the JRC adopted the following working structure to facilitate “thematic evaluations” that will feed into the interim “programme evaluation”:

- *Energy and transport*
- *Sustainable management of natural resources*
- *Contribution to the Lisbon agenda*
- *Safety of food and consumer products*
- *Security and antifraud* (all defined through the EC framework programme)

A sixth thematic area in the JRC work programme is that of *Nuclear safety and security* funded through the Euratom framework programme. In February 2010 a panel of external experts finalised the interim evaluation of the JRC direct actions in the Euratom FP7 *de facto* completing a thematic evaluation in the field of nuclear safety and security.

These are the terms of reference for a panel of experts set up by the JRC to carry out a thematic evaluation of its activities in the field of *Energy and transport* in the context of an overall EC FP7 interim evaluation of the JRC's direct actions. This panel of experts will analyse existing evidence on the activities of the JRC, and prepare a final report in which it will provide conclusions and recommendations as regards the JRC's implementation of its activities related to Energy and transport under the EC FP7.

2 Mandate, deliverables and timetable

2.1 Legal basis

The EC FP7 legal text¹ contains the provision for an interim review in the Article 7.2, which states: “*No later than 2010, the Commission shall carry out, with the assistance of external experts, an evidence-based interim evaluation of this Framework Programme and its specific programmes building upon the ex-post evaluation of the Sixth Framework Programme. This evaluation shall cover the quality of the research activities under way, as well as the quality of implementation and management, and progress towards the objectives set.*”

The relevant ex-post evaluation referred to in the legal basis is the ex-post FP6 evaluation of the JRC⁵.

Specific inter-institutional and Commission requirements further frame this evaluation; in particular those related to the Financial Regulation (Article 27.4), the Implementing Rules (Article 27.3)⁶ and evaluation standards⁷.

⁶ Council Regulation (EC, Euratom) No 1995/2006 of 13 December 2006 amending Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities (OJ L 390 of 30.12.2006, p. 1) and Commission Regulation no. 478/2007 of 23 April 2007, amending Commission Regulation no. 2342/2002 (OJ L 111 of 28.4.2007, p.1)

2.2 Objectives and scope

The objective of the panel will be to carry out a thematic evaluation of the research and associated policy-support activities of the JRC in the field of *Energy and transport* that establishes fact-based answers to the evaluation questions set out in section 2.3.

The thematic evaluation takes place out in the context of the interim evaluation of EC Seventh Framework Programme for research and training activities (2007 to 2013). Together with the other thematic evaluations this evaluation will be subject to a meta-evaluation that will allow the European Commission to assess the continued relevance of the framework programme's objectives, and to review initial outputs and the early effects of the programme.

2.3 Evaluation questions

This interim evaluation covers JRC activities carried out under the Seventh Framework Programme EC (2007-2013) in the thematic area of *Energy and transport*. It should provide substantive answers to the evaluation questions listed hereafter:

Rationale/Relevance

- i) To what extent are the objectives and the approach of the activities in this thematic area pertinent to the needs and problems European of policy makers?
- ii) To what extent is the policy support work based on relevant, sound and innovative science results?
- iii) To what extent do the JRC activities in this area provide (Community) added value
- iv) How does this added value compare to the baseline options (i.e. no EU-policy/no change from FP6 to FP7)?

Implementation

- v) To what extent does the JRC has the competences required for achieving its objectives in this thematic area set in the context of the EC FP7?
- vi) Is the balance between the different activities in this area appropriate and is the level of funding adequate to achieve the objective set in the context of the EC FP7?
- vii) Are the facilities of the JRC appropriate for achieving its objectives in this thematic area set in the context of the EC FP7?
- viii) To what extent does the JRC run its activities in this thematic area in a cost-effective manner?
- ix) Are the arrangements for planning, monitoring, reporting and evaluation appropriate and effective? Are they transparent?
- x) To what extent does the JRC give a follow-up to the recommendations of the JRC FP6 Ex-post evaluation ("King-report")

Achievements and performance level

- xi) What are the indications in the early outcomes of the activities that the overall and specific objectives of the EC FP7 can be met?
- xii) Referring to the consideration of the Council Decisions ("whereas" clauses) to what extent do the JRC's FP7 direct actions in this area:

⁷ "Responding to Strategic Needs: Reinforcing the use of evaluation", SEC(2007) 213.

- a) Provide customer driven support to European policy makers?
 - b) Engage in international cooperation activities for the purpose of implementing the JRC programme?
 - c) Promote the integration of New Member States' /Candidate Countries' organisations and researchers in its activities in particular on the implementation of the S&T components of the *acquis communautaire*?
- xiii) To what degree do the JRC activities in this thematic area support the creation of the European Research Area, e.g. through provision of access to JRC's facilities and contribution to the mobility and training of (young) researchers?
 - xiv) To what degree did the JRC participate in networking activities under the indirect actions of FP7 and what is the level of the network partners?
 - xv) From an expert point of view, how does the work in this thematic area compare to similar work done at top organisations in the relevant fields?

Forward looking

- xvi) What options should be explored for the future orientation of the thematic areas and the overall non-nuclear activities of the JRC in view of the EU 2020 strategy⁸?

2.4 Milestones and deliverables

The panel will start the thematic evaluation with a kick-off meeting to agree on the detailed workings of the panel.

The panel will make an advanced draft final report available for the interim evaluation of the JRC direct actions in FP7 on 15 September 2010 at the latest. The draft report will contain the main findings and recommendations of the thematic evaluation.

The panel delivers a final evaluation report to the JRC on the "thematic evaluation of the Energy and transport activities of the JRC in the EC FP7 programme" in October 2010. The report will count 20 to 30 pages, excluding annexes, with an analysis of findings, a set of conclusions and recommendations based on evidence. It should be prefaced by an executive summary, not exceeding 5 pages.

The JRC will make the findings of the report publicly available.

Meetings

The panel will meet up to a maximum of three times between May and September 2010.

3 Operation of the Panel of Experts

3.1 Composition, identification and selection of experts

The JRC Director General, in close consultation with the Board of Governors, will select five acknowledged experts in the areas of *Energy and transport* and compose a panel that will carry out an independent and objective analysis of the pertinent parts of the JRC Work Programme. The panel will include a highly qualified rapporteur.

⁸ EUROPE 2020, A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final

The experts will be appointed on the basis of the criterion that they have a high level of expertise in the fields of research and technological development in particular, as attested by higher education qualifications of at least doctoral level and/or proven by having won prizes and awards at national, European and/or international level and/or as evidenced by experience and skills which are widely recognised.

For the composition of the panel attention will also be paid to a balanced representation which ensures expertise in the JRC's *Energy and transport* related activities, affiliation to the academic, public service non-governmental organizations and industry community, a certain geographical spread and gender balance. In addition, it will be an asset if some experts have a proven ability to assess the societal dimension and strategic relevance of the framework programme and the specific programmes.

3.2 Working method

The evaluation theme *Energy and transport* comprises the scientific actions indicated in Table 1 given at the end of these terms of reference.

The panel of experts will base their findings on a desk analysis of achievements during the first part of FP7, presentations of selected activities, interviews with selected JRC managers, staff, clients and stakeholders and visits of selected JRC sites. Section 0 specifies the full "evidence base" that will be made available to the experts in electronic form (through access to a dedicated web-site) in the course of May 2010. Upon request the JRC will provide hard copies of the general information documents.

At the kick-off meeting the chair decides on the detailed working method for the thematic evaluation. The chair will see to it that the panel members and the supporting expertise are best exploited in the area of the evaluation theme *Energy and transport*. The panel will hold up to three meetings to come to conclusions and formulate their recommendations.

The chair, in consultation with the JRC, will establish the rapporteur, who takes responsibility for preparing (compiling and editing) the final report, based on all members' written contributions and of relevant material and events identified by the panel members and/or the JRC. The rapporteur will highlight and exploit main points of reports presented by experts, create a PowerPoint presentations where necessary and draft summaries of the discussions held at meetings.

The JRC will make staff available to help organising and support the work of the panel. The staff will also provide input for the production of the report, notably through the collection and distribution of the material for the desk analysis. They will be in regular liaison with the members of the panel and notably the chairperson and the rapporteur to ensure the smooth running of the work of the panel. They will attend the meetings to provide appropriate information and orientations. The evaluation will be designed and carried out in line with the relevant Commission standards for evaluation⁷ and subject to the quality assessment criteria.

An indicative time table of the evaluation can be found in the annex.

3.3 Expert support and evidence-base

The panel will carry out its activities through an independent, robust, evidence-based process. At the discretion of the chairperson, appropriate independent experts can be invited to participate in discussing specific issues, including participation to meetings as required. As evidence base the JRC will provide the panel with all necessary information, in particular:

General information concerning

- The baseline against which the assessment will be made (Framework Programme, Specific Programmes, Multi-Annual Work Programme)
- General reports on progress (e.g. Annual Reports, Annual Activity Reports, results of Customer Surveys)
- Reports of previous FP Evaluations and Commission replies;
- Relevant figures on human resources and budget implementation
- EUROPE 2020, A strategy for smart, sustainable and inclusive growth

Specific information

- Action reports with achievements of each "Energy and transport" action in the JRC work programme during the reporting period
- Statistical information on the implementation of the research activities (i.e. publications, patents, etc.)
- Detailed publication data from the JRC's corporate publication repository (PUBSY)
- Synthesis Report on the JRC Infrastructures, JRC internal report
- JRC Strategy 2010-2020

The panel may want to have the possibility to interview selected representatives of the clients and stakeholders (e.g. European policy makers, beneficiaries of third party work)

3.4 Credits

The physical and intellectual works generated by the expert's assignment will remain the property of the Commission. The experts of this panel undertake not to use these works outside this assignment without the previous written agreement of the Joint Research Centre.

The published report will acknowledge the contributions of the members of the panel.

3.5 Administrative and financial aspects

The JRC will reimburse travel costs according to the division of labour and travel obligations amongst the panel members and according to the standard rules applied by the Commission. The total budget for the members of the panel (expert fees) and the costs of travel and daily/accommodation allowance are provided in the JRC's institutional budget for 2010.

Members of the panel will receive an appointment letter providing for the payment of fees of €450 per day, for a number of days currently estimated at maximum 12 days for the chairperson/rapporteur, and 8 days for the other panel members. The preparation of such an appointment letter will require the registration of the experts concerned in the Commission's relevant database.

ANNEX III: Reference documents for the panel

- [1] Terms of Reference for the establishment of a panel of experts to carry out a thematic evaluation of the Joint Research Centre's activities in the area of Energy and transport
- [2] List of panel members and contacts information
- [3] Actions of the Area Energy and Transport
- [4] Descriptions of individual JRC Actions of the Thematic Area
- [5] Facts and Figures "Energy and Transport" activities of the Joint Research Centre
- [6] The Council Decision for the 7th Framework Programme EC
- [7] The Council Decision for the 7th Framework Programme of the of the European Atomic Energy Community (Euratom)
- [8] The Council Decisions for the JRC Specific Programme in the EC FP
- [9] JRC Multi Annual Work Programme 2007-2013
- [10] The Joint Research Centre (JRC) Annual Management Plan 2007
- [11] The Joint Research Centre (JRC) Annual Management Plan 2008
- [12] The Joint Research Centre (JRC) Annual Management Plan 2009
- [13] Joint Research Centre Annual Report 2007
- [14] Joint Research Centre Annual Report 2008
- [15] Joint Research Centre Annual Report 2009
- [16] Europe 2020 A European strategy for smart, sustainable and inclusive growth
- [17] Ex-post Evaluation of JRC Direct Actions in the 6th Framework Programmes 2002-2006. Final Report, September 2008
- [18] Joint Research Centre: Robust Science for Policy Making A guideline towards integrity and veracity in scientific support and advice – Document CA(06)55
- [19] Interim assessment of JRC infrastructures and facilities and development strategy towards 2020
- [20] Description and purpose of the JRC Task Forces and Thematic Programmes
- [21] JRC Customer Satisfaction Survey 2008 Final report

ANNEX IV: Presentations of TA E&T Activities

Presentations of the area Energy and Transport

- JRC strategy area Energy and Transport
- JRC activities in the area Energy & Transport

Presentations of specific activities

- SETIS SET Plan
- Energy Security
- Photovoltaic solar electricity
- Hydrogen and fuel cells
- Renewable energies
- Biofuels thematic programme
- Economics of Climate Change, Energy and Transport
- Clean and Efficient Transport
- Clean Coal
- Staff and Budget figures

ANNEX V: List of Experimental Facilities visited

Ispra

- European Solar Test Installation (ESTI)
- Vehicle Emissions Laboratory (VELA)

Petten

- Fuel cell test facility
- High pressure gas testing facility
- Biomass and coal research gasifier facility
- Hydrogen sensor testing facility
- Solid-state hydrogen storage testing facility
- High Flux Reactor (HFR)