



**Fuel Cells and Hydrogen Joint Undertaking
(FCH JU)
Annual Activity Report 2012**

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EXECUTIVE SUMMARY

The year 2012 was the second full year for the FCH JU as an autonomous legal entity. It also marked the middle of the 2008-2017 establishment period foreseen for the JU in the context of the 7th Framework Program and was characterized by an increased operational workload stemming from the management of a portfolio of 103 projects.

The main highlights of the year can be summarized as follows:

- 33 grant agreements were concluded for an amount of € 117.5 M corresponding to call 2011, the largest call launched by the JU. In parallel the evaluation of call 2012 proposals was carried out and led to the approval on 11 October 2012 by the Governing Board of a negotiation mandate and to the start of negotiations of 28 proposals for a budget of € 79.8 M. Furthermore 28 amendments to on-going contracts were signed.
- 24 interim and 5 final reports concerning 209 beneficiaries were validated leading to interim/final payments for an amount of € 5.2 M and to clearing of € 12 M. In this frame, following the recommendations of the internal audit capability the ex-ante control process was enhanced in particular through a clarification of the control strategy, a strengthening of the monitoring tools and a review of the procedures/checklists. In addition, the implementation of the ex-post audit strategy launched in 2011 was pursued with 19 audits finalized out of 33 selected. Furthermore, a communication campaign addressed to the FCH JU beneficiaries was organised including 3 sessions covering 54% of the projects and aiming at avoiding errors in cost claims. With a similar aim, the FCH JU Guide on Financial Issues was published providing detailed explanations of the financial provisions of the grant agreement.
- A study¹ on the commercialisation of Fuel Cell buses was carried out involving a coalition of 40 companies and government organisations. It concludes that Fuel Cells and Hydrogen technology allows for a promising, necessary and environment-friendly alternative powertrain for urban buses contributing to the decarbonisation of road transport.
- The Stakeholders' General Assembly was held on 12 October in Paris, for the first time outside Brussels, with a view to increase visibility of the FCH JU and to raise awareness on FCH technologies in France.
- The second Program Review Days were organised on 28 and 29 November 2012, enabling a public assessment regarding the progress of the program towards its objectives.

Although a number of projects will end in 2013, the size of the portfolio of projects will further increase with the signature of call 2012 projects. In this context, the risk related to understaffing identified as a critical risk in the 2012 Risk Management exercise (as already the case in 2011) is a key issue for which mitigating measures are being implemented, such as increased automation, simplification of procedures and efficiency gains using staff build up know-how.

¹ The presentation and report are available at the following link: <http://www.fch-ju.eu/news/fch-ju-launches-its-study-urban-buses-alternatives-power-trains-europe>

1. POLICY ACHIEVEMENTS

The Fuel Cells and Hydrogen Joint Undertaking (FCH JU) represents a public-private research partnership at the European level. Its members are: the European Union, represented by the European Commission as a public representative; the 'New Energy World Industry Grouping Fuel Cell and Hydrogen for Sustainability – NEW-IG' (hereafter "the IG") which represents European companies; and the 'New European Research Grouping on Fuel Cells and Hydrogen - N.ERGHY' (hereafter "the RG"), representing European research organisations and universities.

Fuel Cell and Hydrogen technologies have an enormous potential in terms of contributing to a number of Europe's key policy goals, including the reduction of CO₂ emissions (in the energy system and particularly in transport), improving energy security and promoting innovation-driven growth and employment. The European Strategic Energy Technology (SET) Plan has identified Fuel Cells and Hydrogen to be among the technologies needed for Europe to achieve the targets for 2020: 20% reduction in greenhouse gas emissions; 20% share of renewable energy sources in the energy mix and 20% reduction in primary energy use. Additionally, it has been identified to contribute towards achieving the long-term vision for 2050 towards decarbonisation. This is in line with the Commission's Communication "Energy for a Changing World – An Energy Policy for Europe", the goals of the Lisbon Strategy and the European Strategic Transport Technology Plan.

In order to realise these public benefits, the FCH JU brings public and private interests together in a new, industry-led implementation structure, ensuring that the jointly defined research program better matches industry's needs and expectations, while focusing on the objective of accelerating the commercialisation of Fuel Cells and Hydrogen technologies. FCH JU is a Joint Technology Initiative (JTI) within the Seventh Framework Program 2007 – 2013 (FP7) and implemented as a Joint Undertaking set up by the Council Regulation N° 521/2008 of 30 May 2008 for a period lasting up until 31 December 2017.

This Council Regulation was amended on 14 November 2011 (Council Regulation N° 1183/2011 of 14 November 2011 – OJ L 302, 19.11.2011, p.3) in order to take into consideration the in-kind contributions from other legal entities participating in its activities (mainly research organisations including universities and research centres) in matching the Union's contribution.

The FCH JU has a total financing of € 947 M for the whole period. The Union contributes with a maximum of € 470 M for the purpose of covering operational and running costs. The operational costs of the JU shall also be covered through in-kind contributions from the legal entities participating in the activities. The contribution from the participating legal entities shall at least match the financial contribution of the Union.

The mission of the FCH JU is to support long-term and breakthrough-orientated research, technological development and demonstration and support actions, including pre-normative research, following open and competitive calls for project proposals, independent evaluation and the conclusion of a Consortium Agreement and a Grant Agreement. In addition, the FCH JU pursues support activities such as communication and dissemination of information on technologies and its projects.

1.1 KEY OBJECTIVES 2012

The key operational objectives for the autonomous FCH JU in 2012 are related to two Calls for Proposals: those of 2011 and 2012. In regards to the 2011 call, the negotiations took place in 2012 with the aim of concluding grant agreements for selected projects by the year's end. The negotiations were closed successfully. More details on the outcome are shown below in Chapter 1.3.3. Concerning the 2012 call, the objective was to complete the evaluation stage and to start the negotiations of the selected proposals in 2012. The evaluation was carried out in June 2012. Chapter 1.3.2 describes the process and the results in detail.

Chapter 1.3.1 describes the results of the selection process for the topics of the 2013 call for proposals. Regarding communication activities, the main objectives in 2012 were the efficient dissemination of information to potential participants on the opportunities offered by the Calls for Proposals, making the program known to stakeholders and raising political awareness on the technology readiness and commercialisation prospects of the technologies. Details are indicated in Chapter 2.2.

In addition to the operational objectives, tenders were launched in order to produce comparative studies on the benefits of Fuel Cells and Hydrogen in different application areas.

1.2 RESEARCH ACTIVITIES

In 2012, Grant Agreements were concluded for the Call for Proposals 2011 and following this, the Call for Proposals 2012 was launched. The evaluation of the 2012 proposals was completed and lists of projects to start negotiation with were approved by the Governing Board. In parallel, drafting of the RTD priorities and call topics for 2013 was performed in 2012 with approval by the Governing Board of the 2013 Annual Implementation Plan (AIP) on 19 December 2012.

1.2.1 FCH JU Scientific Priorities 2012

The RTD Priorities and Objectives included in the 2012 AIP served as the basis for the topics included in the Call for Proposals 2012, the fifth for the FCH JU.

The topics in the 2012 Call cover all the five application areas defined in the AIP 2012: Transport & Refuelling Infrastructure; Hydrogen Production & Distribution; Stationary Power Generation & Combined Heat & Power (CHP); Early Markets; and Cross-Cutting Activities.

Regarding the process for drafting the RTD priorities for 2012 as well as the topics for the call, they were initially formulated by the Application Area Working Groups in 2011, led by representatives of the member companies of the IG. They were further elaborated in consultation with the relevant services of the Commission and the RG. The RTD Priorities and call topics were subsequently put forward for consultation with the Scientific Committee and the FCH JU States Representatives Group. Their comments were considered and evaluated for the final draft which was put forward for the decision of the Governing Board and approved later in 2011.

1.2.2 FCH JU Scientific Priorities 2013

The drafting of the RTD Priorities and call topics for 2013 was initiated during the second quarter of 2012 by the Application Area Working Groups. In considering the topics, account was

taken of the response to the 2012 call. The drafting process was similar to that followed for the AIP 2012.

1.3 Operational Activities in 2012 (CALLS, PROJECTS & PROCUREMENT)

1.3.1 Call for Proposals 2013 activities

The Call for Proposals 2013 was prepared in 2012 and comprises 27 Topics covering all five application areas described in the AIP 2013. The estimated FCH JU financial contribution to the Call is € 68.5 M. Please see Table 1.3.1 below for a complete list of topics and the planned budget distribution.

Table 1.3.1: Topics called for in the 2013 Call for Proposals and the corresponding indicative FCH JU funding

Area/ Topics called	Funding Schemes	Indicative FCH JU Funding million €
Area SP1-JTI-FCH.1: Transportation & Refuelling Infrastructure		23.0
SP1-JTI-FCH.2013.1.1 Large-scale demonstration of road vehicles and refuelling infrastructure VI	Collaborative Project	
SP1-JTI-FCH.2013.1.2 Research & development on bipolar plates for PEM Fuel Cells	Collaborative Project	
SP1-JTI-FCH.2013.1.3 Research & development of periphery components for Hydrogen refuelling stations	Collaborative Project	
SP1-JTI-FCH.2013.1.4 Field demonstration of auxiliary power units for transport applications	Collaborative Project	
SP1-JTI-FCH.2013.1.5 Fuel quality assurance for of Hydrogen refuelling stations	Collaborative Project	
Area SP1-JTI-FCH.2: Hydrogen Production & Distribution		7.5
SP1-JTI-FCH.2013.2.1 Development of improved road H2 distribution	Collaborative Project	
SP1-JTI-FCH.2013.2.2 Diagnosis and monitoring of electrolyser performance	Collaborative Project	
SP1-JTI-FCH.2013.2.3 Large capacity PEM electrolyser stack design	Collaborative Project	
SP1-JTI-FCH.2013.2.4 New generation of high temperature electrolysers	Collaborative Project	
SP1-JTI-FCH.2013.2.5 Validation of photo electrochemical Hydrogen production processes	Collaborative Project	
Area SP1-JTI-FCH.3: Stationary Power Generation & CHP		24.0

Area/ Topics called	Funding Schemes	Indicative FCH JU Funding million €
SP1-JTI-FCH.2013.3.1 Improving understanding of cell & stack degradation mechanisms using advanced testing techniques, and developments to achieve cost reduction and lifetime enhancements for stationary Fuel Cell power and CHP systems.	Collaborative Project	
SP1-JTI-FCH.2013.3.2 Improved cell and stack design and manufacturability for application-specific requirements for stationary Fuel Cell power and CHP systems.	Collaborative Project	
SP1-JTI-FCH.2013.3.3 Stationary power and CHP Fuel Cell system improvement using improved balance of plant components/sub-systems and/or advanced controls and diagnostics systems	Collaborative Project	
SP1-JTI-FCH.2013.3.4 Proof of concept and validation of whole Fuel Cell systems for stationary power and CHP applications at a representative scale	Collaborative Project	
SP1-JTI-FCH.2013.3.5 Field demonstration of large scale stationary power and CHP Fuel Cell systems	Collaborative Project	
SP1-JTI-FCH.2013.3.6 Field demonstration of small scale stationary power and CHP Fuel Cell systems	Collaborative Project	
SP1-JTI-FCH.2013.3.7 Development of Fuel Cell serial production techniques and equipment for stationary Fuel Cell power and CHP systems	Collaborative Project	
Area SP1-JTI-FCH.4: Early Markets		9.0
SP1-JTI-FCH.2013.4.1 Demonstration of Fuel Cell-powered material handling vehicles (MHV) including infrastructure	Collaborative Project	
SP1-JTI-FCH.2013.4.2 Demonstration of portable generators, back-up power and uninterruptible power systems	Collaborative Project	
SP1-JTI-FCH.2013.4.3 Development of portable Fuel Cell systems for early market applications	Collaborative Project	
SP1-JTI-FCH.2013.4.4 Development of 1-30 KW Fuel Cell systems and Hydrogen supply for early market applications	Collaborative Project	
Area SP1-JTI-FCH.5: Cross-cutting Issues		5.0
SP1-JTI-FCH.2013.5.1 European curriculum on H2&FC technologies: implementation of educational and study material	Coordination and Support Actions (Supporting Action)	
SP1-JTI-FCH.2013.5.2 Training on H2&FC technologies for operation and maintenance	Coordination and Support Actions (Supporting Action)	
SP1-JTI-FCH.2013.5.3 Social acceptance of FCH technologies throughout Europe	Coordination and Support Actions (Supporting Action)	

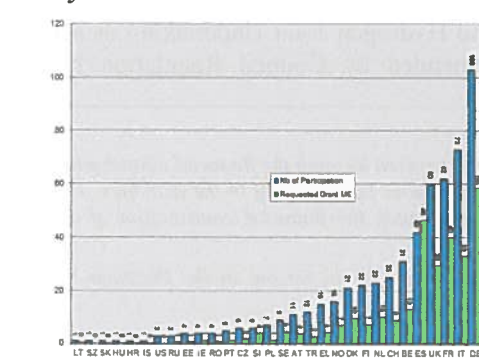
Area/ Topics called	Funding Schemes	Indicative FCH JU Funding million €
SP1-JTI-FCH.2013.5.4 Development of industry wide uniform performance test schemes for SOFC/SOEC cells & stacks	Collaborative Project	
SP1-JTI-FCH.2013.5.5 Development of a European framework for the generation of guarantees of origin for green H2	Coordination and Support Actions (Supporting Action)	
SP1-JTI-FCH.2013.5.6 Pre-normative research on resistance to mechanical impact of pressure vessels in composite materials	Collaborative Project	
Total indicative FCH JU Funding		68.5

1.3.2 Call for Proposals 2012 activities

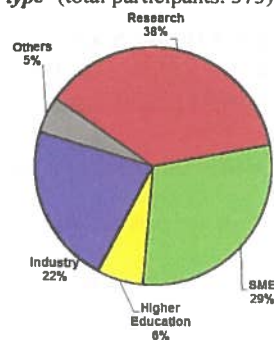
The Call for Proposals 2012 was published on 17 January 2012 with an indicative budget of € 77.5 M (increased by the EFTA contributions and reactivation of amounts from previous years, as approved by the Governing Board to € 79.8 M €). The submission deadline for the Call was 24 May 2012. The evaluation of submitted projects was carried out from 8 to 29 June 2012² by 31 independent experts. In addition, one chair- and one vice chairperson oversaw the consensus phase and one independent observer was invited to monitor the evaluation procedure in order to ensure that it was carried out in a fair, impartial and confidential manner. The Independent Observer's Report was issued by the end of July 2012.

The Calls for Proposals are managed under the responsibility of the Executive Director and 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 the Program Office staff. Graphs 1.3.2 (a)-(d) below provide statistics on the 2012 Call for proposals participation and the evaluation process.

Graph 1.3.2(a) Participation in project proposals by country³



Graph 1.3.2(b): Participation in project proposals by participant type⁴ (total participants: 573)

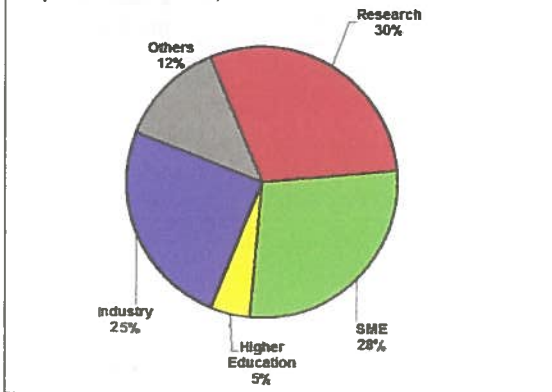


² The individual (remote) evaluation took place from 8-20 June 2012. The Consensus Meetings were held from 25-27 June 2012 and the panel meeting was held on 28-29 June 2012.

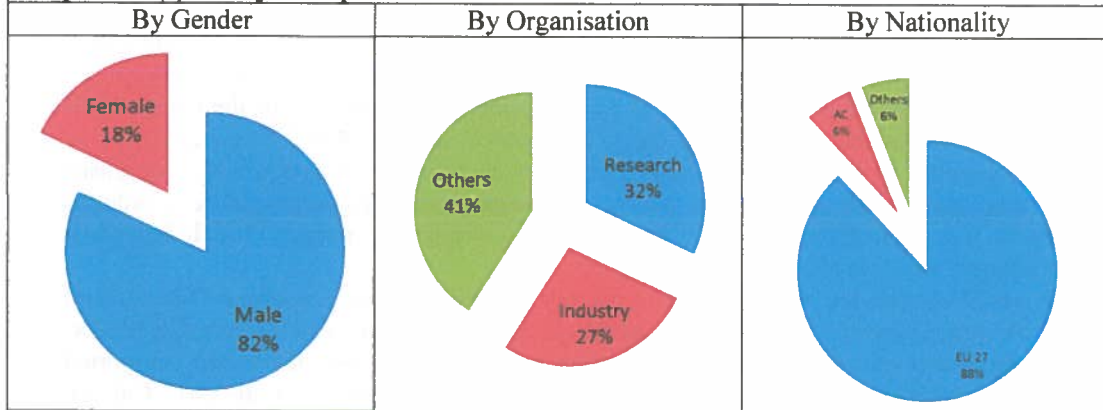
³ Includes all project proposals submitted by the deadline before evaluations.

⁴ Includes all project proposals submitted by the deadline before evaluations.

Graph 1.3.2(c) Participation in project proposals by requested contribution breakdown (total funding requested: € 292.5 M)



Graph 1.3.2(d): Call for Proposals 2012: Evaluators



Out of the 72 proposals submitted, 4 were deemed ineligible. Of the remaining, 43 proposals passed the thresholds at the evaluation stage.

Article 12 paragraph 3 of the Statutes of the Fuel Cells and Hydrogen Joint Undertaking as set out in the Annex to Regulation (EC) N° 521/2008 amended by Council Regulation N° 1183/2011 of 14 November 2011 provide for the following:

'3. The operational costs of the FCH Joint Undertaking shall be covered through the financial contribution of the Union, and through in-kind contributions from the legal entities participating in the activities. The contribution from the participating legal entities shall at least match the financial contribution of the Union.

Receipts shall be dealt with in accordance with the Rules of Participation set out in the Decision No 1982/2006/EC.

This paragraph shall apply from the date on which the Research Grouping became member of the FCH Joint Undertaking.'

The contribution from the legal entities participating in the activities of the 43 proposals above threshold have shown not to be sufficient to fulfil the matching requirement while maintaining funding rates that were in line with the nominal rates, set at a level corresponding to the funding rates in the Seventh Framework Program.

Consequently, in practice, it was necessary to reduce the nominal funding rates after the submissions of project proposals and evaluation in order to meet the matching requirement. In the 2012 Call for Proposals, funding rates were reduced by a factor of 0.80, producing the following funding rates:

For the Collaborative Projects (CP)

RTD activities

40% of direct eligible costs for large industrial participants

60% of direct eligible costs for SMEs, non-profit public bodies, universities, higher education establishments and non-profit research organizations

Demonstration activities

40% of direct eligible costs for all type of participants

Other activities

80% of direct eligible costs for all type of participants

For the Coordination and Support Actions (CSA)

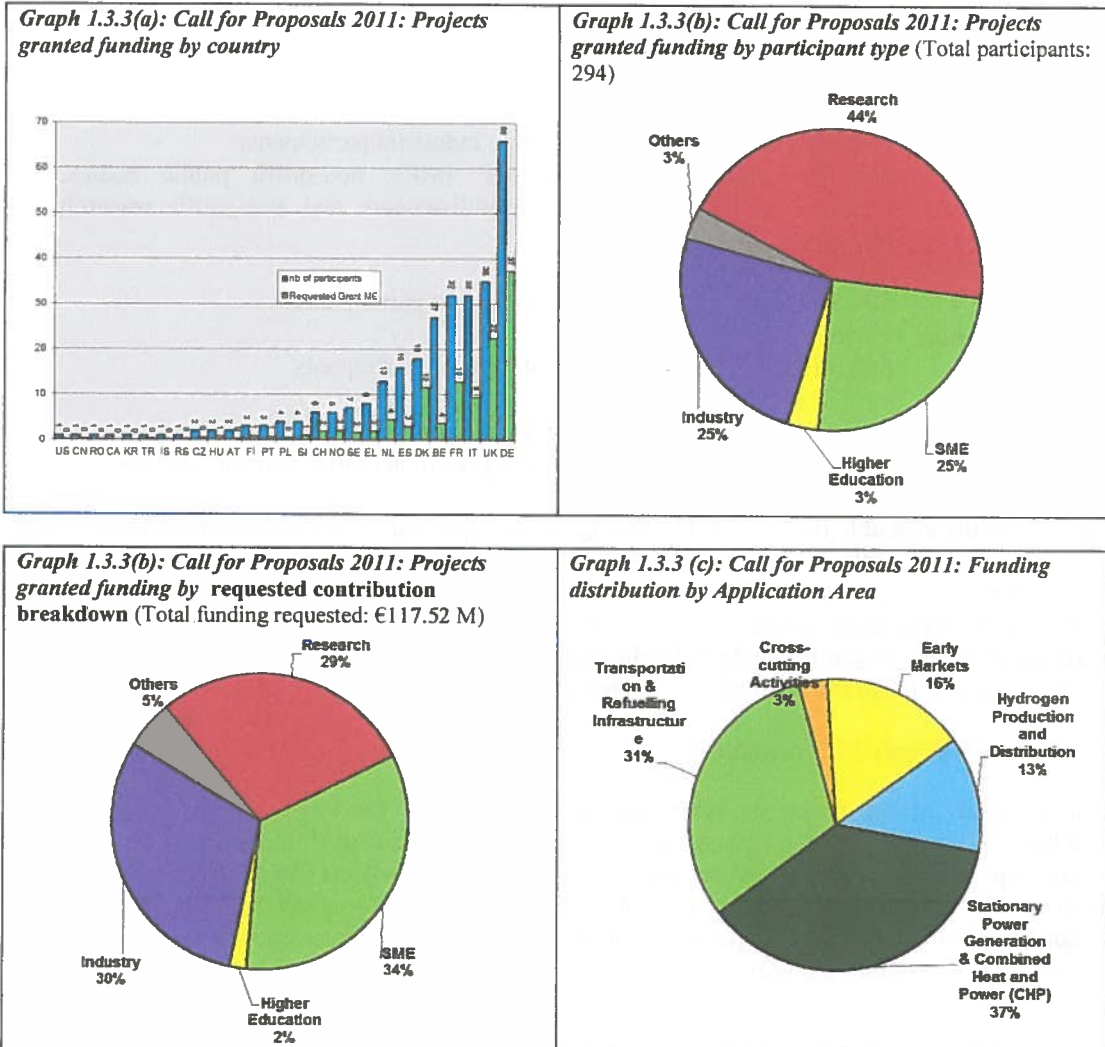
80% of direct eligible costs, for all types of activities and participants

In the light of the available budget, the Governing Board approved in its meeting on 11 October 2012 a list of 27 proposals (and a reserve list of an additional 16 proposals) to start negotiations with, in order to conclude Grant Agreements. These proposals are ranked in order of priority, according to the evaluation results. The Governing Board decided to add 1 proposal from the reserve list in the Hydrogen Production Application Area to the existing 27 to start negotiations with. The negotiations of the 28 proposals started on 17 October 2012.

1.3.3 Call for Proposals 2011 activities

The negotiations of the proposals submitted to the 2011 Call for Proposals started on 28 November 2011 and the last proposal negotiation was concluded on 7 December 2012. In different steps, the Governing Board approved the funding of 33 projects (30 proposals from the main lists and 3 proposals from the reserve lists). Grant agreements for all of these projects were concluded by the end of 2012. The payments of pre-financing, with one exception, were made to all project consortia before the year's end.

Graphs 1.3.3(a)-(c) below provide statistics on the distribution of funding by country and participant type, as well as by application area, as per the Grant Agreements concluded.



1.3.4 Call for Proposals 2010 activities

Following the request of the C3SOFC project coordinator, on behalf of all consortium members, the FCH JU agreed to terminate the related Grant Agreement (number 278195). Termination came into force upon the date of signature of the termination letter by the FCH JU (4 September 2012) and with retroactive effect from 01/10/2011, the start date of the project. Therefore no reports were due and the entire amount of pre-financing was recovered from the individual beneficiaries.

In December 2012, the coordinator of the project TOWERPOWER (Grant Agreement number 279190), was put under administration. The FCH JU Director decided to suspend the project until he had complete assurance that the consortium of partners is able to deliver the expected results and informed the consortium on 14 December 2012 accordingly.

1.3.5 Call for Proposals 2009 activities

The FCH JU Director decided to suspend the project NH34PWR (Grant Agreement number 256856) for the same reasons as indicated above (same company as coordinator) until he had complete assurance that the consortium of partners is able to deliver the expected results and informed the consortium on 14 December 2012 accordingly.

The projects below ended in 2012 and submitted their final technical and financial reports. The below comments are mainly based on the executive summary of the final public report; for more information (public summary report and public deliverables) the interested reader can refer to the project website or the FCH JU website.

HYGuide (www.fc-hyguide.eu)

The main outcome of the project is two guidance documents on “how to perform Life Cycle Assessment (LCA) in the field of Hydrogen production and Fuel Cell technologies”. These documents were developed in a peer reviewed stakeholder process (incl. public consultation) and are available (ready-to-use) for on-going FCH JU projects. The platform, as an integrative part of the International Reference Life Cycle Data (ILCD) network, can be used as a hub for LCA data sets in the field of Hydrogen and Fuel Cells.

H2FC-LCA (www.fc-hyguide.eu)

Where the HYGuide project mainly focused on Hydrogen, the H2FC-LCA elaborated the Fuel Cell LCA aspects. The two consortia agreed to coordinate their projects and to share a common work program mainly concerning the key overall LCA methodological choices avoiding in such way contradictory results and the delivering of different methodologies.

The consortium developed a Specific Guidance Document for application to Fuel Cell technologies and related training material with courses for practitioners in industry and research, based on and in line with the International Reference Life Cycle Data System (ILCD) Handbook, coordinated/ co-developed by the EC's JRC-IES. It includes 3 case studies concerning the application of the LCA guidance to PEMFC, SOFC and MCFC systems in order to provide practitioners with real examples on how to apply concepts and rules contended in the guidance.

1.3.6 Call for Proposals 2008 activities

The projects below ended in 2012 and submitted their final technical and financial reports.

Prepar-H2 (www.newenergy.is/en/preparh2)

The outcome is a list of recommendations, which are meant to help future FCH projects to conduct correct engagement and emphasis on socio-economic issues and also point out key issues which should be incorporated into future demo projects.

NextHyLights (www.nexthylights.eu)

NextHyLights was a project to assist in preparing the next large-scale Hydrogen Fuel Cell vehicle demonstration projects in Europe. The project has developed consolidated plans for large-scale demonstration projects across three parallel Hydrogen Fuel Cell vehicle (FCEV) segments 'passenger cars', 'buses' and 'other vehicles'. In the case of the bus segment a roll-out plan covering the market introduction has also been developed. The vehicle segment specific work plans cover the time span including the next large-scale demonstration projects.

Auto-stack (autostack.zsw-bw.de)

The consortium assessed ways to identify and reduce the critical barriers for better collaboration between stakeholders and generate a more attractive business case for a European automotive stack industry during pre-commercial and early commercial phases.

Activities did include the development of a common OEM specification and stack platform concept, analysis of the potential for meeting the mid-term technical and cost targets by the European supply chain, establishment of a technology roadmap, assessment of synergies with other applications and finally definition of a business concept for a European stack industry.

The Auto-Stack study demonstrated the benefits of combining expertise between OEMs, supply chain and research players by providing a deeper understanding of the technology status, existing limitations, objectives and priorities for further stack research and development with focus on the critical requirements for commercialization of automotive stack technology.

1.3.7 Operational indicators

The operational indicators for the follow-up of the program performance are defined in the Annual Implementation Plan 2012. The latest available results have been added in table 1.3.7 below. Footnotes below are explaining the details of each indicator.

Table 1.3.7 Operational indicators in 2012

Fuel Cells and Hydrogen Joint Undertaking – RTD activities				
SPECIFIC OBJECTIVES		Result indicators		
		Indicator	Target	Latest known results
1	To address technological and non-technological barriers to commercialisation of FCH technologies as defined in the MAIP	Coverage of topics called for	100% by 2013	84% ⁵
		Percentage of proposals which successfully address the criteria of scientific and/or technological excellence ⁶	70% by 2013	74% ⁷
		Percentage of projects which have fully achieved their objectives and technical goals and have even exceeded expectations	60% ⁸ by 2013	Data not yet available ⁹
2	To promote the use and dissemination of research results with a view specifically to commercialising FCH technologies	Percentage of proposals which successfully addressed the criterion of dissemination and use of project results ¹⁰	70% by 2013	90% ¹¹
		Percentage of projects showing evidence that they will produce significant scientific, technical, commercial, social or environmental impacts	60% ¹² by 2013	Data not yet available ⁹
		Percentage of industrial participation in the projects of which SMEs	50% of industrial participation by 2013	68% ¹³
			15% of SMEs participation by 2013 ¹⁴	30% ¹⁵
		Percentage of projects which generate one or more patent applications	30% by 2013	Data not yet available ⁹ (13 patents submitted)

⁵ Based on the evaluation results of all calls including the Call for Proposals 2012.

⁶ Based on the Consensus report for research projects established by the evaluators to rank the proposals. The scoring used for this indicator is good to excellent

⁷ Based on the evaluation results of the Call for Proposals 2012.

⁸ On finished projects (not all projects will be finished by 2013).

⁹ The number of finished projects in 2012 (7 finished projects), with submitted final report, is not representative.

¹⁰ Based on the Consensus report for research projects established by the evaluators to rank the proposals. The scoring used for this indicator is good to excellent

¹¹ Based on the evaluation results of the Call for Proposals 2012.

¹² On finished projects (not all projects will be finished by 2013).

¹³ Based on the funding granted under the 2011 Call for Proposals, including SMEs.

¹⁴ Based on funding granted to SMEs in projects

¹⁵ Based on the projects funded under the 2011 Call for Proposals.

Fuel Cells and Hydrogen Joint Undertaking – RTD activities			
SPECIFIC OBJECTIVES	Result indicators		
	Indicator	Target	Latest known results
	Percentage of projects with publications in peer reviewed journals	55% by 2013	Data not yet available ⁹ (24 projects with publications in journal or in conference proceeding)

1.3.8 Program Review Days 2012

The second edition of the annual Program Review Days took place on 28 and 29 November 2012 and covered the entire portfolio of on-going FCH JU funded-projects from the 2008, 2009, 2010 calls and some projects from the 2011 call. Altogether, this amounted to 71 projects presented; this includes 4 projects funded under FP7 by the European Commission and which were deemed relevant. All presentations are published on the FCH JU web site.

These Review Days aim at assessing the progress of the FCH JU program in relation to the achievement of the targets of its Multi-annual Implementation Plan (MAIP), the annual implementation plans as well as monitoring the evolution in relation to international developments. As the Program Review Days are an open event, it offers an excellent visible platform for projects and technological developments in the sector. It gives additionally excellent networking opportunities for Review Day participants and project representatives. The Review Days 2012 will result in the publication of a final report which will be available in Q1 2013 on the FCH JU website.

The document related to the 2011 Review Day is available on the FCH JU web site at the following address: http://www.fch-ju.eu/sites/default/files/188213_2012_2640_FUEL_CELLS_AND_HYDROGEN1.pdf

1.3.9 Public procurements: Benchmark studies

The activities described in this section are implemented by a call for tenders (i.e. public procurement) as foreseen in the Annual Implementation Plan 2012: five areas for benchmarking studies are identified.

Subject (Indicative title)	Indicative FCH JU funding €	In 2012 Committed funding
Development of a European Fuel Cell and Hydrogen Vehicles Roll Out Plan	0.6 million	€ 92,550
Development of a European Urban Fuel Cell Bus Commercialisation Strategy	1.7 million	€ 1,056,000
Commercialisation roadmap for Hydrogen powered Fuel Cell material handling vehicles	0.5 million	0 (see below)

Subject (Indicative title)	Indicative FCH JU funding €	In 2012 Committed funding
Development of a European commercialisation strategy for Fuel Cell stationary applications	1.5 million	0 (see below)
Jobs Creation Impact of Different Deployment Scenarios for Fuel Cells and Hydrogen Technologies	0.2 million	€ 160,000
Total indicative FCH JU Funding	4.5 million	

1. In March 2012, after an open procedure, the FCH JU signed framework contracts (with reopening of competition) with three consultancies. The objective is to use these framework contracts as the main tool by which to contract the studies.
2. **Bus sector:** Using the above mentioned framework contract, the FCH JU, assisted by the contractor McKinsey and a coalition of 40 companies, launched in March 2012 a study on the commercialisation of Fuel Cell buses. The study consisted of a fact-based comparison of the following aspects:
 - 8 alternative powertrains for urban buses: diesel, CNG, serial diesel hybrid, parallel diesel hybrid, Fuel Cell, trolley, overnight battery charging and opportunity battery charging electric
 - three dimensions for evaluation: cost, performance and environment.

The study demonstrates that Fuel Cell buses can actually become an attractive environment-friendly alternative by 2030 with a limited cost premium in comparison to the incumbent diesel technology. As a next step, the FCH JU will explore the feasibility of a second phase of the study with a view to examine how to move from today's situation towards this 2030 prospect.

The final report of the study is available on the FCHJU website at <http://www.fch-ju.eu/news/fch-ju-launches-its-study-urban-buses-alternatives-power-trains-europe>

3. **Employment study:** Using the framework contract, the FCH JU contracted McKinsey to conduct a study on the "Trends in Investments, Jobs and Turnover in the Fuel Cells and Hydrogen Sector". This study was based on three sources: a survey of all the FCH JU's beneficiaries, desk research and interviews of public and private decision makers. The report was very useful in terms of helping the Commission in its impact assessment of the renewal of the FCH JU. The report will be available on the FCH JU website in Q1 2013.
4. **Car sector:** A study on European Roll out for FCH vehicles must be done in close cooperation with those member states who are most involved in the deployment of FCH vehicles for several reasons :
 - a. Most of the financial and regulatory tools necessary to move from demonstration of FCH technologies to deployment are in the hands of member states.
 - b. The deployment of FCH vehicles is subject to a chicken and egg conundrum: vehicles will not be produced and sold as long as there is not a sufficient number of refilling stations; and stations will not be installed as long as there is no sufficient number of

vehicles. The best way to overcome this problem is to organise deployment of cars and stations at the same moment in a limited number of areas/countries.

This led to conclude that the best way to contribute to a study on car roll outs was to work closely together with the member states and industrial partners that were ready to (study to) launch this roll out; this at national level and with the ambition to expand these study results step by step to the whole of Europe.

Based on the above reasoning, the FCH JU used a fraction of the budget foreseen for a study on a Fuel Cell car roll out to contribute to the UK H2 Mobility study; this study investigates the feasible and acceptable conditions for a Fuel Cell car roll out in the UK.

5. **Stationary application:** A study comparing alternative technologies for distributed power generation was done and paid for by a coalition of private industrial companies. For this, a first phase, FCH JU funds were not required. This study concludes however that for stationary Fuel Cell applications, the technology requires additional efforts in order to become competitive with other technologies. The foreseen FCH JU budget may be used in a second phase to study specifically how to make the Fuel Cell technology competitive for this type of applications.
6. **Material handling vehicle sector:** a study on a commercialisation road map for material handling vehicles was not deemed necessary any more seeing the current progress in this sector, especially in US.

1.4 COOPERATION

1.4.1 International cooperation

International cooperation was continued during 2012 with key partner countries, particularly with the US but also with South Korea. The FCH JU's approach is to develop cooperation at operational levels through projects and information exchanges. The policy cooperation with international partners remains the EC's main prerogative.

USA: Staff of the FCH JU participated in the Department of Energy's (DoE) Annual Merit Review and DoE experts were in turn represented at the FCH JU's 2012 Program Review Days and in the evaluation of the proposals from the 2012 Call for Proposals.

In addition, bilateral meetings were held either in person or via teleconference to discuss on ways for operational cooperation. Work programs were shared in order to identify areas of common interest at project level. Following these discussions, the 2012 Call for Proposals contained one topic with an eligibility criterion which stated that any proposal submitted to the FCH JU will be eligible only if coordinated with US partners approved by the DoE. One proposal for this topic was selected by the Governing Board for opening negotiations and will most probably lead to the signature of a Grant Agreement in Q1 2013.

Republic of Korea: Discussions were established through contacts with KETEP (Korea Energy Technology Evaluation and Planning). The same approach as the one proposed to DoE was proposed to KETEP and will be discussed further during 2013.

In addition, international experts from for example Japan were involved in the 2012 Program Review Days.

1.4.2 Member States

Exchanges of information with the Member States and countries associated to the 7th Framework Program were sustained and further developed in 2012 through the FCH JU States Representatives Group (SRG). The SRG held 3 meetings (March, June, November) where members were consulted on the Annual Implementation Plan 2013.

In the course of this year, the SRG meeting has become a very fruitful platform for discussion. A stronger and more convincing involvement of SRG members is now in place; this includes for example the presence of new representation (i.e. Hungary). The ambition of a closer connection with national Ministries is targeted in light of bringing FCH technology issues to the attention of the highest national level.

In summary, the SRG discussion in 2012 covered the following key issues:

1. the national priorities and expectations
2. the future of the FCH JU program under Horizon 2020
3. the FCH JU studies (i.e. bus commercialization strategy)
4. national best practices (i.e. UK's national agency for business innovation, German National Organization for Hydrogen and Fuel Cell Technology, H2E France, ...) and projects (i.e. H2moves Scandinavia)

In addition to the formal cooperation through the States Representatives Group, the relationship with the Member States has been intensified through the National Contacts Points for energy in all member states and with the Enterprise European Network Points. These have regularly been informed about FCH JU activities, invited to its events and received specific information material. Further contacts were developed with Permanent Representations of Member States (advisors for energy, transport and/or research), specifically from Central and Eastern European countries.

1.4.3 Regions

Cooperation with European regions was pursued at several levels. A number of joint actions were carried out with the HyER (Hydrogen Fuel Cells and Electromobility for European Regions), formerly named HyRaMP. HyER, as an organisation, brings together regions interested in investing in Fuel Cell and Hydrogen technologies. It coordinated the regional contribution to the sector survey on growth and investment in FCH technologies and participated also in the bus commercialisation study. HyER was also invited as observer to participate in some State Representatives Group and Governing Board meetings.

The communication taskforce, established by the Program Office, IG, RG and HyER to align activities and messages as well as develop communication synergies, continued its activities. Joint actions were organised as part of the project dissemination strategy, for example during the EU sustainable energy week.

At project level, several regions have contributed considerable additional funding to the FCH JU activities, particularly in the large-scale bus demonstrations.

1.4.4 Joint Research Centre

The Joint Research Centre (JRC) of the European Commission continued to support FCH JU activities in 2012 under the Framework Agreement concluded between the two entities in 2009. In 2012 a revision of this Framework Agreement was discussed lengthy but finally deemed not necessary.

At program level, the JRC provided the FCH JU with inputs and technical data to the strategic planning (Annual Implementation Plan 2013). The JRC participated also in the planning of international cooperation strategies and meetings with international partners. Additional, the JRC provided a strong and very useful link between the FCH JU and activities within the SET Plan aimed at reinforcing the FCH JU links with other relevant European Industrial Initiatives and integrating the FCH JU contribution into the SETIS monitoring tool.

At project level, JRC is a consortium partner in 9 projects selected from the 2012 call for proposals. It also maintains and updates databases and associated tools for public access to EC-funded and JTI-funded R&D on FCH technologies: NESSHY-DB and HIAD.

The JRC also provided policy support to the European Commission in the field of FCH technologies (for example technical inputs to relevant legislation and standardisation) and support in international cooperation activities (IPHE, IEA).

The JRC participated in the 2012 Program Review Days with 3 reviewers.

2. SUPPORT ACTIVITIES

2.1 ADMINISTRATIVE FUNCTIONS

2.1.1 Legal and Financial Framework

In 2012, the main activities carried out by the Program Office in this field included the following:

Revision of the model grant agreement:

The model grant agreement was revised to include two simplifications:

1. The possibility for SMEs owners and other persons who work for a FCH JU project but do not receive a salary to declare their personnel cost through a flat rate system.
2. The possibility for beneficiaries to declare average personal costs without having to obtain a certification of their methodology in advance.

Financial guide

A financial guide was produced and shared with the FCH JU beneficiaries. The objective is to provide detailed explanations of the financial provisions of the grant agreement. It also increases the legal certainty for beneficiaries and helps the FCH JU in ensuring equality of treatment between the beneficiaries.

Communication campaign:

In order to facilitate the financial implementation of projects and to avoid errors in the costs reporting by beneficiaries, the FCH JU organised three sessions of a one-day-training for its beneficiaries. The training included a detailed explanation of the financial provisions of the grant agreement, an explanation of the control system applicable to the FCH JU funding as well as an analysis of the most frequent errors in the costs reporting of beneficiaries.

2.1.2 Personnel

Two selection procedures were completed (replacement of the staff upon their resignation):

- Financial Assistant AST4 (took up the duties on 16 October 2012)
- Project Manager FG IV (took up the duties on 01 January 2013) for a temporary filling of an AD 8 project manager position

In this context the Governing Board approved a change in the organisation chart aiming at reinforcing the finance team given the increased workload stemming in particular from the increased number of cost claims submitted and from the coordination and monitoring of ex-post audits.

At end of 2012 the FCH JU Program Office was staffed with 17 Temporary Agents and 2 Contract Agents.

Trainees

In 2012, the FCH JU offered for the second time to young graduates the possibility of gaining practical work experience in the areas of finance, administration and projects management through an extensive, paid 6 months traineeship scheme. The feedback from both supervisors and trainees shows that the scheme is very successful.

Implementing rules

The following implementing rules were adopted by the Governing Board of the Joint Undertaking in March 2012:

- Decision on the policy on protecting the dignity of the person and preventing psychological harassment and sexual harassment
- Decision for setting up the FCH JU Staff Committee
- Decision on staff appraisal

Team building

There was an investment in team building activities during 2012, with two sessions : one in January 2012 focusing on enhancing team cooperation and productivity, and another one in December on communicating in multicultural environment.

Training activities

Organizing and delivering training courses to the staff members in 2012 was carried out in the areas of general training, language training, IT training and Management training with an average of 10.24 days per staff member and an average of € 903.53 per staff member.

Staff survey

A Staff survey was conducted for the first time in 2012. Survey data shows that staff members are keen to engage, if given the right tools, planning and information from the management.

2.1.3 Offices

The seat of the FCH JU Program Office is located in Brussels, on Av. de la Toison d'Or 56-60, and has been here since the second week of January 2011, together with four other established Joint Undertakings.

2.1.4 IT Infrastructure

The priority objectives for IT are to ensure a stable and secure IT system, provide IT support to staff in the use of IT applications and equipment and to cooperate with the other JUs to ensure synergy and the efficient use of resources.

Main achievements in 2012 for IT include the following:

- The I.T. infrastructure was stabilised and enhanced throughout the year, namely the Wi-Fi network and the security concerns. Equipment and service to users were developed or improved and all FCH staff are now equipped with laptops. In collaboration with the FCH JU accountant, the inventory database for IT equipment and furniture has been tested and the first inventory exercise, performed. The common meeting areas have been properly equipped with phones and projection material.
- The BCP (business continuity plan) including elements of disaster recovery plan was adopted and an agreement was signed with DG RTD which provides for support in case of crisis. Given the differences in requirements and goals of the 5 JTI's the discussions on a full disaster recovery plan were pursued during the year to find a common solution.
- After the reorganisation of the shared drive performed in 2011, the mail registration tool was improved which offers some features available in the Ares tool of the Commission, for instance. An analysis of business needs was performed in the summer which led to the decision to acquire the M-Files software.
- The IT governance structure for the JUs with different committees has been put in place and coordinated by the IT Officers, Heads of Finance and Administration and Executive Directors. With the input of all members, the framework for a strategic IT decision has been set. The IT common work plan has been designed for the IT group and will help create savings in terms of human resources, infrastructure and in managing the increasing workload.

As identified in the risk assessment, a number of problems were still experienced with the IT tools during the year which caused the risk level for the internal processes for the calls to increase. Particular attention was given to those issues as they have a direct impact on the workload and planning activities of the staff. Aside from this, access to the CORDA database has improved our speed and quality of data analysis.

The stabilisation of the IT tool configuration and servers, timely reporting and monitoring of IT issues and a root-cause analysis of the problems and a close following the Service Level Agreements have all worked to significantly reduce other IT risks in the organization in 2012.

2.2 COMMUNICATION ACTIVITIES

In 2012, activities initiated in 2011 have been further developed and enriched. Additionally, new activities have been initiated, with a view to strengthen awareness-raising towards EU & national policy makers, multipliers' networks as well as towards opinion leaders and stakeholders of the FCH sector and related communities. The messages focused on the overall potential and market readiness of FCH technologies, the progress of the program so far and the dissemination of projects.

This assertive message remained strongly supported on the one hand by the fact-based study on power trains for vehicles – which had compared the technical, economic and environmental performance of different power train technologies for vehicles ([http://www.fch-ju.eu/sites/default/files/documents/Power trains for Europe.pdf](http://www.fch-ju.eu/sites/default/files/documents/Power%20trains%20for%20Europe.pdf)) – and on the other hand, by a

report from the FCH sector on the financial and technological outlook for the period 2014-2020 (<http://www.fch-ju.eu/page/publications>).

This message had been further enriched by the 2011 Program Review Days final report, which assessed the progress and achievements of the Program so far.

A policy analysis, commissioned by the FCH JU to the Bruegel Institute labelled “The great transformation: decarbonising Europe's energy and transport systems”, was published in February 2012 (<http://www.fch-ju.eu/page/publications>). The analysis contributed towards backing the FCH JU request for support for the transition to a low-carbon energy and transport system.

A wide sectorial survey addressing the whole FCH community and whose preliminary conclusions were made public in October 2012 further helped the FCH JU in highlighting the positive impact that the public-private partnership program has had so far on R& D investments and activities, job creation, and on the general growth of the sector.

2.2.1 Advocacy and awareness-raising

The FCH JU further strengthened its relationships with policy makers at the European level and at national levels, creating opportunities for presenting the partnership, its achievements and its perspectives for delivering the objectives, which led to its creation. These exchanges took (and take) place in the framework of discussions related to the definition of Horizon 2020 and targeted the Commission, MEPs as well as representatives from Member States. A special effort was made towards Central and Eastern European policy makers through meetings with permanent representation advisors from EU 12.

Additionally, individual meetings with some 50 key relevant policy makers were organised.

The FCH JU also had the opportunity to present its achievements and views on the Horizon 2020 legislative process to all the Councillors and Scientific attachés of the National Permanent Representations at the occasion of an official Research & Energy Council Working Party meeting (21 June) and again to the ITRE working group of the S&D Group of the European Parliament (20 October). A presentation was also given at the Social and Economic Committee (30 April) at the invitation of the rapporteur on the opinion of Technology platforms.

The FCH JU contributed to the dinner debate organised at the European Parliament by the European Energy Forum (11 January) on FCH technologies and organised a dinner debate at the Parliament in Strasbourg. This dinner debate, hosted by MEP Maria Da Graça Carvalho on the transition to a low-carbon energy and transport system on 13 March, followed the launch of the above mentioned policy report “The great transformation: decarbonising Europe's energy and transport systems”.

Finally, the FCH JU continued to collaborate with and provide data to an expert group on future transport fuels which was coordinated by DG Move and the European Commission.

Publications and electronic communication



Several publications have been developed: a general leaflet on FCH JU, a listing & mapping of demonstration activities and a report on the program review with fact-sheets per projects.



The FCH JU web site, operational since March 2011, developed new pages: the Stakeholders' General Assembly and its surrounding activities, program reviews and projects which were presented by application area and year.



2.2.2 Public relations & dissemination of projects

In addition to the organisation of its own events, such as a public information session for the 2012 call and support to the brokerage event organised by Industry and Research groupings in Brussels (9 February), the FCH JU participated in national information sessions at the annual call (UK, Spain, Italy), exhibitions and key visibility events. It also launched its bus commercialisation study in Brussels (6 December).

Exhibitions



The Fuel cells and Hydrogen Joint Undertaking took part as an exhibitor for the first time at the Hannover Messe from 23 to 27 April 2012, as part of the Group Exhibit Hydrogen + Fuel Cells, part of the Energy trade fair which hosted 130 exhibitors from 20 countries. It joined a booth with NOW, CEP and Linde. The Group Exhibit Hydrogen + Fuel Cells is Europe's biggest one-stop-shop exhibition for cutting edge technology: stationary, mobile and portable/micro Fuel Cell systems, Hydrogen production, transport and infrastructure, catalysts, testing, components and more. For the record, 190,000 visitors were registered in 2012 at Hannover Messe.

The FCJ JU took part in a round table discussion on the topic of "Fuel Cells for private homes: electricity and heat made by yourself", in the public forum discussions and made presentations on its activities and projects in the technical forum.

Visits from high-ranking politicians emphasized the international significance of the Group Exhibit. The EU Commissioner for Climate Action, Connie Hedegaard, and the EU Commissioner for Energy, Günther Oettinger, showed great interest in the exhibits.



From 3 to 7 June, the FCH JU participated in the World Hydrogen Energy Conference organised in Toronto. The Chair of the Governing Board presented the FCH JU and its activities in a plenary session and FCH JU was available at a booth in the exhibition area. Several projects from the FCH JU portfolio were further presented in parallel technical sessions and to the International Energy Agency- Hydrogen implementing agreement.

EU Open day (12 May)

For the EU Open day of the EU institutions, the FCH JU exhibited in the Berlaymont Building and displayed a Fuel Cell and Hydrogen car on the Esplanade in order to allow the general public to view the applications of Fuel Cell technology and its current and future potential. Commissioner Oettinger had the opportunity to test drive the Fuel Cells and Hydrogen car.



For the ***EU Sustainable Energy Week (EUSEW)***, which took place from 22 to 28 June, the FCH JU offered a joint exhibition with one of its flagship demonstration projects, H2 Moves Scandinavia, in the European Parliament. At the time, H2 Moves Scandinavia was just about to launch a European Road Tour across several Member states. The exhibition was hosted by Mr Morten Messerschmidt, Danish MEP.





In addition, the FCH JU joined forces with HyER to organise an Energy Day, dedicated to Fuel Cells and Hydrogen technologies. Here, key stakeholders in the main demonstration locations could share their experiences and highlight how Hydrogen is moving their communities to a low carbon transport and energy future.

A Fuel Cell electric and battery electric vehicle Drive & Ride was complementing this event, where 10 different zero emission car models could be tested. The Drive & Ride was part of a Clean Mobility partnership developed with the EUSEW secretariat, EHA and AVERE providing clean transport in Brussels throughout the EU Sustainable Energy Week.



Paris Motor show (27-29 September)



The European Hydrogen Road Tour 2012, organized by the FCH JU supported project H2 Moves Scandinavia, stopped at the Paris Motor Show during the press days and the first public day to share an exhibition booth with FCH JU and Air Liquide. In collaboration with the French Association for Hydrogen as well as Daimler, Honda, Hyundai and Toyota, media and visitors were offered the possibility to test drive Hydrogen-powered electric cars and exchange views with the European public-private partnership, car companies, and partners

from the European Road Tour. Some 160 test drives took place during these three days, where more than 300 people were offered the possibility to experience Fuel Cells electric cars powered by Hydrogen. Media attention on FCH was significantly raised in print press, radio and TV.

Presence at the Paris Motor Show also intended to raise awareness among French policy makers on the integration challenges of Hydrogen cars in the sustainable mobility sector in France. Representatives of the Parliament, Senate and Ministries Cabinets joined a networking reception and the presentations made by the H2 Moves Scandinavia project, car companies, and FCH JU.



Stakeholders' General Assembly (12 October)

The Stakeholders General Assembly¹⁶ 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



¹⁶ Article 10 of the FCH JU Statutes

to provide comments and suggestions for the future planning of the program.

It is also a key platform for European and global stakeholders across sectors including research, industry and financial communities, policy makers and international partners, to come together to examine and assess the current position of this emerging industry, exchange ideas on next steps and make contacts.



The 5th Stakeholders' General Assembly was organized in Paris with a view to raise awareness on FCH technologies and programs in France among stakeholders and decision makers, at a time of the finalization of the current funding program and preparation of the Horizon 2020 agendas and ambitions. The objective was also to stress the need for reinforced support from local policy makers, both national and European, as well as local private partners – all of which were welcomed at a networking reception, hosted by Senator Jean-Marc Pastor, on 11 October.

A Press conference organized in Maison de la Chimie highlighted the achievements of the sector in research and demonstration and illustrated the objective to launch larger and broader deployment plans in the next decade.

The 5th Stakeholders' General Assembly also hosted an exhibition featuring 10 presenters from the industry and the research community, where compressors, stacks, motorbikes, H2 station models, storage tanks, and electrolyzers were displayed. Cars and the H2 Antares Plane from DLR were exhibited outside the premises.

Festival of sustainable development (9-11 November)



At the Festival of sustainable development, organized by a Brussels local authority, the FCH JU had the opportunity to present FCH technologies to the general public through videos, display models and in a conference on electro-mobility. Electric vehicles (both battery and Fuel Cells and Hydrogen) were displayed during these two days.



Conferences and other public speaking opportunities

FCH JU staff and/or Executive Director participated in more than 30 external events and conferences in 2012 in 10 different Member States and 3 key non-European countries (US, Switzerland, Canada) to present the program and FCH JU activities and developments.

Workshops

The FCH JU contributed to the organisation and/or supported the organisation of two workshops, one on materials on 26-27 March in Grenoble and one on electrolyzers on 10 May in Copenhagen.

The workshop on materials aimed to give a complete overview of the entire portfolio of projects on Fuel Cells and Hydrogen (30 projects) in the FCH JU and other programs (e.g NMP, Energy programs and end of the EU Seventh Framework Program FP7). It aimed to highlight the impact

of materials in this area and future related policy needs, as well as enable the materials and FCH communities in Europe to identify joint collaboration and application areas. Additionally, the workshop focused on gaining new contacts and new ideas for strategic industrial partnerships and developing key recommendations on future research needs in the FCH domain in order to set up a material roadmap to foster the development of FCH in Europe.

The workshop on electrolysers aimed to review international developments in the area as well as assess different electrolysis technologies, notably through FCH JU project achievements and progress.

2.2.3 Media relations



The FCH JU maintained regular press relations at many activity launches, such as the launch of the 2012 call, the publication of the Bruegel study on the decarbonisation of the energy and transport system, the events organised during the EUSEW, the Motor Show and the Stakeholders' General Assembly. 4 press releases were issued in 2012 and numerous inputs were also provided to journalists upon request.

Articles on FCH JU were directly contributed and published in Research Media (issue Spring 2012) and European Energy Innovation magazine (issue winter 2012).



3. MANAGEMENT AND INTERNAL CONTROL SYSTEMS

This section of the AAR provides the reader with the overall picture of the implementation of sound management (not only financial) in FCH JU. It provides key information on the nature and characteristics of the JU's organisation to understand the context in which the JU operates (Chapter 3.1), its governance structure and accountability chain (Chapter 3.2), as well as the functioning of the JU's internal control system (Chapter 3.3).

3.1 NATURE AND CHARACTERISTICS OF THE FCH JU

As further detailed in Section 1, FCH JU is a public-private research partnership with three members (i.e. the European Commission, the 'NEW Industry Grouping' and the 'N.ERGHY Research Grouping').

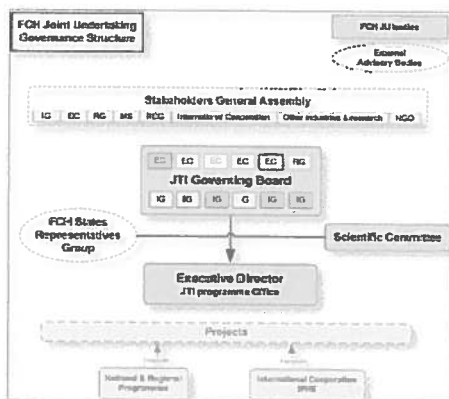
FCH JU was set up in 2008 for a period up to 31 December 2017 and its total financing, consisting of contributions of all the members, is € 947 million for the whole period. The operational costs, which represent more than 90% of the total budget, shall be covered in roughly equal parts through the financial contribution of the Union and through in-kind contributions from the legal entities participating in the activities. The contribution from the participating legal entities shall at least match the financial contribution from the Union.

FCH JU as a legal entity is responsible for the correct implementation of its budget. FCH JU provides funds through grants to beneficiaries which are eligible to receive funds in order to support research activities selected following open and competitive calls for proposals. The general and specific legal, technical and financial terms for the grant procedures are stipulated in Grant Agreements signed with beneficiaries.

3.2 GOVERNANCE STRUCTURE

The governance structure of FCH JU is composed of two executive bodies (i.e. the Governing Board and the Executive Director assisted by the staff in the Program Office) and three advisory bodies (i.e. the Scientific Committee, the FCH States Representatives Group and the Stakeholders' General Assembly). It provides a solid accountability chain and can be represented as shown in Graph 3.2 below.

Graph 3.2: FCH JU Governance Structure



3.2.1 Executive bodies

Governing Board

The Governing Board is the main decision-making body of the FCH JU. All three members of the FCH JU are represented on the Governing Board: the Industry Grouping has six seats, the Commission has five seats and the Research Grouping has one seat. The Governing Board holds the overall responsibility for the operations of the Joint Undertaking, including the implementation of activities, the approval of the annual implementation plan, budget and annual accounts and the approval of the list of selected project proposals.

The Board meets at least twice a year. Additional meetings may be organised at the request of one of the Members, or at the request of the Executive Director. Decisions of the Board may also be taken by written procedure on a proposal from the Chair.

In 2012 the Board met four times respectively on 7 March, 29 June, 11 October and 29 November. Important decisions were taken at the meetings or by written procedure in particular the adoption of the Annual Implementation Plan 2013, the 2011 final annual accounts, the 2013 budget and establishment plan, the appointment of new Scientific Committee members, the correction factor 0.8 to be applied for Call 2012 etc.

Executive Director and Program Office

The Executive Director is the legal representative of the FCH JU and is supported by the staff of the Program Office. He is the chief executive responsible for the day-to-day management of the FCH JU, in accordance with the decisions of the Governing Board. The Executive Director as Authorising Officer is responsible for the proper management of the JU's budget and has to report and give assurance on the use of the budget in accordance with sound financial management principles (Chapter 5).

The Program Office, under the responsibility of the Executive Director, is in charge of the daily management of the Joint Undertaking and executes all responsibilities of the FCH JU including, among other tasks, the launching of the calls for proposals, the evaluation and selection of projects, the monitoring and update the Multi-Annual and Annual Implementation Plans, the coordination with other relevant programs at national and regional levels and communication and other support activities.

3.2.2 Advisory bodies

Scientific Committee

The Scientific Committee has nine members, appointed by the Governing Board on the basis of their scientific competencies and expertise to give their science-based recommendations on the priorities and the progress of the FCH JU. The members reflect a balanced representation of world class expertise from academia, industry and regulatory bodies and from different fields of expertise within Fuel Cell and Hydrogen technologies.

The Scientific Committee's first priority is to advise on the R&D agenda set out in the Multi-Annual and Annual Implementation Plans of the FCH JU.

In 2012 the Scientific Committee met three times respectively on 27 January, 28/29 March and 11 October. The SC gave advice on the drafting of the AIP 2013

2 new SC members were appointed by the Governing Board on 29 June and 2 other members during the Governing Board meeting on 29 November.

FCH States Representatives Group

The FCH States Representatives Group (SRG) consists of one representative of each Member State and of each country associated with the 7th Framework Program. The Chairperson of the FCH SRG attends the meetings of the Governing Board as an observer.

The SRG has an advisory role in the JU and shall act as an interface between the JU and the relevant stakeholders within their respective countries. The most important tasks of the SRG comprise providing opinions on program progress in the FCH JU, monitoring compliance and the respect of targets and coordination with national programs to avoid overlapping.

In 2012 the SRG met three times respectively on 6 March, 15 June and 30 November and, amongst many other activities, assisted the FCH JU and the JRC in mapping the efforts made at Member States level to support and develop the deployment of Fuel Cells and Hydrogen technologies. These data are used by the JRC for the review of the SET-Plan activities.

Stakeholders' General Assembly

The Stakeholders' General Assembly (SGA) has an advisory role in the FCH JU. It is open to all public and private stakeholders, international interest groups from Member States and Associated countries, as well as from third countries.

At the General Assembly, which is convened once a year, stakeholders are informed of the activities of the FCH JU and invited to provide comments. The Stakeholders' General Assembly is an important communication channel to ensure transparency and openness in the FCH JU's activities with its stakeholders.

For information on the activity of the SGA in 2012 please refer to Chapter 2.2.2.

3.3 THE FUNCTIONING OF THE ENTIRE INTERNAL CONTROL SYSTEM

The foundation of the FCH JU's Internal Control Framework is provided by a set of 16 **Internal Control Standards** (ICS) which were adopted by the Governing Board on 15 June 2010. The Standards are inspired by the internationally recognized COSO framework¹⁷ and are structured around six areas, namely: 1. Mission and Values, 2. Human Resources, 3. Planning and Risk Management Processes, 4. Operations and Control Activities, 5. Information and Financial Reporting, and 6. Evaluation and Audit.

To permit effective implementation and allow measurement of the maturity of the JU's internal control systems, each standard is complemented by a list of **'Requirements'** the minimum features and specific practical actions (FCH JU Internal Control Standards in Annex 6).

¹⁷ <http://www.coso.org/>

3.3.1 Effectiveness of implementation of the control standards

FCH JU has established an **Action Plan** for the effective implementation of the standards. This Action Plan describes the requirements for each standard, the status of their implementation, the action owner within the JU and the related outstanding actions and time plan. The analysis of the effectiveness of implementation identified weaknesses in the following areas:

- *ICS 3 – Staff allocation and flexibility.*

The increased workload linked to the increased number of on-going projects remains a challenge for the FCH JU. Understaffing was identified as a critical risk in the FCH JU 2012 Risk Management exercise. The development of workload indicators has been undertaken to better assess staff allocation. Efficiency gains are expected from ① the development of new and improvement of existing IT tools (automatic generation of templates and letters, various monitoring tools to facilitate controls, improved data management system, ...), ② the simplification of internal processes as much as possible and ③ consolidation and use of the internally built-up know how by staff.
- *ICS 4 – Staff evaluation and development.*

The training policy and training plan have not yet been formally adopted. A more proactive approach based on the identification of needs at the time of the annual appraisal and the development of training paths should be put adopted in Q2 2013 in consultation with the staff committee.
- *ICS 8 – Processes and procedures and ICS 9 Management supervision.*

Main FCH JU processes and procedures are documented; a few procedures need to be further formalized. Furthermore the audit of “ex-ante controls” identified a number of weaknesses; an action plan to address those issues has been adopted and implementation of corrective measures is on-going. The effectiveness of the supervision system is hindered by weaknesses in the use of the monitoring tools; measures to strengthen the system are under consideration and will be implemented.
- *ICS 11 – Document Management.*

Effective implementation of the system for document management needs to be strengthened. An analysis of the different options for a stable IT system for document management was carried out and a system was chosen end 2012. It will be progressively implemented in 2013.
- *ICS 12 – Information and Communication.*

The recommendations issued by the Internal Audit Capability following her assessment of users’ access rights to ABAC and FP7 tools were implemented. An analysis of compliance with requirements in relation to the MoU with DG HR & Security was carried out prior to the renewal of the MoU. The FCH JU still has to perform an analysis of DG Budget Financial Systems (ABAC) requirements and review its level of compliance.
- *ICS 13 – Accounting and Financial Reporting.*

The action plan to address the few weaknesses identified by the Accountant in the frame of the validation of the accounting systems was monitored and actions were implemented. There is however still room for improvement to ensure timely filing of financial paper files and the new filing structure of operational documents will be implemented in 2013.

3.3.2 Conclusion

The FCH JU annual review of its implementation of the Internal Control Standards (ICS-15) was based on a desk review by the ICC and interviews of staff members. This has led to an assessment of the FCH JU's internal control status at the end of the reporting year, with respect to both the ICS compliance and the effectiveness of the control arrangements in place. In addition, information on internal control issues received through the mid-year Management Reports from the Heads of Unit has been considered. Furthermore information from the monitoring of action plans including (1) the state of play of recommendations accompanying the validation of the accounting systems by the Accountant on 21 November 2011, (2) the effective implementation of the recommendations of the Internal Audit Capability related to the assessment of access rights in ABAC and FP 7 tools and (3) the state of play of the action plan on the recommendations of the Internal Audit Capability audit of "ex-ante controls" has also been taken into account. Finally, issues identified by the IAC and referred to in section 4.1.2 have been considered as well. This analysis had enabled the ICC to report the state of internal control and her recommendations to the Executive Director.

The functioning of the internal control systems has also been monitored throughout the year by the systematic registration of exceptions (under ICS 8). The underlying causes behind these exceptions have been analyzed and corrective and alternative mitigating controls have been implemented when necessary.

Concerning the overall state of the internal control system, generally the FCH JU complies with the three assessment criteria for effectiveness; i.e. (a) staff having the required knowledge and skills, (b) systems and procedures designed and implemented to manage the key risks effectively, and (c) no instances of ineffective controls that have exposed the FCH JU to its key risks.

However further enhancing the effectiveness of the FCH JU's control arrangements is required, in particular by (1) fully implementing the action plans on recommendations of both internal and external auditors, (2) addressing the critical risk identified in the 2012 Risk Management exercise and (3) improving the use of monitoring tools.

In conclusion, without prejudice of the reservation described under section 4.2, management has reasonable assurance that, overall:

- suitable controls are in place and working as intended;
- risks are being mitigated and/or monitored;
- improvements and reinforcements are being implemented.

4 BUILDING BLOCKS TOWARDS REASONABLE ASSURANCE

4.1 BUILDING BLOCKS TOWARDS REASONABLE ASSURANCE

Reasonable assurance is the personal judgement of the JU's Executive Director - as Authorising Officer of the JU at the date of signature of this Annual Activity Report - based on all information at his disposal. This information can be structured around three main pillars or 'building blocks', namely: (1) the assessment by the JU's management (2) results from audits during the reporting year and (3) the assurance received from the Heads of Unit in their management reports.

4.1.1 Building block 1: Assessment by JU's management

This building block describes the main elements underpinning the JU's control strategy and provides evidence, through indicators, of its solidness.

The JU's control strategy covers all activities of the JU. However, grant management being the core business of the JU and representing more than 90% of its operational budget, this chapter focuses on such process. As indicated in Chapter 3.1, FCH JU provides funds through grants to beneficiaries following open and competitive calls for proposals. FCH JU projects are implemented through Grant agreements signed with beneficiaries and co-financed by the JU. After signature of the Grant Agreement, pre-financing payment is made to make funds available and allow the starting of the project. During project implementation, grants are paid on the basis of the beneficiary's declaration of eligible costs (i.e. cost claims).

Since the setting up of FCH JU, five Calls have been launched (i.e. Calls 2008, 2009, 2010, 2011 and 2012). The key dates and data on payments for each call are shown in the following tables:

Table 4.1.1(a): FCH JU Calls – Key dates

	Call 2008	Call 2009	Call 2010	Call 2011	Call 2012
Publication	October 2008	July 2009	June 2010	May 2011	January 2012
Signature of Grant Agreements	December 2009	October-December 2010	October-December 2011	June- December 2012	Not yet. Negotiations on-going
Payment of Pre-financings	December 2009, except € 27,220 in January 2010	December 2010, except € 519,508 in Q1 2011 at the request of the beneficiary.	November-December 2011	July to December 2012	Not yet. Negotiations on-going
Payments of experts	Q1-2 2009 (app.)	Q2 2010 (app.)	Q4 2011 (app.)	Q3 2012	Q3 2013 (exp.)
Cost claims validated	6 Cost Claims validated in 2011 (44 beneficiaries) 12 Cost claims validated in 2012 (97 beneficiaries)	4 Cost Claims validated in 2011 (33 beneficiaries) 15 cost claims validated in 2012 (94 beneficiaries)	2 Cost Claims validated in 2012 (18 beneficiaries)	First cost claims expected in 2013.	Not yet Negotiations on going

Table 4.1.1(b): 2012 operational payments (amounts in €)

year	Pre-financings	Payments against cost claims	Clearing	Other operational payments	Total operational payments
2012	44,980,842*	5,246,904	12,094,499	1,215,150	51,442,896
2011	48,515,320**	4,626,994	1,658,664	120,888	53,263,202
2010	39,894,107***	-	-	-	39,894,107

*of which 197,908 on calls 2008-2010 and 44,782,934 on call 2011

** of which 759,508 on calls 2008-2009 and 47,755,812 on call 2010

*** of which 553, 941 on call 2008 and 39,340,166 on call 2009

Therefore, the following main conclusions can be extracted from the tables 4.1.1 (a) and (b) above with an impact on the 2012 Annual Activity report:

- The largest proportion of 2012 operational payments relate to pre-financings, mainly for the Call 2011 projects.
- Following the reporting requirements established in the signed grant agreements, 29 cost claims involving 209 beneficiaries and related to Calls 2008, 2009 and 2010 projects have been validated in 2012.

The main elements of **FCH JU control strategy** are a combination of ex-ante and ex-post controls. The table below clarifies the main features of these controls:

Table 4.1.1 (c): 'Ex-ante' vs. 'Ex-post' controls

	'Ex-ante' Controls	'Ex-post' Controls
When?	<u>Before</u> the transaction is authorised	<u>After</u> the transaction is authorised
Frequency?	Obligatory on <u>all</u> transactions	Made on a <u>sample</u> basis
How?	Mainly <u>desk review</u> of supporting documents (e.g. beneficiaries' proposals and reports) but might also take place 'on-the-spot' at the beneficiary's premises, if deemed necessary and cost-effective.	Mainly <u>On-the-spot</u> checks at the beneficiary's premises.
Impact?	Errors detected should be corrected <u>before</u> the transaction is approved	Errors detected (e.g. ineligible expenditure) should be corrected through <u>recovery orders</u> or offsetting with future payments.
Assurance?	<u>Primary</u> means of ensuring sound financial management and legality and regularity of transactions but <u>less 'evidence'</u> (in particular for the eligibility of costs) as normally based on desk review.	<u>Secondary</u> means of ensuring sound financial management and legality and regularity of transactions but <u>more robust</u> as normally carried out 'on-the-spot'.

Concerning the **project lifecycle**, the JU's control strategy is divided into four distinct stages. Control objectives, key controls, main outputs and indicators have been defined for each stage as indicated in the table below. For more detailed information on the controls applied in each stage, reference is made to Annex 5.

Table 4.1.1(d): Stages in the Project Lifecycle: Objectives; Controls; Outputs & Indicators

	Stage 1 Evaluation	Stage 2 Negotiation & Selection	Stage 3 Project & Contract management	Stage 4 Ex-post controls: audits & recoveries
Objectives	Select projects to be financed according to their research credentials to ensure the achievement of the JU's operational objectives.	For each proposal: Clarify objectives and work to be carried out. Substantiate costs and determine its duration and JU's contribution.	Translation of each of the selected proposals into a legally binding instrument and making of pre-financing. Verification of (1) interim and final beneficiaries' payment requests and (2) achievement of key milestones.	Contribute to ensure the legality and regularity of the payments. Provide an indication of the effectiveness of previous ex-ante controls.
Controls	<ul style="list-style-type: none"> • Screening of submitted proposals for eligibility. • Choice of independent (i.e. no conflict of interest) expert evaluators. • Evaluation by a minimum of three independent experts. • Panel review for consistency, quality control and ranking of proposals. 	<ul style="list-style-type: none"> • Use of 'Evaluation Summary Report' as starting point for the negotiation. • Requests for Budget clarifications, if deemed necessary. • Legal status verifications • Financial viability checks • Adoption of safeguarding measures (e.g. guarantees) • When deemed necessary, 'on the spot' control visits 	<p><u>Contracting and pre-financing payment:</u></p> <ul style="list-style-type: none"> • JU Financial circuits in place ensuring all operational and financial aspects are checked by two independent members of JU staff before (i.e. ex-ante) authorisation. <p><u>Interim and final payments:</u></p> <ul style="list-style-type: none"> • Analysis of beneficiaries' technical and financial reports (intermediate and final) • Certificates on Financial Statements (i.e. cost claims)¹⁸ by certifying auditor¹⁹ and on the methodology used for the calculation of costs²⁰. • Midterm reviews by external experts, when applicable in the Grant Agreement. • When deemed necessary, 'on the spot' control visits. • JU Financial circuits in 	Financial (representative and risk-based) and Technical audits after (i.e. ex-post) JU's authorisation of interim or final payments and up to 5 years after the end of the project ²¹ .

¹⁸ Mandatory if above thresholds (Model Grant Agreement , article II.4.4)

¹⁹ Independent from the beneficiary and qualified to carry out statutory audits.

²⁰ Optional (Model Grant Agreement , articles II.4.4 and II.14.1)

²¹ Model Grant Agreement , articles II.22 and II.23

			place as for 'contracting and pre-financing payment' above.	
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	Stage 1 Evaluation	Stage 2 Negotiation & Selection	Stage 3 Project & Contract management	Stage 4 Ex-post controls: audits & recoveries
Outputs	<ul style="list-style-type: none"> Evaluation Summary Report (ESR) for each proposal Ranking list of proposals Initial Information letter to applicants 	<ul style="list-style-type: none"> Final list of selected proposals 	Financial transactions: <ul style="list-style-type: none"> Budgetary and Legal Commitment. Pre-financing, interim and final payments 	Financial transaction: <ul style="list-style-type: none"> Recovery order (e.g. in case of ineligible expenditure identified after ex-post audits) or offsetting with future payments
Indicator	<ul style="list-style-type: none"> Redress procedure: Number of applicants' complaints / Total proposals 	<ul style="list-style-type: none"> Financial impact of the negotiation process: Difference between the total value of the JU contribution 'requested' in project proposals, (1); 'recommended' in the negotiation mandates (2) and 'agreed' in the signed grant agreements.(3) 	<ul style="list-style-type: none"> Percentage of the number of payments made on time 	<ul style="list-style-type: none"> Representative error rate (i.e. average of individual error rates (in percentage) detected by representative ex-post audits). Residual error rate (i.e. error rate left in the population after the correction of (1) all detected errors and (2) extrapolation of systematic errors on the non-audited amounts of audited beneficiaries). Audit coverage: percentage (in value) of audited cost claims out of the total value of validated cost claims (i.e. population).

The indicators defined above aim at providing an indication of the robustness of each stage and as such provide assurance on the sound financial management and the legality and regularity of the financial transactions (i.e. commitments and payments). An analysis of each indicator is the following:

Stage 1: Evaluation

A 'redress procedure' gives applicants the possibility to file a complaint in case they think that there were shortcomings in the handling of their proposal during the evaluation. A redress committee, working independently from the evaluation, analyses eligible complaints and, where

suitable, may recommend the re-evaluation of the proposal. The final decision on follow-up actions is taken by the Executive Director.

The indicator on 'redress procedure' shown in the table below provides an indication of the quality of the evaluation process which is a key element in the grant warding process.

Table 4.1.1(e): Redress procedure

	Call 2008	Call 2009	Call 2010	Call 2011	Call 2012
Number of proposals	32	50	71	82	72
Number of complaints received	0	4	6	4	6
% of complaints	0%	8%	8%	5%	8%
Number of complaint cases which led to a re-evaluation	0	0	0	0	0
% of complaints which led to a re-evaluation	0 %	0 %	0%	0%	0%

The low number of complaints in the different calls of which none led to a re-evaluation, (1) is an indication of the robustness of the evaluation and grant award process and (2) provides assurance on the legality and regularity of the commitments (i.e. signed Grant Agreements) in stage 3 below.

Stage 2: Negotiation and selection

The negotiation is the main process to ensure the efficient use of the JU's budget as it discards work which is not essential for the achievement of the scientific objectives of the project and ensures that the budgeted costs are commensurate with the planned work.

The financial impact of the negotiation process, as shown in the indicator below, is defined as the reduction (expressed as a percentage) in JU contribution to the grant agreements, as a result of the negotiation process.

Table 4.1.1(f): Financial impact of the negotiation process (in thousands €)

	Call 2008	Call 2009	Call 2010	Call 2011	Call 2012
Number of grant agreements	16	28	26	33	Negotiations on going
JU contribution 'requested' in project proposals (1)	36,046	85,643	99,382	141,126	
JU contribution 'recommended' in Negotiation mandates (2)	29,076	75,202	84,907	119,733	
JU contribution 'agreed' in the signed grant agreements (3)	27,222	72,527	83,676	117,522	
Reduction in percentage from contribution 'requested' (1) – (3)	24%	15%	16%	17%	
Reduction in percentage from contribution 'recommended' (2) – (3)	6%	4%	1.5%	1.8%	

The total value of the JU contribution 'requested' in the project proposals (1), is reviewed by the JU due to several factors (e.g. comments on budget proposals by independent experts, budget clarification process, total JU budget available and matching requirements). This reviewed value is the value of the JU contribution 'recommended' in the 'Negotiation mandates' (2) and represents the starting point of the negotiation process. As a result of the negotiation process, the value is/might be further reviewed. This third value represents the value of the JU contribution 'agreed' in the signed grant agreements (3).

The average reduction resulting from negotiations for calls 2008, 2009, 2010 and 2011 was respectively 24% , 15%, 16% and 17% when considering the initial contribution requested in project proposals as starting point, and respectively 6%, 4%, 1.5% and 1.8% if the starting point is the value as per the negotiation mandate. Whereas the average reduction (1) - (3) is mainly the result of budget available and matching requirements, the reduction (2) - (3) is mainly due to changes during negotiations to comply with experts recommendations made during the evaluation stage.

Stage 3: Project and contract management

The project and contract management stage starts with the signature of the grant agreement and ends with the final payment to the beneficiary.

As shown in table 4.1.1(a) and (b) the number of validated cost claims from beneficiaries of projects from the 2008-2010 calls is increasing. In terms of amount paid, pre-financings remain the core part (87.4% of operational payments). The financial transactions involved are mainly the contract signature (commitment), the payments of either pre-financings or interim payments or other expenditure linked with the project lifecycle (payment of experts) and the clearing of pre-financing.

The main legality and regularity indicator for the commitment is the percentage of complaints as indicated in stage 1 above. Concerning payments, an important indicator is the 'time to pay', which is defined as the percentage of payments made within the binding deadlines as shown in the table below.

Table 4.1.1(g): Percentage of the number of payments made on time

	Call 2008	Call 2009	Call 2010	Call 2011	Call 2012
Grants: payment of pre-financings and against cost claims	100%	100%	100%	100%	Not yet
Payments of experts (evaluators and mid-term reviewers)	71%	34%	53%	62%	89%

The data shows that 100% of grant payments, which represent more than 90% of the total value of JU's payments, were done on time. 89% Of the payments to experts were made on time (100% for expert evaluators) showing a significant improvement compared to the previous years. Efforts will be pursued to ensure timely payment of mid-term reviewers.

Stage 4: Ex-post controls

Ex-post controls are the fourth and last **stage** of JU's control strategy in the project lifecycle as shown in Table 4.1.1(d). This stage includes the ex-post audits as well as the recovery/correction of any amounts found to have been paid in excess of the amount due.

Ex-post audits have three main **objectives**, namely: (1) to assess the legality and regularity of expenditure on a multiannual basis; (2) to provide an indication on the effectiveness of the ex-ante controls and (3) to provide the basis for corrective and recovery mechanisms.

Because of its **multiannual nature**, the effectiveness of the FCH JU's control strategy can only be fully measured and assessed in the final stages of the JU's program, once the ex-post control strategy has been fully implemented and systematic errors have been detected and corrected.

The main legality and regularity **indicator** in this stage is the "**error rate**" detected by ex-post audits. The following two aspects have to be considered when providing information on error rates and inferring conclusions from those errors:

- Due to the multiannual perspective of ex-post audits, their effectiveness has to be measured by presenting 'cumulative' information on the errors detected.
- Two types of ex-post audits have to be distinguished with two different objectives: 'Representative' audits with a goal of producing a representative estimate of the error rate present in the population and 'Corrective' audits (e.g. risk-based audits) with the objective of detecting and correcting as many errors as possible.

Having in mind the two aspects above, three types of cumulative **error rates** are calculated to provide a comprehensive overall view of the results of ex-post audits (see table 4.1.1.(j)). For

each type of errors, the rate is calculated at 'Total cost' and at 'FCH JU contribution' level. This distinction is necessary as not all errors detected a total cost have a financial impact on the FCH JU contribution²².

- Overall Error Rate – it is the error rate derived from all audits, comprising both 'representative' and 'risk-based' audits. It is calculated as a percentage of the value of the errors detected divided by the value of total costs accepted by the JU²³. It provides information on the importance of errors detected but it cannot be used as a reference for inferring conclusions on the expected error in the non-audited population due to the following reasons: (1) it is the result of 'representative' and 'risk based' audits with two different objectives and (2) considering the limited number of audits, it is highly influenced by the result of only one audit with the highest value of costs accepted and of errors detected.
- Representative Error Rate – it is the error rate resulting from the representative audits. It will give a reasonable estimate about the level of error in the population at the time of the audits, but it says nothing about the corrections and follow up undertaken by the FCH JU, nor of the final financial impact in the JU contribution of any error. The formula for the calculation of the representative error rate, in accordance with FCH JU ex-post audit strategy approved by the Governing Board, is shown in Annex 4.
- Residual Error Rate – it is the level of error remaining in the population after the corrections and recoveries by the FCH JU. This includes extrapolation of audit results to non-audited contracts and the correction of errors. The formula for the calculation of the residual error rate, in accordance with Ex-post strategy and shown in Annex 4, is based on the following: (1) all the errors detected will be corrected; (2) the residual error rate for participations subject to extrapolation is estimated to be equal to the non-systematic error rate; and (3) all participations subject to extrapolation are clean from systematic material errors.

Ex-post audit resources. The lean structure of the FCH JU does not allow for the setting up of an internal ex-post audit section and therefore ex-post audits are outsourced to external audit firms. Whereas the execution of the audit work is externalised, part of the JU's staff is responsible for the management of ex-post audits and in particular of the following three processes: (1) Planning (i.e. selection of 'representative' and 'risk-based' audits, coordination with Commission audits and preparation of audit input files), (2) Monitoring (i.e. regular follow up of audit status, interaction with audit firms on technical questions and quality checks of audit reports) and (3) Evaluation/implementation of audit results (i.e. inferring conclusions on the basis of identified error rates, extrapolation procedures and initiation of recovery orders/offsetting with future payments to correct errors detected).

²² For example: an error detected on indirect costs (at total cost level) for a beneficiary using 'actual' indirect cost method but with a maximum reimbursement rate of 20% could have no impact in the FCH JU contribution if 'declared' and 'eligible' indirect costs are both above the 20% reimbursed by the JU.

²³ When considering the value of errors detected, 3 calculations are provided: with only the errors in favour of the JU, with only the errors in favour of the beneficiary and with the total value of errors (in favour of the JU and of the beneficiary).

The following table gives an overview on the resources devoted to ex-post audits.

Table 4.1.1(h): Input indicators (amounts in €)

	2011	2012
Internal resources ex-post audits ²⁴	1 FTE	1,5 FTE
Cost of externalised audits (Commitments, in €)	€ 77,820	€ 208,665

The FCH JU ex-post audit strategy was adopted by the Governing Board on 6 January 2011 and its implementation started in September 2011. The following table gives an overview of the number of ex-post audits and their audit coverage.

Table 4.1.1(i): Indicators of coverage: Number of audits and audit coverage

Batch	Year	To be launched	On-going	Finalised ²⁵	TOTAL	Of which	
						Representative	Risk-Based
1 st batch	2011	0	0	5	5	5	0
2 nd batch	2011	0	1	6	7	5	2
3 rd batch	2012	0	1	8	9	8	1
4 th batch	2012	11	1	0	12	12	0
Total (audits)		11	3	19	33	30	3
Total (cost claims)		30	8	25	63	54	9
Total costs accepted by FCH JU (in €) (A)					56,239,520		
Total costs (to be) audited (in €) (B)					22,868,348		
Total costs of audits finalised (in €) (C)					9,363,094		
Audit coverage of total audits (in %) (B/A)					41%		
Audit coverage of finalised audits (in %) (C/A)					17%		

The first cost claims were received by the FCH JU in the spring of 2011 and ex-post audits were launched immediately after the validation by the JU of the first claims. In the calendar year 2011, two batches were launched, the 1st batch (5 audits) in September 2011 and the 2nd batch (7 audits) in December 2011. During 2012, two additional batches have been launched: 3rd batch (9 audits) in February 2012 and 4th Batch (12 audits) in December 2012 of which 1 audit is launched and the rest will be launched in 2013 after due coordination with the Commission services for those common beneficiaries for which an EC audit is currently on-going.

In conclusion, since the launching of Ex-post audits, 33 audits have been selected of which, 30 'representative' and 3 'risk-based'. Out of the 33 audits (comprising 63 cost claims), 19 are finalised, 3 on-going and 11 to be launched. The cumulative audit coverage is 17% (on finalised audits) and 41% (on total audits) of the validated cost claims at the reporting date.

²⁴ This is an estimation of the time devoted by JU's staff to ex-post audits in order to manage the 3 processes under the JU's responsibility (i.e. Planning, Monitoring and evaluation/implementation of audit results).

²⁵ An audit is considered finalised when the audit adjustment and the related 'error rate' is final as of the cut-off date for the preparation of the AAR (i.e. 08/02/2013). This comprises either audits with "Final Audit Reports" received or, if not received, with a "Pre-final audit report" (after contradictory procedure with the beneficiary) approved by the JU and with a definitive audit adjustment.

The error rates resulting from the 19 finalised audits (of which 18 representative and 1 risk-based) are the following:

Table 4.1.1(j): Indicators of Error

	Achieved cumulative period (as of 08/02/2013)	
	Total cost	FCH JU contribution
Costs accepted by FCH JU Financial Officers (FO) (in €) (A)	9,363,094	4,141,263
Overall errors (in €) in favour of the FCH JU (B)	-808,099	-214,070
'Overall Error rate' (only in favour of the FCH JU) (B/A)	-8.63%	-5.17%
Overall errors (in €) in favour of the beneficiary (C)	499,357	47,327
'Overall Error rate' (only in favour of the beneficiary) (C/A)	5.33%	1.14%
Total Overall errors (in €) (in favour of the FCH JU and in favour of the beneficiary) (D)	-308,741	-166,742
'Overall Error rate' (net-off errors in favour of the JU and of the beneficiary) (D/A)	-3.30%	-4.03%
'Representative error rate' (formula in Annex 4) (%)	-2.57%	-2.44%
'Residual error rate' (formula in Annex 4) (%)	-1.67%	-1.62%

The difference between the 'representative error rate' and the 'residual error rate' is the result of (1) the correction of errors in an important part of the population due to the high audit coverage and (2) the important effect of extrapolation of audit results to non-audited cost claims.

The analysis of the error rates and the need for a reservation in the declaration of assurance concerning the accuracy of the cost claims is addressed in Section 4.2.

Implementation of audit results:

As a result of errors identified during the FCH JU ex-post audits, unduly paid JU funds need to be recovered. The FCH JU has implemented the necessary controls and monitoring mechanisms to ensure that all errors detected in favour of the JU are corrected in due course (either through a recovery order or a set-off against a future payment).

The detailed situation on the implementation of ex-post audit results is as follows:

Table 4.1.1 (k) Implementation of ex-post audit results in favour of the FCH JU (in €)

Audit launching year	Audit adjustment (in favour of FCH JU)		Adjustments pending implementation		Adjustments implemented	
	On total cost	On JU contribution	On total cost	On JU contribution	On total cost	On JU contribution
2011	803,446	202,901	14,382	9,301	789,064	193,600
2012	4,653	11,169	4,653	11,169	0	0
Total	808,099	214,070	19,035	20,470	789,064	193,600

By the end of 2012, the percentages of total adjustments effectively implemented were 97.6 % and 90.4% at total cost and at FCH JU contribution level, respectively. These high percentages prove the timely implementation of audit results and consequently the effective correction of detected errors by the FCH JU.

Implementation of extrapolation:

Extrapolation is the process by which ‘systematic’ errors detected on audited cost claims are ‘extrapolated’ to all other non-audited FCH JU claims of the same audited beneficiary. The timely implementation of ‘extrapolation’ relies on beneficiaries preparing and submitting revised cost claims from which the effect of any systematic error(s) detected in audits has been eradicated.

The overall situation on the implementation of extrapolation is as follows:

Table 4.1.1 (I) Implementation of extrapolation of ex-post audit results

	Beneficiaries
Audits finalised ²⁶	19
Letters of conclusion sent as of reporting date	10
Of which potentially concerned by extrapolation	4
Extrapolation documents received	3
Extrapolation documents to be received (due date not reached)	1
Extrapolation implemented	2

Liquidated damages

Liquidated damages are applied systematically by the FCH JU. In some cases, they do not result in a recovery order due to the application of the ‘*de minimis rule*’²⁷. By the end of 2012, out of the 25 cost claims with finalised audit, 7 have been assessed as requiring liquidated damages for a total amount of € 12,199.33. Pre-information letters have been sent to beneficiaries in 6 of these cases and recovery orders have already been issued for 4 cases for a total value of € 11,143.84. This represents a 91.35% of liquidated damages implemented which proves the timely implementation of liquidated damages by the FCH JU.

4.1.2 Building block 2: Results from audits during the reporting year and follow up of previous audits

FCH JU Internal Audit Capability (IAC)

During 2012, the IAC of the Joint Undertaking carried out two assurance engagements (i.e. ‘Audit on ex-ante controls for eligibility of declared costs and related payments’ and ‘Assessment of the level of in-kind contributions (jointly with the IAS)’), provided consulting services on the AAR process and was responsible for the management of ex-post audits in coordination and with the assistance of the Finance unit. In addition, the IAC updated the auditor’s risk assessment of the previous year in order to define the IAC audit plan for 2013 which was approved by the Executive Director on 20 November 2012.

²⁶ Of which 1 final audit report not yet received and 8 received in the two weeks preceding the reporting date.

²⁷ Liquidated damages will only be applied where the unjustified contribution exceeds 2% of the total contribution claimed for the given period.

Regarding the assurance engagements, the most relevant audit findings concern the following issues:

- On the "Audit on Ex-ante controls for eligibility of declared costs and related payments": (1) more clarification is needed on the ex-ante control strategy of the JU in some areas (e.g. JU's control approach towards participants of projects not requesting JU contribution but providing in-kind contribution only, monitoring and analysis of project deliverables); (2) low quality of 'Certificates on Financial Statements' (CFS) which do not systematically provide the JU with the assurance expected from them; (3) some weaknesses identified in the clarification process between the JU and the coordinator; (4) need for a reinforced monitoring by the JU of the submission, approval and payment of beneficiaries reports' in order to reduce the 'time to pay' and (5) some issues identified in the JU's procedures and checklists (e.g. overlaps and missing checks, number of actors involved not aligned with the associated risks).

FCH JU actions: The timing of the audit assignment was intentionally set at the very early stages of the implementation of the process of ex-ante controls of periodic reports with a view to ensure its adequacy and to enable a swift enhancement of this process. This explains the number and importance of the audit findings. To properly address these findings an action plan was established by the JU and most of the recommendations are being implemented. In particular, the control strategy has been clarified; the scrutiny of CFS by the JU and the clarification process have been strengthened, a more regular follow up of beneficiaries' reports is now in place and JU's procedures and checklists are being updated to address the gaps identified by the IAC.

- On the 'Assessment of the level of in-kind contributions': the auditors (IAC and IAS) concluded that the aggregated level of in-kind contributions certified by the JU's Executive Director (cut-off date 08/02/2012) for an amount of € 347.6 million, should be reduced by € 0.93 million (or 0.3%).

FCH JU action: the amount of in-kind contribution was corrected. The auditor's assessment on the level of in-kind contributions is to be carried out on a yearly basis. The next assessment will be performed this year and results presented by April 2013.

Concerning consulting services provided by the IAC on the AAR process, advice was provided for the identification of the relevant aspects to consider and report under the sections 'Management and Internal control system' and 'Building blocks towards the declaration of assurance'.

As far as the ex-post audit process is concerned, the ex-post audit strategy is being implemented since September 2011. 33 Audits have been selected so far of which 19 are finalised. See more details on the objectives of ex-post audits and on the relevant indicators in section 4.1.1 – Stage 4 (ex-post controls)

Regarding the risk assessment exercise, the following high risk areas were identified by the auditor as requiring further management intervention: monitoring of operational and administrative activities, data protection, IT development and management, document management, business continuity, matching assessment and ex-post controls. To address these high risk areas, the management of the JU defined appropriate actions of which the large majority are already implemented (e.g. Identification of Key Performance Indicators and their

monitoring through mid-year management reports, data protection system, timely reporting of IT issues, follow up of FCH-FP7 IT tools, assessment by the IAC of users' access rights granted in ABAC and FP7 IT systems, business continuity plan, methodology for and assessment of in-kind contributions and implementation of ex-post audits) and a few of them are on-going (i.e. establishment and monitoring of IT SLAs and document management system).

Finally, concerning the FCH JU's *follow up of action plans for the IAC audits from the previous year*²⁸, all audit recommendations have been implemented during 2012. The IAC will carry out a follow-up assignment in 2013 to confirm their effective implementation.

Commission's Internal Audit Service (IAS)

During 2012, the IAS carried out, jointly with the IAC, the assessment on the level of in-kind contributions (see results above).

European Court of Auditors (ECA)

In its 2011 annual report, the Court provided a 'clean opinion' on the reliability of the accounts. Concerning the legality and regularity of the underlying transactions, the Court provided a positive opinion 'except for' the transactions relating to the validations of cost claims due to the material errors detected by the FCH JU in two ex-post audits. The Court confirmed the key importance of ex-post audits within the JU's internal control system and its effectiveness in identifying and correcting errors.

See section 4.1.1 – Stage 4 on ex-post audit results and section 4.2 on the JU's analysis concerning the need for a reservation and actions to reduce the error rate.

Without calling into question the Court's opinion indicated in the above paragraph, the Court provided some comments on the budgetary procedure, the validation of the accounting system (see section 3.1.1), the assessment on the level of in-kind contributions carried out by the IAC and IAS (see above) and other horizontal matters for which actions have been developed by management and are (being) implemented.

4.1.3 Building block 3: Assurance from Heads of Unit

The FCH JU Internal Control Framework provides for mid-year management reports from the Heads of Unit to the Executive Director including a declaration of assurance. For the second half of the year, the Heads of Unit review is encompassed in their input for the Annual Activity Report and on the review by the Internal Control Coordinator of the state of the internal control system.

Based on their review, the Heads of Unit consider that given the scope of the Statement of Assurance and taking into account the controls and monitoring system in place, the weaknesses they identified, except for the reservation explained under section 4.2 and related to the rate of residual errors in cost claims, do not call in question the reasonable assurance as to the use of resources for their intended purpose, respect of the principles of sound financial management,

²⁸ Two assurance engagements carried out in 2011, namely: 'Assessment of FCH JU users' access rights granted in ABAC' and 'Assessment of FCH JU users' access rights granted in P7 IT systems'.

and the fact that the implemented control procedures give the necessary guarantees concerning the legality and regularity of the underlying transactions.

4.1.4 Completeness and reliability of the information reported in the building blocks

As mentioned under Section 4.1, the information reported in Sections 4.1.1 to 4.1.3 stems from the results of management monitoring and auditors' work which is reflected in the reports listed here before. These reports result from analysis of evidence available. This approach provides sufficient guarantee as of the completeness and reliability of the information reported and result in complete coverage of the FCH JU budget.

4.2 RESERVATIONS

The **overall error rate** based on all audits finalised (18 representative, 1 risk-based) at this point is:

- Considering only errors in favour of the FCH JU: -8.63% at total cost level and -5.17% at FCH JU contribution level.
- Considering only errors in favour of the beneficiary: 5.33% at total cost level and 1.14% at FCH JU contribution level.
- Considering all errors: -3.30% at total cost level and -4.03% at FCH JU contribution level.

The **representative error rate** from the 18 representative audits finalised is – **2.57%** at total cost level and **-2.44%** at FCH JU contribution level.

However, the precision of the sample is limited due to the following factors:

- The relatively limited number of audits. This is not due to any weakness or delay in the implementation of the ex-post audit strategy as reflected by the high audit coverage but simply because of the limited population (i.e. limited number of cost claims validated as the first cost claims were only received in Q3 2011).
- The audits have been concentrated on new beneficiaries which were not previously audited by the JU or Research Commission services and therefore are less familiar with FCH JU rules. The cost statements of these beneficiaries are, therefore, likely to be affected by more errors.

The **residual error rate** calculated at this point is **-1.67%** at total cost level and **-1.62%** at FCH JU contribution level. This rate should develop as more audits are closed, and more corrections and recoveries undertaken. In fact, at this stage of FCH JU strategy, the 'cleaning effect' of implementation and extrapolation of audit results does not yet have a significant effect in lowering the detected error rate. Moreover, the financial impact of this error rate regarding legality and regularity may be lower, once additional eligible expenditure declared and reassignment of eligible expenditure between project partners have been taken into account.

However, although the residual error rates at this point in time are below 2%, taking into consideration:

- The error rates detected by FCH JU in 2 of the 3 on-going audits are, although still provisional, above 2%.

- The early stages and therefore limited past experience of the FCH JU
- The error rates, above 2%, detected by Research Commission Services which the JU can use as a reference basis in these early stages (i.e. Commission and JU rules are very similar and one can expect a similar risk profile of the beneficiaries until more FCH JU's own experience is available);

FCH JU introduces a reservation for the accuracy of cost claims as it is not possible with the information available at this stage to state with a reasonable assurance that by the end of the programming period the residual error rate will be below the materiality threshold (i.e. 2%) defined in Annex 4 'Materiality Criteria'.

The **maximum impact (i.e. amount at risk)** is € 939,200 at total cost level and € 382,758 at FCH JU contribution level. This amount is calculated as follows:

	Maximum impact	
	Total cost	FCH JU contribution
Residual error rate (A)	-1.67%	-1.62%
Total costs accepted by FCH JU (cumulative) (B)	56,239,520	N/A
Payments against cost claims (cumulative) (C)	N/A	€ 9,873,898
Clearing of pre-financing (cumulative) (D)	N/A	€ 13,753,163
Maximum impact (at cost level) (A*B)	939,200	N/A
Maximum impact (at FCH JU contribution) (A* (C+D))	N/A	€ 382,758

Action plan to address the reservation:

The reservation is the result of an expected 'residual error rate' above the materiality threshold (i.e. 2%). FCH JU actions are therefore targeted to reduce the residual error rate.

In this context two aspects have to be taken into consideration:

- **Legal framework:** the complexity of the current rules, mainly based on the reimbursement of actual costs, is a significant factor in the errors found by our ex-post auditors. The last changes introduced in the legal framework giving more possibilities for the use of average personnel costs can be considered as a simplification measure for the beneficiary but does not necessarily result in less error. Only a radical simplification of the rules as proposed under Horizon 2020 could, if approved, lead to a reduced error rate. However, the current FCH JU program will not benefit from those simplification measures.
- **Effectiveness of the ex-post audit strategy:** As reported in Section 4.1.1, the FCH JU ex-post audit strategy is being implemented as expected: 19 audits have been finalised, a high audit coverage has been achieved (41% of launched and 17 % of finalised audits), ex-post audits have proved to be an effective control to detect errors and the FCH JU has shown its effectiveness for a timely correction of the errors detected (97.6 % and 90.4% of implementation rate at total cost and at FCH JU contribution level, respectively). Therefore, no additional actions are proposed on the JU's ex-post control strategy and the JU will continue with its ex-post control audit work.

Considering the two aspects above, several actions are being implemented by FCH JU to reduce the residual error rate and are a combination of *preventive, detective and corrective measures*. In particular:

- FCH JU has implemented measures to prevent financial errors in cost reporting by improving awareness within the beneficiaries of the regulatory framework. Three **communication campaigns** addressed to FCH JU beneficiaries have been organised so far and FCH JU guides on financial and control/audit matters have been published. More communication campaigns will be organised in the future with a focussed audience, including auditors responsible for the preparation of the CFS and a focused scope on recurrent issues.
- FCH JU **ex-ante controls** are being reinforced in order to allow for a higher detection and correction of errors before validation of cost claims (e.g. JU's scrutiny of CFS has been strengthened and JU's ex-ante checklists have been updated to address the gaps identified by the IAC audit). This process will continue to address all IAC audit recommendations on ex-ante controls.
- No changes are proposed on the JU's ex-post control strategy and the JU will continue with its **ex-post control audit work**.

4.3 OVERALL CONCLUSION

The purpose of this section is to provide an overall conclusion on the impact of the reservation (section 4.2) on the declaration of assurance as a whole (section 5).

It is important to note that only material weaknesses/risks lead to a reservation to the assurance in Section 5. The concept of '**materiality**' provides the Executive Director with a basis for assessing the importance of the weaknesses/risks identified. Deciding whether something is material involves making a judgement in both qualitative and quantitative terms. See details on the 'Materiality criteria' in Annex 4.

Based on the information provided in sections 4.1 and 4.2 the following conclusions can be drawn:

- Concerning FCH JU's policy activities, no qualification is to be made. There is also no reservation on the procedures relating to the selection of contractors and beneficiaries for FCH JU projects and its underlying financial operations (legal and financial commitments). This is also the case for JU's payments relating to administrative expenditure and procurement, as well as for pre-financing payments in the case of grants.
- The amounts that may be affected by errors are expenditure against cost statements in 2012. Comparing the 'amount at risk' as shown in section 4.2 with the reference amounts as indicated in the table below, it is possible to give assurance regarding 99.34% of the total expenditure (operational and administrative) and 99.31% of the budget implemented in 2012.

	Total cost	FCH JU contribution
Maximum impact (A)	€ 939,200	€ 382,758
Total administrative and operational expenditure (B)	€141,285,895	N/A
Total payments 2012 (C)	N/A	€ 55,201,810
% of amounts NOT affected by errors	99.34% (1 - (A/B))	99.31%(1 - (A/C))

5 DECLARATION OF ASSURANCE

I, the undersigned, Mr Bert De Colvenaer, Executive Director of FCH JU in my capacity as authorising officer:

Declare that the information contained in this report gives a true and fair view²⁹.

State that I have reasonable assurance that the resources assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions.

This reasonable assurance is based on my own judgement and on the information at my disposal, such as the results of the self-assessment, the results from internal and external audits during the reporting year and the assurance provided by the Heads of Unit in their management reports.

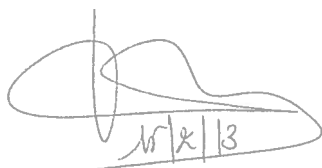
Confirm that I am not aware of anything not reported here which could harm the interests of the Joint Undertaking.

However, the following reservation should be noted:

The reservation concerning the rate of residual errors with regard to the accuracy of cost claims as further explained in section 4.2.

Brussels, 15 February 2013

Bert De Colvenaer
Executive Director



The image shows a handwritten signature in blue ink. The signature is stylized and appears to be 'Bert De Colvenaer'. Below the signature, the date '15/2/13' is written in a simple, handwritten style.

²⁹ True and fair in this context means a reliable, complete and correct view on the state of affairs in the JU.


ANNEX 1: STATEMENT OF THE INTERNAL CONTROL COORDINATOR

I declare that in accordance with the Commission's communication on clarification of the responsibilities of the key actors in the domain of internal audit and internal control in the Commission³⁰ which is used as a reference by the FCH JU, I have reported my advice and recommendations to the Executive Director on the overall state of internal control in the FCH JU.

I hereby certify that the information provided in Parts 3 and 4 of the present AAR and in its annexes 2 to 5 is, to the best of my knowledge, accurate and exhaustive

Brussels, 15 February 2013

Elisabeth Robino
Internal Control Coordinator



15/2/13

³⁰ [SEC\(2003\)59 of 21.01.2003.](#)

ANNEX 2: HUMAN RESOURCES

Establishment plan posts

Category and grade	Establishment plan 2012		Posts actually filled at 31.12.2011		Posts filled in by external publication in 2012		Promotion / reclassification in 2012		Departures 2012		Posts actually filled at 31.12.2012	
	perm	temp	perm	temp	perm ³¹	temp ³²	perm	temp	perm	temp	perm	temp
AD 16												
AD 15												
AD 14		1		1								1
AD 13												
AD 12												
AD 11		3		3								3
AD 10												
AD 9		1		1								1
AD 8		4		4						1		3
AD 7		2		2								2
AD 6												
AD 5												
Total AD		11		11							0	10
AST 11												
AST 10												
AST 9												
AST 8		1		1								1
AST 7		3		3								3
AST 6												
AST 5												
AST 4		1		1		1				1		1
AST 3		2		2								2
AST 2												
AST 1												
Total AST		7		7		1				2		7
Total		18		18		1				2		17

In addition the FCH JU employs 2 contract agents of FG III and FG IV.

³¹ Recruitment + transfer

³² All new contracts, including the inter-agency job market

ANNEX 3: FINANCIAL INFORMATION

In accordance with the Council Regulation 521/2008 setting up the Fuel Cells and Hydrogen Joint Undertaking (article 12 of its Statutes), the FCH JU is financed through contributions from its Members, including cash contributions from the Union and the Industry and Research Groupings for its running costs and a cash contribution from the Union for its operational activities.

Budget structure

The budget of the FCH JU is divided into 3 titles as follows:

TITLE 1 Staff expenses
TITLE 2 Administrative expenses
TITLE 3 Operational expenses

Fund sources include funds from the current year (C1), funds carried over from the previous year (C8), reactivated unused appropriations from previous years (C2), internal assigned revenue (C4) and assigned revenues carried over from 2011 (C5).

Budget Revenue

The funding of the FCH JU budget 2012 was as follows (in €):

For Title 1 and 2 appropriations are non-differentiated: commitment and payment appropriations are of equal amount. For Title 3 appropriations are differentiated. Commitments are paid over several years in accordance with contractual obligations.

The funding of the FCH JU budget 2012 was as follows (in €):

Heading	CA	PA	Cashed in 2012
Union contribution* for operational expenditure	78,888,028	52,461,896	52,461,896
Union Contribution* for administrative expenditure	1,153,310	1,153,310	1,153,310
Industry Grouping	2,665,973	2,665,973	2,322,487.49
Research Grouping	444,329	444,329	387,081.25
Other revenues	160,000	160,000	2,001,746.11**
Re-activation of appropriations	11,673,918	7,017,506	
TOTAL	94,985,558	63,903,014	58,326,520.85

* Includes EFTA contribution

** Includes € 1,732,080 assigned revenues (see C4 under section 1.4)

Budget expenditure

Budget execution at year end reached 99.4 % in terms of commitment appropriations and 83.1% in terms of payment execution.

Below is an overview of the budget implementation (execution on commitments and payments) by fund source:

2012- C1

(amounts in €)

	Commitment Appropriations	Committed	% committed	Payment Appropriations	Paid	% paid	Carry over to 2013 (automatic C8)	To be cancelled/ reactivated
Title 1	2,450,000.00	2,277,548.00	93.0%	2,450,000.00	2,226,556.00	90.9%	50,991.31	172,452.69
Title 2	1,973,612.00	1,678,221.00	85.0%	1,973,612.00	921,572.00	46.7%	756,646.31	295,393.69
<i>Subtotal</i>	<i>4,423,612.00</i>	<i>3,955,769.00</i>	<i>89.4%</i>	<i>4,423,612.00</i>	<i>3 148,128.00</i>	<i>71.2%</i>	<i>807,637.62</i>	<i>467,846.38</i>
Title 3	78,888,028.00	78,888,028.00	100.0%	52,461,896.00	44,129,279.18	84.1%	0.00	8,332,616.82
Total	83,311,640.00	82,843,797.00	99.4%	56,885,508.00	47,277,407.18	83.1%	807,637.62	8,800,463.20

2012 – C 2

(amounts in €)

	Commitment appropriations	Committed	% committed	Balance commitment	Payment appropriations	Paid	% paid
Title 3	11,673,918	9,982,468	85.51 %	1,691,450	7,017,506	7,017,506	100 %

These amounts correspond to reactivation of unused appropriations cancelled in 2011 and entered in 2012 budget initially or by amendment.
Balance commitments are reactivated in 2013 budget.

2012 – C 4

(amounts in €)

	Appropriations	Committed	%	Paid	%
Title 1	645.00	0	0	0	0
Title 2	1,135.61	0	0	0	0
<i>Sub-total</i>	1,780.61	0	0	0	0
Title 3	1,730,300.30	0	0	0	0
Total	1,732,080.91	0	0	0	0

The funds relate to recovery of amounts due by third parties. The main item is a recovery order on a project which was terminated at the request of the consortium. These amounts are carried over automatically to 2013 (C5) and will be used for the FCH JU activity.

2012 – C 5

(amounts in €)

	Appropriations	Committed	% committed	Paid	% paid
Title 1	814.10	814.10	100 %	814.10	100 %
Title 2	5,733.34	5,733.34	100 %	5,733.34	100 %
<i>Sub-total</i>	6,547.44	6,547.44	100 %	6,547.44	100 %
Title 3	296,111.20	296,111.20	100 %	296,111.20	100 %
Total	302,658.64	302,658.64	100 %	302,658.64	100 %

The funds correspond to assigned revenues of 2011 carried over in 2012.

2012 – C 8

(amounts in €)

	Commitment Appropriations	Committed	% committed	Payment Appropriations	Paid	% paid	To be cancelled /reactivated
Title 1	53,963.82	17,696.55	32.8%	17,696.55	17,696.55	32.8%	36,267.27
Title 2	662,207.20	586,541.85	88.6%	586,541.85	586,541.85	88.6%	75,665.35
<i>Subtotal</i>	716,171.02	604,238.40	84.4%	604,238.40	604,238.40	84.4%	111,932.62
Title 3	196,686,064.18	180,040,994.54	91.5%	0.00	0.00		16,645,069.64
Total	197,402,235.20	180,645,232.94	91.5%	604,238.40	604,238.40	84.4%	16,757,002.26

Total payments made in 2012 (all fund sources) amounted to € 55,201,810.22 (47,277,407.18+7,017,506+ 302,658.64+ 604,238.40)

ANNEX 4: MATERIALITY CRITERIA

The '**materiality**' concept provides the Executive Director with a basis for assessing the importance of the weaknesses/risks identified and thus whether those weaknesses should be subject to a formal reservation to his declaration.

When deciding whether something is material **qualitative and quantitative** terms have been considered:

In **qualitative** terms, when assessing the significance of any weakness, the following factors have been taken into account:

- the nature and scope of the weakness;
- the duration of the weakness;
- the existence of compensatory measures (mitigating controls which reduce the impact of the weakness) and
- the existence of effective corrective actions to correct the weaknesses (action plans and financial corrections) which have had a measurable impact.

In **quantitative** terms, in order to make a judgement on the significance of a weakness, the potential maximum (financial) impact is quantified.

Whereas the FCH JU control strategy is of a **multiannual nature** (i.e. the effectiveness of the JU's control strategy can only be assessed at the end of the program when the strategy has been fully implemented and errors detected have been corrected), the Executive Director is required to sign a declaration of assurance for each financial year. In order to determine whether to qualify his declaration of assurance with a reservation, the effectiveness of the JU's control system has to be assessed not only for the year of reference but more importantly with a multiannual perspective.

The **control objective** for FCH JU is to ensure that the 'residual error rate', i.e. the level of errors which remain undetected and uncorrected, does not exceed 2% by the end of the JU's program. The question of being on track towards this objective is to be (re)assessed annually, in view of the results of the implementation of the ex-post audit strategy.

As long as the residual error rate is not (yet) below 2% at the end of a reporting year within the program lifecycle, a **reservation** would (still) be made. Nevertheless, the Executive Director apart from the residual error rate may also take into account other management information at his disposal to identify the overall impact of a weakness and determine if it leads to a reservation.

In case an adequate calculation of the residual error rate is not possible for reasons not involving control deficiencies³³, the consequences are to be assessed quantitatively by estimating the likely exposure for the reporting year. The relative impact on the Declaration of Assurance would be then considered by analysing the available information on qualitative grounds and considering evidence from other sources and areas (e.g. information available on error rates in more experienced organisations with similar risk-profiles).

³³ For example, in the early stages of implementation of audits when the number of audit results is limited.

Considering the crucial role of ex-post audits within the JU's control system, its effectiveness needs to check whether the scope and results of the ex-post audits carried out are sufficient and adequate to meet the control objectives.

Effectiveness of controls

The starting point to determine the effectiveness of the controls in place is the 'representative error rate' expressed as a percentage of errors in favor of the FCH JU detected by ex-post audits measured with respect to the amounts accepted after ex-ante controls.

According to the FCH JU ex-post audit strategy approved by the Governing Board, the 'representative error rate' will be based on the average error rate (AER) for a stratified population, from which a judgemental sample has been drawn according to the following formula:

$$\text{AER}\% = \frac{\sum(\text{err})}{n} = \text{RepER}\%$$

Where:

$\sum(\text{err})$ = sum of all individual error rates of the sample (in %). Only the errors in favour of the JU will be taken into consideration.

n = sample size

Second step: calculation of residual error rate.

To take into account the impact of the ex-post controls, this error level is to be adjusted by subtracting:

- Errors detected and corrected as a result of the implementation of audit conclusions.
- Errors corrected as a result of the extrapolation of audit results to non-audited contracts with the same beneficiary.

This results in a residual error rate, which is calculated in accordance with the following formula:

$$\text{ResER}\% = \frac{(\text{RepER}\% * (\text{P-A}) - (\text{RepER}_{\text{sys}}\% * \text{E}))}{\text{P}}$$

Where:

ResER% = residual error rate, expressed as a percentage.

RepER% = representative error rate, or error rate detected in the representative sample, in the form of the Average Error Rate, expressed as a percentage and calculated as described above (AER%).

RepERsys% = systematic portion of the RepER% (the RepER% is composed of complementary portions reflecting the proportion of systematic and non-systematic errors detected) expressed as a percentage.

P = total amount in € of the auditable population.

A = total of all audited amounts, expressed in €.

E = total non-audited amounts of all audited beneficiaries. This will consist of the total amount, expressed in €, of all non-audited validated cost statements for all audited beneficiaries (whether extrapolation has been launched or not).

This calculation will be performed on a point-in-time basis, i.e. all the figures will be provided as of a certain date.

Adequacy of the audit scope

The quantity and adequacy of the audit effort carried out is to be measured by comparing the actual audits to the target audit coverage referred to in the ex-post audit strategy (currently 40%).

ANNEX 5: FCH JU INTERNAL CONTROL STRATEGY

The table below provides a narrative description of the control environment and of key controls in each stage of the project lifecycle, including two horizontal processes, namely: Planning & Programming and Communication & Information.

1. The control environment
<p>Summary: FCH JU Projects co-financed through the reimbursement of eligible costs:</p> <p>The control environment characterised by a large number of beneficiaries, each operating their own control system.</p> <p>Key inherent control risks in this environment:</p> <p>Complex legal framework required to implement a system based on the reimbursement of ‘actual eligible costs’;</p> <p>Beneficiaries must allocate personnel cost and overheads via productive hours and time recording and deduct a range of ineligible items (VAT, duties) from direct costs and overheads via management accounting in accordance with the complex contractual and regulatory provisions;</p> <p>Budgets allocated at the award stage are indicative only – amounts paid are always provisional and subject to recovery if not in line with actual costs;</p> <p>Given the large number of criteria to be complied with, and the relative lack of financial management expertise of the beneficiaries, errors are expected to be frequent.</p> <p>Accountability structures:</p> <p>The Executive Director reports to the Governing Board annually through the Annual activity Report which includes his declaration of assurance. He is also requested to inform the Governing Board, at any time deemed appropriate, of any potentially significant issues related to internal control, audit and OLAF investigations as well as material budgetary and financial issues which might have an impact on the sound management of appropriations or which could hamper the attainment of the objectives set. Furthermore he reports annually to the European Parliament, the Council and the Commission on internal audits (article 73(5) of the FCH JU Financial Rules).</p> <p>The main bases for assurance are the mid-year reports from the Heads of Unit which are required to sign a statement of assurance.</p> <p>The reliability of the information is supported by the monitoring of action plans and supervision of activities.</p> <p>The Internal Control Coordinator prepares the annual assessment of the FCH JU internal control system and issues recommendations to the Executive Director. Furthermore, he certifies the accuracy and exhaustiveness of the information on management and internal controls as well as the information contained in the annexes to the AAR.</p> <p>The Internal Audit Capability provides the Executive Director with expertise and advice on internal control and on risk management. Furthermore the Internal Audit Capability and the Internal audit Service of the Commission provide the Executive Director with independent, objective assurance services as to the effectiveness and efficiency of risk management, control</p>

and internal governance processes in the FCH JU.

The FCH JU also relies on the certificates issued by independent, professional auditors on the compliance with the contractual and regulatory requirements and on the accuracy of the cost statements submitted in order to detect and correct errors before the payments are made.

Management and control systems: stages and main actors	
Grants are awarded directly to the beneficiary consortia. The coordinator of each consortium manages the distribution of funds, except in a few projects for which payments are made directly to beneficiaries.	
Grant period: Between x and y months (average x months)	12 - 81 (36.4)
Average value (in €)	3,572,778
Median value (in €)	12,810,629
Range of grants (in thousand €)	257 – 25,878
Percentage of grants under €1 million.	11.47%
Number of coordinators/beneficiaries:	103/883

2. Stages and actors and main issues addressed at each stage

<u>Horizontal process: Planning & Programming</u>	<p>The Council regulation 521/2008 setting up FCH JU is the primary element from which the objectives of the JU derive for the preparation of the Multi-Annual (MAIP) and annual (AIP) implementation planning.</p> <p>The AIP is developed on the basis of an internal dialogue in order to ensure it is understood and owned and after having taken into consideration stakeholders' feedback to ensure alignment with their priorities.</p>
<u>Project Lifecycle Stage 1 - Evaluation</u>	<p>Proposals are evaluated and selected according to their research credentials (i.e. best value for public money).</p> <p>Key controls include the screening of submitted proposals for eligibility; the choice of independent expert evaluators, the evaluation by a minimum of three experts; and a panel review for quality control and ranking of proposals.</p>
<u>Project Lifecycle Stage 2 – Negotiation & selection</u>	<p>Based on the ranking list, the JU establishes the final list of proposals and proceeds to negotiate the grant agreements with the successful applicants.</p> <p>The purpose of the negotiation is to clarify and adapt the work to be carried out and the operational objectives of the project, substantiate its costs and determine its duration and the maximum contribution from the FCH budget</p>

	<p>which is of key importance for the JU in order to respect the 'matching principle'³⁴.</p> <p>The JU seeks to implement the advice of the independent expert evaluators. This negotiation generates significant efficiencies in the use of JU funds by discarding work which is not essential for the achievement of the scientific objectives of the project and ensuring that the budgeted costs are commensurate to the work to be carried out.</p> <p>Negotiation results are put forward to the Governing Board which approves the final list of selected proposals.</p> <p>This phase includes legal and financial verifications (the legal status of the beneficiary, its possible inclusion in the Early Warning System (EWS)³⁵, its financial viability and its capacity to co-fund the project) as well as safeguarding measures (e.g. bank guarantees, reduced level of pre-financing and shorter reporting periods).</p>
<p><u>Project Lifecycle</u> Stage 3 – Project & contract management</p>	<p><u>Contracting and pre-financing</u></p> <p>After final approval of proposals for funding, the grant agreements are prepared for signature based on a model.</p> <p>Before the commitment is authorised and the pre-financing is paid, financial circuits are in place ensuring that all relevant operational and financial aspects are verified by at least two independent members of staff.</p> <p><u>Interim and final payments</u></p> <p>For beneficiaries' payment requests (i.e. cost claims), the JU relies on two main sources:</p> <ol style="list-style-type: none"> (1) Beneficiaries' technical and financial progress reports (intermediate and final). (2) Audit certificates by certifying auditor who must be independent from the beneficiary and qualified to carry out statutory audits of accounting documents. In particular: <ol style="list-style-type: none"> a. '<i>Certificates on the beneficiaries' financial statements</i>' issued by independent, professional auditors on the compliance with the contractual and regulatory requirements and on the accuracy of the cost statements submitted in order to detect and correct errors before the payments are made. b. '<i>Certificate on the methodology</i>': the beneficiary may submit

³⁴ Council Regulation 521/2008 as amended by Regulation 1183/2011, FCH Statutes, article 12(3): *"The operational costs of the FCH JU shall be covered through the financial contribution of the Union and through in-kind contributions from the legal entities participating in the activities. The contribution from the participating legal entities shall at least match the financial contribution of the Union Receipts shall be dealt with in accordance with the Rules of Participation set out in the Decision No 1982/2006/EC.*

³⁵ So far, access to the EWS by FCH is limited to some EWS levels.

	<p>a 'Certificate on the methodology' for the calculation of costs which it uses to prepare its claims with regard to both personnel and indirect costs.</p> <p>The approval of interim and final payments to beneficiaries is subject to the ex-ante financial circuit indicated above. Indeed, before a payment is authorised, all relevant operational and financial aspects are verified by at least two independent members of staff. Project managers verify that the work carried out by the beneficiary is in all respects in compliance with the grant agreement by evaluating the project reports and deliverables. To do so, they may seek the advice of independent experts. Financial assistants carry out financial and arithmetical checks to ensure financial statements and auditor's certificates have been submitted in accordance with the provisions of the grant agreement. The authorising officer ascertains that these checks on the supporting documents have been done and validates the expenditure.</p> <p>When deemed necessary, ex-ante 'on the spot' control visits and/or ex-ante 'in depth' desk checks may be carried out during project implementation. They include the verification of individual cost items against other sources of information (reconciliations, authorisation) based on third-party invoices or payslips provided by the beneficiary. Basic deficiencies in beneficiaries' understanding of the contract provisions can be detected and improved this way, with a resulting corrective effect on future claims.</p>
<p><u>Project Lifecycle</u> Stage 4 – Ex-post controls: audits and recoveries</p>	<p>Ex-post audits are one of the main elements for the provision of assurance because many errors can only be detected by ex-post audits 'on the spot'. This control is intended to (1) contribute to ensure the legality and regularity of the financial transactions; (2) to provide an indication of the effectiveness of ex-ante controls and (3) to provide the basis for corrective and recovery mechanisms.</p> <p>The JU has developed an ex-post audit strategy which is harmonised with the Commission's strategy as requested by the General Financing Agreement signed between the Commission and the JU.</p> <p>Audit results are implemented by the Executive Director as authorising officer by issuing recovery orders or deducing amounts wrongly paid from future payments to the same beneficiary.</p>
<p><u>Horizontal process:</u> Communication & Information</p>	<p>Communication and information channels with beneficiaries and auditors provide preventive and directive measures to improve the quality of beneficiaries' financial management and of their data. This aims at ensuring that both beneficiaries and the certifying auditors fully understand the contract requirements and provisions, in order to reduce the number of errors and omissions in the cost claims submitted.</p> <p>In this respect, FCH JU has developed some guidance notes which are available through the '<i>Participant's Portal</i>' and the FCH JU webpage. This includes a Guide to financial issues for FCH JU beneficiaries. The FCH JU has also developed a communication campaign to ensure that both beneficiaries and certifying auditors understand the contract requirements and provisions, in order to reduce the number of errors and omissions in the cost claims submitted to the FCH JU.</p>

	<p>The FCH JU also participates in meetings with units responsible for ex-post audits in the Commission in order to spread their best practices across JU's beneficiaries and auditors and ensure a common understanding of similar critical issues and harmonised methodology.</p>
<p><u>Horizontal process:</u> Anti-fraud measures</p>	<p>Anti-fraud measures and actions are embedded in various ex-ante and ex-post controls for prevention and detection purposes.</p> <p>The FCH JU cooperates with the Commission services in particular in sharing information in the context of reviews of selected fraud related risks and risk schemes (such as double funding).</p> <p>The FCH JU will take into account the "Methodology and guidance for the Agencies' anti-fraud strategies" that is being developed by the network of agencies and based upon the methodology document prepared by OLAF for the Commission. In this context it will raise fraud risk awareness and arrange fraud-related training for its staff.</p>
<p>3. Supervision and monitoring of the internal control systems and audit follow up</p>	
<p>The FCH JU complies with all Internal Control Standards, including:</p> <ul style="list-style-type: none"> Recording of exceptions. Recording and correction of internal control weaknesses. Principles of the "surveillance" system. Systematic monitoring of the implementation of audit recommendations. Structured and documented reviews of the effectiveness of the internal controls. Structured and documented risk management exercises. Direct observation and analysis of information. <p>In addition, the FCH JU is also subject to an independent monitoring and review and receives regular feedback on adequacy of the system in place from:</p> <ul style="list-style-type: none"> • The Internal Audit Capability – the audits and consultancy work performed by the FCH JU's Internal Audit Capability, audit opinion. • The Internal Audit Service – currently limited to the joint IAS-IAC annual assessment of the level of in-kind. • The European Court of Auditors - the Annual examination of systems assessed as effective. <p>There is a systematic monitoring of the implementation of audit recommendations. It is aimed to ensure that the internal control weaknesses and risks identified by both external (the European Court of Auditors) and internal auditors (currently mainly the Internal Audit Capability) are reported and adequately addressed; defining appropriate action to remedy systemic weaknesses and monitoring the implementation of action plans.</p>	

ANNEX 6: FCH JU INTERNAL CONTROL STANDARDS

MISSION AND VALUES

ICS 1: Mission

The FCH JU's 'raison d'être' is clearly defined in up-to-date and concise mission statements developed from the perspective of its customers.

Requirements

- The JU have up-to-date mission statements which are linked across all hierarchical levels.
- These mission statements have been explained to staff and are readily accessible.

ICS 2: Ethical and Organisational values

Management and staff are aware of and share appropriate ethical and organisational values and uphold these through their own behaviour and decision-making.

Requirements

- The JU has procedures in place to ensure that all staff is aware of relevant ethical and organisational values, in particular ethical conduct, avoidance of conflicts of interest, fraud prevention and reporting of irregularities.

HUMAN RESOURCES

ICS 3: Staff allocation and flexibility

The allocation and recruitment of staff is based on the FCH JU's objectives and priorities. Flexibility is promoted to strike the right balance between ownership and continuity.

Requirements

- Whenever necessary - at least once a year - management aligns the organisational structures and staff allocations with priorities and workload.
- Staff job descriptions are consistent with relevant mission statements
- According to its scope and size, the JU has a policy to promote flexibility in order to ensure that the right person is in the right job at the right time and, where feasible, can provide multilevel support.
- Necessary support is defined and delivered to new staff to facilitate their integration in the team;

ICS 4: Staff Evaluation and Development

Staff performance is evaluated against individual annual objectives, which fit with the FCH JU's overall objectives. Adequate measures are taken to develop the skills necessary to achieve the objectives.

Requirements

In the context of the evaluation process, discussions are held individually with all staff to establish their annual objectives, which fit with the JU's objectives.

Staff performance is evaluated according to standards set by the JU.

Appropriate measures to develop the necessary skills (e.g. training, coaching...) are defined and management ensure their implementation.

PLANNING AND RISK MANAGEMENT PROCESSES

ICS 5: Objectives and Performance Indicators

The FCH JU's objectives are clearly defined and updated when necessary. These are formulated in a way that makes it possible to monitor their achievement. Key performance indicators are established to help management evaluate and report on progress made in relation to their objectives.

Requirements

- The JU's Annual Implementation Plan (AIP) is developed in accordance with applicable guidance and on the basis of (1) an internal dialogue in order to ensure it is understood and owned and (2) stakeholders' feedback to ensure alignment with their priorities.
- The AIP clearly sets out how the planned activities will contribute to the achievement of objectives set, taking into account the allocated resources and the risk identified.
- To the extent possible, the AIP objectives are established in line with the SMART criteria, i.e. they are Specific, Measurable or verifiable, discussed and Accepted, realistic and Timed.
- Whenever necessary, the objectives are updated to take account of significant changes in activities and priorities.
- Where appropriate, the JU establishes road-maps of on-going multi-annual activities (i.e. MAIP), setting out critical milestones for the actions that need to be taken before the budget appropriations can be implemented for the whole period of the activity.
- In the AIP, there is at least one performance indicator per objective to monitor and report on achievements. To the extent possible, the performance indicators are established according to the RACER criteria, i.e. they are Relevant, discussed and Accepted, Credible, Easy and Robust.
- Measures are defined to alert management when indicators show that the achievement of the objectives is at risk.

ICS 6: Risk Management Process

A risk management process that is in line with applicable provisions and guidelines is integrated into the Annual Implementation Plan (AIP).

Requirements

- A risk management exercise (i.e. risk identification, risk assessment and action plan) at JU level is conducted at least once a year as part of the AIP process and whenever management considers it necessary (typically in the event of major modifications to the JU's activities occurring during the year). Risk management is performed in line with applicable provisions and guidelines.
- Risks considered "critical" from an overall JU perspective are indicated in the JU's Annual Implementation Plan and followed-up in the Annual Activity Report.

OPERATIONS AND CONTROL ACTIVITIES

ICS 7: Operational Structure

The FCH JU's operational structure supports effective decision-making by suitable delegation of powers. Risks associated with the FCH JU's sensitive functions are managed through mitigating controls. Adequate IT governance structures are in place.

Requirements

- Delegation of authority is clearly defined, assigned and communicated in writing, conforms to legislative requirements and is appropriate to the importance of decisions to be taken and risks involved.
- All delegated and sub-delegated authorising officers have received and acknowledged the Charters and specific delegation instruments.
- As regards financial transactions, delegation of powers (including both "passed for payment" and "certified correct") is defined, assigned and communicated in writing.
- The JU's sensitive functions are identified and relevant mitigating controls are established e.g. robust Financial Circuits, management of exceptions, use of independent experts when necessary and other control procedures (ref. ICS 8).
- Governance of the IT structure is established to enable the efficient and secure functioning of the IT services.

ICS 8: Processes and Procedures

The FCH JU's processes and procedures used for the implementation and control of its activities are effective and efficient, adequately documented and compliant with applicable provisions. They include arrangements to ensure segregation of duties and to track and give prior approval to control overrides or deviations from policies and procedures.

Requirements

The JU's main operational and financial processes and procedures and IT systems are adequately documented.

The JU's processes and procedures ensure appropriate segregation of duties (including for non-financial activities).

The JU's processes and procedures comply with applicable provisions, in particular the Financial Rules (e.g. ex-ante and ex-post verifications).

A method is in place to ensure that all instances of overriding of controls or deviations from established processes and procedures are documented in exception reports, justified, duly approved before action is taken and logged centrally in the JU.

ICS 9: Management supervision:

Management supervision is performed to ensure that the implementation of activities is running efficiently and effectively while complying with applicable provisions.

Requirements

- Management supervises the activities they are responsible for and keep track of main issues identified. Management supervision covers both legality and regularity aspects and operational performance (i.e. achievement of AIP objectives).
- The supervision of activities involving potentially critical risks is adequately documented³⁶.
- Management monitors the implementation of accepted audit recommendations and related action plans.
- At least annually in the Annual Activity Report (AAR) as stipulated in Article 6 of the JU's Statutes and Article 10 of the General Financing agreement, and at any time deemed appropriate, the Executive Director informs the Governing Board of any potentially significant issues related to internal control, audit and OLAF investigations as well as material budgetary and financial issues which might have an impact on the sound management of appropriations or which could hamper the attainment of the objectives set.

³⁶ Depending on the nature of the work performed, the documentation of supervision can, for example, be constituted of minutes of meetings, notes explaining key decisions, signature of authorising officer in IT systems, or documents explaining the scope, methods, results and conclusions of the supervisory activities

ICS 10: Business Continuity:

Adequate measures are in place to ensure continuity of service in case of "business-as-usual" interruption. Business Continuity Plans (BCP) are in place to ensure that the FCH JU is able to continue operating to the extent possible whatever the nature of a major disruption.

Requirements

Adequate measures - including handover files and deputising arrangements for relevant operational activities and financial transactions - are in place to ensure the continuity of all service during "business-as-usual" interruptions (such as sick leave, staff mobility, migration to new IT systems, incidents, etc.).

Business Continuity Plans cover the crisis response and recovery arrangements with respect to major disruptions (such as pandemic diseases, terrorist attacks, natural disasters, etc.). They identify the functions, services and infrastructure which need to be restored within certain time-limits and the resources necessary for this purpose (key staff, buildings, IT, documents and other).

ICS 11: Document Management:

Appropriate processes and procedures are in place to ensure that the FCH JU's document management is secure, efficient (in particular as regards retrieving appropriate information) and complies with applicable legislation.

Requirements

- Document management systems comply with relevant security measures, provisions on document management and rules on protection of personal data.
- A document management system is established for registration, filing, classification and archiving of documents.

INFORMATION AND FINANCIAL REPORTING**ICS 12: Information and Communication:**

Internal communication enables management and staff to fulfil their responsibilities effectively and efficiently, including in the domain of internal control. The FCH JU has an external communication strategy to ensure that its external communication is effective, coherent and in line with the JU's key political messages. IT systems used and/or managed by the JU (where the JU is the system owner) are adequately protected against threats to their confidentiality and integrity.

Requirements

- Internal and external communications comply with relevant copyright provisions.

- Appropriate Internal Communication is in place to ensure that management and staff are appropriately informed of decisions, projects or initiatives that concern their work assignments and environment.
- All personnel are encouraged to communicate potential internal control weaknesses, if judged significant or systemic, to the appropriate management level.
- A documented general strategy for external communication, including clearly defined target audiences, messages and action plans is in place. The communication strategy is devised from the beginning of policy formulation and is discussed with the relevant stakeholders.
- The IT systems support adequate data management, including database administration and data quality assurance. Data management systems and related procedures comply with relevant Information Systems Policy, compulsory security measures and rules on protection of personal data.

ICS 13: Accounting and Financial Reporting:

Adequate procedures and controls are in place to ensure that accounting data and related information used for preparing the organisation's annual accounts and financial reports are accurate, complete and timely.

Requirements

- The Authorising Officer (i.e. Executive Director) has responsibility for ensuring the reliability and completeness of the accounting information under his/her control necessary to the Accounting Officer for the production of accounts which give a true image of the JU' assets and of budgetary implementation.
- The JU's accounting procedures and controls are adequately documented.
- Financial and management information produced by the FCH JU, including financial information provided in the Annual Activity Report, is in conformity with applicable accounting rules and instructions.

EVALUATION AND AUDIT

ICS 14: Evaluation of activities:

Evaluations of expenditure programs, and other non-spending activities are performed to assess the results, impacts and needs that these activities aim to achieve and satisfy.

Requirements

- N/A: The evaluation of the Program is up to the Commission.

ICS 15: Assessment of Internal Control Systems:

Management assess the effectiveness of the FCH JU's key internal control systems, including the processes carried out with external assistance and/or outsourced, at least once a year.

Requirements

- Management assess the effectiveness of the FCH JU's key internal control systems, including the processes carried out with external assistance and/or outsourced at least annually. Such self-assessments can, for example, be based on staff surveys or interviews combined with management reviews of supervisory reports, results of evaluation and ex-ante/ex-post verifications, audit recommendations and other sources that provide relevant information about the JU's internal control effectiveness.
- On an annual basis – as part of the Annual Activity Report – the Internal Control Coordinator signs a statement, to the best of his/her knowledge, on the accuracy and exhaustiveness of the information on management and internal control systems provided in the Annual Activity Report.

ICS 16: Internal Audit Capability:

The FCH JU has an Internal Audit Capability (IAC), which provides independent, objective assurance and consulting services designed to add value and improve the operations of the JU.

Requirements

- The role and responsibilities of the FCH JU's Internal Audit Capability (IAC) are formally defined in an audit charter.
- The annual audit work plan is risk-based; and is approved by the Executive Director and the Governing Board.
- The Executive Director ensures that the IAC is independent of the activities they audit.
- The Executive Director ensures that the IAC has sufficient and adequate resources to perform the audit work plan.



**Analysis and assessment of the Fuel Cells and Hydrogen Joint Undertaking
Annual Activity Report 2012 (FCH JU AAR)
by the FCH JU Governing Board**

Legal basis

Article 40 (2) of the FCH Financial Rules states that *'by no later than 15 June each year, the Governing Board shall send to the budgetary authority and the Court of Auditors an analysis and assessment of the Authorising officer's annual report on the previous financial year. This analysis and assessment shall be included in the Annual Activity Report of the FCH Joint Undertaking, in accordance with the provisions of Article 21 of the Statutes'*.

Analysis

The Fuel Cells and Hydrogen Joint Undertaking's Annual Activity Report 2012 (Authorising Officer's report) was presented to the FCH JU Governing Board on March 14th 2013 and it was approved by the Governing Board in June 2013.

The Governing Board is of the opinion that the FCH JU AAR 2012 covers well the main activities of the FCH JU in 2012, clearly identifies the risks associated with the FCH JU operations, duly reports on the use made of the FCH JU resources provided, and indicates the efficiency and effectiveness of the FCH JU internal control system.

The Governing Board recognises the progress made by the FCH JU and the achieved results in 2012 and notes in particular that:

- The FCH JU successfully completed the negotiations leading to the signature of 33 grant agreements of the fourth Call for Proposals (published in 2011) with a total FCH JU contribution of 117,5 M €, with the participation of 294 legal entities. 25% of the participants in the signed grant agreements are SMEs, receiving 34% the FCH JU funding granted in the call.
- In 2012, the FCH JU published the fifth Call for Proposals with an indicative FCH JU budget of 77,5 M € (increased to 79,8 M €) . For this call, 72 proposals were evaluated with the assistance of independent experts, in which 573 legal entities participated and in which 28% of the FCH JU funding was requested by SMEs. The Governing Board approved on October 11th 2012 a list of 28 proposals (and a reserve list of an additional set of 15 proposals) for opening negotiations in view of concluding grant agreements.
- The second programme review day was successful enabling the public assessment of the progress of the programme towards its objectives.

- The low number of complaints from coordinators of proposals not retained for negotiations (8) is considered as an indication of the robustness of the evaluation process.
- 100% of payments for grants were paid on time. In addition, it is recognised the improvement of the time to payment for the experts in relation to previous years (89% of payments on time in 2012 while only 62 % in 2011).
- The FCH JU Guide on financial issues, providing clarifications on the financial provisions of the FCH JU grant agreement, was published. Furthermore, to avoid errors in the financial reports of the beneficiaries, several training sessions were organised for the FCH JU beneficiaries.
- The Governing Board also recognises that actions have been taken by the FCH JU to implement the remarks provided by the European Court of Auditors in its report on the FCH JU Annual Accounts 2011. In addition, the high implementation of ex-post audit results (97,6% of total costs) proves effective correction of the detected errors in the FCH JU grant agreements.
- The Governing Board observes that assurance could be given regarding 99,34% of the total expenditure (operational and administrative)

The Governing Board considers that the following aspects require improvement:

- The achievements of the FCH JU in relation to the technical objectives set should be better explained in the AAR, as well as the results of the FCH JU projects finished.
- A number of public procurements foreseen in the AIP 2012 were cancelled or postponed. All efforts should be made to ensure that procurements are launched as planned.

Risk management process

Concerning the “Risk Management process”, the Governing Board appreciates that mitigating actions have been implemented to address the critical risk of understaffing identified in the Annual Activity Reports 2011 and 2012, such as the increased automation, simplification of procedures and efficiency gains using staff build up know-how.

The Governing Board also acknowledges that the management of the FCH JU has taken actions to tackle the risk areas identified in the risk assessment exercise, jointly carried out by the Internal Audit Service and the Internal Audit Capability. The risk areas identified were monitoring of operational and administrative activities, data protection, IT development and management, documents management, business continuity, matching assessment and ex-post controls.

Human resources

In relation to the use of human resources, the Governing Board notes that the FCH JU staff assigned to the activities carried out in 2012 have been used for their intended purpose. It is also noted that one post was vacant at the end of 2012. This was filled on 1st January 2013.

Internal control system

The Governing Board is of the opinion that, in general, the internal control system is working and adequately mitigates the critical risks which could hamper the achievement of the FCH JU objectives and activities. However, it is noted that further improvement is needed in terms of effectiveness to address the weaknesses identified.

The Governing Boards acknowledges that thanks to the Action Plan for the effective implementation of the internal control standards, several weaknesses were identified

The functioning of the internal control systems has been monitored through the year by the systematic registration of exceptions, leading to corrective and alternative mitigating measures.

The Governing Board positively notes that all audit recommendations from the Internal Audit Capability's audits from previous years have been implemented during 2012.

The Governing Board also notes that actions have been carried out to deal with the audit findings of the two assurance engagements carried out by the Internal Audit Capability in 2012, one on "ex-ante controls for eligibility of declared costs and related payments" and another one on the "assessment of the level of in-kind contributions".

The Governing Board welcomes the reasonable assurance that suitable control systems are in place, and that the identified risks are being mitigated and/or monitored.

Ex-post controls

The Governing Board notes with satisfaction that the ex-post audit strategy intended to ensure the legality and regularity of the expenditure has been duly implemented in 2012. More than 33 audits have been selected out of which 19 are finalised. As a result of the ex-post audits, lack of accuracy of few costs claims was detected.

It is noted that more than 90% of the adjustments related to the implementation of the ex-post audit results in favour of the FCH JU have been implemented.

The Governing Board notes that although the residual error rate on cost claims is below the materiality threshold (i.e. 2%), the Declaration of Assurance of the Authorising Officer states a reservation in this regard. This seems justified by a prudent approach taking into consideration that it is not possible at this point in time to state that by the end of the programming period the residual error rate will be below 2%.

Assessment

The declaration of the Executive Director's and the FCH Annual Activity Report 2012 gives a good assessment of operational and financial management in relation to the achievement of objectives. Based on the information provided, the FCH JU key objectives set up for the financial year 2012 have been met in compliance with legality, regularity and sound financial management.

The Governing Board also notes that a reservation has been issued for the reasons mentioned above and it welcomes that in this respect preventive, detective and corrective actions are implemented by the Programme Office.

The Governing Board considers that, taking into consideration the control and monitoring system, the implemented control procedures give the necessary guarantees concerning the legality and regularity of the operations of the FCH JU in the financial year 2012.

The FCH JU Governing Board hereby adopts the analysis and assessment of the FCH Annual Activity Report 2012.

ADOPTED BY
WRITTEN PROCEDURE 14 June 2013
14. 06. 2013

