

*Adopted by the FCH JU Governing Board on 15 June 2010*



# **Fuel Cells and Hydrogen Joint Undertaking (FCH JU) Management Report 2009**

## **FCH JU Activity Report 2009**

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## **FCH JU Management Report 2009**

### **EXECUTIVE SUMMARY**

The Fuel Cells and Hydrogen Joint Undertaking (FCH JU) had two main objectives in 2009: Firstly, to prepare the legal and financial framework and to procure the necessary services and infrastructure to prepare for autonomy of the FCH JU by Q2 of 2010. Secondly, to execute the operational budget of the FCH JU by the conclusion of Grant Agreements for projects selected in the first Call for Proposals of 2008 and planning and launching of the Call for Proposals 2009.

All bodies described in the Regulation setting up the FCH JU<sup>1</sup> were established and fully active from January 2009. During 2009, the FCH JU's autonomy pending, the Interim Executive Director, Mr Philippe Vannson, supported by an Interim Programme Office, was in charge of the daily management of FCH JU under the auspices of the European Commission and was also supported by Commission staff<sup>2</sup>.

Important progress was made during the year towards reaching autonomous status for the FCH JU which is expected to be reached in Q2 of 2010.

The financial framework was completed with the preparation of budgetary planning for administrative costs until 2017. Also, the General Financing Agreement for the FCH JU was prepared and approved by the European Commission in September 2009.

As regards staffing, 18 vacancy notices for Temporary Agent positions were published in 2009, including that of the Executive Director, and the first two employees took up duty in December. For the rest, the recruitment process is foreseen to be largely completed by Q3 of 2010, including the two remaining employees of the 20 foreseen in the Staff Policy Plan that are to be recruited off the EC pre-selection lists as contract agents.

The FCH JU moved to its temporary premises at the Covent Garden building of the European Commission in December. A public procurement procedure is under way to lease offices for the period August 2010 – 2017. 30 offers were received and the selection process was ongoing at the end of 2009.

An IT-assisted accounting system, Accrual Based Accounting System (ABAC), was chosen and is being adapted for FCH JU needs in order to be ready for the autonomy.

On the operational side, the Governing Board adopted on 15 May the Multi-Annual Implementation Plan (MAIP) of the FCH JU, defining the scientific priorities for the duration of the programme. The MAIP will be translated into Annual Implementation Plans

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<sup>1</sup> Council Regulation (EC) No 521/2008 of 30 May 2008 setting up the Fuel Cells and Hydrogen Joint Undertaking; O.J. L 153, 12.6.2008, p.1

<sup>2</sup> In accordance with Art. 16 of the Council Regulation (EC) No 521/2008 of 30 May 2008.

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(AIP) each year, which set out the detailed topics for Calls for Proposals. The FCH JU Grant Agreement, governing the relationship between the FCH JU and beneficiaries participating in projects, was also adopted on the same date.

The first Call for Proposals, launched in 2008, was brought to conclusion in December 2009. Evaluation of submitted projects was carried out in January-February by 19 independent experts. An independent observer monitored that the procedure was carried out in a fair, impartial and confidential manner. On 15 May 2009 the Governing Board approved a list of 16 project proposals for negotiations, which started on 5 June 2009. Negotiations were concluded and, following the approval of the Governing Board, Grant Agreements were signed for the funding of 16 projects in December. Of the preliminary budget of € 28.8 M, €27.2 M was committed to these projects<sup>3</sup>. Pre-financing was paid out to the selected beneficiaries by 31 December.

The AIP 2009, setting out 29 topics for the Call for Proposals, was adopted on 15 May and the corresponding Call, the second for the FCH JU, was published on 2 July with a preliminary budget for FCH JU contribution of € 71.3M. The submission deadline was 15 October and evaluations took place in November 2009<sup>4</sup>. Of 50 proposals submitted by the deadline, 31 passed the evaluation thresholds. The list of projects to enter into negotiations with is foreseen to be put forward for the approval of the Governing Board in the first quarter of 2010.

Key communication activities in 2009 included the launching of the FCH JU website in May and the organisation of the Stakeholders General Assembly 2009 in October. The FCH JU was also presented in various events and for in Europe and further afield. Cooperation with key stakeholders, in particular European Regions, Member States' programmes as well as international partners was actively developed.

Finally, a number of key challenges were identified and work to tackle these was initiated. Most importantly, extensive work was undertaken to find a practical solution to the low funding levels that render the programme uncompetitive internationally but also in comparison with other European PPPs. The results will be presented to the Governing Board for a decision in 2010.

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<sup>3</sup> The amounts include European Free Trade Area contributions 2.4% from countries associated to the 7th Framework Programme.

<sup>4</sup> Remote evaluations 3-13 November; Consensus and panel meetings 16-20 November 2009.

## **1. INTRODUCTION**

Fuel cells, as an efficient conversion technology, and hydrogen, as a clean energy carrier, have a great potential to contribute to addressing energy challenges facing Europe. They can be employed in a range of applications from transport to stationary and portable power generation. Fuel cell and hydrogen (FCH) energy technologies thus hold considerable socio-economic benefits for the European citizens. They will help combating climate change by reducing carbon dioxide emissions, reduce Europe's dependence on primarily imported hydrocarbons and contribute to economic growth.

The Fuel Cells and Hydrogen Joint Technology Initiative (FCH JTI) is a unique public private partnership supporting research, technological development and demonstration (RTD) activities in fuel cell and hydrogen energy technologies in Europe.<sup>5</sup> Its aim is to accelerate the market introduction of these technologies realising their potential as a vector in a carbon-lean energy system.

FCH JTI brings together businesses representing the entire supply chain for FCH technologies, the European Commission and research institutions. A coordinated approach is proposed in order to pull together resources and coordinate RTD efforts of different stakeholders in order to identify and overcome technical and non-technical barriers to market-introduction of FCH technologies. In order to meet the objective of market deployment, industry has a lead role in defining RTD priorities and timelines, in consultation with the European Commission and the research community.

To implement the JTI, the founding members, European Commission (EC) and the IG, have agreed to set up a Joint Undertaking (JU) as a legal entity for the period up to 2017, which the RG joined as a additional member as of 14 July 2008.

The objective of the Fuel Cells and Hydrogen Joint Undertaking (FCH JU) will be achieved through the support of research, technological development and demonstration activities that pool resources from the public and private sectors, through open and competitive calls for proposals. Calls for proposals will be published annually in the period of 2008 to 2013 and in the period of 2014 to 2017 the projects that are still running will be brought to conclusion.

The Council Regulation<sup>6</sup> setting up the FCH JU was adopted on 30 May 2008, and was published in the Official Journal of the European Union on 12 June 2008. The Statutes of the FCH JU are an integral part of the Council Regulation.

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<sup>5</sup> Europe in this context means Member States and countries associated to the 7<sup>th</sup> Framework Programme (FP7) i.e. Albania, Bosnia & Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia, Switzerland, Turkey.

<sup>6</sup> Council Regulation (EC) No 521/2008 of 30 May 2008 setting up the Fuel Cells and Hydrogen Joint Undertaking; O.J. L 153, 12.6.2008, p.1

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Until the FCH JU has its full operational capacity to implement its own budget (financial and operational autonomy planned Q2, 2010), the EC shall be responsible for the establishment and initial operation of the FCH JU in collaboration with its other Members, and with the involvement of the competent bodies in accordance with Article 16 of the Council Regulation.

The present Annual Activity Report (AAR) describes the status of the execution of the activities of the FCH JU performed in the year 2009, including actions carried out to complete the legal and financial framework of the FCH JU as well as executing its core activities by concluding the 2008 Call for Proposals and by implementing the 2009 Call for Proposals.

The Annual Activity Report 2009 shall be presented by the Interim Executive Director to the Governing Board of the FCH JU for approval.

### **3. KEY OBJECTIVES 2009**

The key objectives for 2009 were in two domains: Firstly, to prepare the legal and financial framework of the FCH JU and to procure the necessary services and infrastructure to prepare for autonomy in 2010. Secondly, to execute the operational budget of the FCH JU by the conclusion of grant agreements for projects selected in the first Call for proposals of 2008 and planning and launching of the Call for proposals 2009. All these key objectives were reached.

### **4. FCH JU GOVERNANCE**

The FCH JU is composed of two executive bodies: the Governing Board and the Executive Director (supported by the Programme Office). The advisory bodies of the FCH JU are the Scientific Committee, the FCH JU States Representatives Group and the Stakeholders General Assembly.

All these bodies and advisory groups were established in 2008 apart from the Scientific Committee to which members were appointed in January 2009. Activities of all the bodies in 2009 are described below.

#### **4.1 Governing Board**

The FCH JU Governing Board held two meetings in 2009: the first on 30 January and the second on 15 May.

The Governing Board includes six representatives of the IG, five representatives of the EC and one representative of the RG. Gijs van Breda Vriesman (Shell Downstream Services International B.V.), Chair of the IG, continued to Chair the Governing Board in 2009. Mr Zoran Stančič, Deputy-Director General, DG RTD, EC continued in the position of Vice-

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Chair for most of the year. The position of Vice-Chair fell vacant as of 1 October 2009 when Mr Stančič left his position as Deputy-Director General in DG RTD. The selection of a new Vice-Chair is pending.

On 31 December 2009, other members of the Board were:

From the IG:

Mr Peter Fröschle, Daimler  
Mr Lucio Gallo, Ansaldo Fuel Cell  
Mr Mikael Sloth, H2Logic  
Mr Jan Piet Van Der Meer, Nedstack  
Mr Herbert Wancura, NTDA Energia

From the EC:

Mr Fabrizio Barbaso, Deputy-Director General, DG TREN  
Mr Raffaele Liberali, Director, DG RTD K, Energy  
Ms Anne Houtman, Director, DG TREN A, Internal Market and Sustainable Development  
Mr Franco Biscontin, Director, DG RTD R, Resources  
Mr Wiktor Raldow, Head of Unit, DG RTD K, Unit 2: Energy Conversion and Distribution systems (alternate)

From the RG:

Mr Paul Lucchese, Chairman of the RG, CEA

Mr Gallo became a member on 28 October 2009, replacing Mr Jonathan Lewis of Rolls Royce Fuel Cell.

Upon the resignation of Mr Stančič, Mr Raldow, as the alternate EC representative in the Governing Board, assumed the fifth EC representative's position on 1 October 2009.

Other members were in their positions throughout the whole year.

Decisions by the Governing Board during 2009 included:

Adoption of

- The Framework Agreement between the Joint Research Centre and the FCH JU;
- The ranking list of proposals for possible funding for the 2008 Call for Proposals;
- The FCH JU Staff Policy Plan;
- The Multi-Annual Implementation Plan;
- The Annual Implementation Plan 2009;
- The Guide for Applicants 2009;
- The Annual Activity Report 2008;
- The FCH JU Grant Agreement;

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- The first batch of Staff Implementing Rules for the FCH JU;
- The decisions on funding 16 projects selected in the Call for Proposals 2008.

Selection of

- Nine members to the FCH JU Scientific Committee (Please see Chapter 4.3 for details).

## **4.2 Executive Director**

The Executive Director is the legal representative and the chief executive for the day-to-day management of the FCH JU in accordance with the decisions of the Governing Board in line with Article 6 of the FCH JU Statutes.

The vacancy notice for the recruitment of the Executive Director was published in the Official Journal on 21 April 2009<sup>7</sup>. An advert for the vacancy referring to the publication in the Official Journal was subsequently published between 21 April and 10 May in 29 European newspapers. Interviews with selected candidates for the position were held during November/December 2009 in front of a selection panel including representatives of all the members of the FCH JU. The selection process is expected to be concluded in Q2 of 2009.

Mr Philippe Vannson as the Interim Executive Director will fulfil the functions of the Executive Director until he/she takes up his/her duties<sup>8</sup>.

The Interim Executive Director is supported by staff from the European Commission until such date as the FCH JU will have recruited a sufficient number of own staff<sup>9</sup>.

The first two members of FCH JU staff, the Legal Officer and the Human Resources Officer, assumed their positions on 1 December 2009. The recruitment of the rest of the staff is foreseen to be completed in Q3 of 2010.

## **4.3 Scientific Committee**

The Scientific Committee (SC) shall consist of 9 members and have the scientific competences, experience and expertise to cover all the technical domains and sectors necessary to make strategic science-based recommendations regarding the activities of the FCH JU<sup>10</sup>.

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<sup>7</sup> OJ C 91 A of 21 April 2009

<sup>8</sup> Mr Vannson was appointed as Interim Executive Director by the Commission on 18 November 2008 in accordance with Art. 16 of the Council Regulation (EC) No 521/2008 of 30 May 2008.

<sup>9</sup> In accordance with Art. 16 of the Council Regulation (EC) No 521/2008 of 30 May 2008.

<sup>10</sup> Article 8 of the Statutes of the FCH JU.



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In accordance with Article 8 of the FCH JU Statutes and the Specific Criteria and Selection Process for the Composition of the Scientific Committee, adopted by the Governing Board on 22 December 2008, the Governing Board appointed 8 members to the Scientific Committee on 30 January 2009 and a further 9<sup>th</sup> member on 15 May 2009.

The members of the Scientific Committee are:

Name	Gender	Country
1. ATKINSON, Alan, Prof.	M	UK
2. DORDA, Andreas, Dr.	M	Austria
3. GARCHE, Jürgen, Prof. Dr.	M	Germany
4. HARG, Knut, Mr. (Chair)	M	Norway
5. LEFEBVRE-JOUD, Florence, Dr.(Vice-Chair)	F	France
6. LINARES-SOLANO, Angel, Prof.	M	Spain
7. ROVERA, Giuseppe, Mr.	M	Italy
8. SJUNNESSON, Lars, Prof.	M	Sweden
9. KRAMER, Gert Jan, Dr.	M	The Netherlands

The Scientific Committee held two meetings in 2009. In the first meeting, held on 9 March 2009, the Committee gave its input to the MAIP and the AIP 2009 to be considered by the Governing Board. The second meeting was held on 10 July 2009, jointly with the Application Area Working Group leaders of the FCH JU Industry Grouping and Research Grouping, to discuss the Scientific Committee's views for longer term improvement of the AIPs and the MAIP and in particular to elaborate targets and milestones of the FCH JU. Recommendation was issued to establish a working group to deliberate on targets and milestones.

On 13 October 2009, the Scientific Committee elected by written procedure Mr Knut Harg as Chair and Ms Florence Lefebvre-Joud as Vice-Chair.

#### **4.4 States Representatives Group**

The FCH JU States Representatives Group (SRG) is an external advisory body to the FCH JU Governing Board. It acts as an interface between the FCH JU and the relevant stakeholders within the respective countries. The SRG includes one representative of each Member State and of each country associated to the 7<sup>th</sup> Framework programme<sup>11</sup>.

The SRG held one meeting in 2009, on 12 March. As a result of the meeting, the SRG issued its recommendations for the AIP 2009 and the MAIP for the consideration of the Governing Board. A Chair and two Vice-Chairs were also elected. Dr Bernard Frois of France was elected Chair, while Dr Georg Menzen of Germany and Dr Aksel Mortensgaard of Denmark were elected Vice-Chairs.

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<sup>11</sup> Albania, Bosnia & Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia, Switzerland, Turkey

#### **4.5 Stakeholders General Assembly**

The Stakeholders General Assembly<sup>12</sup> is an external advisory body to the FCH JU. It is to be organised annually, as a meeting open to all public and private stakeholders. The objective is to inform stakeholders about the FCH JU activities and invite them to provide comments.

The Stakeholders General Assembly 2009 was held in Brussels on 26-27 October. The first day of the event focused on informing stakeholders about the progress of the FCH JU programme while the programme on the second day consisted of panel discussions on markets and politics relevant to fuel cell and hydrogen technologies more generally.

The event was attended by 364 registered participants. The majority of the participants represented industry, followed by the research community, Member States and Regions. The programme featured 60 speakers from Europe, Japan and the US representing businesses, research organisations, governmental and other public bodies and NGOs. The event also featured a "Drive 'n Ride" exhibition featuring 6 hydrogen fuel cell vehicles that were used to transport selected guests during the event and were available for test drive for key stakeholders and decision-makers upon invitation.

Feedback on the FCH JU implementation and the event itself was gathered from participants and will be taken into consideration in the planning for 2010.

The cost of the SGA 2009 was roughly € 55,500. The final figure may be slightly higher this, as some reimbursements claims of speakers are still pending at the time of the writing of this Report.

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<sup>12</sup> Article 10 of the FCH JU Statutes

## **5. RESEARCH ACTIVITIES**

The FCH JU supports long-term and breakthrough-orientated research, research and technological development, as well as demonstration and support actions, including pre-normative research, following open and competitive calls for project proposals, independent evaluation, and the conclusion of Consortium Agreements and Grant Agreements. In 2009, Grant Agreements were concluded for the Call for Proposals 2008 and the Call for Proposals 2009 was initiated.

### **5.1 FCH JU Multi-Annual Implementation Plan**

The research agenda has been developed during 2008 and 2009 by industry-led working groups, divided into four main application areas (AA): Transport & Refuelling Infrastructure; Hydrogen Production & Distribution; Stationary Power Generation & Combined Heat & Power (CHP); and Early Markets. Cross-cutting activities have been established as a fifth area in order to emphasise their relevance and provide programme level coordination. These include Regulations Codes and Standards (RCS), Pre-Normative Research (PNR), socio-economic research, technology and life cycle assessments, market support (particularly for SMEs), public awareness and education. Important interfaces and synergies are expected between all these areas drawing mutual benefits from each other's results. Initial proposals from the AA Working Groups have been finalised together with the RG and the EC.

The research agenda outlining the research activities that shall be supported by the FCH JU are set out in the Multi-Annual Implementation Plan (MAIP) of the FCH JU. The MAIP was adopted by the Governing Board on 15 May 2009. The document can be consulted at: [http://ec.europa.eu/research/fch/index\\_en.cfm?pg=documents](http://ec.europa.eu/research/fch/index_en.cfm?pg=documents)

The MAIP is foreseen to be a living document, revised and updated regularly to respond to technological and market developments when deemed appropriate by the Governing Board.

The MAIP will be translated into annual research priorities each year in an Annual Implementation Plan (AIP) which will set out the topics for the Call for Proposals.

### **5.2 FCH JU Scientific Priorities 2009 and 2010**

The RTD Priorities and Objectives included in the 2009 Annual Implementation Plan (AIP) served as the basis for the topics included in the Call for Proposals 2009, the second for the FCH JU.

The topics in the 2009 Call cover all the five application areas defined in the AIP 2009: Transport & Refuelling Infrastructure; Hydrogen Production & Distribution; Stationary Power Generation & Combined Heat & Power (CHP); Early Markets; and Cross-Cutting Activities. See chapter 6.1 for a complete list of topics. The AIP 2009 can be consulted at: [http://ec.europa.eu/research/fch/index\\_en.cfm?pg=documents](http://ec.europa.eu/research/fch/index_en.cfm?pg=documents).

The RTD Priorities for 2009 as well as the topics for the call were initially formulated by the Application Area Working Groups led by representatives of the member companies of the IG. They were further elaborated in consultations with the relevant services of the European Commission and the RG. The RTD Priorities and call topics were subsequently put forward for consultation of the Scientific Committee and the FCH JU States Representatives Group and their comments were considered for the final draft put forward for decision of the Governing Board.

The process of establishing the RTD Priorities and call topics for 2010 to be included in the AIP 2010 was initiated during the fourth quarter of 2009 by the Application Area Working Groups. In considering the topics, account will be taken of the response to the first call, which closed on 15 January 2008 and for which Grant Agreements were signed in December 2009. The drafting process will be similar to that followed for the AIP 2009.

## **6. CALLS FOR PROPOSALS**

During 2009 the FCH JU finalised the selection process for the Call for Proposals 2008 by signing Grant Agreements for 16 projects. In addition, a new Call for 2009 was published on 2 July 2009 and evaluation was carried out in November using a single-stage call and evaluation process.

### **6.1 Selection of projects for the Call for Proposals 2008**

The Call for Proposals 2008 was published on 8 October 2008 and the submission deadline for the Call was 15 January 2009. The evaluation of submitted projects was carried out from 30 January 19 February 2009<sup>13</sup> by 19 independent experts. In addition, one independent observer was invited to monitor that the evaluation procedure was carried out in a fair, impartial and confidential manner. The Independent Observer's Report has been presented to the FCH JU Governing Board on

Out of 32 proposals submitted, 18 passed the thresholds at the evaluation stage. A list of 16 projects<sup>14</sup> was subsequently put forward for the Governing Board to be selected for starting negotiations to conclude Grant Agreements with them.

On 15 May 2009 the Governing Board approved the list and the negotiations for the 16 proposals started on 5 June 2009. During negotiations, two projects chose to withdraw due to changed circumstances of the partners and negotiations were started with the proposals on the reserve list for the application area in question (Stationary Power Generation & Combined Heat & Power).

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<sup>13</sup> The individual (remote) evaluation took place from 30th January to 11th of February. The Consensus Meetings were held from 16th to 18th February 2009, the panel meeting was held on 19th of February 2009.

<sup>14</sup> According to the AIP 2009 (p.42), up to 5 projects could be supported under Topic SP1-JTI-FCH.3.3: 'Degradation and lifetime fundamentals'. As 7 proposals passed the evaluation thresholds for this topic, the two with the lowest evaluation marks were not proposed for funding.

The negotiations were concluded and the Governing Board approved 16 projects for funding in November-December 2009.<sup>15</sup> Details of the projects that receive funding from the FCH JU budget for the Call for Proposals 2008 can be consulted at [http://ec.europa.eu/research/fch/index\\_en.cfm?pg=projects](http://ec.europa.eu/research/fch/index_en.cfm?pg=projects) .

The call process was managed under the responsibility of the Interim Executive Director based on the principles of excellence, transparency, fairness and impartiality, confidentiality, efficiency, speed and ethical considerations. In managing the Call process, he has been supported by European Commission staff.

## 6.2 The Call for Proposals 2009

The Call for Proposals 2009 was published on 2 July 2009 and the deadline for submissions was 15 October 2009. The Call comprised 29 Topics based on the 2009 RTD Priorities and covering all five application areas described in the AIP 2009<sup>16</sup>. The estimated FCH JU financial contribution to the Call was € 71.3 million. Please see Table 1 below for a complete list of topics and the planned budget distribution.

Table 1: Topics called for the 2009 Call for Proposals and the corresponding indicative FCH JU funding

No.	Topic	Scope	Indicative FCH JU Funding Million €
<b>Transportation &amp; Refuelling Infrastructure</b>			<b>26.4</b>
1	Large-scale demonstration of road vehicles and refuelling infrastructure II	Demonstration of second generation fuel cell hybrid buses for public transportation, passenger cars and appropriate refuelling infrastructure with improved durability, robustness, reliability and efficiency. The aim is to provide extended operating experience, and prove technological readiness. Demonstration trials are supported by activities on public awareness, on technological and environmental assessment, on safety and certification requirements.	
2	Development of electric driven turbocharger for fuel cell	Development on air supply systems to further improve system performance, efficiency and robustness, assess improved architectures and alternative concepts.	
3	Development and optimisation of PEM FC electrodes and GDLs	Development of catalysts for PEM fuel cells- to further reduce the use of platinum in membrane electrode assemblies (MEAs), increase catalyst performance and electro-chemical stability; development of novel materials for gas diffusion layers (GDLs). Testing of the MEAs. The overall aim is to produce MEAs with significant specific cost reduction (i.e. cost/power).	

<sup>15</sup> The Council Regulation (EC) 521/2008 provides in its Article 5.2 (n) of its Statutes for the Governing Board to approve the list of project proposals selected for funding.

<sup>16</sup> The AIP 2009 can be consulted at: [http://ec.europa.eu/research/fch/index\\_en.cfm?pg=documents](http://ec.europa.eu/research/fch/index_en.cfm?pg=documents).

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No.	Topic	Scope	Indicative FCH JU Funding Million €
4	Cryogenic hydrogen storage	Development activities on cryogenic hydrogen storage. The activities need to include an assessment of the potential to reach the technological targets with regard to benchmarks of alternative storage technologies, such as compressed on board hydrogen storage.	
5	PNR on composite storage	Pre-normative research for high pressure composite storage on design criteria, such as ageing, pressure levels, shock resistance, failure modes. The overall objective is to establish production and performance standards and define safety factors.	
6	PNR on fuel quality	Pre-normative research on hydrogen fuel quality with the aim to determine fuel quality specifications and standards based on safe fuel cell operation requirements	
<b>Hydrogen Production &amp; Distribution</b>			<b>5.7</b>
7	Development of fuel processing catalyst, modules & systems	Development of reforming technologies for hydrogen production based on conventional and alternative fuels (such as bio-fuels, methanol and ethanol); focus is on materials and processes for chemical conversion and desulphurisation. The objective is to further develop refuelling technologies for the introduction of hydrogen-fuelled vehicles in the market.	
8	Development of gas purification technologies for hydrogen production	Development of gas purification technologies and quality monitoring for hydrogen production processes based on conventional and alternative fuels, such as bio-fuels. Scope of work is on optimisation of materials, including membranes and sorbents, - and processes for pressure swing adsorption (PSA) and temperature swing adsorption (TSA). The objective is to further develop refuelling technologies for the introduction of hydrogen-fuelled vehicles in the market.	
9	New generation of high temperature electrolyser	Development activities of high-temperature electrolysis, with focus on cells and stacks. The objective is to couple high-temperature electrolyzers with renewable solar and nuclear energy systems, with substantial improvement of energy-efficiency.	
10	Improved solid state H <sub>2</sub> storage systems	Long-term and break-through oriented research on improved solid state hydrogen storage options for increased efficiency and storage capability.	
<b>Stationary Power Generation &amp; CHP</b>			<b>25.9</b>
11	Fundamentals of fuel cell degradation for stationary power application	Research on critical parameters and operating conditions that impact degradation and life time of cells and stacks, for all power ranges and fuel cell technologies	
12	Materials development for cells, stacks and balance of plant (BoP)	Development of materials to improve performance of single cells stacks and BoP components, in terms of longer lifetime and lower degradation as well as improved mechanical, thermal and electro-chemical stability. Investigation on material production techniques need to be considered as well. Open to all fuel cell technologies	

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No.	Topic	Scope	Indicative FCH JU Funding Million €
13	Operation diagnostics and control for stationary applications	Development activities on control and diagnostic tools for a) reliable degradation and lifetime prediction of cells and stacks; b) robust control and operation of complete fuel cell systems. Open to all fuel cell technologies.	
14	Component improvement for stationary power applications	Development activities to improve a) The performance of individual components of fuel cell systems (e.g. fuel cell units, reformer, heat exchangers, fuel management and power electronics); b) The understanding and optimization of interaction between BoP components and mature stacks. The objective is to meet relevant performance targets, including durability and cost. Open to all fuel cell technologies.	
15	Proof-of- concept fuel cell systems	Development of proof-of- concept prototype fuel cell systems for any stationary application, potential feature and technology. The aim is to demonstrate feasibility of proposed systems. The aim is to show interaction between the PoC FC systems with other devices required for delivering power, heat and cooling to end users.	
16	Validation of integrated fuel cell systems readiness	Development to show system readiness of integrated fuel cell systems in simulated application environments for typical lead applications. Economic manufacturing solutions need also to be addressed, ensuring that quality and cost targets are met.	
17	Market capacity Build and Field demonstration of stationary fuel cell systems	Demonstration of proven fuel cell systems on a relevant scale and in real end-user environment. Systems shall be suited for up scale-manufacturing including supply chain. The aim is to demonstrate fit-for -purpose technical system performance and extended operation experience to pave the ground for large-scale deployment.	
18	Application specific targets for stationary power generation and related technology benchmark.	Assessment and benchmarking of specific technological and economic targets for small, micro, commercial and industrial stationary applications. The analysis shall review the potential of the different technologies to fulfil the identified targets and identify actions for the consolidation and acceleration of research activities.	
<b>Early Markets</b>			<b>10.3</b>
19	Demonstration of fuel cell-powered materials handling vehicles and infrastructure	Demonstration of industrial application readiness of fuel cell-powered material handling vehicles, (e.g. forklifts, pallet trucks) including the related hydrogen refuelling infrastructure. The aim is to address critical application requirements with regard to sustainability, efficiency and logistic effort. Demonstration trials are supported by activities on dissemination and certification requirements.	
20	Demonstration of portable generators, backup and UPS power systems	Demonstration of application readiness with respect to cost-competitiveness, lifetime, logistics, environmental performance of portable generators, back-up and UPS-systems.	



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No.	Topic	Scope	Indicative FCH JU Funding Million €
21	Demonstration of portable and micro Fuel cells for various applications	Demonstration of application readiness of portable and micro fuel cells for different applications (e.g. industrial tools, recreational, sub-micro CHP) in order to provide awareness and attract additional niche applications.	
22	Miniaturised balance of plant components	Development of miniaturized balance of plant components for micro fuel cells (10- 500 W) in order to achieve the required power density, prove the capability to operate with different fuels and meet target cost.	
23	PNR & RCS on the indoor use of fuel cells	Pre-normative research aimed at the development of methodologies and procedures for safe indoor use of fuel cells, including definition of specific codes for noise, emissions, and safety.	
24	SME promotion: Early demand stimulation schemes	Support action aiming at developing concepts for SMEs early demand stimulation schemes and frameworks with focus on strategic procurement by public institutions, cities or regions. The final aim is to support the market entry for SMEs.	
<b>Cross-cutting Issues</b>			<b>3.0</b>
25	Development of educational programmes	Development of technology-specific training initiatives for technical professionals, in cooperation with other programs such as Leonardo. The overall objective is to secure the required mid- and long-term human resource base.	
26	Training initiatives for regulators	Development of technology-specific training initiatives for local, regional or national regulators and technical project managers to broaden knowledge base on hydrogen and fuel cells.	
27	SME promotion: Outreach program	Development of supporting tools for SMEs to approach investors and OEMs.	
28	Development of a framework for Technology Monitoring and Assessments (TMA)	Development of a comprehensive technology monitoring and assessment (TMA) framework to be used by the FCH JU for assessing progress towards achieving both FCH JU objectives and vis-à-vis major external developments.	
29	Development of a framework for Life Cycle Assessment (LCA)	Development of dedicated practice guidance for hydrogen and fuel cell technologies to be integrated with the International Reference Life Cycle Data System (ILCD) Handbook on LCA	
		<b>Total indicative FCH JU Funding</b>	<b>71.3</b>



### **6.3 Evaluation of the Call for Proposals 2009**

Evaluation of the Call for Proposals 2009 was carried out by 30 independent experts in November 2009<sup>17</sup>. In addition, one independent observer monitored that the evaluation procedure was carried out in a fair, impartial and confidential manner.

50 proposals were submitted by the deadline of which 31 passed the evaluation thresholds. The list of projects to be entered into negotiations with is foreseen to be prepared in the first quarter of 2010 in accordance with the evaluation results and within budgetary constraints. It scheduled to be put forward for approval of the Governing Board in the first quarter of 2010 after which contract negotiations will be initiated.

The call process is managed under the responsibility of the Interim Executive Director based on the principles of excellence, transparency, fairness and impartiality, confidentiality, efficiency, speed and ethical considerations. He is supported by European Commission staff as well as those FCH JU staff who have taken up duty while the call process is ongoing.

## **7. COMMUNICATION ACTIVITIES**

The focus of the 2009 communication activities was on the RTD activities of the FCH JU and opportunities offered by the Calls for Proposals as well as on the progress of the FCH JU establishment.

The Stakeholders General Assembly 2009, organised in Brussels on 26-27 October, was the single most important communication event for the FCH JU in 2009. See Chapter 4.5 for the details of the event.

The FCH JU's website was launched in May at [http://ec.europa.eu/research/fch/index\\_en.cfm](http://ec.europa.eu/research/fch/index_en.cfm).

Numerous presentations on the FCH JU have been held throughout Europe and around the world during 2009. Please see the details below. Inputs to various media have been provided upon request.

Communication activities are expected to increase in 2010 with the appointment of a dedicated Policy and Communications Officer as well as a Stakeholder Relationship Manager, foreseen for the first quarter of 2010.

FCH JU representatives participated in the following events in 2009 to present the programme:

- Meeting with the Hydrogen Bus Alliance (HBA), Berlin, Germany, 7 May (P.Vannson)

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<sup>17</sup> Remote evaluations 3-13 November; Consensus and panel meetings 16-20 November 2009.

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- 2009 DoE Hydrogen Program and Vehicle Technologies Annual Merit Review and Peer Evaluation Meeting , Washington DC, US, 17 – 22 May (P.Vannson)
- EVS24 WORKSHOP ON HYDROGEN STAVANGER FORUM, Stavanger, Norway 12-13 May (P.Vannson)
- FCH JU – Members' Brokerage Event Cologne, Germany, 19 May (M.Farkkila)
- UKRO Annual Conference, Cardiff, UK, 2-3 July (M.Farkkila)
- Participation au Comité de pilotage du programme Hpac de l'ANR (Agence Nationale de la Recherche), Paris, France, 08 July (P.Vannson)
- Séminaire "Fuel Cell perspectives for the vehicle industry, research institutions and public authorities" Paul Scherrer Institute, Zurich, Switzerland, 22 July (P.Vannson)
- Meeting with DAIMLER AG, Stuttgart, Germany, 28 July (P.Vannson)
- F-cell conference 2009, Stuttgart, Germany, 28 September (P.Vannson)
- Meeting with French Environment and Energy Management Agency, Paris, France, 30 September 2009
- Conférence "Salon Entreprise Durable", Paris, France, 20 October (P.Vannson)
- Conference of the HyFLEET: CUTE Project, Hamburg, Germany, 17-18 November (P.Vannson)
- Guest speaker at the 7th National Hydrogen & Fuel Cell Conference; Arnhem, the Netherlands, 10 December 2009 (P.Vannson)

## **8. COOPERATION**

### **8.1 International cooperation**

Cooperation was further developed during 2009 with key partner countries, at this stage mainly the US and Japan. The FCH JU's approach is to develop cooperation at practical level in projects and project management while policy cooperation remains the EC's prerogative.

Mr Vannson, the Interim Executive Director, participated in the Annual Merit Review of the US Department of Energy (DoE) in May and a delegation from the DoE attended the FCH JU Stakeholders General Assembly in October. Ms Sunita Satyapal, Director of the DoE's Hydrogen Program, presented the DoE's activities at the plenary session and a meeting was held between the DoE and the FCH JU to plan future cooperation.

Two American experts proposed by the DoE participated in the evaluation of project proposals for the FCH JU's Call for Proposals 2009. Project topics and their initial coverage were shared with the DoE following the evaluation of the 2009 Call with a view to identifying opportunities for cooperation.

As regards Japan, Mr Herbert Wancura, member of the Governing Board in charge of international relations, represented the FCH JU in Japan on two occasions in 2009. In March, he presented the FCH JU programme at the EU-Japan Workshop on Energy Research and Technological Development in Tokyo and in June at the Tokyo Energy Fair.

Mr Hirohisa Aki of Japanese Ministry of Economy, Trade and Industry (METI) participated in the FCH JU Stakeholders General Assembly to present METI's FCH activities at the plenary.

### **8.2 Member States**

In addition to the formal cooperation through the States Representatives Group, programme level coordination was initiated with the German national programme<sup>18</sup> in a meeting in September, where possible synergies and areas of cooperation were identified.

### **8.3 Regions (HyRaMP)**

Cooperation with European Regions was actively developed during 2009 through the HyRaMP organisation bringing together Regions actively investing in hydrogen and fuel cell technologies.

Identification of common priorities (in particular bus and forklift demonstrations) was coordinated with HyRaMP in a workshop organised in March between FCH JU Programme Office and HyRaMP representatives. Meetings for coordination and

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<sup>18</sup> Nationale Organisation Wasserstoff- und Brennstoffzellentechnologie (NOW)

information exchange purposes were also held in conjunction with the HyRaMP Board meetings in January and October.

Bus demonstration projects were identified as a specific area of common interest and practical level cooperation advanced considerably in 2009. Legal and practical considerations regarding the participation of regions and municipalities in bus projects were studied and several meetings were held to prepare cooperation in FCH JU demonstrations in the 2009 Call and in future Calls. Two meetings, in Hamburg and in Brussels, were held for this purpose in July, involving representatives of the FCH JU, HyRaMP and the Hydrogen Bus Alliance.

## **9. SUPPORT ACTIVITIES**

Support activities in 2009 consisted essentially of preparation for the autonomy of the FCH JU. They included finalising the legal and financial framework necessary for the autonomous functioning of the FCH JU, recruitment of staff, and procurement of office space, IT infrastructure and the necessary services.

### **9.1. Legal and financial framework**

In 2009, key advancements were made in establishing the legal and financial framework of the FCH JU. The FCH JU Grant Agreement, governing the relationship between the FCH JU and beneficiaries participating in RTD projects, was adopted by the Governing Board in May.

Budgetary planning for administrative costs was prepared until 2017, the end date for running projects of the FCH JU.

The General Financing Agreement for the FCH JU was prepared and approved by the European Commission in September 2009.

### **9.2. Personnel**

The FCH JU Staff Policy Plan foresees a total of 20 staff. None had been recruited at the start of 2009.

Therefore, the FCH JU was functioning under the auspices of the Commission, the conditions for autonomy not having been fulfilled yet. The continuity of business during 2009 has been ensured by the Commission staff charged with setting up the FCH JU. Nevertheless, in December during the period of move of the FCH JU to its premises in Covent Garden, shortage of secretaries due to sickness absences had an impact on the administrative follow-up. Moreover, the limited number of delegated staff from the Commission in charge of setting up the FCH JU faced a heavy workload which necessitated focusing on the most urgent priorities.

As regards recruitment of own staff, 14 vacancy notices were published in February 2009 with a further 3 in June. The vacancy notices were published on the website of the European Personnel Selection Office (EPSO)<sup>19</sup>. All published positions were for temporary agents.

The vacancy notice for the recruitment of the Executive Director was published in the Official Journal on 21 April 2009<sup>20</sup>. An advert for the vacancy referring to the publication in the Official Journal was subsequently published between 21 April and 10 May in 29 European newspapers. Interviews with selected candidates for the position were held during November/December 2009 in front of a selection panel including representatives of all the members of the FCH JU. The selection process is expected to be concluded in Q2 of 2009.

The two remaining vacancies are for contract agent positions, meaning that the candidates must be chosen from those shortlisted by EPSO as having passed a contract agent selection test. Recruitment is foreseen for the second quarter of 2010.

### **9.3 Offices**

The seat of the FCH JU is located in Brussels, Belgium. As a temporary solution the FCH JU is renting office space in the Covent Garden building of the European Commission. The move to these premises took place in December and the lease for them has been agreed with the Research Executive Agency up to July 2010.

A public procurement procedure (so-called 'Kallas procedure') is under way to lease offices for the period August 2010 – 2017. 30 offers were received and the selection process was ongoing at the end of 2009.

Furniture and office equipment were delivered in November-December, following a public procurement procedure.

The location outside DG RTD proper and the Commission's IT server has caused some delays in processes. This is due to the fact that the FCH JU staff have not had access to the common applications of the Commission e.g. for filing and archiving. Files have therefore had to be circulated between several buildings to fulfill filing and archiving requirements. Moreover, authorisations and validations for financial transactions are still required from Commission services while autonomy is pending. This has also resulted in lengthy circulation of files between services. The situation will be remedied once the FCH JU is autonomous and will have its own applications in place and follow its own payment, archiving, and other workflows.

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<sup>19</sup> <http://europa.eu/epso/>

<sup>20</sup> OJ C 91 A of 21 April 2009

#### 9.4. IT Infrastructure

An IT-assisted accounting system, Accrual Based Accounting System (ABAC), was chosen and is currently adapted for FCH JU needs in order to be ready for the autonomy. Common IT hardware and server infrastructure for the Covent Garden offices was provided by DG RTD for the period in Covent Garden and was in place in November. IT hardware that is not shared was procured through RTD framework contracts.

#### 9.5 Budget Execution

The FCH JU had two main types of costs in the pertinent period:

- (1) the running costs, covering administrative tasks, communication activities, support for operational activities such as evaluation; and
- (2) the operational costs, which consist of the costs of supporting research activities.

The respective budget for these two lines of expenditure was as follows:

#### COMMITMENTS

	Budget forecast AIP 2009	Budget committed 2009*
Operational costs (title 3)	72 970 240.00	72 970 240.00
Running costs (title 1&2)	2 764 800.00**	1 213 196
Total	75 735 040.00	74 183 436

\*The amounts include European Free Trade Area contributions 2.4% from countries associated to the 7<sup>th</sup> Framework Programme.

\*\* As allowed by Article 12 of the Annex to the Council Regulation (EC) N° 521/2008, an amount of 1 524 800 € has been transferred from the non-used running costs to the operational budget 2011.

	Global commitment 2008	Individual commitment 2009
Operational costs (title 3)	28 771 590	27 221 590

The Commission supported the FCH JU on the basis of Article 16 'preparatory action' of Council Regulation (EC) No 521/2008. The FCH JU received a financial contribution from the EC for the operational and running costs on its specific FCH budget line. The running activities were supported by the Commission *budget line* 08.010441 and the operational activities were supported by the Commission *budget line* 08.0402, 08.0502, 08.0602, 08.0704, 06.060102, 06.060202. The breakdowns of expenditures are detailed in the tables below.

*Adopted by the FCH JU Governing Board on 15 June 2010*

<b>Annual Account – Commitment appropriations Execution FCH JU 2009*</b>				
<b>Description</b>	<b>ABAC Ref</b>	<b>Date</b>	<b>Amount</b>	<b>Budget line</b>
Call II (Global Commitment)	SI2.5539375	11/08/2009	72 970 240	08.0402, 08.0502, 08.0602, 08.0704, 06.060102, 06.060202 (operational)
IT infrastructure (shared and non shared IT, Accounting tool, adaptation FP7 tools)	SI2.531999, SI2.532002, SI2.542003, SI2.544474, SI2.2593877		107 656.66	08.010441 (running)
Meetings evaluations, Governing Board...)	SI2. 527647, SI2.523903, SI2.526340, SI2.554612, SI2.544469		312 744.32	08.010441 (running)
Staff – salaries	SI2.541140		224 000	08.010441 (running)
Staff recruitment	SI2.531635, SI2.537297		115 947,46	08.010441 (running)
Staff – medical service (SLA)	SI2.535078		10 000	08.010441 (running)
Staff – training (SLA)	SI2.535790		10 000	08.010441 (running)
Staff – PMO (SLA)	SI2.535092		20 000	08.010441 (running)
Missions	SI2.531649		20 600	08.010441 (running)
Housing	SI2.532931		245 000	08.010441 (running)
Communication (FCH JU Stakeholders General Assembly 2009)	SI2.ACPROCE027720700, SI2.ACPROCE027609900, SI2.543162, SI2.526340		111 232.18	08.010441 (running)
Office furniture	SI2.543208		36 014.94	08.010441 (running)
		<b>Total</b>	<b>74 183 435.56</b>	

\*The amounts include European Free Trade Area contributions 2.4% from countries associated to the 7<sup>th</sup> Framework Programme.

*Adopted by the FCH JU Governing Board on 15 June 2010*

<b>Annual Account – Payment appropriation Execution FCH JU 2009*</b>				
<b>Description</b>	<b>ABAC Ref</b>	<b>Date</b>	<b>Amount</b>	<b>Budget line</b>
Call I ( Individual Commitments)	16 contracts		17 271 600	08.050200 (operational)
Call II (Global Commitment)	SI2.5539375	11/08/2009	0.00	08.0402, 08.0502, 08.0602, 08.0704, 06.060102, 06.060202(operational)
IT infrastructure (shared and non shared IT, Accounting tool, adaptation FP7 tools)	SI2.531999, SI2.532002, SI2.542003, SI2.544474, SI2.2593877		57 837.10	08.010441 (running)
Meetings evaluations, Governing Board...)	SI2. 527647, SI2.523903, SI2.526340, SI2.554612, SI2.544469		170 313,68	08.010441 (running)
Staff – salaries	SI2.541140		13 772.60	08.010441 (running)
Staff recruitment	SI2.531635, SI2.537297		86 121.00	08.010441 (running)
Staff – medical service (SLA)	SI2.535078		0.00	08.010441 (running)
Staff – training (SLA)	SI2.535790		3 204.00	08.010441 (running)
Staff – PMO (SLA)	SI2.535092		0.00	08.010441 (running)
Missions	SI2.531649		15 289.90	08.010441 (running)
Housing	SI2.532931		0.00	08.010441 (running)
Communication (FCH JU Stakeholders General Assembly 2009)	SI2.ACPROCE027720700, SI2.ACPROCE027609900, SI2.543162, SI2.526340		43 622.82	08.010441 (running)
Office furniture	SI2.543208		0.00	08.010441 (running)
		Total	17 661 761.10	

\*The amounts include European Free Trade Area contributions 2.4% from countries associated to the 7<sup>th</sup> Framework Programme.

The Annual Accounts of FCH JU have been included in the Annual Financial Report from DG RTD for discharge under the Community Financial Regulation. The Commission produces the provisional consolidated annual accounts for the year ended 31 December by no later than 31 March of the following year. Following an audit by the Court of Auditors,



*Adopted by the FCH JU Governing Board on 15 June 2010*

the final accounts are issued by 31 July and published in the Official Journal by 15 November, together with the opinion (DAS) of the Court.

## 10. INDICATORS

The key activities for 2009 have been described in the Annual Implementation Plan 2009. Table 2 below describes the status with reference to these activities.

Table 2: Status of key FCH JU activities as described in the Annual Implementation Plan 2009

Key activities 2009	Planned	Status
Complete selection procedure for the Scientific Committee	Q1	Completed
Adopt Framework Agreement with the JRC	Q1	Completed
Adopt/approve the key documents for continued implementation of the 2008 budget: The list of projects for negotiations for the 2008 Call and the Grant Agreement.	Q2	Completed
Adopt/approve the key documents for operations in 2009: Call documents for 2009, Annual Implementation Plan 2009, the Staff Policy Plan and the Annual budget.	Q2	Completed
Adopt/approve the key documents for operations in the long term: Multi-Annual Implementation Plan and Staff Policy Plan 2010-2012.	Q2	Completed
Adopt the practical arrangements for implementing Regulation (EC) No 1049/2001 regarding transparency and access to EU documents. <sup>21</sup>	Q4	In progress (Completion Q1 2010)
Adopt the practical arrangements for implementing Regulation (EC) No 1073/1999 in relation to the prevention of fraud, corruption and any illegal activity detrimental to the communities' interest.	Q4	In progress (Completion Q1 2010)
Make appropriate provisions for the internal auditing function <sup>22</sup>	Q4	In progress (Completion Q1 2010)
Appoint the FCH JU Executive Director	Q4	In progress (Completion Q2 2010)
Adopt the FCH JU Communication Strategy	Q4	Postponed until the Policy and Communications Officer is appointed
Launch the development of branding of the FCH JU	Q4	Postponed until the Policy and Communications Officer is appointed
States Representatives Group: Election of Chair and Vice-Chairs, adoption of the Rules of Procedure	Q1	Completed
Develop the FCH JU interim website	Q2	Completed
The 2 <sup>nd</sup> Stakeholders General Assembly meeting	Q4	Completed
Publication of the second call for proposals	Q3	Completed

<sup>21</sup> FCH JU Council Regulation No 521/2008, Article 14

<sup>22</sup> FCH JU Statutes Article 11

## **11. CHALLENGES**

A number of key challenges for the FCH JU have been identified in 2009 and work to address these has been initiated.

These include:

- Improving the current low funding levels of the FCH JU;
- Developing closer cooperation with Member States and Regions;
- Developing a framework for elaborating Regulations, Codes and Standards (RCS);
- Improving programme targets and milestones;
- Improving the FCH JU's strategy for implementing large demonstration projects;
- Modalities for interface with other EU policies;
- International cooperation strategy.

The current funding rules of the FCH JU is the most pressing issue for the success of the programme, as low levels of funding granted under the current framework render the programme uncompetitive internationally, but also in comparison with national programmes and other European Public-Private Partnerships (PPPs) and Joint Undertakings. A working group including representatives of the Programme Office, the IG and the RG held several meetings during 2009 to map possible solutions to the problem. A large number of scenarios were analysed based on the data from the Calls for Proposals 2008 and 2009 and the work plan of the MAIP. The results of this work will be submitted to the Governing Board in 2010 for a decision on the course to take, including a possible amendment of the Council Regulation.

Efforts to develop cooperation with Member States and Regions in 2009 are described in Chapter 8 above.

As regards RCS, the first planning meeting to define the role of the FCH JU in coordinating the formulation of RCS was held in September together with DG Enterprise. Participants included representatives of standardisation organisations, Member States, academia and the EC. Discussions are ongoing on how to best organise the RCS function within the Programme Office.

The improvement of targets and milestones for the FCH JU was discussed at the meeting of the Scientific Committee and the Application Area Working Group leaders in April. Mr Herbert Wancura (IG) and Dr Robert Steinberger-Wilckens (RG) were mandated to produce terms of reference for the work to be carried out in 2010 to improve these. These will be presented to the Governing Board in Q1 2010 for approval to procure a comprehensive study.

*Adopted by the FCH JU Governing Board on 15 June 2010*

Strategy for large scale demonstrations in the automotive sector has been discussed in the context of developing cooperation with Regions. The NextHyLights project, funded under the 2008 Call, has as its objective to prepare the demonstration strategy for road vehicles.

International cooperation activities in 2009 have been described in Chapter 8 above. A strategic approach will be elaborated in 2010.

Coordination with other EC policies and programmes will also be developed in 2010 once the FCH JU is autonomous and fully staffed.