Fuel cells and hydrogen
Joint undertaking

Public Information session on 2011 call

12 May 2011

New Energy World JU
fuel cells & hydrogen for sustainability

OUTLINE

1- The Fuel Cells and Hydrogen Joint Undertaking– State of Play

2- The Annual Implementation Plan 2011 (topics opened)

3- Proposals – from submission to selection

4- Questions & Answers

OUTLINE

1- The Fuel Cells and Hydrogen Joint Undertaking– State of Play

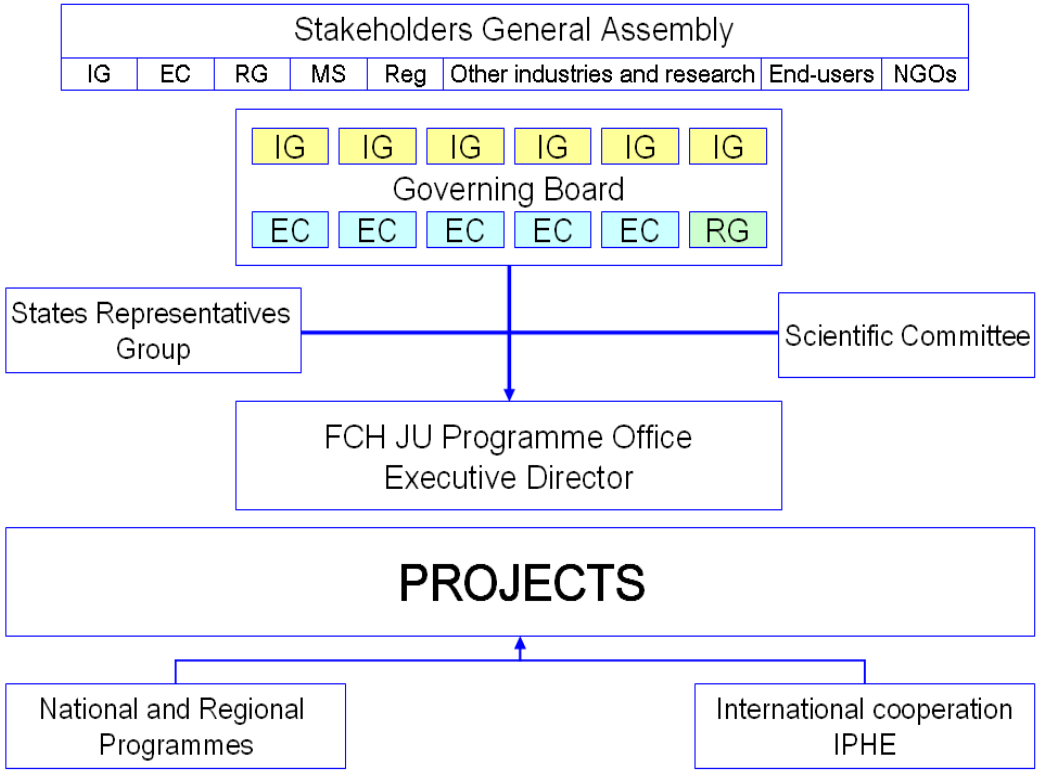
FCH JU : Strong Public Private Partnership with Focused Objectives

FCH JU - Objectives

- Bring resources together under a cohesive, long-term strategy : **public private partnership**
- Ensure **commercial focus** by matching RTD activities to **industry's needs and expectations**
- Scale-up and intensify links between Industry and the **Research Community**

To accelerate the development of technology base towards commercialization from 2015 onwards

FCH JU – Governance structure



Strong Partnership with Focused Objective

The European Union represented by the European Commission

European Industry Grouping for the Fuel Cells and Hydrogen Joint Technology Initiative (NEW-IG)

New European Research Grouping on Fuel Cells and Hydrogen (N.ERGHY)

To accelerate the development of technology to establish the technology base for commercialisation from 2015 onwards

NEW-IG: Industry Representation

New Energy World IG
fuel cells & hydrogen for sustainability

- Represents **Industry perspectives** in the Joint Undertaking
- 54 member-companies from all over Europe
- Almost 50 % SMEs
- Structured in application-lead areas (Production, Transport, Stationary, Early Markets)
- Representation based in Brussels

- Private partner in the JU – contributes 50 % cost
- Co-develops Annual Implementation Plan
- Part of JU governance through JU Governing Board

NEW-IG: Industry Representation

New Energy World IG
fuel cells & hydrogen for sustainability

- **Priority setter**, by co-drafting Annual and Multi-annual implementation plans
- **Application oriented** – facilitating market development of FCH technologies in a coordinated manner (e.g. commercialisation plans)
- **Focus on accelerating development and market deployment** of applications (FCEV, telecom back-up systems, forklifts)

Ideas for projects? Need a partner?

Fuel Cells and Hydrogen Joint Undertaking

BROKERAGE EVENT 2011

19 May 2011, 11:30-17:30 CET

Hotel Kempinski, Berlin, Germany

New Energy World IG

fuel cells & hydrogen for sustainability

N.ERGHY

research on fuel cells & hydrogen

FCH JU Brokerage event 2011

Why to participate:

- ✓ Discuss your projects ideas for FCH JU Call 2011
- ✓ Find potential project partners
- ✓ Develop your proposal
- ✓ Build or join a consortium
- ✓ Receive information and advice
- ✓ Enlarge your network

For more information:

Take a leaflet with contact details and visit us at www.fch-ju.eu.

N.ERGHY: Research Representation

- Represents **Research perspectives** in the Joint Undertaking
- 60 members from research organizations and Universities all over Europe
- Structured in application-lead areas (Production, Transport, Stationary, Early Markets)
- Representation based in Brussels

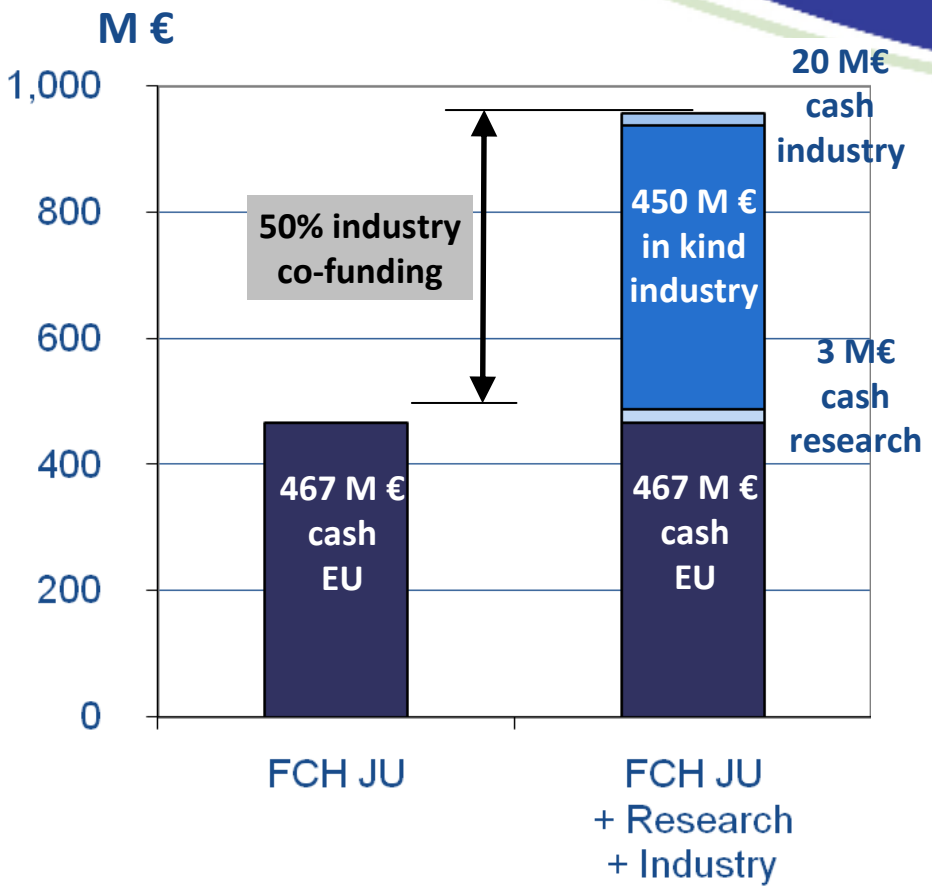
- Private partner in the JU – contributes 8+% cost
- Co-develops Annual Implementation Plan
- Part of JU governance through JU Governing Board

N.ERGHY: Research Representation

N.ERGHY
research on fuel cells & hydrogen

- **Priority setter**, by co-drafting Annual and Multi-annual implementation plans
- **Research for the market**, providing research expertise in the Fuel Cell and Hydrogen Joint Undertaking to accelerate the deployment of hydrogen and fuel cell technology
- **Emphasis on aligning** research and industry activities for FCH technology market deployment

FCH JU - Operational budget



Budget : 2008 ~ 2013 : **(min.) 940 M €**

Operations : to launch annual, open and competitive calls for project proposals

Principle : 50/50 cost-sharing between the EU and Industry

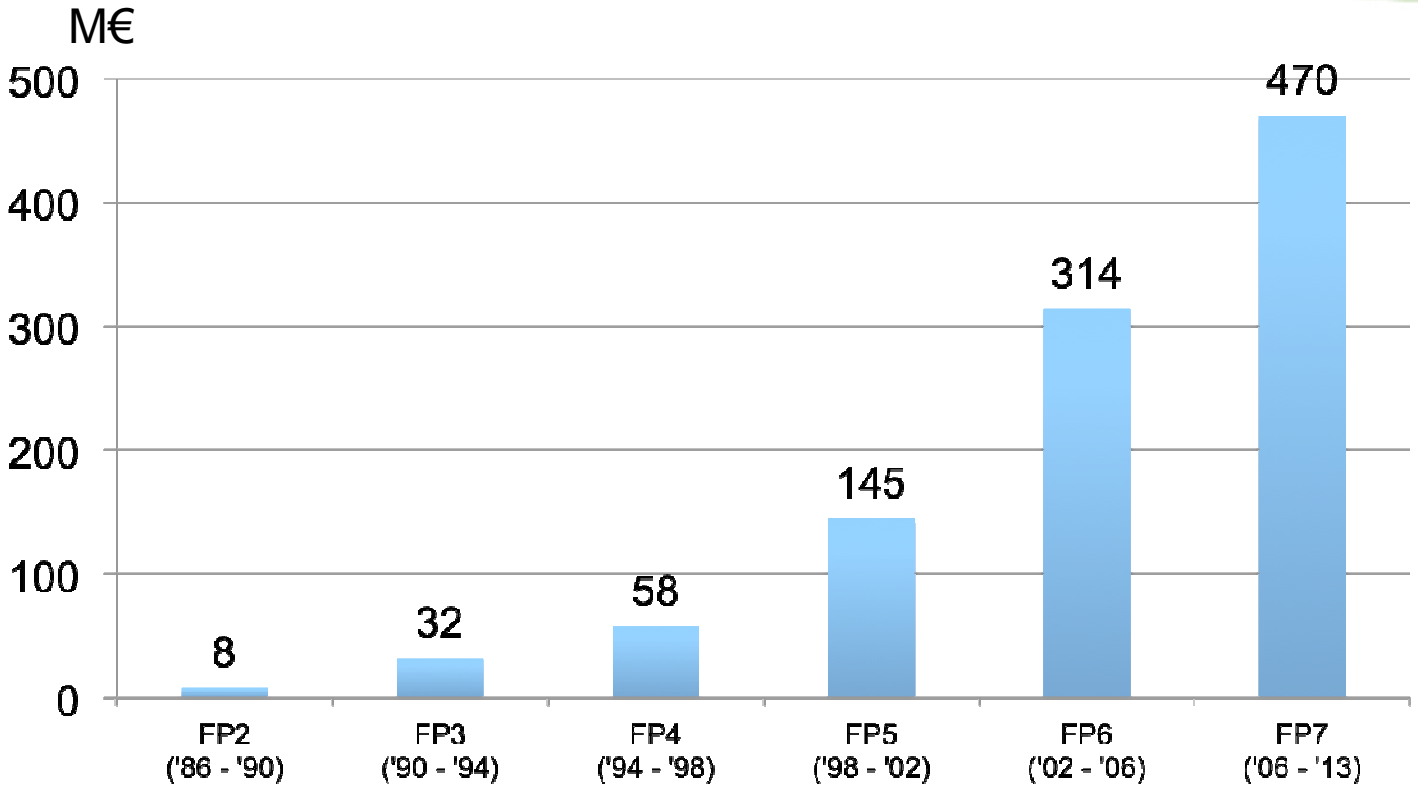
Limit : The requested FCH JU (cash) funding has to be matched by industry co-financing (in kind) at call level; in case of mismatching, the FCH JU funding is reduced.

Correction factor : in order to reflect the reduced FCH JU funding, a correction factor is applied to all funding schemes

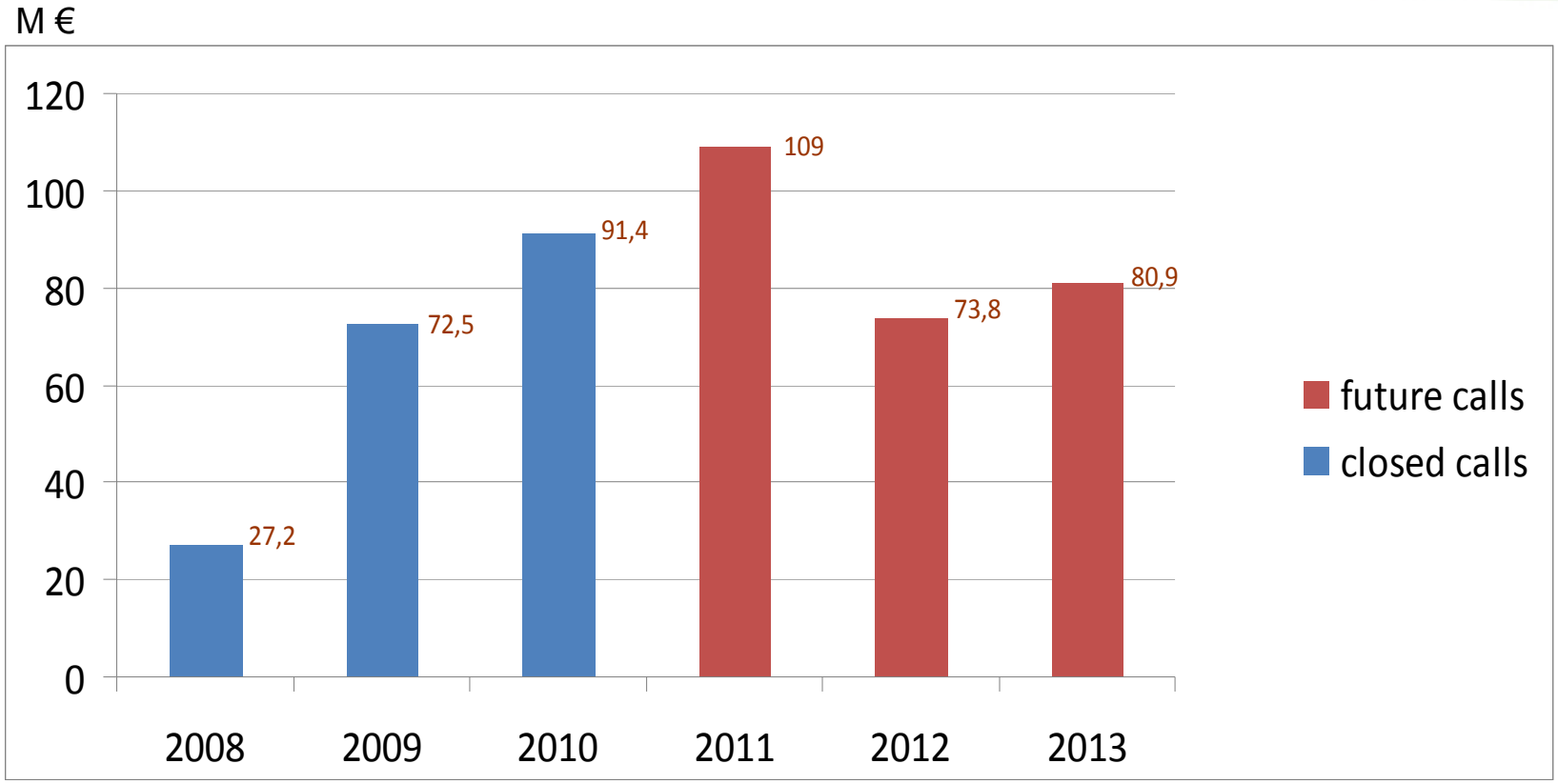
(e.g. for the calls 2010: 0.72, for 2008 & 2009: 0.67)

Continuous Support of the EU for Fuel Cells and Hydrogen

Framework Programmes

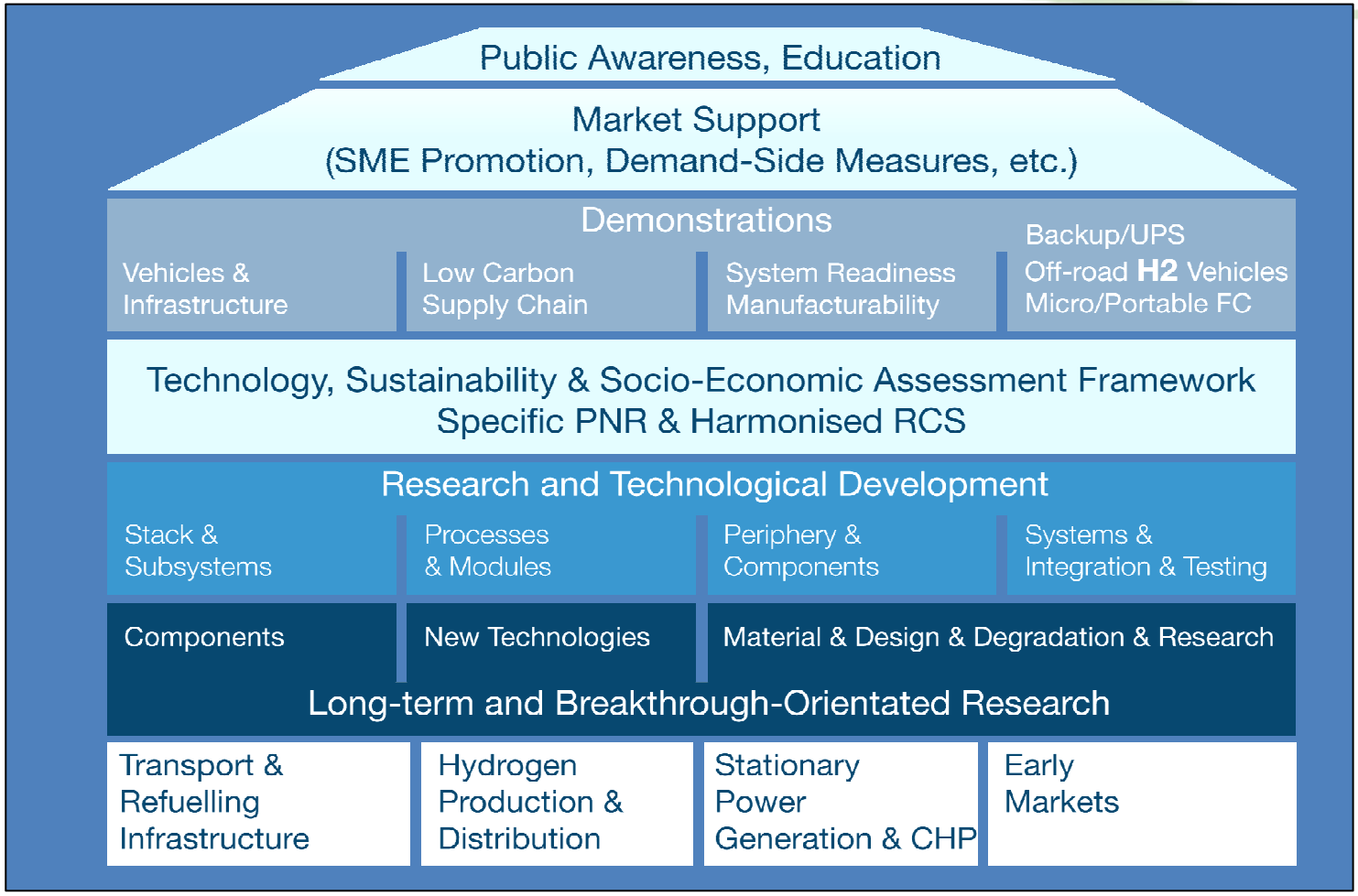


Call for proposals budget 2008 – 2013



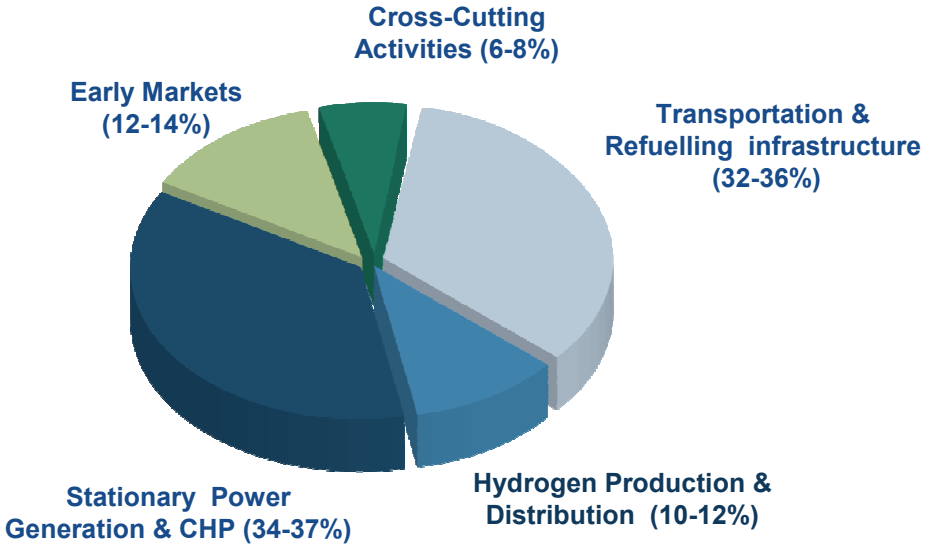
Multi-Annual Implementation Plan 2008 - 2013

Adopted in May 2009… currently under revision

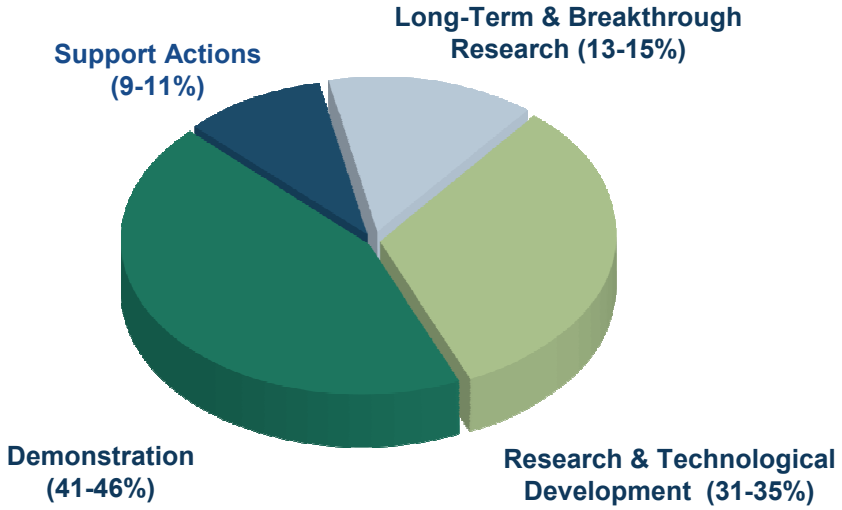


Budget Breakdown 2008-2013

By Application Area (*)



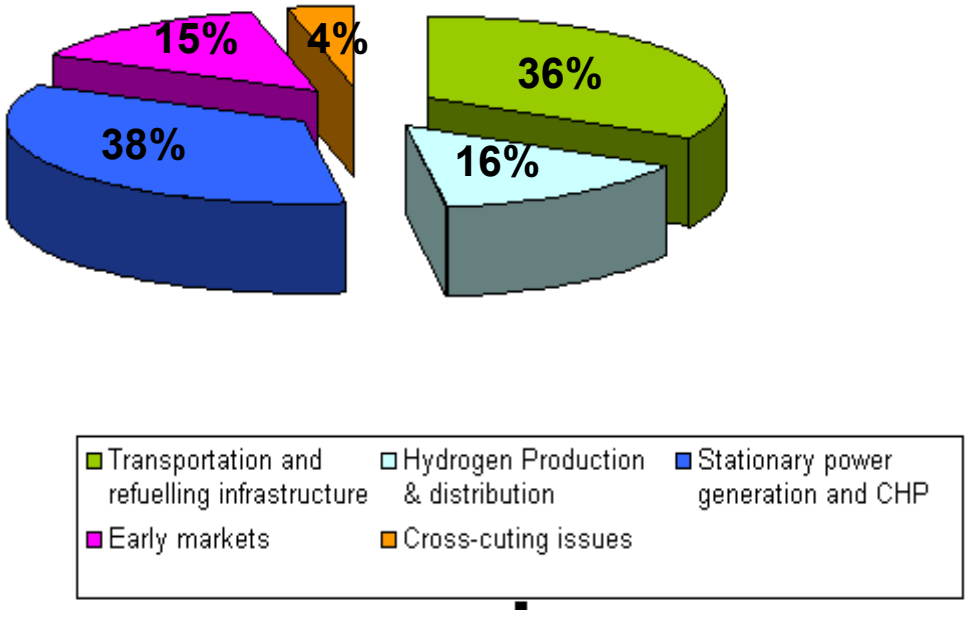
By Activity Type (*)



* as stated in the Multi Annual Implementation Plan

Call 2011 Overview

Application area/topics	Indicative funding (M€)
Transport (10)	36
H2 production (9)	16
Stationary (8)	38
Early Markets (5)	15
Cross-cutting (4)	4
Total (36)	***109***



ROADMAP Call 2011

Publication of call	3 May 2011
Deadline for submission of proposals	18 August 2011
Evaluation of proposals	September 2011
Evaluation Summary Reports sent to proposal coordinators ("initial information letter")	October 2011
Invitation letter to successful coordinators to launch grant agreement negotiations with the FCH JU	December 2011
Signature of first FCH JU grant agreements	From April 2012
Letter to unsuccessful applicants	From April 2012

FCH JU commercialisation studies

Series of studies on further European 'Roll Out' and commercialisation plans

Subject (indicative title)	Indicative FCH JU funding €	Indicative timetable for publication
Development of a European Fuel Cell and Hydrogen Vehicles Roll out Plan	One contract 0.6 million	2011/2012
Commercialisation plan for stationary applications **Development of a European Urban Fuel Cell Bus commercialisation strategy** **Commercialisation roadmap for hydrogen powered fuel cells material handling vehicles**	One contract Lot 1 1.5 million Lot 2 1.7 million Lot 3 0.5 million	2011/2012
Total Indicative FCH JU funding	**4.3 million**	

2- The Annual Implementation Plan 2011 (topics opened)

Transportation and refuelling infrastructure

Indicative funding: 36 M€

Demonstration

Focus on large-scale demonstration of FCEVs including the build-up of the necessary refuelling infrastructure.

Technologies for the refuelling stations - improvement of 700 bar refuelling concepts and technologies, research on the filling process.

Reduce GHG emissions in the aircraft sector - FC APUs can play an important role.

Research and Development

Fuel cell systems still need further research and development on competitive and reliable components.

- components, such as peripheral components (e.g. air supply subsystems), membranes, membrane electrode assemblies and bipolar plates.
- Characterisation and diagnostic techniques as well as modelling and simulation
- Degradation of fuel cells

Transportation and refuelling infrastructure

1.1	**Large-scale demonstration of road vehicles and refuelling infrastructure IV**	• Minimum of 5 buses and/or minimum of 10 passenger cars per site • Station hydrogen production efficiency target 50 – 70Cost targets: • Potential to reduce cost of the vehicle by 25% for the next generation. • **Max. FCH JU support 7 Mio €/ project – Max 2 projects**
1.2	**In-situ characterization and diagnostic techniques for optimisation of water management and state of health determination of PEMFC**	• In-situ diagnostic tools with spatial resolution implemented in stacks • Improved operation of fuel cell stacks or improved liquid water removal under laboratory conditions • Demonstration of lifetime of at least 2,000 h under dynamic automotive load • Methodologies to determine state of health of stacks
1.3	**Improvement of PEMFC performance and durability through multi-scale modelling and numerical simulation**	• Understanding of feedback between processes on microscopic scales and macroscopic performance and durability of the PEMFC • Prediction of improved operating conditions • Validation of model code(s) on standard test cases • Simulations shall be used to demonstrate feasibility of technical targets relevant to automotive application:
1.4	**Periphery – FC-System Components**	Advanced research and development for next generation balance of plant components for PEM fuel cells in transportation applications. • air compressors, anode recirculation modules, air humidifiers, air processing units • improve lifetime and reliability, reduction of cost

Transportation and refuelling infrastructure

1.5	**Next generation European MEAs for transportation applications**	• MEAs appropriate for high temperature and low RH operation • significant reduction in cost • durability of at least 5,000 h under automotive conditions • pilot scale processability of MEAs and components
1.6	**Investigation of degradation phenomena**	**The project should focus on critical system operating parameters and conditions for automotive applications:** • aiming at establishing a robust methodology • develop tools for life-time assessments • reveal degradation and failure mechanisms • facilitate improvements in materials, system architectures and vehicle operating strategies.
1.7	**Research & development on Bipolar Plates**	The project activities will include either: • Development of (i) corrosion resistant conductive **coatings** for low cost metals, or (ii) bi-polar plates made from **alternative non-metallic materials** Or: • Development of cost effective bipolar plate **manufacturing technologies** • Demonstration of formability of metal/coating combination in complex configuration

Transportation and refuelling infrastructure

1.8	**Research & Development of 700 bar refuelling concepts & technologies**	**Complete 700bar hydrogen refuelling retail concepts and technologies ensuring:** • CAPEX and OPEX costs enabling self-sustained roll-out of infrastructure • Standardised concepts for hydrogen fuelling stations and supply interfaces at a European level • Accurate and verified refuelling in compliance with relevant EU national member states legislation
1.9	**Fuel cell systems for airborne application**	**The overall objective is to design, develop and flight test an aircraft related fuel cell system against flight / application specific requirements.** • auxiliary subsystems optimization, covering air supply, water management, thermal and power management, • evaluate current safety, codes and standards • demonstrator in the power range of 30-100kW, providing proof of concept for the application.
1.10	**Pre-normative research on fast refuelling**	**Identification, definition, and evaluation of approaches for optimised fuelling procedures** • Identify, define, and evaluate approaches for optimised fuelling procedures • Evaluate the influence of tank construction on the maximum allowable filling speed • contribute to further refinement of the current standard, SAE J2601.

Hydrogen production and distribution

Indicative funding: 16 M€

Basic and applied R&D in innovative hydrogen production and supply chains From renewable energy sources and improved solid state and underground storage.

Sustainable hydrogen production and supply chains should be demonstrated and ready for commercialisation by 2013 -> **Demonstration** of production facilities, based on electricity or biogas as primary energy source, which should provide an effective coupling to the hydrogen delivery infrastructure.

The demonstration projects of renewable hydrogen production will prepare the ground for future large investments in synergy with the AA on "Transportation & Refuelling Infrastructure“.

Hydrogen production and distribution

2.1	**Demonstration of MW capacity hydrogen production and storage for balancing the grid and supply to a hydrogen refuelling station**	• Definition of a standard optimised hydrogen production and storage system as a function of grid balancing constraints and local hydrogen fuel needs • **Installation and operation of a standalone forecourt size electrolyser (100 - 500 kg/day) with a hydrogen storage system** • Study of regulatory aspects
2.2	**Demonstration of hydrogen production from biogas for supply to a hydrogen refuelling station**	Show **provision of hydrogen to transport applications from biogas as economically viable solution** for reducing green house gas emissions of transport . • Installation and continuous operation of a standalone forecourt size hydrogen production unit from biogas (100 - 500 kg/day), associated to a hydrogen storage system • Study of relevant regulatory aspects • Evaluation of costs, efficiency, and availability based on actual operation.
2.3	**Biomass-to-hydrogen (BTH) thermal conversion process**	Scope of work comprises **development and scale up activities on materials and reactors design in order to obtain a continuous process** • Conception of low cost and energy efficient systems to produce hydrogen from solid and liquid biomass • Assessment of performance in terms of efficiency • Design and build a reactor for the continuous production of hydrogen at a pre-commercial scale • Feasibility assessment of the process

Hydrogen production and distribution

2.4	**Novel H_2 storage materials for stationary and portable applications**	• Hydrogen storage for supply of stationary, portable or transport (except road) applications • Hydrogen storage for direct supply of special industrial applications (e.g. glass industry) • Hydrogen storage to enable continuous supply from, e.g. bio and natural gas reforming, or from intermittent sources
2.5	**New generation of high temperature electrolyser**	• Development of cells and stacks designed for high-temperature (800-1000 ºC), high current density (>1 Acm-2) • Manufacture of dedicated HTE cells and stacks for use in large systems for the conversion of electricity from renewable sources • Demonstration of a HTE system of kW size under realistic conditions
2.6	**Low-temperature H_2 production processes**	Low temperature hydrogen production technologies are very promising for decentralised applications: water splitting using solar energy, **photocatalytic and photoelectrochemical reforming** of low or negative cost organic compounds (e.g., wastewaters, surplus or waste materials from biomass processing industries, etc.) at ambient conditions or **fermentation technologies**

Hydrogen production and distribution

2.7	**Innovative Materials and Components for PEM electrolysers**	• More efficient catalysts for the oxygen evolution reaction • Polymer membranes with improved conductivity, low gas crossover and high mechanical stability at operating conditions • Alternative materials for bipolar plates and current collectors, replacing titanium, e.g. novel coatings for stainless steel
2.8	**Pre-normative research on design and testing requirements for metallic components exposed to H2-enhanced fatigue**	• Design code for pressure equipment with metallic components • Metallic material characterization for hydrogen service • Experimental implementation of design and design testing approach • Proposed approach for standardisation • Recommendations for implementation in international standards
2.9	**Measurement of the quantity of hydrogen delivered to a vehicle**	Development and testing of measurement system of the quantity transferred having a level of accuracy acceptable by weights and measure authorities. The work could either focus on improvement of existing technologies and/or on the development of new concepts The scope includes obtaining acceptance by regulatory bodies .

Stationary power generation and CHP

Indicative funding: 38 M€

Aim to achieve competitive electrical efficiencies of 45%+ for power units and of 80%+ for CHP units.

Focused efforts to address lifetime requirements of 40,000 hours for cell and stack, as well as commercial target costs.

Basic research activities

- new generation stack and cell designs

Applied research activities

- developing components and sub-systems

Demonstration activities

- proof-of concept
- technology validation
- market capacity build up

Field demonstration activities are split into small (residential and commercial) and large (distributed generation or other industrial or commercial) applications **scale.**

Targets for stationary applications and CHP

Targets				
	MCFC	SOFC	PEMFC	AFC
Efficiency	> **47 %** (at MW class level) (based on natural gas)	> **50** % (at 10+ kW class level) *(based on natural gas)*	> 50% (based on pure hydrogen) (35% based on integrated reformer solution)	> **58%** by 2015 *(based on hydrogen)*
Lifetime	> **25,000 hrs** (stack) > **10 years system**	> **25,000 hours** (stack) > 10 years system	>10,000 hours (stack) >20,000 hours (system)	> **16,000 hours** by 2015 (stack) **25 years** plant life
Cost targets	**3,500 — 4, 000** €/kW by 2015 **2,000 -2,500** €/kW market entry requirement *(stack + BoP)*	**< 1000 €/kWe** by 2015 *(stack cost, 10+ kW unit size, MW manufacturing scale)*	**< 3000 €/kWe** (hydrogen fuel cell system)	**850 €/kWe** by 2015 (*for the system*)
	Meeting market requirements			

Stationary power generation and CHP

3.1	**Next generation stack and cell design**	Outcome will include a minimum of two of the following items: • Improved electrical efficiency over the state of the art • Considerable cost reductions • Improved tolerance to contaminants • Improved cycling capability • Improved start-up time • Decreased materials consumption • Provide evidence of compactness, realistic lifetimes, cost targets and high efficiencies throughout life **Max 2 projects**
3.2	**Advanced control for stationary power applications**	**Establish a reliable management of interfaces with the application environment** • Development of advanced lifetime prediction methods • Development of robust control algorithms • Development of cost efficient control methods and protocols • Implementation of standard communication protocols both with control interfaces to the grid or other industrial environments **Max 2 projects**
3.3	**Component improvement for stationary power applications**	Development activities to improve a) The performance of **individual components** of fuel cell systems (e.g. fuel cell units, reformer, heat exchangers, fuel management and power electronics); b) The understanding and **optimization of interaction** between BoP components and mature stacks. The objective is to meet relevant performance targets, including durability and cost. Open to all fuel cell technologies. **Max 3 projects**

Stationary power generation and CHP

3.4	**Proof-of-concept fuel cell systems**	• **Proof of feasibility of integrated fuel cell units** including operation in simulated real-life context of sufficient duration (several thousand hours) • Proof of potential to achieve targets of the specific application(s) • Increased understanding of system level failure modes • Definition of requirements for fully integrated systems in the specific application(s) • Pre-normative results that can lead to recommended practice for the concept **Max 3 projects**
3.5	**Validation of integrated fuel cell system readiness**	• **Validation of fully integrated systems (+identification of mass-production route)** • Proof of successful integration with, for instance, heat utilisation, carbon capture, renewable fuels etc. • Operation in real-life context of sufficient duration (> 4,000 hours) • To identify pre-normative RCS in the specific applications **Max 3 projects**
3.6	**Field demonstration of large stationary fuel cell systems for distributed generation and other relevant commercial or industrial applications**	• **Installation and operation of at least 1 MWel over more than 10,000h with total performance loss below 3 %** • Efficiencies, cost and lifetimes demonstrated through techno-economic analysis • Environmental sustainability: assessment by means of LCA **Max 2 projects**

Stationary power generation and CHP

3.7	**Field demonstration of small stationary fuel cell systems for residential and commercial applications**	• **Install complete integrated systems (electrical power <100kW) in +25 identical units in the range 1-10 kWe, at least 3 identical units for units > 10 kWe** • Help building the supply chain and support activities for complete systems • Demonstrate integration into existing power, heat and smart grid infrastructures **Max 2 projects**
3.8	**Pre-normative research on power grid integration and management of fuel cells for small residential, commercial and industrial applications**	• **Improved technical understanding of grid interaction problems** • Proposals for validation and integration protocols for DSM • Background procedures and methodologies for RCS • Proposal and recommendations for further development of RCS **Max 1 project**

Early markets

Indicative funding: 15 M€

Coverage of both demonstration activities for more mature fuel cell systems and R&D for enhancing systems to meet operational and cost requirements or to reduce the time to demonstration and deployment.

Demonstration
Demonstration and deployment of material handling and BUP or/and UPS products, with improved technology maturity.
The demonstrations projects are intended to be at a scale to achieve cost reductions through economies of scale and thereby addressing cost barriers for Future commercial deployment.

Research and Development
1-10kW fuel cell systems, portable systems and Balance of Plant for small portable systems to achieve focused technology improvements against operational and performance targets, and against future cost competitiveness objectives, and in order to reduce the time to demonstration deployment and market readiness.

Early markets

4.1	**Demonstration of fuel cell-powered Material Handling vehicles including infrastructure**	• Demonstration shall comprise at least **50 or more fuel cell MHE vehicles** at one or across several end-users sites and applications • Demonstration should include supporting hydrogen supply infrastructure • Clear TCO evaluations for each application • Environmental sustainability: assessment by means of LCA
4.2	**Demonstration of application readiness of Back-Up Power and Uninterruptible Power Systems**	• **Demonstration up to 20 systems in the 1-3 kW range, 10 in the 6-10 kW range or 5 systems in the 11-50 kW range** • Technical requirements that the proposed systems should include: o Reliability >95% o Response time of less than 5 ms o Projected lifetimes of 3 to 5+ years o Target system cost: 3,500 €/kW (fuel cell system alone) o Projected number of start-stop cycles 2,000 • Demonstrate a viable hydrogen supply solution for this application
4.3	**Research and development of 1-10kW fuel cell systems and hydrogen supply for early market applications**	One or more of the following applications: Heavy duty material handling vehicle UPS/Back-up-power – (short and not frequent blackout) UPS/Back-up-power – (long and frequent blackout) The following main elements should jointly be addressed within the same project: • Hydrogen supply including either distribution or onsite-production concepts • Fuel cell systems, balance of plant components and hybridisation / power management

Early markets

4.4	**Research, development and demonstration of new portable Fuel Cell systems**	**Electrical power output should be between 50 W and 500 We.** **The objective is to develop complete systems, ready to be used by specified end users.** **System development may include:** • **stack** • **fuel storage** • **if required fuel processing** • **balance of plant components** • **if required for the application, power electronics and controls integration**
4.5	**Research and development of Balance of Plant items for small portable and other fuel cell devices**	**Development of balance of plant components for small fuel cells (10- 500 W)** **The following key components are covered by the scope of the call:** • **Mass flow meters for air and gaseous fuels** • **Liquid dosing pumps** • **Air blowers** • **Filling level indicators**

Cross-cutting issues

Indicative funding: 4 M€

These activities are to ensure that non-technical barriers to the deployment of these technologies are properly addressed.
All project will be type CSA except 5.4

They will include:

- Studies on assessment of benefits on the use of hydrogen as an energy storage medium, as well as on advanced financing instruments to achieve acceleration of market introduction of hydrogen and fuel cell technologies
- Educational aspects, with the development of hydrogen safety training for first responders, considered critical for the successful introduction of market-ready products
- Development of harmonised testing protocols for PEM stacks, in order to achieve a set of testing procedures that provide a uniform look at their characteristics

Cross-cutting issues

5.1	**Assessment of benefits of H_2 for energy storage and integration in energy markets**	• **Benchmark study of the various energy buffering alternatives valid for GWh scale over days to weeks** • Assess storage options in geological formations • Evaluate availability of suitable geological formations for the recommended storage options all over Europe • Evaluate the added value of hydrogen as energy buffer related to the energy market and its commodities, identify market mechanisms
5.2	**Study of Financing Options to accelerate commercialisation of hydrogen and fuel cell technologies**	• Analysis of the potential recyclable components of fuel cells • Development of models for financing costs of components over several years • Analysis of effects on factory cost and end user prices • Study on possible structures required to make proposed mechanisms feasible (legal, regulatory, financial)
5.3	**First responder educational and practical hydrogen safety training**	Provide **educational and practical hydrogen safety training to fire services and site operators**, who must know how to handle potential incidents. • Develop and disseminate first-responder hydrogen safety educational materials in Europe • Build and disseminate hydrogen safety response approach based on feedback and responders' best practices • Develop and disseminate first-responder intervention guide
5.4	**Development of EU-wide uniform performance test schemes for PEM fuel cell stacks**	• Identification of relevant testing procedures and protocols for particular fuel cell applications • **Definition, development and experimental validation of commonly accepted testing procedures and protocols** • Establishment of methodologies for the uniform collection, analysis and presentation of test data

3- Proposals 2011- from submission to selection

FROM SUBMISSION TO SELECTION

PART I- FCH JU RULES for PARTICIPATION

PART II- PREPARATION, SUBMISSION and EVALUATION of PROPOSALS

PART III- CLOSING RECOMMENDATIONS

PART I. FCH JU RULES for PARTICIPATION

Definitions

Who can participate

Funding limits, Eligible costs

DEFINITIONS

according to the model FCH JU Grant Agreement

- **Public body means any legal entity established as such by national law, and international organisations**
- **Research organisation means a legal entity established as a non-profit organisation which carries out research or technological development as one of its main objectives**
- **Industry – for the purpose of the FCH JU Grant agreement - means a legal entity pursuing an economic activity with a profit objective, or an affiliated entity to such a legal entity**
- **Higher and secondary education establishments - term used by Financial Regulation / Implementing Rules and includes universities, schools for applied sciences and similar**
- **SMEs mean micro, small and medium-sized enterprises within the meaning of Commission Recommendation 2003/361/EC in the version of 6 May 2003 (*)**

(*) enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million

WHO CAN PARTICIPATE in FCH JU PROJECTS ?

- *Participation in projects shall be open to legal entities and international organisations once the minimum conditions have been satisfied*

- *The minimum conditions to be fulfilled for Collaborative Projects and Coordinating Actions funded by the FCH JU shall be the following:*

  a) *At least 3 legal entities must participate, each of which must be established in a Member State or an Associated Country, and no two of which are established in the same Member State or an Associated Country*
  b) *All 3 legal entities must be independent of each other as defined in Article 6 of the Rules for Participation of the Seventh Framework Programme[1]*
  c) *At least 1 legal entity must be a member of the Industry Grouping (IG) or the Research Grouping (RG)*

- *The minimum condition for service and supply contracts, Support Actions, studies and training activities funded by the FCH JU shall be the participation of one legal entity*

[1] Regulation (EC) No 1906/2006 of the European Parliament and of the Council of 18 December 2006 laying down the rules for the participation of undertakings, research centres and universities in actions under the Seventh Framework Programme and for the dissemination of research results (2007-2013)

GENERAL PRINCIPLES

Implementation and Grant Agreement

Principles of co-financing and no profit

Forms of grants (EU Financial contribution):

- ***Reimbursement (in whole or in part) of eligible costs is the preferred method***
- ***A grant will be awarded by means of a Grant Agreement between the FCH JU and the project participants***
- ***The project activities shall be financed through a financial contribution from the FCH JU and through in-kind contributions from the legal entities participating in the activities***
- ***The industry contribution shall at least match the EU contribution, i.e. the financial (cash) contribution coming from the FCH JU***

ELIGIBLE COSTS

- actual
- incurred during the duration of project
- in accordance with the usual accounting principles of beneficiary
- recorded in the accounts of beneficiary
- used for the sole purpose of achieving the objectives of the project

Non-eligible: *identifiable indirect taxes including VAT, duties, interest owed, provisions for future losses or charges, exchange losses, costs declared, incurred or reimbursed in another EU project etc*

DIRECT/INDIRECT COSTS

Eligible costs shall be composed of

Direct costs = attributable directly to the action

Indirect costs = not attributable directly to the action, but which have been incurred in direct relationship with the direct costs

The reimbursement of participants' costs shall be based on their eligible direct and indirect costs

UPPER FUNDING LIMITS

Reimbursement of direct costs: according to the type of organisation and/or activity

Type of organisation	*Type of Activity*		
	RTD	*Demonstration*	*Other*[1]
Industry (other than SME)	*CP: max. 50%*	*CP: max. 50%*	*CP: max. 100%* *CSA: max. 100%*
SME	*CP: max. 75%*	*CP: max. 50%*	*CP: max. 100%* *CSA: max. 100%*
Non-profit public-bodies, universities & higher education establishments, non-profit Research organisations	*CP: max. 75%*	*CP: max. 50%*	*CP: max. 100%* *CSA: max. 100%*

Funding schemes: *CP: Collaborative project*
CSA: Coordination and Support Action

[1] *"Other" activities refer to management activities, training, coordination, networking and dissemination (including publications). Please note that scientific coordination is not considered to be a management activity.*

INDIRECT COSTS

Principles and flat rates are set out in the Annual Implementation Plan(s)

The reimbursement of indirect costs for every beneficiary will be:

- Either a maximum of 20% of the direct eligible costs,
- Or a flat rate of 20% of the direct eligible costs,

  excluding its direct eligible costs for subcontracting and the costs of resources made available by third parties which are not used on the premises of the beneficiaries.

  First option is mandatory for industry, except for those whose accounting system does not allow to distinguishing direct from indirect costs. Under this option, beneficiaries shall declare their actual indirect costs under eligible costs.

CSA funding scheme: *reimbursement limit of 7% of direct costs*

PART II.

PREPARATION,
SUBMISSION and
EVALUATION of PROPOSALS

THREE “BIBLES”

ANNUAL IMPLEMENTATION PLAN 2011

GUIDE FOR APPLICANTS *(version 2 – May 2009)*

Electronic Proposal Submission System (EPSS) - USERS GUIDE

+ excel tool for budget checking

ANNUAL IMPLEMENTATION PLAN 2011

Includes the Call Fiche for the 2011 Call

Identifies the topics specific for the Call

Specifies Funding Scheme for each Topic

Provides Eligibility criteria as well as Evaluation Criteria

Indicates detailed evaluation procedure & timetable

GUIDE FOR APPLICANTS

version 2 – May 2009

Includes description of Funding Schemes

States how to submit proposal incl. instructions for Parts A & B

(template & page limits)

ELECTRONIC PROPOSAL SUBMISSION SYSTEM-*EPSS*

Electronic submission of proposals in EPSS ⇒ CORDIS

- ➔Fill in Part A proposal details using on-line web form
- ➔Upload PDF of Part B proposal description
- ➔Remember to Save and Submit regularly
- ➔Latest Submission overwrites previous one
- ➔Don’t wait until last minute!

PARTS of PROPOSAL

PART A: Administrative information about the proposal and the participants (On-line web forms)

PART B: Scientific & Technical content of proposal

Template or list of headings – provided as WORD/RTF file

To be uploaded into the EPSS

In PDF and within size limit of 10Mbytes

To be only submitted electronically by the coordinator using the Commission's EPSS

BEFORE SUBMITTING YOUR PROPOSAL

Check List

- Does your planned work address the topic(s) open in the call?
- Is your proposal eligible?
- Is your proposal complete?
- Are you applying for the right funding scheme?
- Does your proposal follow the required structure?
- Do you have the agreement of all the members of the consortium to submit it on their behalf?

ELIGIBILITY CRITERIA

Minimum conditions that a proposal must fulfil to be retained for evaluation:

- **Submission of proposal before the deadline**
- **Minimum number of eligible, independent participants (incl. membership of IG/RG)**
- **Completeness of proposal (parts A & B)**
- **Scope**

EVALUATION

Peer-review carried out by independent experts selected by the FCH JU

Experts selection is based on high level expertise and appropriate competences. Furthermore, academic/industrial balance, as well as geography, gender, « rotation » balances.

Experts sign confidentiality and no-conflict of interest declarations

Following the FCH JU "Rules for submission of proposals, and the related evaluation, selection and award procedures"

EVALUATION CRITERIA

Criteria adapted to each funding scheme

- indicated in the Annual Implementation Plan 2011 and in the Guide for applicants

Divided into three main criteria:

S&T Quality (including relevance to the topic of the call)

Concept, objective/state of the art, work-plan/methodology

Implementation (operational capacity of participants)

Individual participants and consortium as a whole (management structure, complementarity/balance of partners)

Allocation of resources (appropriateness, justification of budget, staff)

Impact

Contribution to expected impacts listed in work programme (at European level)

Plans for dissemination/exploitation (appropriateness of measures, including IPR)

NEXT STEPS

After evaluation

Results of evaluation are communicated to the coordinator in the initial information letter which includes the Evaluation Summary Report (ESR)

FCH JU informs relevant advisory bodies: States Representative Group (SRG) and Scientific Committee (SC)

FCH JU draws up final list of proposals for possible funding (respecting funding availability, including matching principle)

→ Governing Board decision

Opening negotiation letters are sent

PART III.

CLOSING RECOMMENDATIONS

Do’s and Don’ts

(best practise from the previous calls)

- **What exactly is the novelty of the proposal?**

Do: Include a clear State of the Art, SoA (not only EU, but international) which illustrates this novelty

Do: Provide details of any "preliminary" activities already performed by some members of the consortium to show that they don't start from ‘scratch’ and that the risk is limited

- **What are you planning to do and how?**

Do: Critically review the number of deliverables (too many OR too few are bad indicators)

Do: Provide clear milestones which allow to evaluate the progress of the project (including Go/NoGo decision points)

Do: Structure the Work Plan in a clear and consistent way showing the relationship among the different Work Packages (WP) and/or tasks

Do: Try to have a balanced (sectorial and geographical) and complementary consortium; avoid adding "cosmetic" partners

Don’t: mix deliverables and milestones

Don’t: Avoid using sub-contractors and third parties - a strong consortium should be able to perform the major tasks with their own resources

The proposal should provide clear and short answers to these questions

- **How is your budget/resources planned over the activities and duration of the project ?**

  Do: explain as clear as possible the allocated resources (e.g. man-months) per partner and activities - avoid to over-estimate the effort needed

  Do: try to declare as accurately as possible the estimated costs, especially for indirect costs (use the correct method of declaration of indirect costs)

  Don't: include partners with 0 total costs - the requested funds could be zero, but the total should be definitely higher, reflecting their contribution to the project

- **What can be expected as a result of the project?**

  Do: Describe precisely the main outcome of the project - avoid using too many ambiguous terms (e.g. illustrate, evaluate, assess, recommend, etc)

- **What would be the impact on energy technology?**

  Do: Describe the potential impact of the "project outcome" not of the "technology" being addressed

  Do: Provide "quantitative" estimates of critical parameters (e.g. performance, size, weight, cost, etc) which allow to compare the resulting outcome with the SoA

CLOSING RECOMMENDATIONS

Choose your partners carefully to cover the needed expertise

Check your proposal against the check list provided in the Guide for Applicants

Do not wait until the last moment to submit the proposal

Read the reference documents before preparing the proposal

Reference documents

- Annual Implementation Plan 2011 (including call fiche)
- Guide for Applicants
- FCH JU Rules for submission, evaluation and award procedures
- FCH JU model Grant Agreement

Find a document :

http://www.fch-ju.eu/content/how-participate-fch-ju-projects

Do not hesitate to ask for help or further information at:

fch-projects@fch.europa.eu

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4- Questions & Answers

THANK YOU FOR YOUR ATTENTION !