

Interim Assessment of the Research PPPs in the European Economic Recovery Plan

Energy-efficient Buildings

Factories of the Future

European Green Cars Initiative





EUROPEAN COMMISSION

Directorate-General for Research and Innovation
Directorate G - Industrial Technologies
Unit G.2 - New forms of production

Contact: *J. L. Vallés*

*European Commission
Office CDMA 00/70
B-1049 Brussels*

*Tel. (32-2) 29-91757
Fax (32-2) 29-58046*

E-mail: jose-lorenzo.valles@ec.europa.eu

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Luxembourg: Publications Office of the European Union, 2011

ISBN 978-92-79-20425-8

doi 10.2777/60324

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Printed in Belgium

PRINTED ON ELEMENTAL CHLORINE-FREE BLEACHED PAPER (ECF)

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Glossary

AIAG:	Ad-hoc Industrial Advisory Group
CSF:	Common Strategic Framework
EC:	European Commission
ECHORD:	European Clearing House for Open Robotics Development (FP7 project 231143)
ECTF:	European Clean Transport Facility
ECTP:	European Construction Technology Platform
EeB:	Energy-efficient Buildings (Research PPP)
EPoSS:	European Technology Platform on Smart Systems Integration
ERTRAC:	European Road Transport Research Advisory Council
FoF:	Factories of the Future (Research PPP)
FP7:	Framework Programme 7
ETP:	European Technology Platform
GC:	Green Cars (Research PPP)
Manufuture:	European Manufacturing Technology Platform
OEM:	Original Equipment Manufacturer
PPP:	Public Private Partnership
RTO:	Research and Technology Organisation
SmartGrids:	European Technology Platform for the Electricity Networks of the Future
SME:	Small and Medium Sized Enterprise
TTG:	Time To Grant

Executive Summary

This report details the results of an interim assessment of the three running research PPPs established under the European Economic Recovery Plan. The overall result of this assessment is positive, although it is noted that the early nature of the review, with no project deliverables yet being available, means that much of the evidence is based on the attitudes and views of stakeholders, rather than quantitative data. Nevertheless, the initial signs are good and the research PPPs are seen as a useful scheme for organising Research and Innovation topics with direct industrial utility and the model could be developed further in the Common Strategic Framework (CSF).

The PPPs have all been successful in engaging top industrial companies, SMEs and research organisations within Europe, increasing significantly the large industry and SME participation, suggesting that they are seen as relevant to the needs of industrial companies while also focusing on pertinent research issues.

The three research PPPs were targeted at providing research and innovation support to strategically important industries at a time when industrial funding of such actions was in danger of being cut back due to the economic crisis. However, while the review found that the research PPPs have been an effective response to the crisis, it is unlikely that they will achieve the aim of making a difference to the competitiveness of European industry unless they are given longer term support in the CSF. One criticism from industrial stakeholders is that the current level of funding is not sufficient given the economic importance of the industries they are targeting. To make a significant impact on the world stage in terms of European competitiveness, the total combined public and private expenditure in this area would need to be considerably increased.

The research PPPs have facilitated a closer working relationship between the Commission and industry in the setting of goals and longer-term research programme objectives, which have been defined in the Multiannual Roadmaps prepared by the Ad-Hoc Industrial Advisory Groups. This has allowed industry to commit to longer-term strategies for research investment.

The set-up and implementation of the research PPPs has been achieved by ad-hoc and flexible arrangements, rather than taking the Joint

Technology Initiatives (JTIs) approach of establishing legal entities. Whilst this has permitted the fast start-up of activities and rapid implementation of programmes, the understanding of the structures and mechanisms in the wider stakeholder community needs to be improved.

Successful features of the research PPPs are the efficiency of the calls for proposals, with improved success rates and shorter time to grant compared with FP7 as a whole, and the involvement of multiple FP7 themes.

Nevertheless, to meet the needs of industry and in particular to engage new organisations in the process, further work needs to be undertaken to streamline the processes associated with PPPs, maintaining the efficiency of the calls and unifying the procedures across the various participating themes.

Whilst the research PPPs were specifically set up to be relevant to the needs of industry, they still focus on pre-competitive activities and funding schemes of FP7 instruments. To properly address the industrial needs relating to global competitiveness, the research PPPs need to support activities relating to the “Valley of Death”¹, in particular issues where proven concepts and prototypes fail to progress to successful wealth creating products and services. While some of the Valley of Death issues require commercially sensitive, proprietary actions, others, such as proving of concepts for European added-value on an industrial scale and the development of early markets, can be issues that can be tackled pre-competitively. The research PPPs need to include innovation actions that address these near market issues.

Finally, the review found that the dissemination activities associated with research PPPs need to be strengthened. It is particularly relevant due to the nature of the industrial landscape in Europe, where there are many SMEs whose output critically affects the competitiveness of Europe, but only a small proportion of which are actively engaged with FP7 programmes. Therefore, to reach this wider target community more focussed actions need to be undertaken and industry, and particularly the industrial associations in the research PPPs, can play a vital role.

¹ See Mid-Term Report of the Expert Group on KETs (February 2011)
http://ec.europa.eu/enterprise/sectors/ict/key_technologies/kets_high_level_group_en.htm

The Group of Experts formulated five main recommendations, summarised below. Each recommendation has an associated set of actions which are further detailed in the conclusions section.

Recommendation 1: Continue and further develop the research PPP initiatives in the CSF and enlarge their scope to a full programme concept.

In developing the concept, attention should be paid in particular to mechanisms to monitor on-going projects and the continued relevance of the strategic goals, as well as setting up common dissemination actions to maximise the impact of projects, particularly to the wider industrial community. The 3 PPPs set up under the European Economic Recovery Plan should be continued.

Recommendation 2: The governance and procedures of the research PPPs (particularly regarding the Commission - industry interface) should be formalised and made more transparent.

The current governance arrangements, whilst clearly working in the current PPPs, leave uncertainties about the role of the various parties and the transparency of the process. In particular the roles of the Ad-Hoc Industrial Advisory Groups and the Industrial Associations related to the PPPs could be formalised, while still supporting flexible procedures.

Recommendation 3: The procedures for administration and management of the research PPPs should be further streamlined and should allow for appropriate flexibility in the execution of the programmes and projects.

To maintain industrial appeal and relevance for these actions, research PPPs must have efficient, attractive and relevant procedures and administration with a light overhead for industrial participants. The different themes involved in the research PPPs should adopt a unified approach across a PPP and to ensure the particular utility of the research PPPs to industry, they should avoid the bureaucracy associated with JTIs².

² JTI Sherpas' Group Final Report "Designing together the 'ideal house' for public-private partnerships" (January 2010) ftp://ftp.cordis.europa.eu/pub/ftp7/docs/jti/jti-sherpas-report-2010_en.pdf

Recommendation 4: The research PPP Innovation actions should be strengthened with more emphasis on actions which support transfer of new concepts to the market.

To maintain the industrial relevance, the research PPPs need to continue to develop ideas and concepts with high potential impact and also actions that support the transfer of these concepts towards deployment in the market.

Recommendation 5: Research PPP actions and activities need to focus on strengthening the overall impact and dissemination of the project results.

One of the objectives of the research PPPs is to enhance European industrial competitiveness. It is therefore essential that measures are taken to improve the overall impact and dissemination of the project results that are relevant to industry and society.

1. Introduction

This report constitutes a first, interim assessment, undertaken by a Group of Experts, of the three research Public Private Partnerships (PPPs) launched in November 2008 as part of the European Economic Recovery Plan³. The research PPPs support research, development and innovation in manufacturing, construction and the automobile industries, which had seen demand plummet as a result of the financial crisis and which also face significant challenges in the transition to the green economy:

- In the manufacturing sector, a €1.2 billion “**Factories of the Future (FoF)**” initiative to promote the competitiveness and sustainability of European manufacturing industry
- In the construction sector, a €1 billion “**Energy-efficient Buildings (EeB)**” initiative, to promote green technologies and the development of energy-efficient systems and materials in new and renovated buildings with a view to reducing radically their energy consumption and CO₂ emissions.
- In the Automotive sector a “**Green Cars (GC)**” initiative to improve the sustainability of all European road transport and accelerate the move towards the electrification of road and urban transport. The indicative budget for this initiative is €5 billion, including a €1 billion budget for research activities and the rest in support measures from the European Investment Bank under its European Clean Transport Facility.

The aim of this interim assessment is to review the research PPPs with respect to their:

- **Relevance**: whether the assumptions underlying their establishment are still valid;
- **Effectiveness**: progress towards their objectives;
- **Efficiency**: good implementation of their management and operation;
- **Research Quality**: the extent to which the research PPPs support world-class research that helps propel Europe to a leadership position globally.

³ EC COM(2008) 800

While these research PPPs have been set up during the final years of the FP7 programme, the review also addresses whether they can effectively fulfil their objectives in this timescale and the extent to which the research PPP model may evolve as an effective model for contributing to the EU2020 strategy.

The report details the status of the current implementation of the research PPPs by analysing statistical data, taking evidence from both published information and a wide range of interviews with representatives of the research PPPs including industrial participants, Research and Technology Organisations (RTOs), representatives of national public authorities, and staff of the European Commission. It also takes into account the conclusions and recommendations from the conference "From Economic Recovery to Sustainability " in April 2010, the Competitiveness Council in May 2010 and the workshops organised by the EC in November 2010 with all funded projects from the first calls of the EeB and FoF PPPs.

The Group of Experts was appointed by the European Commission and operated independently according to its Terms of Reference. The Panel is comprised by a mix of experts coming from different fields and backgrounds, some with specific expertise in the technological content of the research PPPs and some with general expertise in research and innovation programmes, strategy and management. Details are given in Annex A.

2. Objectives of the FoF, EeB & GC Public-Private Partnerships

The three research Public Private Partnerships launched by the EU as part of its European Economic Recovery Plan are funding research and innovation to revitalise the European manufacturing, construction and automotive industries. The Research PPPs were seen as an effective way of mobilising public and private resources for research activities to stimulate a strong resurgence of these sectors from the crisis, giving confidence to industry to invest in long-term research even when faced with short-term economic problems.

Although the research PPPs were implemented as a result of the European Economic Recovery Plan, the technological goals and ideas of all three initiatives took advantage of the Strategic Research Agendas that had been under development for some time within the European Technology Platforms related to these industry sectors. For instance, the first position paper on clean mobility with recommendation for actions had been conjointly published by the EC and the European Technology Platform (ETP) EPoSS the year before the crisis and the launch of the European Economic Recovery Plan.

The research PPPs were implemented by co-ordinating research activities across several FP7 themes and interacting with industry through the creation of Ad-hoc Industrial Advisory Groups (AIAGs). To allow research on priority topics to start-up rapidly, the first series of cross-thematic calls were already published in July 2009.

The experience gained with the first actions is used to develop the longer-term approach and strategy; in parallel the partners are exploring other ways to strengthen the public-private partnerships.

2.1. Setting up the European Economic Recovery Plan PPPs

The objectives for the three partnerships between the public and private sectors launched as part of the European Economic Recovery Plan were:

- *In the manufacturing sector a 'Factories of the Future' initiative with the objective of assisting EU manufacturers across all sectors, particularly SMEs, to adapt to global competitive pressures by increasing the technological base of EU manufacturing through the development and integration of the enabling technologies of the*

future, such as engineering technologies for adaptable machines and industrial processes, ICT and advanced materials

- *In the construction sector, a 'European energy-efficient buildings' initiative, to promote green technologies and the development of energy-efficient systems and materials in new and renovated buildings with a view to reducing radically their energy consumption and CO₂ emissions. The initiative should have an important regulatory and standardisation component and would involve a procurement network of regional and local authorities.*
- *In the automotive sector, a 'European Green Cars' Initiative, "involving research on a broad range of technologies and smart energy infrastructures essential to achieve a breakthrough in the use of renewable and non-polluting energy sources, safety and traffic fluidity"*

Immediate steps were taken to implement the research PPPs through the creation of Ad-hoc Industrial Advisory Groups (AIAGs), a key feature of the research PPPs, which facilitate the strategic dialogue between the Commission and industry. In case of the construction and manufacturing sectors, dedicated industrial research associations, representing the private side of the partnership have been created.

On 30th March 2009, Commissioner Potočnik, Commissioner for Science and Research, and high-level representatives of industry met to review progress and discuss the priorities for the implementation of the research actions. It was agreed⁴ that the first steps for these partnerships would be the publication of cross-thematic calls for research projects by the end of July 2009, funded by FP7.

These research PPPs are effectively new cross-thematic programmes in that they bring together research topics from several different Themes. They differ from the current JTIs in that they use the standard FP7 rules which facilitated a fast start-up and short time for implementation. The research PPPs differ from the standard FP7 Co-operation programme Themes in the engagement of industry and the Commission during the discussions to prepare the annual work programme and call formulation and the co-ordinated multi-theme nature of the calls. However, the Commission – Industry partnership has not been officially formalised.

⁴ IP/09/520

At the Competitiveness Council meeting on 26th May 2010⁵, it was concluded that research PPPs are crucial in addressing the grand European socio-economic challenges and have the potential to foster productivity and sustainability by focusing on a limited number of industrial sectors, selected on the basis of their potential contribution to European GDP and employment.

The Council highlighted the potential importance of research PPPs but also noted the need for, amongst other things, a clear definition of the public and private roles, simple and transparent procedures, monitoring of the implementation by independent observers and the long-term stability of the running research PPPs.

2.2. Preparing the Multi-Annual Roadmaps and long-term Strategy

To focus the consultation process each of the three research PPPs produced Multi-Annual Roadmaps, outlining the vision, strategic research challenges facing each of the industrial sectors and priorities for the research actions. Although these Roadmaps were created specifically for the research PPPs, they drew on key elements from existing Strategic Research Agendas (SRAs) already developed by relevant European Technology Platforms (ETPs). However, by incorporating elements and themes from other domains, these Roadmaps were able to address a broad area of sector needs not covered by any one ETP and the interests of several Themes within the European Commission.

In the case of Factories of the Future, four strategic sub-domains were identified, namely:

- **Sustainable manufacturing**
- **ICT-enabled intelligent manufacturing**
- **High performance manufacturing**
- **Exploiting new materials through manufacturing**

With respect to Energy-efficient Buildings, five main research challenges underpin the roadmap. These are:

- **Energy-efficient refurbishment of existing buildings**
- **Neutral / energy-positive new buildings**
- **Energy-efficient districts/communities**
- **Horizontal technological aspects** (covering such aspects as the lack of cost-effective technical solutions for

⁵ Council of the European Union. Conclusions concerning various issues related to the development of the European Research Area. 3016th COMPETITIVENESS Council meeting. Brussels, 26 May 2010

demand reduction and the optimal use of renewable energy)

- **Horizontal organisational aspects** (covering such aspects as energy demand effects resulting from individual behaviour and social and economic development)

For Green Cars the focus of the roadmap has three strategic pillars, namely:

- **Electrification of road transport**
- **Long distance road transport**
- **Logistics and co-modality** (covering efficient logistics both within and between cities and the efficient interfaces between transport systems)

Further details of the challenges and proposed implementation can be found within the respective roadmaps^{6,7,8}

2.3. Research PPP Budgets

Based on matched funding from FP7 and the private sector, the overall indicative research budgets of the three research PPPs for the period 2010-2013 amount to €3.2 billion, as detailed in Table 1⁹.

Budgets (M€)	NMP	ICT	TRANSPORT	ENERGY	ENV	TOTAL FP7	TOTAL PPP
Factories of the Future	400	200				600	1,200
Energy-efficient Buildings	250	100		125	25	500	1,000
Green Cars	60	120	220	50	50	500	1,000
TOTAL	710	420	220	175	75	1,600	3,200

Table 1: Indicative funding distribution amongst the various FP7 Cooperation Themes involved in the research PPPs.

⁶ EUR 24282 – Factories of the Future PPP Strategic Multi-annual Roadmap

⁷ EUR 24283 EN - Energy-Efficient Buildings PPP: Multi-Annual Roadmap and Longer Term Strategy

⁸ European Green Cars Initiative PPP Multi-annual roadmap and long-term strategy

⁹ After this initial distribution, ICT additionally committed € 45 million for FoF and € 15 million for EeB

It is worth emphasising the multi-theme nature of the research PPP funding as shown in Table 1. During the period 2010-2013, the three research PPPs use the current FP7 funding schemes and the calls are published under the respective themes' work programmes. Besides the €1 billion for research activities for GC, there is a package of financial and demand-side measures totalling €4 billion provided by the European Investment Bank under its European Clean Transport Facility (ECTF). The EIB loans will support organisations carrying out research, development and innovation focusing on cleaner forms of road transport, particularly emission reductions.

2.4. Differences between research PPP and standard FP7 schemes and actions

Although the research PPPs operate under standard FP7 rules in terms of the calls and the evaluation procedures, there are significant differences in their operation and focus. Firstly, the work programmes are drawn up in close collaboration with the AIAG, aiming to align research topics to the current needs of the respective industry and focussing on outcomes which could result in market available systems within 3-5 years, albeit that the research topics are still pre-competitive. The emphasis on the speed of delivery to the market is regarded by industry as a highly beneficial aspect of the research PPP actions. Furthermore, the calls are co-ordinated (but not integrated) across multiple themes and steps have been taken to reduce the time to grant, compared with other FP7 themes, recognising the time horizons of the industrial research actions.

There is a generally positive consensus that the coordination between the Commission and industry representatives in the AIAG has led to better defined objectives associated with the Multi-Annual Roadmaps, a substantial simplification, increased rate of success, reduced time to contract, increased participation of industry and an increased share of successful participation of SMEs.

These research PPPs provide new methods of Commission and industry interaction and differ from, for example, other public-private partnerships like existing JTIs as they have not constituted any Joint Undertaking between the public and private parties.

3. Implementation of the Research PPPs

The sector-related European Technology Platform (ETP) Strategic Research Agendas were important contributions prior to the preparation of the research PPP Multi-Annual Roadmaps. The European Technology Platforms were launched from 2003 onwards, and in particular, the ECTP for construction, Manufuture for manufacturing and EPoSS, ERTRAC and Smartgrids for the automotive industry provided the broader vision and forum on which to base the research PPPs.

Although each research PPP had this ETP-based preliminary work as a starting point, the actual research PPP Roadmaps were drafted and finalised by the respective AIAG, in consultation with all the relevant stakeholders and the Commission services.

3.1. Governance, operational organisation and plans

The main difference from business as usual under FP7 is the creation of the AIAGs. There is one AIAG per PPP. The AIAG is co-chaired by the Commission and the private sector and is composed of representatives of the various industries and stakeholders. The members are nominated by the private side and invited by the Commission, trying to ensure a balanced stakeholder representation. The members have strong technical and R&D programmes expertise, coming from different types of organisations (i.e. Industry, RTO and academia) and a spread of representative countries. The AIAGs have prepared the Multi-Annual Roadmaps that indicate the research priorities for the period 2010-2013 and advise the Commission on the annual work programme.

Two of the three PPPs have created non-profit industrial associations, under the umbrella of their respective Technology Platforms, to represent the private side in the PPP. The associations created are:

- The Energy Efficient Buildings Association (E2BA) for the EeB PPP.
- The European Factories of the Future Research Association (EFFRA) for the FoF PPP.

However, the present roles have evolved largely by mutual agreement and there is no written formalisation or documentation of the responsibilities and roles of the various parties. There is evidence that some external parties do not have a clear understanding of the structure, purpose and relevance of the research PPPs.

The Commission continues to be responsible for the definition of the work programme and annual calls, which are discussed and agreed in their respective themes' FP7 Programme Committees with the Member States and Associated States.

The launching of cross-thematic calls, evaluation and selection of proposals and negotiation of grant agreements follow the usual procedures of FP7, under the responsibility of the Commission.

3.2. Research PPP Calls in the Work Programmes 2010 and 2011

In the calls in Work Programme 2010, 251 proposals were submitted for the 3 research PPPs, 60 for EeB topics, 97 for FoF and 87 for GC. After the evaluation, 96 were above the threshold (38%) and from the total submitted proposals 30% (72 proposals) were retained for negotiation, which is the effective success rate in the PPP calls of the Work Programme 2010. Individual success rates were 26% for FoF, 32% for EeB and 26% for Green Cars.

In the calls under Work Programme 2011, 400 proposals were submitted for the 3 research PPPs, 120 for EeB topics, 193 for FoF and 87 for GC. Following the evaluation, 138 were above threshold (35%) and from the total submitted proposals 21% (83 proposals) were retained for negotiation, which is the effective success rate of the Work Programme 2011. Individual success rates were 19% for FoF, 20% for EeB and 26% for Green Cars.

3.3. Other Activities Carried Out

Several other activities have been carried out by the European Commission, Member States, European Technology Platforms and Industrial Associations.

The European Commission's Directorates General for Research and Innovation, Information Society and Media, Energy and Transport, organised two general Information Days in Brussels to support the preparation of proposals for the research PPPs (with all related information being available on the website of the European Commission¹⁰):

¹⁰ http://ec.europa.eu/research/industrial_technologies/ppp-in-research_en.html

- FP7 Information Day on Research PPPs - 13 July 2009

More than 800 participants attended the event. The event was opened by Commissioners Potočnik and Reding, followed by a good overview of the activities within the PPPs by industrial representatives.

The aim of this event was also to provide information about the first cross-thematic coordinated Calls related to the research PPPs. In particular, the research topics within the call and the conditions for participation were explained. Brokerage sessions followed the plenary session. The event was oversubscribed but the presentations were made available on the internet.

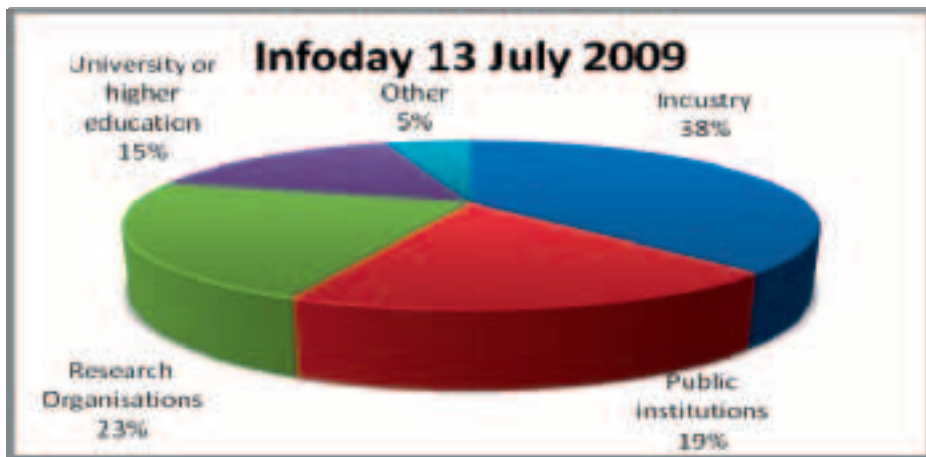


Figure 1 Participation in the July 2009 Infoday

- FP7 Information Day on Research PPPs - 9 July 2010

Around 850 participants attended the event which was opened by the new Director General of DG Research and Innovation, Mr. Robert-Jan Smits, followed by a good overview of the activities ongoing in the research PPPs by industrial representatives and having similar information sessions to the previous year.

The breakdown for participation in these two Information Days, by category of attendee, is given in Figures 1 and 2.

The research PPPs have also been presented in general information days organised by the respective themes participating. National research PPP events have been organised in several Member States.

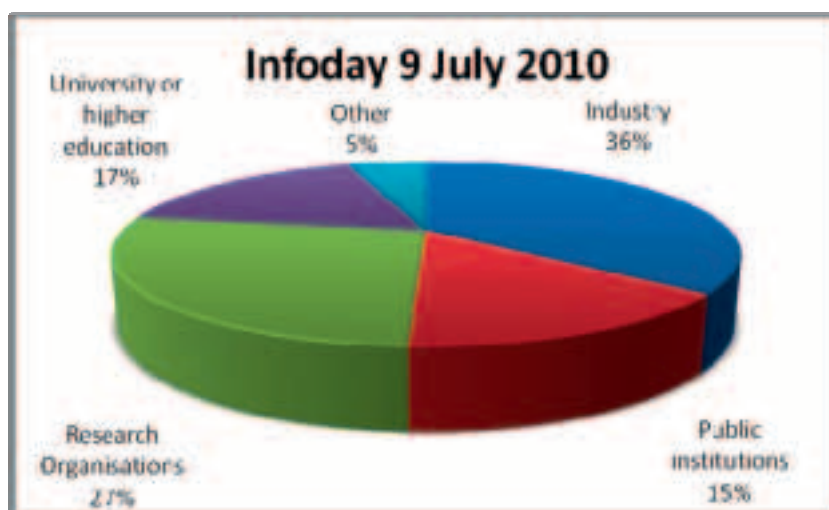


Figure 2: Participation in the July 2010 Infoday

During the Spanish Presidency of the Council of the European Union the R2S Conference - *The European RTD Framework programmes: From Economic Recovery to Sustainability*¹¹, was organised in Valencia, 13-14 of April 2010. The Technology Platforms and Industrial Associations related to the research PPP contributed to this event. Around 2000 persons attended the various sessions and meetings. Proceedings and conclusions can be found on the conference website.

Independently, the Technology Platforms and Industrial Associations have organised specific events for the promotion and dissemination of the research PPPs activities.

¹¹ <http://www.r2sconference.eu/>

Finally, two workshops have been held, one on Factories of the Future on 25th November 2010 and the other on Energy-efficient Buildings on 26th November 2010, where the first recipients of PPP grants presented their projects and the activities and early goals and expected impacts of the research PPPs were discussed.

4. Achievements and Progress Towards Objectives

The research PPPs have achieved in general terms the overall objectives of the European Economic Recovery Plan by:

- launching short-term actions supporting smart investment in research and innovation to reinforce Europe's competitiveness in the longer term;
- boosting innovation and stimulating confidence in the sectors involved;
- developing the strategic objectives of the Roadmaps

The legal framework for operating the research PPPs has been established within the standard rules and instruments of FP7. Two calls for proposals, with topics relating to the needs identified in the Roadmaps have been launched, proposals evaluated and projects selected. The networking of stakeholders has been effective and the industrial participation including SMEs has been encouraging.

The research PPPs have also contributed to the ERA and the Europe 2020 Strategy.

4.1. Effectiveness of the Research PPPs¹²

4.1.1. Public - Private cooperation and industry involvement

The launch of the research PPPs and creation of the Ad-Hoc Industrial Advisory Groups and Industrial Associations has contributed to strengthening the networking and pooling of existing knowledge and experiences of existing European Technology Platforms. It has resulted in an increased participation of industry in the calls for proposals and an increase of both public and private investment driven by an expectation of a greater and stable allocation of public funds to these sectors.

The operation of the AIAGs, in which Commission representatives of all the different themes work together with the industry representatives, has

12 Statistical data presented in this document are from the European Commission's CORDA data base, the Framework Programmes' central repository of data. Data in the FP7 Interim Evaluation report (November 2010) are taken from FP7 Monitoring Report 2009 (data on CORDA at April 2010). Data presented in this document correspond to the calls of the 2010-2011 Work Programmes for the research PPPs, latest update, March 16th 2011.

facilitated the development and the implementation of the Roadmaps and inputs to the annual work programmes. However, there remain some differences in the implementation of the calls and evaluation processes in the different themes. Therefore, while the cooperation is seen to be progressing well, greater consistency of approach could be achieved by a formalisation of the roles of the various parties.

4.1.2. Implementation of the Roadmaps

The rapid implementation of the research PPPs using the FP7 rules permitted the launch of the first cross-thematic calls in July 2009 followed by second calls in July 2010. Although these were broadly similar actions, the funding schemes used were subtly different in the participating themes and this was a potential source of complexity and confusion at proposal preparation phase for participants' presenting proposals to more than one theme in the PPP calls.

For the first call, it was not possible to organise the same deadline for the 3 research PPPs due to logistic issues, but this was resolved for the second call, with all calls having the same opening date and deadline. For the Work Programme 2011, the calls for the three research PPPs were opened on 20th July 2010 with a deadline of 2nd December 2010. This allowed nearly 5 months for preparing the proposals, a period that seems appropriate for constructing competitive projects.

The topics of the calls of the 2010 and 2011 Work Programmes showed a strong correlation with the strategic objectives in the respective roadmaps, and in many cases had a particular emphasis on industrial relevance and validation activities.

For the evaluations, the expert evaluators were, in general, selected according to standard FP7 criteria. However, within the NMP Theme additional criteria for the selection of experts for the research PPPs topics were established, aiming for each evaluation panel to have at least 60% of industrial experts.

The implementation is seen by both sides of the partnership to have been both effective and efficient. Nevertheless, to give greater clarity to participants, the Commission should adopt a common implementation across the participating themes, ideally with a single point of entry for any external party wishing to participate in PPP.

4.1.3. Increased overall RTD investment and industry participation

Prior to the launch of the research PPPs, the Commission had a variety of support programmes that were in the thematic areas of the three research PPPs. Funding between 2007 and 2010 in the themes and topics aligned to the research PPPs averaged nearly €150 million per year, but there was a downward trend (2009 funding was €124 million). By contrast, support for the research PPP projects over 2010 to 2013 has started at over €260 million and is planned to increase with an average annual spending of over €400 million and a final year indicative spending of €590 million. This is shown graphically in Figure 3.

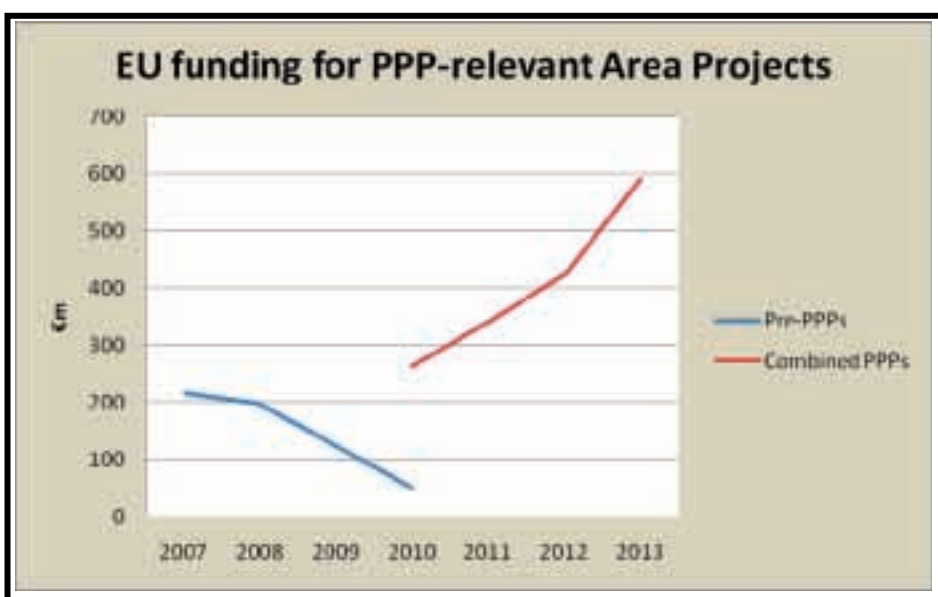


Figure 3: Comparison of EU funding levels pre and post the launch of the research PPPs

The average EU funding level for the combined first calls of the research PPPs was 66%. Although this was higher than the 50% target rate for the research PPPs, it is also somewhat lower than the 70% average for FP7 cooperation projects, indicating a larger industrial participation than standard and a slightly higher rate of industrial funding.

More significant is the percentage of funding taken by large industry and SMEs in research PPP calls when compared with standard FP7 calls. For 2010 the large industry funding participation was 30% across the three research PPPs compared with an FP7 average of 16%. In terms of SMEs these figures were 19% and 14% respectively. For the 2011 calls the requested funding for retained projects are slightly higher (32% for large industrial and 25% for SME), which is indicative that these programmes are of high relevance for industry. The overall funding going to industry (including SMEs) is around 50% in the PPP calls.

4.2. Efficiency

4.2.1. Efficiency of the Research PPPs Actions

When compared with the average number of proposals retained in the FP7 Cooperation Programme, the outcome of the calls of the three research PPPs in Work Programme 2010, showing that 30% of proposals were retained for negotiation, is good. For the 2011 Work Programme, 21% of the proposals were retained for negotiation, but the numbers of proposals submitted were much higher. Further details are provided in Table 2.

These figures suggest that the targeted nature of the calls has resulted in an initial success rate that is more attractive to industry. However, the situation needs to be monitored and action taken if the decrease in the success rate of the second call continues in subsequent calls.

	Number of submitted proposals	Number of proposals Retained for Negotiations	Number of proposals above the threshold	Average % of EU funding granted per project
Average FP7, Cooperation	19866	3646 (18%)	--	70
PPPs (1st Call)	251	75 (30%)	96 (38%)	66
PPPs (2nd Call)	400	83 (21%)	138 (35%)	66

Table 2: Number of proposals submitted, retained for negotiation and above the threshold

According to the data provided by the Commission, the duration of the evaluation process for research PPP calls is strongly reduced as compared

to FP7 Cooperation Programmes. The averaged total time to grant (TTG)¹³ for the various topics in the PPPs has been 280 days in the 2010 call, while this TTG in FP7 Cooperation calls is 430 days. The maximum TTG in all 3 research PPPs was 388 days¹⁴ and the minimum value was 156 days. Further details are given in Table 3. Further efforts may be needed to sustain the TTG seen in the 1st call, as more proposals may be retained for negotiation as the PPPs' annual budgets increase.

	Averaged TTG days	Minimum TTG days	Maximum TTG days*
FP7-Cooperation	430	--	--
PPPs (1st Call)	280	156	388
FoF PPP (1st Call)	263	156	387
EeB PPP (1st Call)	287	203	388
GC PPP (1st Call)	299	210	336

Table 3: Total Time to Grant for FP7 Cooperation and research PPPs

4.2.2. Promotion of Cross-disciplinary and Trans-European Research

A total number of 779 project partners have, to date, been successful in the first round of research PPP calls. The most participative organisations in the three research PPPs are Large Industries and SMEs, with 238 and 185 participations respectively (31% and 24% of the total participants). In contrast, public bodies represent just 1% of the total participants. These results are shown in Figure 4.

¹³ Days from call closure to grant agreement signature by Commission, based on latest update of data , 16th March 2011

¹⁴ Based on grants signed. Due to one withdrawal, two further proposals entered into negotiations at a significantly later stage which will impact on the average and maximum TTG.

* see footnote 12



Figure 4: Distribution of participation in funded proposals in the first Call of the PPPs by type of partner

A similar analysis of the distribution of participation in the second research PPP call still shows in Figure 5 industry with the largest share, but the participation share by public bodies has increased to 8%, mainly associated with the GC PPP.



Figure 5: Distribution of participation in funded proposals in the second Call of the PPPs by type of partner

Comparing these data to the participation in the FP7 Cooperation Programme (as shown in Figure 6), Industry has a much larger participation in research PPPs than in other FP7 programmes, with the increased participation of large industrial companies being even greater than that of SMEs. On the other hand, Higher Education Institutes and, to a lesser extent, Research Centres have a notably smaller participation in research PPPs than in FP7 Cooperation Programme.

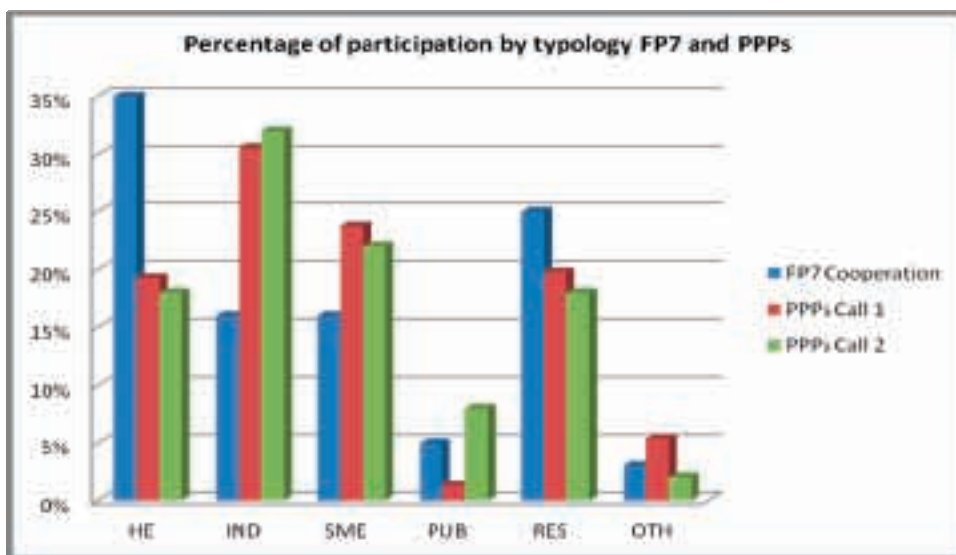


Figure 6: Participation in funded proposals in the Work Programme 2010 by partner type in FP7 Cooperation and Research PPPs

Figure 7 illustrates the distribution of the participation by country in the calls under the Work Programme 2010. It is noted that 88% of the participation (based on total number of partner participations) is within EU-15 countries, while EU-12 countries have a participation of 5% and Associated Countries (Israel, Norway, Switzerland and Turkey) have a participation of 6%. The participation of Third Countries is relatively small.

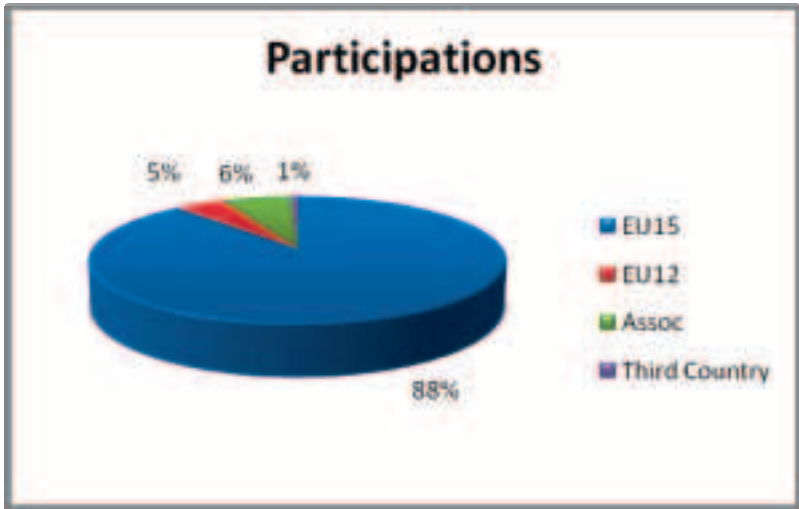


Figure 7: Participation by Countries in the 2010 Work Programme

The EU contribution in the 1st call of the research PPPs has almost 91% of the funding attributed to EU-15 countries (244.1M€) as shown in Figure 8.

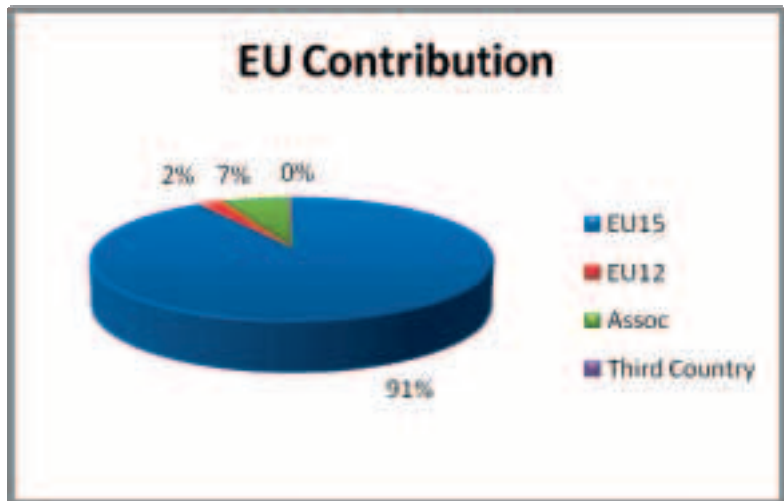


Figure 8: EU Contribution by Countries

Overall, the PPPs have achieved a good mix of cross-disciplinary research, with a higher than usual contribution from industry, compared with the average FP7 Cooperation programme. The PPPs have also promoted trans-European research, although the participation by organisations in EU-12 countries has been weak, a problem which is known in FP7.

4.2.3. Adequacy of Funding Levels to meet the Objectives of the Research PPPs

Funds allocated according to the European Economic Recovery Plan for the phase 2010-2013 (last 4 years of FP7) represent a clear increase of the funding for the period compared to that initially forecast to support these sectors. However, in order to achieve the industrial objectives for 2020 and to address the grand challenges of the European 2020 Strategy and further commitments for 2050, it would be necessary to continue to support the research PPPs within the Common Strategic Framework (CSF).

4.2.4. Dissemination and Exploitation

It is currently too early to assess the exploitation results of the three research PPPs. It is also too early in the project cycle to assess realistic dissemination activity, although the three PPPs held workshops in 2010 to discuss initial impacts of the PPP activities and to raise awareness on early results of projects. Participants recommended introducing measures to increase the impact of both the individual projects and clustering projects. As per FP7 projects, PPP projects have specific dissemination and exploitation plans. Therefore, although it is early days and more could be done to increase the dissemination and impact of the results of the research PPP projects, there is evidence that consideration is already being given to this.

In terms of dissemination of knowledge about the research PPPs and their aims, some good work has been undertaken, but there is no clear evidence that this has succeeded in reaching organisations not familiar with FP7 cooperation programmes, which is needed if the PPPs are to achieve their optimum impact on their respective industries.

4.3. Quality

4.3.1. Efficiency of the Research PPPs Actions

Data on participation shows that the research PPPs have attracted high quality stakeholders in terms of overall research investment at European level, including research funds from EU Framework Programmes.

4.3.2. Participation Patterns

Participation to the first call was dominated by EU15 countries with 88% of the awarded funding going to beneficiaries in those countries and only 5% going to beneficiaries in EU12 countries with 7% going to other countries. The top 5 countries where beneficiaries are located are also

predictable in terms of reflecting the dominant economic powers within the EU, namely:

- Germany 21%
- Italy 15%
- Spain 11%
- France 9%
- UK 8%

Following efforts to raise the profile of the PPPs activities, particularly within EU12 countries, the proposals retained for negotiation under the second call are still dominated by EU15 countries, with 92% of the potential budget compared with 2% to EU12 countries and the remaining 6% foreseen to go to other countries. In terms of the top five countries where beneficiaries are located, they are the same as for the first call but the proportion of potential grant funding going to the top three has increased, namely:

- Germany 24%
- Italy 16%
- Spain 12%
- France 9%
- UK 7%

Amongst the EU-12 countries, Polish participation stands out, with 20 participations. Among the Associated Countries, Switzerland has also an important number of participations in the research PPPs (31).

Overall, the participation pattern largely mirrors the most economically active nations in the relevant industrial sectors and areas, which perhaps also provides confirmation of the industrial relevance of the research PPPs.

4.3.3. Measures and Actions for Ensuring the Highest Quality Involvement

The industrial associations and the ETPs have been important fora for networking various kinds of stakeholders seeking research and technological excellence and also effective implementation in the market of the processes, products and services developed.

Info-days, brokerage events as well as training activities regarding the European research environment have been organised in order to disseminate information and build up research proposals.

During the evaluation of proposals, measures were taken to ensure there was an increased representation of experts from industry in the evaluations panels. For the evaluations carried out to date, an average of 49% of the evaluators were from an industrial background. This good representation of industry is seen as necessary to ensure that relevant weight is given to industrial priorities and therefore supports high quality industrial participation in the programmes.

In general, the actions taken to ensure high quality involvement have been good, although evidence is lacking regarding the inclusivity of the involvement, particularly regarding SMEs in the consultation processes. However, data provided by the Commission for the 2010 call shows that the highest participating organisations (in terms of participation in more than one proposal) include many of the leading European industrial companies and research organisations.

4.4. Capability of the Research PPPs for Encouraging Greater Innovation Actions in Europe

The three research PPPs have been successful in stimulating increased collaborative innovation in their respective areas. There is also evidence that they have been successful, in some cases, in providing a lead to, or creating synergies with, related National Initiatives thereby stimulating even greater innovative action in their respective areas. However, the state of European competitiveness (and the concomitant impact on wealth and jobs) is not only the result of the recent financial crisis and recession. To ensure that Europe remains competitive in an increasingly global market requires a long term focus. It is therefore vitally important that the current efforts of research PPPs are not curtailed at the end of FP7, but that the successes of the research PPPs are taken forward into a longer term plan to speed up the uptake of research results for deployment in Europe.

4.5. Contribution to the Europe 2020 Strategy

The research PPPs, building on the European Economic Recovery Plan objectives, are also making a contribution to the Europe 2020 strategy, in particular to the achievement of a smart, sustainable and inclusive growth in the economy, with their potential impact R&D investment, employment and contribution to resource efficiency (both for energy and materials) improvements while also reducing CO₂ emissions.

Research PPPs constitute a part of a coherent framework for the Union, to mobilise its instruments and policies, and for the Member States, to

undertake enhanced coordinated actions. The research PPPs may contribute to the European Innovation Partnerships.

Europe 2020 Objectives	European Economic Recovery Plan Objectives	Contribution of the PPPs
75% of the 20-64 year-olds to be employed	Create demand for labour	High impact at European level, measurable in terms employment,
3% of the EU's GDP to be invested in R&D/Innovation	Increase investment in R&D, Innovation and Education	Increased industrial participation in FP7 Programmes.
Climate change / energy - greenhouse gas emissions 20% (or even 30%, if a satisfactory international agreement can be achieved to follow Kyoto) lower than 1990, 20% of energy from renewables and 20% increase in energy efficiency	Improve energy efficiency in buildings, transport and manufacturing processes.	PPP Roadmap objectives all contain sustainability and energy saving objectives, which in turn are being incorporated into the annual work programme and RTD / innovation projects.

4.6. Contribution to the European Research Area

Two European industrial associations have been created under the umbrella of the European Construction Technology Platform and Manufature to reinforce the research investment in long term programmes at European level and overcome fragmentation and research inconsistencies. Similar contributions have been made by the coordination actions of ERTRAC (European Road Transport Research Advisory Council), EPoSS (European Technology Platform on Smart Systems Integration), and SmartGrids (European Technology Platform for the Electricity Networks of the Future) for Green Cars.

The participation of the industry community (large companies and SMEs) both in number of proposals and percentage of funding, can contribute to the improvement of knowledge, knowledge sharing and take up and intellectual property transfer between public research organisations and private companies.

The research PPPs launch has also resulted in increased synergies with existing, or re-oriented, national/regional research programmes as well as stimulating ad-hoc national initiatives.

4.7. Analysis of External Consultation

The evidence base used in the review was enhanced by a consultation process amongst individuals with direct experience of the research PPPs as well as others with good knowledge of FP7 Cooperation programmes. The organisations consulted are listed in Annex B. The primary external consultation process was carried out using a questionnaire, seeking both quantitative and qualitative data. The questions were arranged in three sections related to effectiveness, efficiency and quality. The final five questions were open, qualitative questions. This questionnaire is shown in Annex C. A total of 84 individuals were consulted from 18 EU countries. These consisted of 12 of the EU 15 countries, 3 of the EU 12 countries and 2 Associated Countries. The mix of organisational types is shown graphically in Figure 9.



Figure 9: Typology of Organisations Consulted

Conclusions

The Public-Private Partnerships (PPPs) on Factories of the Future (FoF), Energy-efficient Buildings (EeB) and Green Cars (GC) were set up within the European Economic Recovery Plan with the specific purpose of mobilising public and private resources for research activities to stimulate a strong resurgence of these sectors from the crisis, giving confidence to industry to invest in long-term research even when faced with short-term economic problems. The impact expectations of PPPs are critical for Europe: sustainable growth and competitiveness through renewal of industry and jobs.

Research PPPs differ from normal collaborative projects in the FP7 in that industry has an important role in developing the Multiannual Roadmaps. Unlike the Joint Technology Initiatives (JTIs), the PPPs have not been set-up as legal entities. Research PPPs have the potential to address the whole value chain. The current research PPPs have been set up on the basis of existing industrial European Technology Platforms such as ECTP, Manufature, EPoSS, ERTRAC and Smartgrids.

It is too early to draw definitive conclusions as there is only experience of two research PPP Calls and the projects are in their initial phase at the time of this interim assessment. However, organisations and actors that have engaged in research PPPs have positive experiences and the primary objectives of all three research PPPs are being met with following actions being achieved:

- Focus on industrially relevant targets
- Increased focus on (and funding of) relevant topics
- Good engagement with relevant stakeholders
- Focus on shorter term deployment of research results
- Good participation of both large and small industry
- Positive action to overcome some of the constraints of the instruments available, e.g. speed of implementation (time is the most valuable asset in industry)

The Group of Experts concludes that the main principles and requirements for research PPPs should be (1) transparent processes, (2) efficiency, and (3) clear responsibilities. The Group of Experts has tried to answer to following questions:

- What is the best way of making an open, inclusive system?
- Are the various parties meeting these requirements?
- Are the requirements fit for the purpose?
- What is the right approach for rules of participation; common rules for all or tailor-made rules depending on the context?
- Who should be responsible for evaluation and project management?

What would help innovation?

1. The research PPPs, being funded from European Union Programmes, should be inclusive. There is a need to develop ***an integrated approach*** to research PPPs at European level. This is useful to industry where it brings access to cross-disciplinary skills and knowledge or where it helps build competence and strength throughout the value chain.

2. The research PPPs should build on work carried out within existing European Technology Platforms and the Industrial Associations. Moreover, research PPPs should link with more downstream activities in the ***innovation chains*** in Europe, including various measures at European level that go beyond precompetitive R&D, such as pilot plants and demonstrator facilities, which are necessary to achieve European added-value from research investments and to bridge the gap (“Valley of Death”) from research to market. In particular:

- Research PPPs, set up as part of the European Economic Recovery Plan, had their initial focus on short term actions. However, even if the economic situation has improved for some companies (which is not yet certain as a sustainable trend) we still have a Valley of Death syndrome in Europe; that should be addressed by a longer- term approach and risk sharing measures (EIB loans and guarantees);
- Research PPPs need a clear focus as to where in the innovation chain they can make the greatest impact, e.g. precompetitive or Valley of Death activities. This may not necessarily be the same

for different research PPPs and could, in certain cases, involve more than one step of the innovation chain.

3. **Alignment** of Member States' priorities with EU RTD priorities and research PPP priorities is important to leverage their impact. It is, however, too early to have any firm data as to whether the current research PPPs are influencing Member States' priorities.

4. **Focus** on deployment issues, including innovation and implementation actions focussed on value chains and bridging the Valley of Death. However, such actions should be based on, and framed by, long-term strategic objectives.

What is working well with research PPPs?

5. Implementation and impact is emphasised more for research PPPs than for general collaborative projects. The proportion of Industry participation is greater in the research PPPs than in general FP7 projects. This implies that there is more **implementation potential** in research PPPs than in general FP7 activities. Research PPPs have:

- Successfully validated the research PPP concept: research PPPs are regarded as a successful model for the engagement of industry and provide a clear focus, greater efficiency, flexibility to adapt quickly to changes in the environment, greater transparency and when compared with JTI, less formalistic/bureaucratic management;
- Proved an effective mechanism to organise the cooperation/collaboration between the different stakeholders, notably the Commission and industry.
- Attracted a high quality of submitted proposals.
- Raised awareness within industry, especially with traditional Framework Programme participants, but are less well known in the public or SMEs.

6. There are indications that the research PPPs are being successful in terms of attracting leading, and relevant, industrial companies, SMEs and research organisations.

What should be improved with research PPPs?

Participation and funding

7. Overall funding levels in research PPPs are not yet optimal. While funding is adequate at the level of individual projects, the overall budget needs to be increased to achieve significant and sustainable impact on the competitiveness of European industry. So far the leveraging of the research PPPs on industry R&D investments has been rather limited and further measures need to be taken to create an environment that stimulates industry investment in R&D in order to reach the 2020 Strategy targets. In particular for the research PPPs to have a long term effect in their sectors / industries there needs to be a long term and visible commitment to their existence and stable and adequate funding.

8. Participation in the research PPPs is concentrated amongst relatively few key players following similar FP7 trends. The PPPs should aim to make their activities more attractive to a wider potential audience, particularly through simplification actions and the awareness raising activity using ETPs and National Trade bodies.

9. There is a limited diversity of participants, especially amongst SMEs: SME participation is a challenge for research PPPs and innovative measures are needed such as piggy-backing OEM + SMEs along the value chain within research projects.

10. There is lack of awareness of research PPPs in the new Member States (EU-12). Specific measures need to be taken, including using structural funds to address issues faced by many organisations in these countries, in particular within the Smart Specialisation Strategy in the EU 2020 Agenda.

Governance

11. The current informal arrangements, particularly with the Ad-Hoc Industrial Advisory Groups, lead to some uncertainties and insufficient transparency of the processes. **The partnership should be formalised** and the roles of the partners defined.

12. With the exception of the EeB research PPP, the Ad-hoc Industrial Advisory Groups are involving predominantly large industry. Given the active participation of some SMEs and RTOs, AIAGs should be more representative of the wider stakeholders and include complementary competences e.g. foresight, emerging technologies, commercialisation of research results). However, the current industry focus of the programmes

needs to be retained and the limited capacity of, in particular, SMEs needs to be recognised in this process.

13. While co-ordinated action across multiple themes has been an important component of the research PPPs, a single point of entry to the Commission for each research PPP would improve the processes further for participants.

Procedures (Time to Grant, Evaluation Criteria)

14. Time to Grant is an important factor for industry and has been somewhat addressed within the research PPPs by themes' prioritising these projects. However, the times achieved can still be seen as a deterrent to participation by some potential participants, particularly SMEs. The target on time to grant should be 6 months.

15. Whilst the PPPs success rates are greater than FP7 cooperation projects, the rate is still a potential deterrent to some participants, particularly when evaluated against the effort invested to prepare competent proposals. The research PPPs' evaluation process needs to retain the high quality criteria, but could introduce different thresholds to recognise proposals that are more industry relevant and impact-driven and allowing "national mini-clusters" where there are several SMEs with a larger company in one Member State (aggregation of SMEs in one country is necessary to be able to organise them for a specific goal, or a value network)

Impact

16. There needs to be greater emphasis on the commercialisation of results, i.e. potential impact needs to translate into the ability and willingness to commercialise.

17. Post project monitoring of commercialisation would be useful for both assessing the achievement of the research PPPs and for promoting them as an effective innovation mechanism.

Recommendations

Following the review and analysis, the Group of Experts made a series of recommendations for improving and developing the research PPPs, which are seen as a useful adjunct to other schemes and instruments at the disposal of the Commission and particularly relevant for promoting actions relevant to improving the competitiveness of industry. The major benefits of the research PPPs rely on efficiency, openness, flexibility, accountability, continuity and the active role of industry in defining the research themes.

Recommendation 1: Continue and further develop the research PPP initiatives in the CSF and enlarge their scope to a full programme concept.

In developing the concept attention should be paid to mechanisms to monitor on-going projects and the continued relevance of the strategic goals, as well as setting up common dissemination actions to maximise the impact of projects, particularly to the wider industrial community. The 3 PPPs set up under the European Economic Recovery Plan should be continued.

In particular the Group of Experts recommends:

- 1.1 The Commission, working with industry, should maintain research PPPs as a flexible and responsive form of organising R&D amongst the various stakeholders, recognising that they work best in those cases where strong links have already been established between the Commission, Industrial Associations, European Technology Platforms and general industry.
- 1.2 That future research PPPs be organised along European value chains, rather than necessarily aligned to traditional sectors, to allow for efficient innovation with a greater chance of enhancing European wealth creation by focussing on critical productive technologies and capabilities, without which the ability of Europe to innovate will be gradually eroded.
- 1.3 The Commission and industry commit to long term support of research PPPs and that the matched funding levels are at a level commensurate with the potential economic impact. Without appropriate and long term support, the ability of the research PPPs to produce

lasting effects on the competitiveness of the European industrial landscape will be compromised.

- 1.4 The research PPPs should be continued, addressing the key European objectives and focussing activities on energy and materials efficiency, decarbonisation, competitiveness, growth and employment and involve the major industrial sectors to ensure added-value at EU level.

Recommendation 2: The governance and procedures of the research PPPs (particularly regarding the Commission - industry interface) should be formalised and made more transparent.

The current governance arrangements, whilst clearly working in the current PPPs, leave uncertainties about the role of the various parties and the transparency of the process. In particular the roles of the Ad-Hoc Industrial Advisory Groups and the Industrial Associations related to the PPPs could be formalised, while still supporting flexible procedures.

In particular the Group of Experts recommends:

- 2.1 The roles are developed and published for the Commission, AIAG, Industrial Association and ETPs associated with each PPP to aid transparency and comprehension of the processes. The role descriptions should identify the duties and responsibilities of each party, without creating a burdensome, legal formalisation of the processes.
- 2.2 The Commission and the Industrial Association associated with a PPP should jointly develop the composition of the AIAG.
- 2.3 The consultation processes are widened, in particularly to capture the views of SMEs and RTOs who are underrepresented in the current processes in certain PPPs. The Industrial Associations should ensure representation of the wider community of stakeholders.
- 2.4 A formal link to the relevant ETPs needs to be maintained with the ETPs providing the long term vision.
- 2.5 The monitoring and assessment of the strategic objectives and impact of the research PPPs should be undertaken on a regular basis.

Recommendation 3: The procedures for administration and management of the research PPPs should be further streamlined and should allow for appropriate flexibility in the execution of the programmes and projects.

To maintain industrial appeal and relevance for these actions, research PPPs must have efficient, attractive and relevant procedures and administration with a light overhead for industrial participants. The different themes involved in the research PPPs should adopt a unified approach across a PPP and to ensure the particular utility of the research PPPs to industry, they should avoid the bureaucracy associated with JTI.

In particular the Group of Experts recommends:

- 3.1 The time between the announcement of a call for proposals to the start of the grant is as short as possible, retaining the one-step evaluation while at the same time maintaining a clear focus of research topics to avoid over-subscription. Particular attention needs to be made to calls aimed specifically at SME participation and where appropriate, new faster and simpler schemes should be adopted for closer to market actions (such as ECHORD¹⁵-type projects)
- 3.2 Adopting a single point of contact/entry for each research PPP, and the same administration and procedures for each PPP. Such coherence would allow organisations representing whole value chains to efficiently engage with the PPP.
- 3.3 Maintaining the current emphasis on technical excellence and impact excellence within the evaluation process, with a level playing field for all. Projects must be globally competitive.
- 3.4 Allowing a greater flexibility within projects to take account of the rate of change of technology with respect to project timescales, supporting justified changes of project goals or partnerships to maintain the global relevance of the project and competitive impact of the results.
- 3.5 Focusing on “investment” rather than “procurement”. The project administration procedures should focus on optimising the impact of the project in addition to

¹⁵ An FP7 Integrating Project involving many , semi-independent sub-projects

delivering an agreed schedule of results. The overall focus should be on social and economic return on investment rather than simply funding.

Recommendation 4: The research PPP Innovation actions should be strengthened with more emphasis on actions which support transfer of new concepts to the market.

To maintain the industrial relevance, the research PPPs need to continue to develop ideas and concepts with high potential impact and also actions that support the transfer of these concepts towards deployment within the market.

In particular the Group of Experts recommends:

- 4.1 PPP actions should include the development of pilot plant and strategic demonstrator facilities to provide wide-scale demonstration of European added-value concepts, address specific implementation issues with the technology and provide pre-product buy in by potential user organisations.
- 4.2 SME involvement should be further encouraged, with specific schemes to enable SMEs to buy R&D services from RTOs or academia. Greater SME involvement directly tackles the challenges of new technology adoption amongst smaller organisations thus broadening the uptake of technologies and concepts and strengthening the European manufacturing base.
- 4.3 PPP actions should encourage multi-sectoral value chain approaches within project collaborations to develop market-relevant solutions.
- 4.4 PPPs should actively engage with other programmes and complimentary measures, such as future and emerging technologies and pre-competitive procurement, to provide holistic approaches to the concept to product process.
- 4.5 PPPs need to engage with future European Innovation Partnerships (EIP) like Smart Cities where the activities in the PPP could provide inputs to the EIP forum.

Recommendation 5: Research PPP actions and activities need to focus on strengthening the overall impact and dissemination of the project results.

One of the objectives of the research PPPs is to enhance European industrial competitiveness. It is therefore essential that measures are taken to improve the overall impact and dissemination of the project results that are relevant to industry and society.

In particular the Group of Experts recommends:

- 5.1 The Roadmaps prepared by the Ad-hoc Industrial Advisory Groups should focus on product and process evolution but they should also take into account investments; skills of workforces; an indication of where manufacturing is expected to be located; and where and how product innovations are generated.
- 5.2 Member States and Regions should proactively engage with the research PPPs to ensure an alignment of priorities and measures to optimise impact at the local level;
- 5.3 The Industrial Associations should contribute to leveraging the impact of the PPP projects through promoting networking activities, common dissemination actions to wider groups of potential stakeholders, knowledge transfer to SMEs and supporting exploitation strategies.
- 5.4 There should be more proactive awareness-raising measures regarding the Roadmap and work programmes of the PPPs; with a particular focus on SMEs and mid-cap companies. Industrial Associations should become ambassadors for the relevant PPP and enhance PPP awareness beyond the internal membership, e.g. representative trade organisations.

Finally, the research PPP is not an end in itself but merely a means to an end that is a tool to help improve the competitive position of Europe. As such, the competition is not between European Union initiatives or between European Member States, but rather the global competition with regions that are investing heavily in innovation and manufacturing activities, at a time when Europe is finding it difficult to maintain current investment levels. The research PPP programmes should contribute to attracting industrial investments in innovation and production in Europe.

Annex A: Details of the Group of Experts

Joaquin Mollinedo Corporation	(Chairman)	Acciona
Geoff Pegman Eberhard Bessey Edward Chlebus University of Technology Lars Gunnarsen	(Rapporteur)	R U Robots Ltd Daimler AG Wroclaw Aalborg University
Charles Hirlimann Gunnar Muent Investment Bank Pietro Perlo Centre Leena Sarvaranta		CNRS European FIAT Research VTT

Joaquin Mollinedo (Chairman) (ES), is the current Chief Innovation and Sustainability Officer of Acciona Corporation. Formerly, he was Executive Director for Corporate Resource of Acciona Energy. He has a large experience in managing research and innovation strategies within private companies at corporate level, being responsible as well of corporate relations with the European Commission and other relevant institutions.

Geoff Pegman (Rapporteur) (UK) is Managing Director of R U Robots Ltd, an advanced Robotics company (SME). He is the current Chair of the Robotics and Mechatronics PN and the Vice-President of the International Advanced Robotics Programme, UK representative to the IEEE Robotics & Automation Society Industrial Activities Board and member of the Executive Board of the European Robotics Technology Platform.

Eberhard Bessey (DE) is Senior Adviser at Daimler. He manages the Research and Advanced Engineering Group and the Product Innovations and Process Technologies (Materials Manufacturing Concepts) Group of the company. Since 2004, he is a member of the Support Group ETP "Manufuture", becoming the secretary of ETP Manufuture in 2006.

Edward Chlebus (PL) is Professor of Technical Sciences at Wroclaw University of Technology and Director of the Institute of Production Engineering and Automation. He is also President of the Management Board of Lower Silesian Innovation and Science Park. He is a member of the High Level Group of ETP Manufature as well as the Coordinator of the Production Processes NoE in Poland.

Lars Gunnarsen (DK), Senior Researcher, Construction and health in dwellings at Danish Building Research Institute, Aalborg University. He has a broad experience in research in the field of indoor environment and health, being author of several publications in the field.

Charles Hirlimann (FR), is currently the Director of the European Research and International Cooperation Office (DERCI) at CNRS. Charles has a large experience as researcher as well as being a recognised professor. He worked in the University of Pierre et Marie Curie in Paris until 1983, and since then, he has continued giving classes in the “École de Physique et de Chimie” of Strasbourg, being formerly the Deputy Director of this academic organisation.

Gunnar Muent (DE), is currently Head of Division within the European Investment Bank (EIB) Projects Directorate, in Luxembourg, which is responsible for the technical and commercial due diligence of investment proposals. His division focuses on R&D-intensive manufacturing sectors, including engineering, automotive, chemical and pharmaceutical industries.

Pietro Perlo (IT) is Senior Director, EU Network, FIAT Research Centre. For 15 years he has been a contract professor at the Physics Institute of the University of Torino. He originated the first world-wide commercial introduction of diffractive and microoptics into automotive applications. Currently, he is concentrating his interest on the optimal integration of enabling technologies for zero emission mobility. He is the Chairman of the Automotive Working Group of the EU Technology Platform EPoSS.

Leena Sarvaranta (FI) is Chief Research Scientist, Strategic Research, Head of EU initiatives at VTT. In her role she is responsible for defining the strategies of VTT towards EU research including models of collaboration with various stakeholders in EU research. In 2006 she was member of the Executive Team of VTT Expert Services, developing the concept of expert consultation and acting as business controller.

Annex B. List of Organisations Consulted

ORGANISATION	TYPE	COUNTRY
Architecs Council of Europe	Professional body	Belgium
ARTEMIS JU	JTI	Belgium
AVL	RTO	Austria
Bosch	Large industry	Germany
Bouygues Construction	Large industry	France
CEA	RTO	France
CECODHAS	Public Promoter	Belgium
Comau	Large Industry	Italy
Construction Cluster of Slovenia	SMEs Association	Slovenia
Continental	Large industry	Germany
Convergent Information Technologies GmbH	SME	Austria
CSTB	RTO	France
D'Appolonia	Large industry	Italy
Delcam	Large industry	UK
European Commission	Public Institution	Belgium
EASN	Network	
Energy Efficient Building Association	Association	Belgium
EFFRA Trade Association	Association	Belgium
Electricité de France	Large industry	France
EAMA	Association (largely SME)	UK
ENIAC JU	JTI	Belgium
EPIA	Association	Belgium
Festo GmbH&Co KG	Large Industry	Germany

Fiat	Large industry	Italy
Fraunhofer	RTO	Germany
IFP Energies Nouvelles	RTO	France
IMEC	RTO	Holland/Belgium
INESC Porto	RTO	Portugal
Infineon	Large industry	Germany
Innovation Bridge Consulting	SME	UK
Kuka	Large Industry	Germany
Mostostal	Large industry	Poland
Member States	Public Body	Austria
		Belgium
		Czech Republic
		France
		Germany
		Netherlands
		Poland
		Spain
		Turkey
UK		
ON Semiconductor BVBA	Large industry	Belgium
Philips	Large industry	Netherlands
PSA PEUGEOT CITROËN	Large industry	France
Renault	Large industry	France
Ricardo	RTO	England
Saint Gobain	Large industry	France
SAP	Large Industry	Germany
Siemens	Large Industry	Germany
Sintef	RTO	Norway
STMicroelectronics	Large industry	Italy
Tecnalia	RTO	Spain

Technology Strategy Board	Government Funding Agency	UK
TNO	RTO	Netherlands
TWI	Association/RTO	UK
Tyndall	RTO	Ireland
vdivde	SME	Germany
Valeo	Large industry	France
Volkswagen	Large industry	Germany
Volvo	Large industry	Sweden
VTI	SME	Finland
VTT	RTO	Finland

Annex C: The Questionnaire

The questions were evaluated from 0 to 5, being (0.- Don't know; 1.- Very poor; 2.- Poor; 3.- Adequate; 4.- Good; and 5.- Very good)

Question	Grade (0-5)
EFFECTIVENESS	
1. - How clearly were the objectives of the PPPs specified? (in the official documents such as EERP and the Recovery Package of the Work programme 2010-2011)	
2. - How has the PPP arrangement (the use of FP7 rules for rapid implementation) contributed to the progress towards the overall objectives?	
3.- How effective has the cooperation been towards reaching the objectives (in terms of cross-thematic calls, topics and funding contribution) between the specific themes (Transport, NMP, ICT, Energy, Environment)?	
4. - What is your / the stakeholders' view on the effectiveness of the PPP (based in multiannual programmes) as an appropriate tool for increasing long-term research investment?	
5.- To what extent has the PPP succeeded in networking/pooling various stakeholders between the public and private sectors (in European Platforms, Ad-Hoc industrial Associations, European Commission, Member States) and in combining private-sector investment and European public funding?	
6.- To what extent have the research topics published by FoF/EeB/GC in the first two calls for proposals sufficiently matched the priorities set out in the existing Multi-annual Roadmaps for FoF and EeB (GC, is under preparation)?	
7. - To what extent has the PPP succeeded in combining private-sector investment and European public funding?	
8. - According to the official statistics, how can you evaluate the level of participation in the different topics of the PPPs?	
9. - According to the official statistics, how can you evaluate the level of proposals above the threshold?	
10. - According to the official statistics, how can you evaluate the percentage of proposals reaching negotiation?	
11. - How do you evaluate the support provided so far by PPP to advanced technologies in manufacturing/construction/transport research and development in Europe?	

12. - What has been the level of demand, take up and use of the PPPs?	
13. - To what extent has the PPP contributed/promoted (through awareness and dissemination events and specific research topics) the participation/involvement of industrial and particularly Small and Medium-sized Enterprises (SMEs) in its supported research activities?	
14. - Has the PPP contributed/promoted, through the specific research topics, the participation/involvement of industrials in its supported research activities?	
15. - Has the PPP contributed/promoted, through the specific research topics, the participation/involvement Small and Medium-sized Enterprises (SMEs) in its supported research activities?	
16. - Do you think that independently of the PPPs rapid launching to achieve the policy objectives of the European Economic Recovery Plan, its Governance structure is adequate compared with the existing JTIs?	
17. - How do you evaluate the funding levels and distribution of funds by different type of stakeholders?	
18. - How well do you think that PPPs contribute to the ERA objectives?	
19. – How effective do you believe the PPP mechanisms will be in bringing about faster innovation and commercialisation of results?	
EFFICIENCY	
20. - How well does the PPP arrangement (following the FP7 rules) allow an efficient implementation of the objectives set?	
21. - To what extent are the activities of the PPP carried out efficiently?	
22. - To what extent are the levels of funding and other resources adequate to reach the objectives set?	
23. - How efficient and effective are the PPP mechanisms for dissemination and exploitation?	
24. - To what extent have the Ad-doc Advisory Groups fulfilled their duties?	
QUALITY	
25. - How effective is the PPP in attracting the best researchers and research organisations active in the field?	
26a. - How appropriate is the participation pattern in terms of organisational stakeholders (academic, industrial, including SMEs, and research organisation sectors)?	
26b. – How appropriate is the participation pattern in terms of geographical coverage?	

26c. - How appropriate is the participation pattern in terms of gender balance?	
27.- How well do you think that the Associations created in the frame of the PPPs are contributing to reach the objectives and promote the participation of industry and SMEs, gathering stakeholders, promoting innovation and openness?	
28. - To what extent would a more central role of the Associations increase the impact and dissemination of PPP projects?	
29. - How appropriate are the measures described in the multi-annual Roadmaps and the topics descriptions in the Calls to ensure that innovation will result?	

Open questions:

<p>30. - What can be done to improve the effectiveness of the PPPs?</p> <p>31. - What could further be done to improve the results of the Ad-Hoc Industry Advisory Groups?</p> <p>32. - What could further be done to ensure Europe's best researchers from industry and academia are involved in projects supported by PPP?</p> <p>33. - What could further be done to ensure that European industry, including SMEs, are involved in projects supported by PPP?</p> <p>34. - What would be your main recommendation concerning the future of the PPPs?</p>

Annex D: Evidence used for the interim Assessment

The Group of Experts both reviewed documentary evidence and conducted interviews with a wide range of stakeholders and participants in the research PPPs and with non-participants.

DOCUMENTARY EVIDENCE:

a) Policy Context:


- European Economic Recovery Plan.
- Europe 2020 strategy and Innovation Union Flagship initiative.
- EeB, FoF and GC 2010 and 2011 Call statistics.
- Report of the 'Sherpa Group' (by representatives of the five present JTIs and PPPs). Designing together the 'ideal house' for public-private partnerships in European research.
- Communication from the Commission on Public-Private Partnerships.

b) Understanding PPPs:

- Final Report of the FP7 Interim Evaluation as well as running JTI intermediate evaluation reports.
- Conclusions and proceedings of the Valencia Conference about PPPs, "From Recovery to Sustainability" in April 2010.
- Conclusions from the Competitiveness Council in May 2010.
- Minutes of the meetings of the Ad-Hoc Industrial Advisory Groups.
- EU Industrial R&D Investment 2010 scoreboard.
- Documents of European Technology Platforms.

c) Analysing the implementation of the PPPs:

- Multiannual Roadmaps of EeB, FoF and GC.
- Information and statistics from the 2009 and 2010 Infodays organised in Brussels.
- Annual Work Programmes of the Themes participating in the three PPPs.
- Presentations and conclusions from the EeB and FoF first call projects workshops in November 2010 on Impact of the PPP.
- External expert consultation.



European Commission

**Interim Assessment of the Research PPPs in the European Economic Recovery Plan -
*Energy Efficient Building, Factories of the Future, European Green Cars Initiative***

Luxembourg: Publications Office of the European Union

2011 — 56 pp. — 17,6 x 25,0 cm

ISBN 978-92-79-20425-8

doi 10.2777/60324

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This report details the results of an interim assessment of the three research PPPs - Factories of the Future, Energy-efficient Buildings and Green Cars, that were launched under the European Economic Recovery Plan (November 2008).

The overall result of the assessment is quite positive. The research PPPs have facilitated a closer working relationship between the European Commission and industry in the setting of goals and longer-term research programme objectives, which have been defined in the Multi-annual Roadmaps prepared by the Ad-Hoc Industrial Advisory Groups. Besides research organisations, a higher proportion of top industrial companies and SMEs have engaged in the PPP topics than in usual FP7 projects, suggesting that these PPPs are seen as highly relevant to the needs of industrial companies while also focusing on pertinent research issues.

The assessment found that the research PPPs have been an effective response to the crisis. To achieve the aim of making a substantial difference to the competitiveness of European industry, longer term support would be needed.

