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COVER NOTE

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Subject:	Commission Staff Working Document accompanying the report from the Commission to the European Parliament and the Council - Annual Progress Report on the activities of the Joint Technology Initiatives Joint Undertakings (JTI JUs) in 2011

Delegations will find attached Commission document SWD(2012) 430 final (Part 1/2).

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PART 1/2

COMMISSION STAFF WORKING DOCUMENT

Part I

Accompanying the document

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Annual Progress Report on the activities of the Joint Technology Initiatives Joint Undertakings (JTI JUs) in 2011

{COM(2012) 758 final}

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INTRODUCTION

The present Commission Staff Working Document accompanies the Report from the Commission to the European Parliament and to the Council on the progress achieved by the Joint Technology Initiatives Joint Undertakings in 2011. In compliance with Article 11 (1) of each Council Regulation establishing the Joint Technology Initiatives Joint Undertakings (hereinafter referred to as "JTI JUs") it shall provide details on the implementation of their research activities, i.e. number of proposals submitted, number of proposals selected for funding, type of participants, including SMEs, and country statistics. The document shall also *"include assessment results of the Technology Evaluator referred to in Article 8(1) of the Statutes [of the Clean Sky JU], as appropriate"* pursuant to Article 11(1) of Council Regulation (EC) 71/2008 setting up the Clean Sky Joint Undertaking.

The data contained in this document is gathered through a specifically designed template, filled in by each JTI JU under the guidance of the European Commission. It is divided into five main sections, one per Joint Undertaking. Each section contains the following three sub-sections providing information on the JTI JUs' activities in 2011 in a structured and uniform way: 1) About the JTI JU, 2) Main activities in 2011, and 3) Call implementation.

The description of the progress of each Joint Undertaking throughout the year starts with a short introduction of the JTI JU, outlining its legal basis, main objectives, research priorities, funding and governing structure. The second sub-section highlights the key achievements of the entity in 2011, both from operational and administrative perspective. The submission and evaluation process of the individual JTI JUs calls is also explained.

The last sub-section is dedicated to the calls for proposals launched by the Joint Undertakings in 2011. In case the entity has launched multiple calls during the year, each call is described with a brief summary listing the call topics, eligible beneficiaries, timeline and indicative budget, followed by detailed statistics on the submitted proposals by types of participants and by country. A special attention is given to the number of SMEs, whose participation in the call is presented separately.

Detailed statistics on the selected proposals by types of participants and by country are provided, which can serve for a comparative analysis of the participants at the different steps of the call. Each sub-section ends with a table giving information on the grant agreements signed in the respective call.

1. PROGRESS ACHIEVED BY THE CLEAN SKY JU

1.1. Introduction to the Clean Sky JU

The Clean Sky Joint Undertaking (hereinafter referred to as "CS JU") has been established by Council Regulation (EC) 71/2008 of 20 December 2007 as a public-private partnership between the aeronautic industry, represented by the leaders of the Integrated Technology

Demonstrators (ITDs)[1], their associates, and the European Union, represented by the European Commission.

The *ITD leaders* are twelve industrial organisations that jointly committed to perform, complete and exploit the Clean Sky programme[2]. Each leads or co-leads a specific Integrated Technology Demonstrator. The *associate members* are seventy-four private or public organisations representing industry, academia, SMEs and research centres, selected through a transparent and fair process as permanent members of the Clean Sky JU. They committed to perform and complete certain essential work packages in one or more ITDs for the duration of Clean Sky.

The CS JU has been set up for a period up to 31 December 2017 with the main objective to develop environmental technologies impacting all flying segments of commercial aviation in order to contribute to the ACARE targets[3] for reduction of emissions and noise in air transport in Europe[4], thus contributing to improving the air transport system worldwide.

The objective of the Clean Sky JU is achieved through coordination of research activities that pool resources from the public and private sectors, and that are carried out by the main aeronautical stakeholders (ITD leaders and associates) directly and by partners selected through open and competitive calls for proposals.

The CS JU is built upon **six different technical areas called *Integrated Technology Demonstrators (ITD)***, which develop innovative technologies covering all segments of commercial aviation. Each ITD is led by two founding members and operates through a matrix structure. The ITDs are listed below:

(1) *Smart Fixed Wing Aircraft (SFWA) led by Airbus and SAAB* – focused on active wing technologies that sense the airflow and adapt their shape as required, as well as on new aircraft configurations to optimally incorporate these novel wing concepts*;*

(2) *Green Regional Aircraft (GRA) led by Alenia Aeronautica and EADS-CASA* – dealing with low-weight configurations and technologies using smart structures, low-noise configurations*;*

[1] According to Article 1 of the Clean Sky's Statutes, the *Integrated Technology Demonstrators (ITDs)* refer to the six technological areas covered by the Clean Sky Joint Undertaking.

[2] The founding ITD leaders of the Clean Sky JU are: Agusta-Westland, Airbus, Alenia, Dassault Aviation, EADS-CASA, Eurocopter, Fraunhofer Gesellschaft, Liebherr, Rolls-Royce, SAAB, Safran and Thales.

[3] In 2001, the *Advisory Council for Aeronautical Research in Europe (ACARE)* set the following targets for the aeronautics industry by 2020: 50% reductions of the fuel consumption and the carbon dioxide emissions, 80% reduction of the nitrous oxides emissions, 50% reduction of the perceived external noise and improvement of the environmental impact of the lifecycle of aircraft and related products.

[4] Europe in this context refers to the EU Member States and the countries associated to the Seventh Framework Programme of the European Union (2007-2013), i.e. Switzerland, Israel, Norway, Iceland, Liechtenstein, Turkey, Croatia, the Former Yugoslav Republic of Macedonia, Serbia, Albania, Montenegro, Bosnia and Herzegovina and Faroe Islands (December 2010).

(3) *Green Rotorcraft (GRC) led by Agusta-Westland and Eurocopter* – focused on innovative rotor blades and engine installation for noise reduction, lower airframe drag, diesel engine and electrical systems for fuel consumption reduction and environment-friendly flight paths*;*

(4) *Sustainable and Green Engines (SAGE) led by Rolls-Royce and Safran* – integrating technologies for low noise and lightweight low pressure systems, high efficiency, low nitrous oxides and low weight core*;*

(5) *Systems for Green Operations (SGO) led by Thales Avionics and Liebherr Aerospace* – coping with all-electric aircraft equipment and systems architectures, thermal management, capabilities for green trajectories and improved ground operations*;*

(6) *Eco-Design (ED) led by Dassault Aviation and Fraunhofer* Gesellschaft – addressing the full lifecycle of materials and components, focusing on issues such as optimal use of raw materials, decreasing the use of non-renewable materials, natural resources, energy, emission of noxious effluents and recycling.

Multiple links for coherence and data exchange is ensured between the different ITDs.

Complementing these six ITDs, the *Technology Evaluator (TE)* is a dedicated evaluation platform cross-positioned within the CS project structure. The TE is co-led by DLR and Thales and includes major European aeronautical research organisations as members. Its objective is to assess the environmental impact of the technologies developed by the ITDs and to assess the result of the overall Clean Sky's project output.

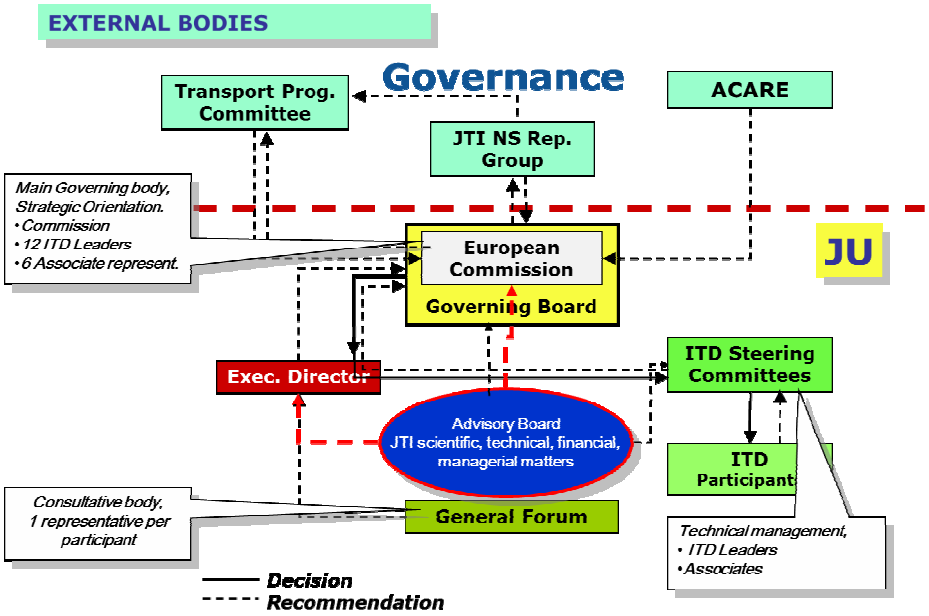
1.1.1. Budget

The total budget of the CS JU is equally divided between the EU and its private members and is set to a maximum of € 1.6 billion. The EU contribution is maximum € 800 million, paid from the budget appropriation allocated to the theme "Transport" of the Specific Programme "Cooperation" under the Seventh Framework Programme (FP7) of the European Union (2007-2013)[5], while the industry should commit the resources at least equal to the EU contribution.

1.1.2. Governing structure

The CS JU governance is composed of three bodies: the Governing Board, the Executive Director and the ITD Steering Committees. It is also supported by three advisory groups: the Scientific and Technological Advisory Board (STAB), the National States Representatives Group (NSRG) and the General Forum.

[5] Decision 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013), OJ L 412, 30.12.2006, p. 1.



1.1.3. Organisation of the team in Clean Sky JU.

The composition of the CS JU executive team developed significantly in 2011, with the recruitment of additional staff for the team. On 31 December 2011 18 TA posts and 5 CA posts were actually filled. Moreover, the Clean Sky JU registered an increase of workload, during the second half of 2011, which could not be covered by the current team. It was then necessary to hire 3 interim staff for the second half of 2011.

1.2. Outline of the main activities and achievements in 2011

2011 was the second full year of independent functioning of the Clean Sky Joint Undertaking. The CS JU achieved progress in both increasing its operational capacity and in running the Clean Sky operations.

1.2.1. Key milestones

- Publication and evaluation of the 3 CS JU's calls for proposals in 2011 as planned, plus the evaluation of the last call of 2010;
- Amendment to the model *Grant Agreement for Partners (GAP)* and the model *Grant Agreement for Members (GAM)*;
- Internal processes monitoring;
- Involvement of the Scientific and Technological Advisory Board in the Clean Sky's activities;
- Implementation of *Internal Audit Plan* and *Ex-Post Audit Strategy*;
- Implementation of the Communication *and Dissemination Strategy*.

Besides, 3 additional staff members were recruited, growing to 23 by the end of the year. The first internal audit started in November 2010, was completed in 2011. Further implementation

and updates of the CS JU main documents took place: *Quality Manual, Manual of Financial Procedures, and Management Manual.* The Development Plan was elaborated in several versions, up to the adoption by the Governing Board in 2011. The CS JU moved successfully to the White Atrium building in Brussels in January 2011.
Clean Sky maintained close links with the SESAR Joint Undertaking, which investigates air traffic management technologies in line with the Single European Sky initiative, with dedicated meetings at different levels (ITD, TE and JU).

1.2.2. Progress in the implementation of the Strategic Research Agenda

2011 provided an actual positive contribution by Clean Sky activities to the implementation of the SRA.

The targets set at the beginning of the Clean Sky programme were the subject of a re-assessment of validity and consistency with respect to evolution of the outside scenario and the actual progress of the activities related to the technology maturation and implementation in the planned demonstrators.

The original content of Clean Sky as defined in the proposal was compliant with the requirements of the SRA with respect to the Greening of Air Transport, identifying the technical domains where new technologies are worth exploring and developing to the level of maturity needed for innovating future aircraft.

A re-assessment of actual progress and validity of assumptions was performed, resulting in an updated work plan (Development Plan) and updated forecast of achievable environmental benefits at the end of the programme. To this scope the role of Technology Evaluator and the dialogue with all ITDs (especially the "vehicle" one, with their Conceptual aircraft definition) was essential, as provided by the First Internal Assessment performed and recently completed [6].

1.2.3. Major changes occurred in the programme

One of the most significant events that occurred in 2011 concerned a change in scope of the first engine demonstrator related to the Open Rotor configuration. At the beginning of the programme, both Direct Drive solution and Geared Drive were considered by the two major engine stakeholders (namely Safran and Rolls Royce respectively). However, following a thorough assessment of the benefits and problems, Safran decided to move to a Geared Drive solution. Therefore both demonstrators (SAGE 1 and SAGE 2) are based on this concept, although with different substantial technical solutions inside. The programme has been revised and adapted to this change accordingly, including the impact on the planned flight activity which is part of SFWA ITD.

[6] A special edition of Skyline informed citizens about the unique process followed and the general outputs of the first assessment (June 2012), available on Clean Sky website

1.2.4. Technology Evaluator

The TE has been created in 2008 with the objective to assess the environmental impacts and benefits of the overall Clean Sky's project output. The general TE requirements were defined in 2009. In 2011, they were further reviewed and detailed, paying particular attention to the first assessment cycle and to the needs of the trade-off studies[7]. This has been expected to help the design and development of the TE system for the first mid-term assessment planned for the end of 2011. Each year until the final assessment in 2015, more accurate assessments are planned to be performed with the updated sets of models resulting from the ITDs' progress.

1.2.5. Governance - Major decisions taken by the Governing Board and other JU bodies

1.2.5.1. Governing Board

The CS JU Governing Board (GB) held **four meetings** in 2011 (31 March, 14 June, 6 October and 14 December). The following **7 written procedures** were implemented:

- Approval of the 2011 provisional accounts and the approval of carry-over of unused commitment and payment appropriations from 2010 to 2011 (14 February 2011)
- Adoption of the results of Call 5 and Call 6 (11 March 2011)
- Adoption of the results of Clean Sky JU Call 7 (14 April 2011)
- Adoption of Clean Sky JU Development Plan (15 April 2011)
- Adoption of the Procedure 1.7.2.1 on the Validation of the In-kind contribution of Members of the Clean Sky JU (2 May 2011)
- Written procedure on the validation of the in-kind contribution provided by non-EC members to the CSJU through the execution of the Grant Agreements 2008, 2009 and 2010 (13 May 2011)
- Adoption of the Budget 2011 amendment n° 1 (19 October 2011)

The Governing Board has adopted during 2011 the following key documents[8]:

- 31 March 2011: Modifications to the models Annex II to the GAMs and GAPs, Rules for participation in calls, Amendments to the Rules of Procedure of the GB,IAS Charter
- 14 June 2011: Final Accounts for 2010, Charter of the Internal Audit Officer, Assessment of the Annual Activity Report 2010
- 6 October 2011: Strategic Audit Plan 2011 – 2013, HR Strategy Paper 2012 -2014, Modification of the Rules of Procedure of the GB, Delegation Decision to the Executive Director
- 14 December 2011: Election of the Chairman (Mr Charles Champion) and Vice Chairman (Ms Catalin Nae) for 2012, Annual Implementation Plan 2012, Annual Budget Plan 2012, Establishment Plan 2012, Modification to Rules of Procedure of the GB, IAS Strategic Audit Plan 2012 -2014, Amendment to Budget 2011 (titles 1 and 2), Communication Strategy and Plan 2012, General Forum recommendations

[7] In system engineering, a *trade-off study* is a simultaneous consideration of multiple alternatives at a point in the design process where a decision needs to be made.

[8] Non-exhaustive list

It can be noted that most of the decisions have been adopted unanimously or very close to unanimity, showing a smooth and efficient decision-making process. Each Governing Board is prepared by a "Sherpa Group" meeting, chaired by the JU, taking place at least 4 weeks in advance to the scheduled GB date.

1.2.5.2. National State Representative Group

The National States Representative Group (NSRG) is an **advisory body** to the Clean Sky Joint Undertaking.

Article 10 of the Council regulations setting up the Clean Sky Joint Undertaking outlines that it will review information and provide opinion on programme progress in the Clean Sky JU, compliance and the meeting of targets, updating of strategic orientation or links to Framework Programme Collaborative Research. It shall also provide input to Joint Undertaking on the interface with relevant national research programmes and identification of potential areas of cooperation, as well as specific measures taken at national level with regard to dissemination events, dedicated technical workshops and communication activities.

It consists of one representative of each EU Member State and of each other country associated with the Framework Programme. It is chaired by one of these representatives. To ensure that the activities are integrated, the Clean Sky Executive Director and the Chair of the Governing Board or his representative attend the NSRG meetings and the Chair of the NSRG attends as an observer at the Clean Sky Governing Board.

The NSRG held **four meetings** in 2011 (8 March, 16 May, 22 September, 22 November).

At the meeting, the Clean Sky JU presented to NSRG all progress with respect to the overall objectives, in particular with the work done on the Development Plan, the 2012 AIP, Communications Plan, Risk Management assessment, increased activities of the STAB members, formal development of the interfaces between the ITDs and the TE, etc..

Involvement in the Communication aspects was also part of the 2011 NSRG scope, like the web site, Skyline, E News and the *Clean Sky at a Glance* Brochure. NSRG Members also supported Clean Sky activities in general, including the events with the European Parliament, Aerodays and the Paris AirShow. The NSRG has received and discussed the reports from the independent observers of the Calls evaluations. NSRG recognised the achievement in SME involvement, as exemplified by the recognition of the 400th participant in Paris. During 2011, the NSRG carried out a review of its own operations and worked out a way to improve their contribution to the Clean Sky success; these actions will be implemented in 2012.

1.2.5.3. Scientific and Technology Advisory Board

The Scientific and Technological Advisory Board (STAB), set up in June 2010 as an advisory body to the CS JU, is now composed of 10 high-level scientists and engineers, all independent from Clean Sky stakeholders. Its purpose is to focus on the scientific and technical analysis of

Clean Sky from different perspectives: i) environmental impact; ii) technology and scientific forecast; iii) societal aspects and iv) economics.

Chaired by David Ewins, Professor at the Bristol University and the Imperial College, it met **four times** in 2011 (10 February, 6 May, 9 September, 25 November), plus several dedicated meetings of the sub-groups created to work on specific areas, namely:

- WG1 dealing with TRL[9]and technology maturity assessment
- WG2 dealing with environmental targets and link with demonstrators
- WG3 working on socio-economic implications

Both working groups WG1 and WG2 produced documents and recommendations that were circulated internally in the JU to the Project Officers and to the ITDs; whereas WG3 will be launched and implemented in 2012.

The STAB provided recommendations on the Technology Readiness Levels (TRL) management, and the environmental forecast criteria definition. Two STAB members, in average, participated in each ITD annual review, according to their expertise area. They will keep the same focus for the following years. The STAB was also requested to check the quality of technical deliverables, by sampling; this action is in progress and will be continued in 2012.

1.2.5.4. JU General Forum

On 27 September 2011, **the CS JU's stakeholders** gathered for the second General Forum. It provided information to the participants in the initiative about its activities and the progress of the Clean Sky JU. This event gathered more than 100 participants.

The Forum also put forward recommendations to the JU on managerial and operational items. Four separate working groups were launched, concerning:

- Experience of partners related to their role in the ITD work programs;
- Cross-ITDs relationship: from members' feed back towards a better efficiency;
- Role and involvement of SMEs (including Members within clusters);
- Role and involvement of Universities and research centres.

1.2.6. Outcome of 1st interim evaluation

Two Interim Assessments of the Clean Sky JU are planned in the Council Regulation, the first one in 2010, the second in 2013.

This first assessment was performed in due time (4th Quarter 2010), by a Panel of six members designated by the European Commission. The report was delivered to the European Commission and the JU in January 2011. From this date, the Joint Undertaking has been

[9] TRL: Technology Readiness Level. A scale of level of maturity of a technology used to compare and evaluate the different stages of development of a technology. TRL 6 is the maximum level for R&T projects, before the product development phase.

implementing the actions related to the Review's recommendations. The report, with the European Commission's comments, was published in September 2011[10].

The Panel finds the concept of the CSJU appropriate for its objectives and recognises a number of achievements:

- Setting up the CSJU as an entirely new Public Private Partnership (PPP) organisation has been a significant success on its own.
- The initial 'top-down' work plan has been complemented by a detailed 'bottom-up' work plan. The corresponding schedule foresees achieving key demonstrator targets within the Clean Sky time frame. Furthermore, the CS timing for demonstrators seems well-synchronized with industrial deployment strategies.
- The CSJU has been highly successful in attracting a high level and wide participation from all EU key industries and a large number of SMEs. CS has led to new collaborations and the participation of new organisations is thus enhancing European integration.
- The coordination with EC Framework Programme and the SESAR Joint Undertaking appears to be organised in an effective manner.
- However, significant delays as compared to the initial plans have been accumulated because of difficulties in establishing the CSJU internal procedures and regulations as well as building up the teams. In particular, the definition and implementation of processes setting up and running a PPP under the rules of a Community Body was highly challenging.

Further delays of technical nature have been identified by the 'bottom-up' work plan in June 2010; for some demonstrators those delays are in excess of 2 years. The Panel notes that the slow start of the CSJU can to a great extent be imputed to the lack of preparedness, both administrative and technical, when starting the Joint Undertaking.

<u>According to the panel, the most important recommendations are the following:</u>

1. Top priority and prime objective of CS is to achieve demonstrator targets within the CS time frame. The Panel recommends streamlining programme activities giving an overriding priority to advanced technology demonstration. This implies diverting some resources from fundamental technology development to advanced technology demonstration.

2. Means to actively recover delays and mitigate future delays should be implemented within and across the six main activities of the programme.

3. Some areas of CS are addressing operations, which are highly affected by particular interests of stakeholder groups. An early and close interaction with airlines, air navigation service providers, airports, etc. is recommended to ensure successful deployment.

[10] COM(2011)572

4. The envisaged developments involve safety-critical systems and operations. Consequently, certification issues need to be considered at early design and development stages already.

5. In order to facilitate the CSJU management process, the Panel recommends the Governing Board to focus on strategic decisions and to increase the level of delegation of routine management issues to the Executive Director (ED). The executive power of the ED has to be strengthened towards managing all programme activities.

6. The resources required for integration and interface activities should be specifically identified in each of the individual work plans. In addition, there is an urgent need for a matrix of interconnected time schedules and deliverables.

7. A detailed roadmap of technical progress should be established in order to compare achievements against the plan. This roadmap should include key decision-making points and technological milestones.

8. The role of the Technology Evaluator (TE) in providing guidance to Integrated Technology Demonstrators (ITDs) should be emphasized. Therefore, the TE should be given a more pro-active responsibility in its interactions with ITDs. Current limitation in interactions between TE and ITDs could be significantly mitigated should demonstrator and TE activities be carried out beyond the current deadline of end 2015.

9. In a development programme like CS, the availability of a contingency budget is necessary to cover unforeseen developments.

10. CS should improve its visibility to the general public.

The Panel assesses the CSJU as an ambitious European initiative with the potential to become a new model of a public-private-partnership. The CSJU should be continued with special attention towards adhering to the main objectives and the work plans.

All the recommendations, in particular the above, have been addressed by actions which are monitored by the JU management. In particular:

- Focusing on the mainstream of Clean Sky, i.e. the integrated demonstrators, is a permanent activity in the coordination activity performed by the JU. This is also part of the annual reviews, to check how the highest Technology Readiness Levels (TRL) are prioritized.
- Keeping the schedule and achieving the environmental targets are the two main objectives of the JU management, and of the ITD coordination. The Quarterly Reports and the Development Plan, now well in place, allow such a monitoring, in order to have an early alert capability. Related key performance indicators on ITD level as well as for the management of the JU have been developed and first results are reported for 2011. It has to be noted that the delays mentioned in the Interim Assessment Report are mostly coming from the initial, starting phase. With respect to the rescheduling performed by mid-2010 and endorsed by the Governing Board through the Development Plan, no significant delay is reported up to now. The link with the market and the "end users" is basically ensured by the industrial stakeholders; the

Technology Evaluator assessments, from early 2012 on, will allow for a wider communication on Clean Sky progress.

- Certification issues are addressed, both through working groups involving the industry and airworthiness Authorities, and periodic JU-EASA coordination.
- The Governing Board rules of procedures, as stated in Chapter 8, have been adapted in order to allow the meetings to be more and more focussed on strategic issues. The role of the Executive Director has been well recognized and strengthened; in particular, the Management Manual entered into full application in 2011. The interfaces between ITDs are being clarified and a cross-check of inputs and outputs is a condition of the Grant Agreements 2012 by the JU. More precise roadmaps have already been included in the Development Plan and are also part of the Annual Reviews targets.
- As described in the technical part of the report, the TE first assessment will be available at the beginning of 2012. The interactions with the ITDs have been subject to significant improvements during this first process. As a matter of fact, the role of the TE will be mainly focussed on providing an independent assessment of the progress towards the environmental objectives, while its feedback to the ITDs in order to support the down-selection of technologies will be more limited for timing reasons; this is not considered as a major issue, given that the ITD tools allow for making the right decisions. As recommended by the Report, it has been agreed to extend the cycle of TE assessments to 2016.
- No contingency margin is available as such; this would be very difficult to implement, at this stage of the programme. Nevertheless, such a margin will actually be provided, if needed, through the priority given to high Technology Readiness Levels in order to achieve the integration of the most mature technologies into the demonstrators.

1.2.7. Main communication activities

A **communication and dissemination strategy** was adopted by the Governing Board in June 2010. An update was adopted in December 2011. This strategy defines objectives, target audiences, messages and tools and includes a more efficient communication to the general public.

In order to inform widely potential candidates about the calls for proposals launched during the year, the JU held information sessions in Toulouse, Vienna, Lisbon, Dublin, Ankara and Warsaw.

The Clean Sky initiative was promoted at different technical conferences, such as CEAS in Venice (Engineering associations council) or ISABE (engines) in Stockholm. The two main events were:

- The Aerodays in Madrid (March 2011): organized by the CDTI of Spain and the European Commission, this very important event (more than 1000 participants) allowed Clean Sky to have two dedicated workshops and to participate in a plenary session (Executive Director). Clean Sky was also present in the related exhibition with a booth where mockups and videos were displayed.

- The Paris Air Show (June 2011): organised every second year, is the biggest in the world. Clean Sky participated with its own "chalet" and organized workshops on different technical areas each day. A celebration of the 400th participant in Clean Sky, a German SME, took place on this occasion. Members of the European Parliament, European Commission and national officials, visitors from overseas, and many industrial representatives, paid a visit to this chalet and had meetings with the JU staff and ITD leaders as well.

Another excellent opportunity to communicate about Clean Sky to the public at large was offered by the **Innovation Convention**, held in Brussels on the 5 and 6 December 2011. This first edition of the Innovation Convention took place one year after the adoption of the Innovation Union flagship initiative. This conference brought together world leading experts in research and innovation to share their views on building a global innovation economy. Following a call for exhibitors open to the entire EU's Framework Programme for Research and the EU's Competitiveness and Innovation Framework Programme, a Clean Sky project was amongst the happy few (only 48 projects were retained): the BLADE project, as part of the Smart Fixed Wing Aircraft ITD, was selected for exhibition.

Clean Sky also participated in an event called "**Innovation in Action"** in the European Parliament, in October 2011; this one week event, co-organised by the 5 Joint Technology Initiatives and sponsored by Maria de Graça Carvalho, included a common exhibition and conferences in the Parliament. The Clean Sky conference was sponsored by Vittorio Prodi, as a Chairman of the Sky and Space intergroup.

A totally new, **dynamic and interactive website**[11] was made available in April 2011 and fully operational for the Paris Air Show. This website is now regularly updated. More information will be provided from now on, about the ITDs achievements, and about the projects completed by the Partners. In 2011 a set of factsheets on the ITDs characteristics and objectives was as well uploaded on the web page in March for wide communication purposes.

The quarterly Newsletter, "Skyline", which was revamped in September 2010, was published on time in March, June and December 2011. A target group of 3000 recipients were regularly informed via e-news about the latest CS developments, and in particular about the launch of the calls for proposals. An 'info@cleansky.eu' mailbox answered regularly general information requests from the CS stakeholders.

Furthermore, CS issued **3 press releases** on 2011 crucial achievements:

- Dassault Aviation evaluates laminar designs in flight as part of Europe's Clean Sky Research Programme (January 2011)
- Clean Sky celebrates its 400th participant (June 2011)
- Early achievements of the Joint Technology Initiatives' €10 billion R&D programme highlighted at the European Parliament (October 2011)

During 2011 Clean Sky has been quoted for 14 times in articles, press releases and publication at European level.

[11] http://www.cleansky.eu/

Two other relevant activities, crosscutting the areas of communication and relations with stakeholders, took place in 2011.

- Clean Sky intended to reinforce participation among the less active member States. With this purpose, in June 2011 **a round table on Aeronautical Research** in Central and Eastern Europe was organized with the aim of exploring options to better involve in Clean Sky countries from Central and Eastern Europe. Participation to the panel was offered to representatives of leading "aeronautical countries" in the region (Czech Republic, Poland, Romania, Hungary, Baltic area) as well as to those participating in European Collaborative research. The Round Table was very well attended by Member States representatives from the region.
- The constant focus on the SMEs participation was complemented by two **interviews with small and medium size companies** having participated to the JTI's call for proposals. The first one was released in May 2011 to present a Belgium SME active in boosting innovation. *Cenaero* is a private applied research centre providing to companies involved in a technology innovation process high fidelity numerical simulation methods and tools to invent and design more competitive products[12]. The second one was published in June 2011 to celebrate the 400th participant to the CS call for proposal. *XRG Simulation GmbH* is a SME located in Hamburg, Ingolstadt and Bremen and represented a cornerstone in CS implementation. It has 14 employees and is active in the energy system simulation (e.g. aircraft systems, automotive systems, buildings, power plants, etc.) and related simulation products[13].

1.2.8. Implementation of calls for proposals (CFPs) in 2011

2011 was the year of the evaluation of Call 7 - which was performed in January 2011, and the publication of three Calls for Proposals: Call 8 (2011-01), Call 9 (2011-02) and Call 10 (2011-03). The CS JU managed in total 159 topics, resulting in a total of 325 partners from 22 countries selected after call 10.

The present document shall provide detailed information on these four calls (calls 7 to 10). Details about the Grant Agreements signed in 2011 are provided in the last section on Grant agreements/Project portfolio, with those for grants relating to calls 1 to 6.

The table below gives an **overview of the calls for proposals** evaluated or launched by the Clean Sky JU in 2011, which will be reviewed in the present document:

Call №	Reference	Publication date	Deadline for submission	Evaluation	Nr of topics	Nr of GAPs	Indicative budget [max funding] (M€)	Outcome of the call (M€)
7	SP1-JTI-CS-2010-05	24-09-2010	09-12-2010	17-21 Jan 2011	38	29	23.0	14.6
8	SP1-JTI-CS-2011-01	10-02-2011	03-05-2011	23-27 May 2011	58	49	31.9	22.5

[12] To read the full interview: http://www.cleansky.eu/content/interview/focus-sme-cenaero-belgium

[13] To read the full interview: http://www.cleansky.eu/content/interview/focus-400th-participant.

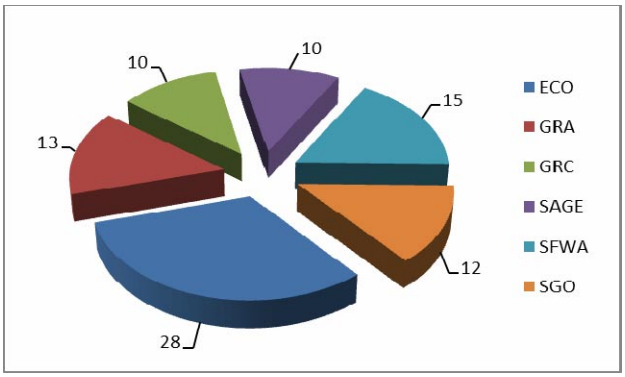
9	SP1-JTI-CS-2011-02	28-04-2011	28-07-2011	19-23 Sep 2011	23	16	12.7	6.1
10	SP1-JTI-CS-2011-03	19-07-2011	12-10-2011	14-18 Nov 2011	40	24	19.5	9.4

The table below presents a general overview of the submitted and evaluated proposals, in response to calls 7 to 10.

Call indicative		No of topics	Submitted proposals			evaluation results		Success rate (%)
			Submitted proposals	Eligible proposals	% of proposals retained	Above threshold	Selected for funding	
7	SPI-JTI-CS-2010-05	38	71	67	94,37%	45	29	64%
8	SPI-JTI-CS-2011-01	58	127	119	93,70%	84	49	58%
9	SPI-JTI-CS-2011-02	23	62	59	95,16%	32	16	50%
10	SPI-JTI-CS-2011-03	40	62	60	96,77%	35	24	68%
TOTAL		**159**	**322**	**305**	**95%**	**196**	**118**	**60%**

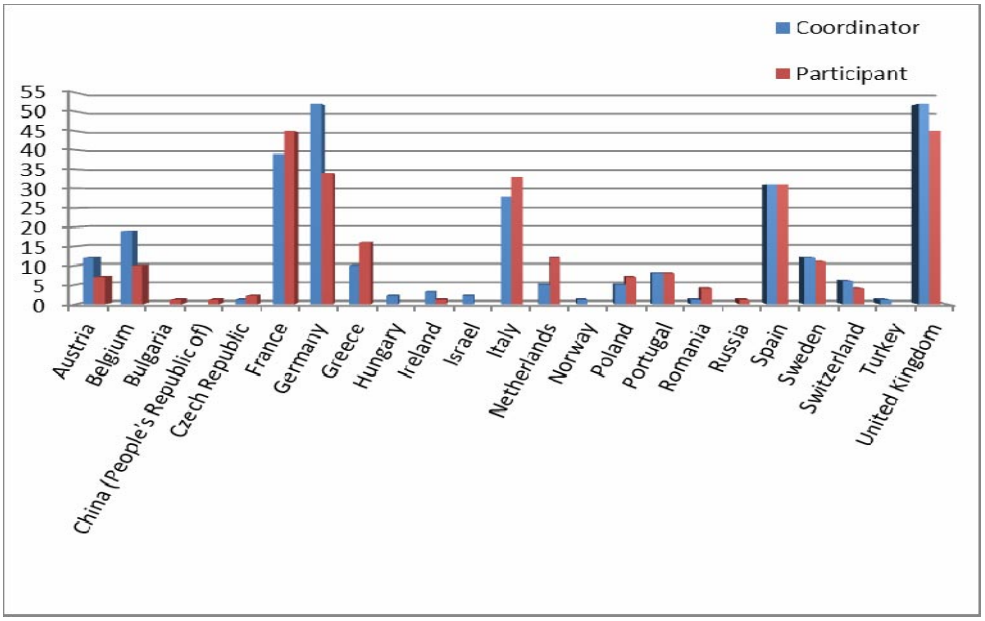
The average response to the CSJU calls in 2011 was about 2 proposals per topic, i.e. more than 320 proposals in total. The average failure rate of the topics increased with respect to previous calls, especially in Call 10, up to a yearly average of 25%, again due either to a lack of proposals submitted in a certain topic, or to negative evaluation results of the proposals in a topic. A related corrective series of actions is on-going to recover the highest success rate of topics.

The figure below shows the presence of SMEs among the winning entities for the Calls evaluated or launched in 2011, in terms of number of SMEs in winning consortia per ITD, to be compared with the total of 118 GAPs to be signed in 2011. For all calls for proposals (up to call 10), 37.1% of the winners selected for funding by the Clean Sky JU were SMEs.

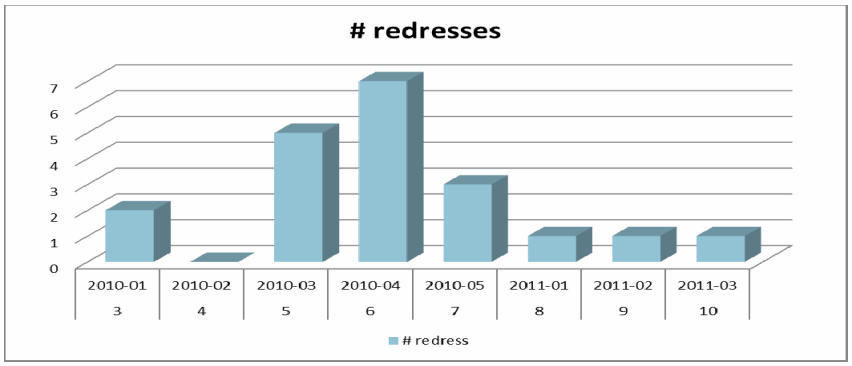


1.2.9. Results of calls for proposals (CFPs) launched between 2009 and in 2011

The geographic distribution of winning organisations (coordinator and participant) is presented in the figure below.



Considering **redresses**, one redress per call was submitted in each call published in 2011. In all cases the Redress Committee judged the relevance of the complaint, in one case proposing the re-evaluation of the proposals. In all cases, no change occurred to the ranking list as resulting from the evaluation. The figure below shows the positive trend of fewer redresses in Calls from 2010 to 2011, demonstrating the effectiveness and correctness of the evaluation process.



1.2.10. Success stories

BLADE (acronym for Breakthrough Laminar Aircraft Demonstrator in Europe), which has been selected to be exhibited during the first Innovation Convention, organised in Brussels on the 5 and 6 December 2011. For the next generation aircraft, higher laminar performance is considered to be one of the key elements to reduce air resistance, increase overall performances and reduce CO^2 emissions. In the SFWA, as results of the research

activities, an Airbus A340-300 will be fitted with new outer wing sections to demonstrate an entirely new designed natural laminar flow wing. In the BLADE project, Aernnova has developed a monitoring system that detects in real time damages and defects on such wings, reducing manufacturing and maintenance costs.

A second success story is the **TaxiBot "Dispatch Towing Vehicle (DTV)"project**, which won in 2011 the Innovation Award at Inter Airport Europe in Munich. The DTV is a towbar-less aircraft tractor dedicated to dispatch towing of single aisle aircrafts (e.g. A320, B737), allowing the aircraft to stop the engines during taxiing in and out. Even though the idea of dispatch towing has existed for decades, past attempts using existing tractors - dedicated to push back and maintenance towing - faced several problems. The DTV concept provides a comprehensive answer to the main drawbacks of classical dispatch towing, protecting airplane landing gears from excessive allowed fatigue limits at all times and allowing the pilot to stay "in control".

A further ongoing significant project is **CARING (Contribution of Airlines for the Reduction of Industry Nuisances and Gases),** which is the only Clean Sky project involving airlines. Launched at the beginning of 2010, it aimed at analysing how current and future environmental regulations may affect the economics of airlines. It also examined how airlines can best adapt to these changes. CARING was successfully completed after a 24 months duration, in December 2011.

1.3. Programme implementation

The CS JU supports research activities carried out by the non-EC members of Clean Sky and by partners selected following open and competitive Calls for Proposals, independent evaluations and negotiations leading to the conclusion of partners Grant Agreements.

Clean Sky aims to create a radically innovative Air Transport System based on the **integration of advanced technologies and full scale demonstrators**, with the target of reducing the environmental impact of air transport through reduction of noise and gaseous emissions, and improvement of the fuel economy of aircraft. The activity covers all main flying segments of the Air Transport System and the associated underlying technologies identified in the Strategic Research Agenda for Aeronautics developed by the Aeronautics Technology Platform ACARE.

As already mentioned in the introduction to the JU, Clean Sky is built upon 6 different technical areas called **Integrated Technology Demonstrators (ITDs)**, which perform preliminary studies and down-selection of work, followed by large-scale demonstrations on ground or in-flight, in order to bring innovative technologies to a maturity level where they can be applicable to new generation "green aircraft". Multiple links for coherence and data exchange will be ensured between the various ITDs.

The **Technology Evaluator** will be the first available European complete integrated tool delivering direct relationship between advanced technologies, still under development, and high-level local or global environment impact. It considers inputs from both inside and outside the "Clean Sky" perimeter to deliver environmental metrics and the levels of aircraft, airport and aircraft fleet level.

As aircraft fuel economy is also influenced by flight trajectory management strategy, Clean Sky has established **links with the SESAR Joint Undertaking** which investigates Air Traffic Management (ATM) technologies in line with the "Single Sky" initiative of the Commission. These links are established via the Technology Evaluator, as well as via the SGO ITD that develops the avionics equipment interfacing with ATM, and via management meetings involving the relevant staff members of the two JUs, up to the two Executive Directors.

1.3.1. Grant agreements with members

The majority of the work inside the Clean Sky JU is carried out by its industrial members under the form of **grant agreements with named beneficiaries**. According to Article 13 (2) (a) of Council Regulation (EC) 71/2008 setting up the Joint Undertaking, an amount of up to € 400 million shall be **allocated to the ITD leaders** and up to € 200 million – to the associate members. In turn, the ITD leaders and associates engage to contribute resources at least matching the EU contribution.

The Clean Sky JU signed the **first seven grant agreements** with its members (referred to as "GAM") in 2008: - one for each of the six ITDs, - a supplementary one for the activities of the *Technology Evaluator*.

These grant agreements will remain in force for the whole duration of Clean Sky, until 31 December 2017. Each year, an amendment is signed in order to update the annual description of work with the corresponding JU financial contribution. No new named beneficiaries joined the CS JU in 2011. The commitments amounted to €17 M€ in 2008; €70.6 M in 2009, €75.7 M in 2010 and €103.16 M in 2011.

The **Steering Committees** responsible for technical decisions taken within each ITD and the TE met regularly in the course of 2011.

1.3.2. Description of the 'Integrated Technology Demonstrators' (ITD) activities

The detailed progress of activities of each ITD in 2011 is presented in annex 1.

1.4. Call implementation

1.4.1. Grant agreements with partners

According to Article 13 (2) (b) of Council Regulation (EC) 71/2008 setting up the Joint Undertaking, **the remaining 25% of the EU funding** to the Clean Sky JU (amounting to at least € 200 million) are allocated to partners selected via **open** and **competitive calls for proposals**.

They serve the dual purpose of widening the participation in Clean Sky to other organisations and to identify R&D performers to take part in the mainstream activities of Clean Sky. Partners selected via calls for proposals are funded in compliance with the upper funding limits set in the *FP7 Rules for Participation*.

According to the Clean Sky's *Rules for Participation and Rules for Submission of Proposals and the Related Evaluation, Selection and Award procedures* any legal entity established in an EU Member State or in a country associated to the FP7 may participate in a CS project. A proposal may involve one or several participants. Examples of potential participants are research institutes, universities, industry, including SMEs, and end-users.

1.4.2. Topic definition

The call **topics** are proposed by each ITD Steering Committee and reviewed by the CS JU Executive Office and by the European Commission. The calls are broadly published by all suitable channels, including the Clean Sky's website. According to the requirements of the ITD and the work package, a **single stage** submission and evaluation process is followed. Once a proposal is submitted, eligibility check and independent evaluations take place.

1.4.3. Evaluation process

The evaluation of proposals is performed on the basis of the following **principles**:

- Excellence of projects selected;
- Transparency of decisions;
- Fairness and impartiality of evaluations;
- Confidentiality of all information;
- Efficiency and speed of evaluation;
- Compliance with ethical and security principles.

The evaluation of proposals is carried out by a **panel of experts** comprising two internal experts from the ITD responsible for the call and two external experts in an open and transparent competitive procedure. Topic managers representing the ITD leaders, as well as Clean Sky staff members also take part in the evaluation process. The presence of **independent observers** aims to verify and guarantee that the above-mentioned rules and principles are followed.

The evaluations are performed against six pre-determined **evaluation criteria**. For each criterion, a **score** is given on a scale from 0 (proposal fails to address the criterion) to 5 (proposal addresses all aspects of the criterion). All factors have equal **weight**. For a proposal to be considered for funding, it needs to pass the following **thresholds**: a minimum 3/5 for each of the 6 criteria and a minimum 20/30 total score.

№	Evaluation criterion	Score	Weight	Threshold
1.	Technical excellence	0 to 5	1	3/5
2.	Innovative character	0 to 5	1	3/5
3.	Compliance with the call for proposals specification and timetable (relevance),	0 to 5	1	3/5
4.	Adequacy and quality of respondent's resources, management and implementation capabilities and track record	0 to 5	1	3/5
5.	Appropriateness and efficient allocation of the resources to be committed (budget, staff, equipment)	0 to 5	1	3/5
6.	Contribution to European competitiveness	0 to 5	1	3/5
	Total score:			**20/30**

The evaluation process consists of several steps:

1. Briefings of the experts to explain the process and the rules for evaluation;
2. Eligibility Review Committee to ensure a coherent legal interpretation of all cases and equal treatment of participants;
3. Individual remote evaluation, the results of which are included in an *individual evaluation report*;
4. Consensus meeting for each proposal, the results of which are included in a *consensus evaluation report*;
5. Topic meeting to examine and compare the various consensus reports, the results of which are included in an *evaluation summary report*. A *topic report* is also established with a list of ranked proposals above thresholds, a list of proposals failing one or more thresholds and a list of ineligible proposals, if any.

If the proposal passes the thresholds and is selected for funding, it enters into the next phase – the negotiation. The process is concluded by the signature of a contract, called *Grant Agreement with Partners* (referred to as "GAP").

It is important to note that the calls for proposals launched by the Clean Sky JU differ from FP7 collaborative research calls and calls launched by the other JTI JUs.

- The content of the activities is much more **focused**, i.e. there are topics, rather than research themes, with a **limited duration** and *specific targeted results* expected at higher technology readiness levels.

- The calls supplement the **technical competences** of the Clean Sky's members by performing highly specific activities, which, on the other hand, have to "slot in" with the overall technical work plan of the CS JU. For this reason, **only one contract** is awarded for each of the topics that are published, and compliance with the technical description is imperative. However, due to the very specific nature, it is possible to participate in a call as a single entity and not in a consortium, as allowed by the Clean Sky's *Rules for Submission of Proposals*.

- Another difference from collaborative research calls is that **the budget is defined by the topic value, and not by the maximum funding**, which allows a wider

participation from all types of entities, independently from the actual eligibility for funding.

1.5. Call 7 SP1-JTI-CS-2010-05

1.5.1. Summary information

Call Identifier	SP1-JTI-CS-2010-05
Publication date	24 September 2010
Deadline	9 December 2010
Evaluation	17-21 January 2011
Negotiation Kick-off	24 February 2011
Indicative Total budget (in €)	€ 30,529 millions
EU contribution after evaluation	€ 14,583 millions
In-kind contribution after evaluation	€ 8,867 millions
Number of topics	38
Reference to call topics	http://ec.europa.eu/research/participants/portal/page/cooperation?callIdentifier=SP1-JTI-CS-2010-05

The Clean Sky JU published its **seventh call for proposals** on 24 September 2010. The call was open for **38 topics**[14] covering activities within all ITDs, without the Technology Evaluator (TE). The 38 open topics were grouped in 15 areas, further re-grouped under the six ITDs as shown in the table below. The **total indicative budget** of the call was set to **€ 30,529,000**, of which the **EU contribution** could be up to **€ 22,896,750** (50-75% of the topic maximum budget indicated).

Identification	ITD-Area-Topic	Nr of topics	Indicative budget (€)	Maximum funding (€)
JTI-CS-ECO	Clean Sky – Eco-Design	11	5,230,000	3,922,500
JTI-CS-GRA	Clean Sky – Green Regional Aircraft	2	620,000	465,000
JTI-CS-GRC	Clean Sky - Green Rotorcraft	7	11,580,000	8,685,000
JTI-CS-SAGE	Clean Sky – Sustainable and Green Engines	4	5,400,000	4,050,000
JTI-CS-SFWA	Clean Sky - Smart Fixed Wing Aircraft	8	3,999,000	2,999,250
JTI-CS-SGO	Clean Sky – Systems for Green Operations	6	3,700,000	2,775,000
TOTAL (M€)		**38**	**30,529,000**	**22,896,750**

14 Annex 2: Full topics overview: CS JU call 7 (SP1-JTI-CS-2010-05).

1.5.2. Analysis of proposals submitted

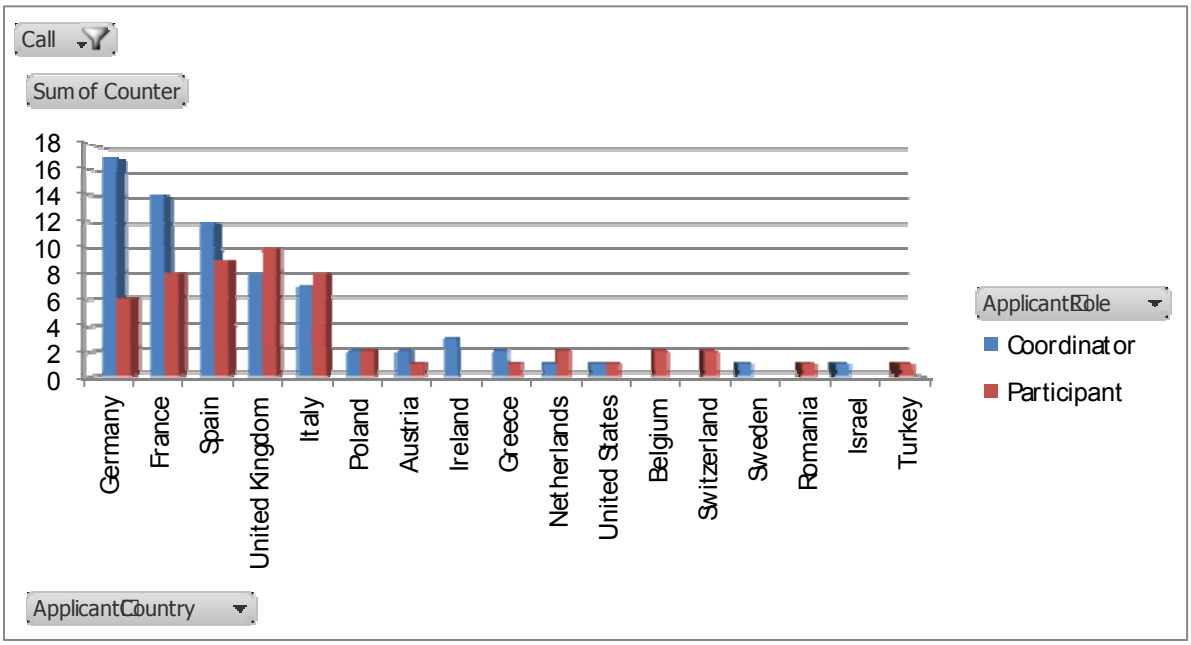
71 proposals involving applicants from **17 countries** were received. Out of those 71 proposals, **67** were considered **eligible** for evaluation. They were evaluated by **84 independent experts**. The table below presents the distribution of participants in the submitted proposals:

Type of participant[15]	Nr of participants in the Proposals	Nr of participants in the funded Projects	Participants success rate
REC	19	8	42%
HSE	29	13	45%
SME	**51**	**18**	**35%**
PRC	26	10	38%
PUB[16]	0	0	0
OTH	0	0	0
Total	**125**	**49**	**39%**

[15] Explanation of acronyms: REC – Research Centre; HSE – Higher or Secondary Education; SME – Small Medium Enterprise; PRC – Private Companies; PUB – Public Body; OTH - Other

[16] For both PUB and OTH, current tables show zero because the initial allocation to the first four categories of all participants; according to that selection, this is still valid and will be revised only if some new case is presented where a more appropriate allocation to either PUB or OTH is necessary. For statistical purpose, we deem the current attributions are correct.

All calls' applicants distributed per country are given in the figure below:



Evaluation results

The on-site evaluation of the proposals followed the established methodology. It was preceded by individual remote evaluations. To ensure high degree of transparency, the CS JU invited **one independent observer** to verify if the evaluations have been done according to the set evaluation guidelines and rules. Out of the 67 eligible proposals, **45 passed the thresholds**, while **22 failed** one or more thresholds. In terms of the topics failed (because not answered or with no successful proposal selected), this is the situation per ITD:

ITD		Unanswered	Failed
ECO	*Eco-Design*	1	2
GRA	*Green Regional Aircraft*	0	1
GRC	*Green Rotorcraft*	1	0
SFW	*Smart Fixed Wing Aircraft*	0	0
SAGE	*Sustainable and Green Engines*	2	1
SGO	*Systems for Green Operations*	1	0
Total		**5**	**4**

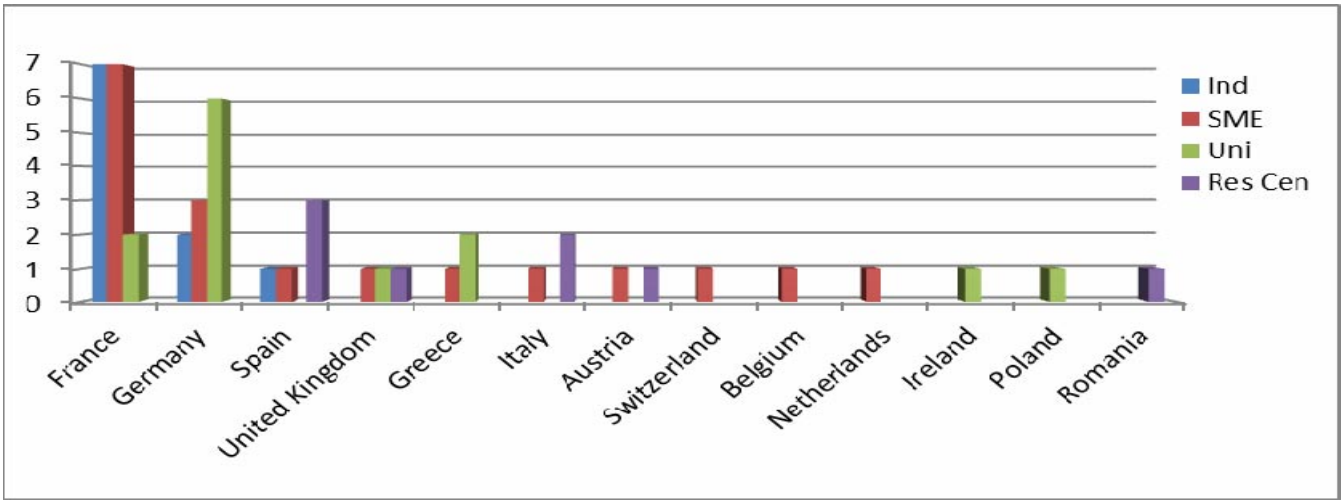
This call shows a reduced number of proposals submitted (it used to be an average of 2.5 per topic, whereas now it is less than 2) and a higher failure rate topic per topic (it is now about 25% and used to be 14%).

The evaluation results, after processing all submitted proposals, are presented in the table below.

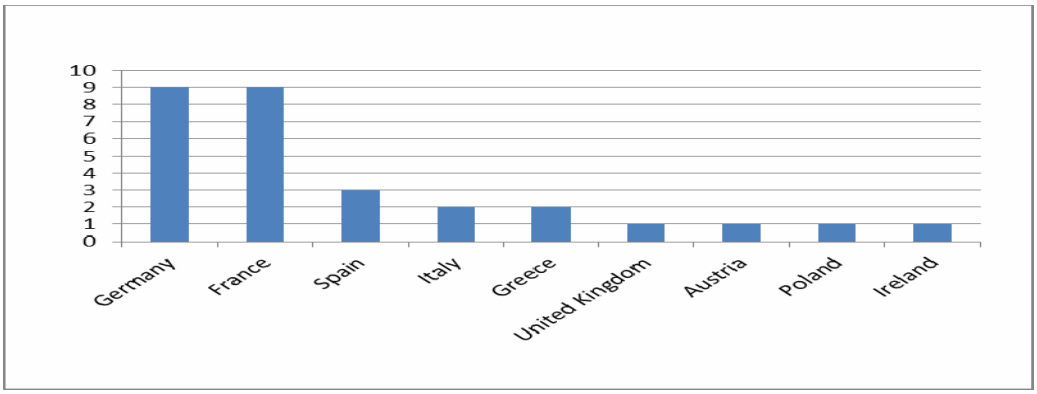
	Submitted proposal			Evaluation results				
ITD/Area	Submitted proposals	Eligible proposals	% of retained	Above threshold		Proposals selected for funding		Reserve list
SFWA	16	**16**	100.00%	13	81.25%	**8**	50.00%	5
GRA	6	**5**	83.33%	2	40.00%	**1**	20.00%	1
GRC	16	**15**	93.75%	8	53.33%	**6**	40.00%	2
SAGE	2	**2**	100.00%	1	50.00%	**1**	50.00%	0
SGO	9	**9**	100.00%	6	66.67%	**5**	55.56%	1
ED	22	**20**	90.91%	15	75.00%	**8**	40.00%	7
Total	**71**	**67**	**79,8%**	**45**	**61,04%**	**29**	**42,59%**	**16**

The **29 proposals** proposed for funding accounted for **49 participations** from **13 European countries**. Of those, **13 (27%)** came from **academia, 10 (20%)** represented the **industry** and **8 (16%)** were **research institutions**. The **SME** participation was **37%** (18 companies were SMEs), requesting a total funding of **€ 4,930,913** (33.81% of the total requested funding).

– The figure below shows the distribution of the 49 participations by country and by type.



– The geographical distribution of the proposals selected for funding is shown in the graph below. Germany and France are taking the leading position with 9 proposals, followed by Spain, Italy and Greece.



1.5.3. Grant agreements signed

CS JU call 7 (SP1-JTI-CS-2010-05).	Number	CS JU contribution (€)	In-kind contribution (€)	Total contributions (€)
Sub-Total (signed GAPs)	26	€ 13,750,443	€ 8,083,014	€ 21,833,457
Sub-Total (Proposals in Negotiation)	3	€ 1,202,694	€ 651,999	€ 1,854,693
TOTAL	29	€ 14,953,137	€ 8,735,013	€ 23,688,150

The list of GAP signed or in negotiation for this call 7 is provided with further details in annex 3.

1.6. Call 8 SP1-JTI-CS-2011-01

1.6.1. Summary information

Call Identifier	**SP1-JTI-CS-2011-01**
Publication date	10 February 2011
Deadline	3 May 2011
Evaluation	23-27 May 2011
Negotiation Kick-off	1 July 2011
Indicative total budget (in €)	€ 42,490 millions
EU contribution after evaluation	€ 21,730 millions
In-kind contribution after evaluation	€ 13,286 millions
Number of topics	58
Reference to call topics	http://ec.europa.eu/research/participants/portal/page/cooperation?callIdentifier=SP1-JTI-CS-2011-0158 topics

The Clean Sky JU published its **eighth call for proposals**, open for **58 topics**[17] covering activities within all ITDs without the Technology Evaluator (TE). The topics were grouped in 18 areas, further re-grouped under the six ITDs as shown in the table below. The **total indicative budget** of the call was set to **€ 42.490.000**, of which the **EU contribution** could be up to **€ 31.867.500** (50-75% of the topic maximum budget indicated).

Identification	ITD - Area - Topic	Nr of topics	Indicative budget (€)	Maximum funding (€)
JTI-CS-ECO	Clean Sky – Eco-Design	12	6,410,000	4,807,500
JTI-CS-GRA	Clean Sky - Green Regional Aircraft	6	1,330,000	997,500
JTI-CS-GRC	Clean Sky - Green Rotorcraft	5	3,150,000	2,362,500
JTI-CS-SAGE	Clean Sky - Sustainable and Green Engines	18	20,000,000	15,000,000
JTI-CS-SFWA	Clean Sky - Smart Fixed Wing Aircraft	12	9,900,000	7,425,000
JTI-CS-SGO	Clean Sky - Systems for Green Operations	5	1,700,000	1,275,000
TOTAL (€)		**58**	**42,490,000**	**31,867,500**

1.6.2. Analysis of proposals submitted

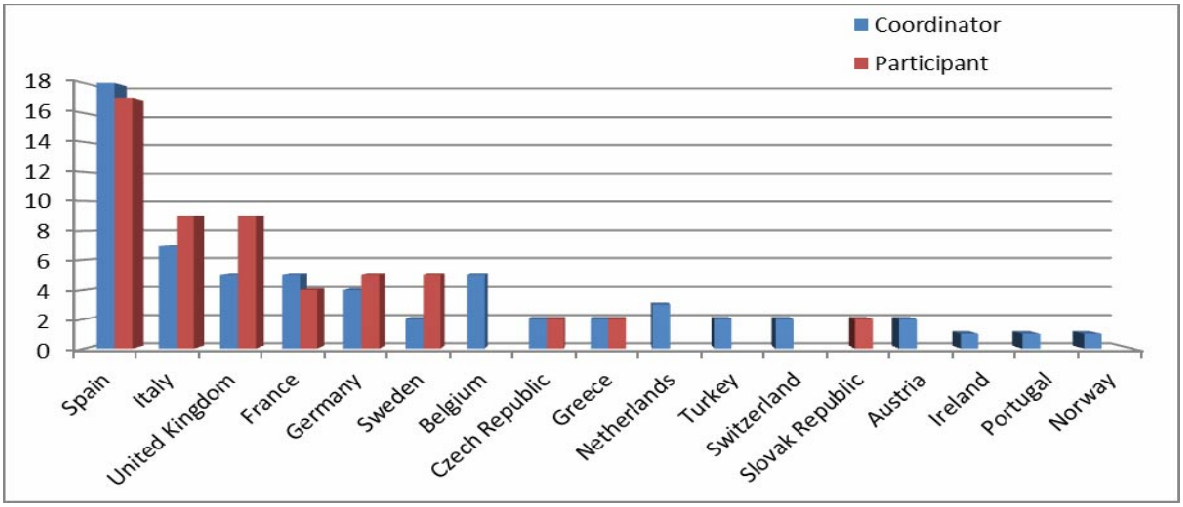
127 proposals were submitted in response to the 58 open topics addressed by the present call, involving applicants from **17 countries**. 8 were found to be ineligible and the remaining **119 eligible proposals** were evaluated by **129 independent experts**. The table below presents the distribution of participants in the submitted proposals:

Type participant[18]	Nr of participants in the Proposals	Nr of participants in the funded Projects	Participants success rate
REC	53	23	43%
HSE	49	25	51%
SME	**86**	**37**	**43%**
PRC	54	30	56%
PUB	0	0	0
OTH	0	0	0
Total	**242**	**115**	**48%**

17 Annex 4: Full topics overview: CS JU call 8 (SP1-JTI-CS-2011-01).

18 Refer to footnotes 6 and 7

An overview of the geographical distribution of the applicants (coordinator and participants) is given in the figure below:



1.6.3. Evaluation results

The on-site evaluation of the proposals followed the established methodology. It was preceded by individual remote evaluations. To ensure high degree of transparency, the CS JU invited **one independent observer** to verify if the evaluations were done according to the set evaluation guidelines and rules. Out of the 119 eligible proposals, **84 passed the thresholds**, while **35 failed** one or more thresholds. In terms of the topics failed (because not answered or with no successful proposal selected), the final situation of successful topics vs. published ones was as follows:

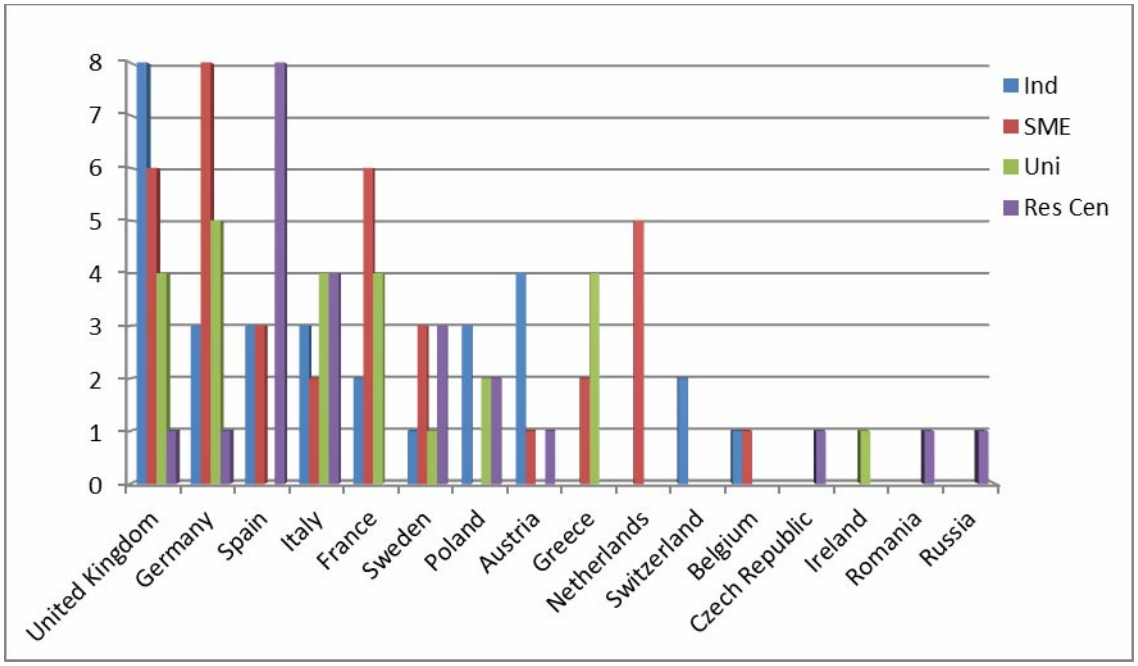
ITD		**Unanswered**	**Failed**
ECO	*Eco-Design*	0	0
GRA	*Green Regional Aircraft*	1	0
GRC	*Green Rotorcraft*	2	0
SFW	*Smart Fixed Wing Aircraft*	1	0
SAGE	*Sustainable and Green Engines*	2	1
SGO	*Systems for Green Operations*	0	2
Total		**6**	**3**

The evaluation results, after processing all submitted proposals, are presented in the table below:

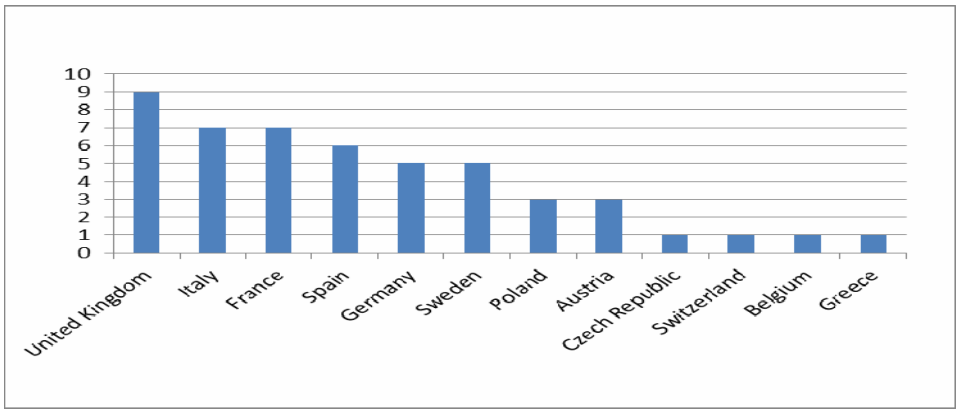
ITD/Area	Submitted proposal			Evaluation results				
	Submitted proposals	Eligible proposals	% of retained	Above threshold		Proposals selected for funding		Reserve list
SFWA	21	20	95.24%	17	85.00%	11	55.00%	6
GRA	23	22	95.65%	14	63.64%	5	22.73%	9
GRC	8	8	100.00%	6	75.00%	3	37.50%	3
SAGE	32	32	100.00%	20	62.50%	15	46.88%	5
SGO	10	7	70.00%	4	57.14%	3	42.86%	1
ED	33	30	90.91%	23	76.67%	12	40.00%	11
Total	**127**	**119**	**91.97%**	**84**	**69.99%**	**49**	**40.83%**	**35**

The **49 proposals** proposed for funding accounted for **115 participations** from **16 European countries**. Of those, **25 (22%)** came from **academia, 30 (26%)** represented **the industry** and **23 (20%)** were **research institutions**. The **SME** participation was **32%** (37 companies were SMEs), requesting a total funding of **€ 6,858,972** (31.56% of the total requested funding).

– Below you may find the distribution of the 115 participations by country and by type.



The geographical distribution of the proposals selected for funding is shown in the graph below. The United Kingdom is taking the leading position with 9 proposals, followed by the Italy, France and Spain.



1.6.4. Grant agreements signed

Due to the timing of this call, the negotiation of GAPs was completed at the end of the year; as a consequence, few GAPs were finalised in 2011.

CS JU call 8 (SP1-JTI-CS-2011-01)	Number	CS JU contribution (€)	In-kind contribution (€)	Total contributions (€)
Sub-Total (signed GAPs)	13	€ 3,699,630	€ 2,187,913	€ 5,887,543
Sub-Total (Proposals in Negotiation)	36	€ 18,835,261	€ 10,366,873	€ 29,202,134
TOTAL	49	**€ 22,534,891**	**€ 12,554,786**	**€ 35,089,677**

The list of GAP signed or in negotiation for this call 8 is provided with further details in annex 5.

1.7. Call 9 SP1-JTI-CS-2011-02

1.7.1. Summary information

Call Identifier	SP1-JTI-CS-2011-02
Publication date	28 April 2011
Deadline	28 July 2011
Evaluation	19-23 September 2011
Negotiation Kick-off	27 October 2011
Indicative Total budget (in €)	€ 16,945 millions
EU contribution after evaluation	€ 6,129 millions
In-kind contribution after evaluation	€ 3,498 millions
Number of topics	23
Reference to call topics	http://www.cleansky.eu/content/procurements/9th-call-proposals23 topics

The Clean Sky JU published its **ninth call for proposals**, open for **23 topics** [19]grouped in 12 areas, further grouped under the six ITDs as shown in the table below. The **total indicative budget** of the call was set to **€ 16,945,000**, of which the **EU contribution** could be up to **€ 12,708,750** (50-75% of the topic maximum budget indicated).

Identification	ITD - Area - Topic	Nr of topics	Indicative budget (€)	Maximum funding (€)
JTI-CS-ECO	Clean Sky - EcoDesign	6	1,530,000	1,147,500
JTI-CS-GRA	Clean Sky - Green Regional Aircraft	3	1,835,000	1,376,250
JTI-CS-GRC	Clean Sky - Green Rotorcraft	3	1,230,000	922,500
JTI-CS-SAGE	Clean Sky - Sustainable and Green Engines	3	4,300,000	3,225,000
JTI-CS-SFWA	Clean Sky - Smart Fixed Wing Aircraft	6	7,200,000	5,400,000
JTI-CS-SGO	Clean Sky - Systems for Green Operations	2	850,000	637,500
TOTAL (€)		**23**	**16,945,000**	**12,708,750**

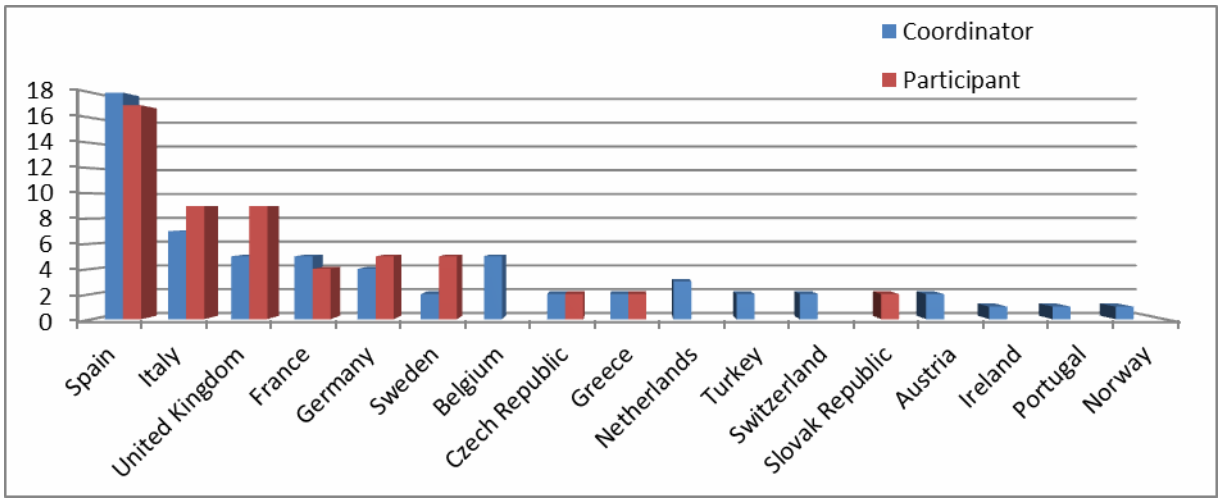
[19] Annex 6. CS JU call 9 (SP1-JTI-CS-2011-02). Topics overview

1.7.2. Analysis of proposals submitted

62 proposals were submitted in response to the 23 open topics addressed by the present call, involving applicants from **17countries**. 3 of them were found to be ineligible, and the remaining **59 eligible proposals** were evaluated by **62 independent experts**. The table below presents the distribution of participants in the submitted proposals:

Type participant[20]	Nr of participants in the Proposals	Nr of participants in the funded Projects	Participants success rate
REC	26	5	19%
HSE	29	5	17%
SME	**49**	**9**	**18%**
PRC	12	5	42%
PUB	0	0	0
OTH	0	0	0
Total	**116**	**24**	**21%**

Geographical distribution of the applicants is given in the figure below:



1.7.3. Evaluation results

The evaluation of the proposals followed the established methodology. To ensure high degree of transparency, the CS JU invited **one independent observer** to verify if the evaluations were done according to the set evaluation guidelines and rules. Out of the 59 eligible proposals, **32 passed the thresholds**, while **27 failed** one or more thresholds.

[20] Refer to notes 6 and 7

In terms of the topics failed (because not answered or with no successful proposal selected), the final situation of successful topics vs. published ones was as follows:

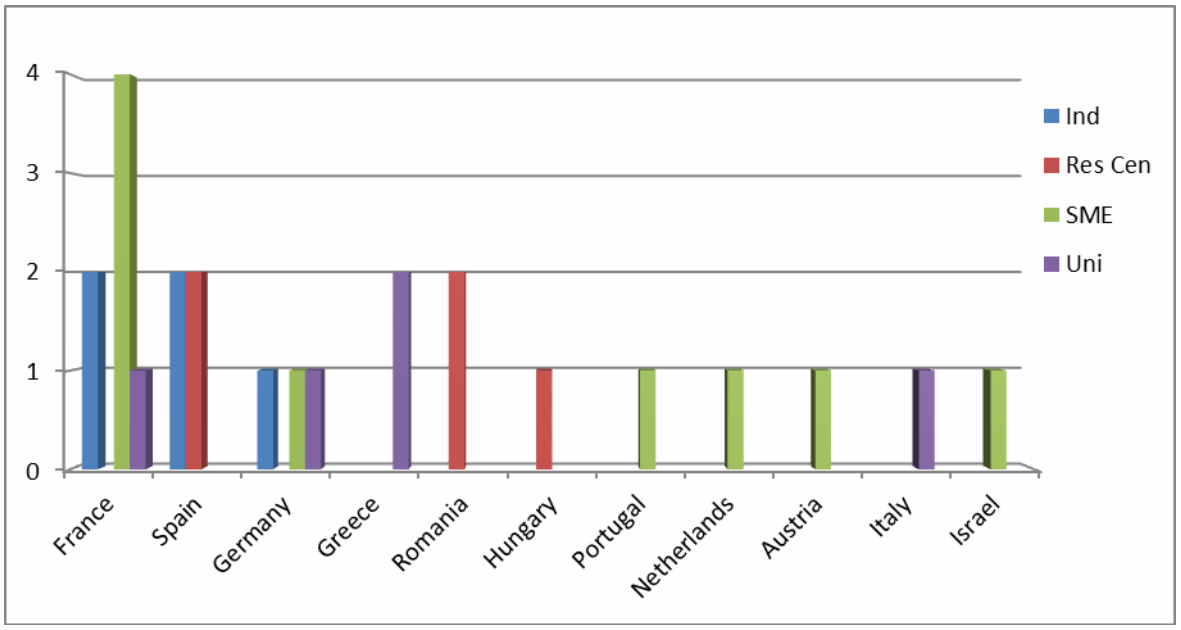
ITD		Unanswered	Failed
ECO	*Eco-Design*	1	0
GRA	*Green Regional Aircraft*	1	0
GRC	*Green Rotorcraft*	0	2
SFW	*Smart Fixed Wing Aircraft*	0	0
SAGE	*Sustainable and Green Engines*	0	**2**
SGO	*Systems for Green Operations*	1	0
Total		**3**	**4**

The evaluation results, after processing all submitted proposals, are presented in the table below:

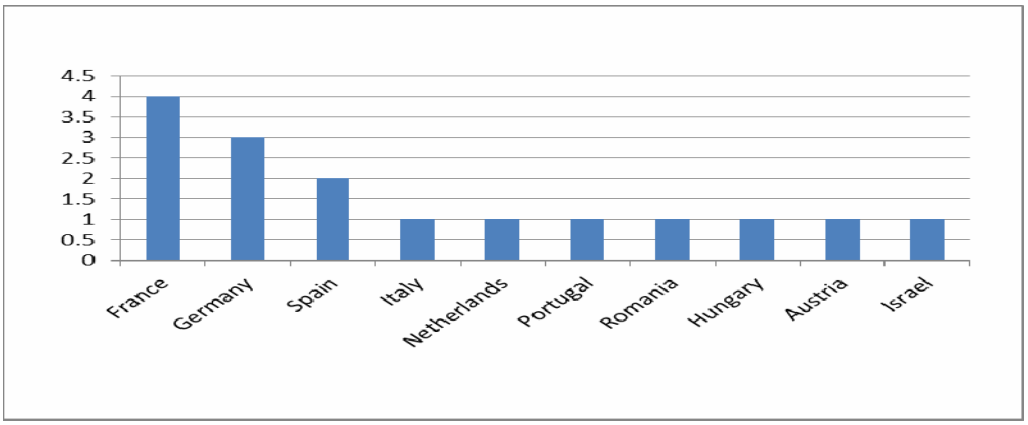
	Submitted proposal			Evaluation results				
ITD/Area	Submitted proposals	Eligible proposals	% of retained	Above threshold		Proposals selected for funding		Reserve list
SFWA	14	13	92.86%	11	84.62%	5	38.46%	6
GRA	7	7	100.00%	3	42.86%	2	28.57%	1
GRC	7	7	100.00%	5	71.43%	3	42.86%	2
SAGE	5	5	100.00%	1	20.00%	1	20.00%	0
SGO	2	1	50.00%	0	0.00%	0	0.00%	0
ED	27	26	96.30%	12	46.15%	5	19.23%	7
Total	**62**	**59**	**89.86%**	**32**	**44.18%**	**16**	**24.85%**	**16**

The **16 proposals** proposed for funding accounted for **24 participations** from **11 European countries**. Of those, **5 (21%)** came from **academia, 5 (21%)** represented **the industry** and **5 (21%)** were **research institutions**. The **SME** participation was **38%** (9 companies were SMEs), requesting a total funding of **€ 1,195,138** (19.50% of the total requested funding).

– Below you may find the distribution of the 24 participations by country and by type.



– The geographical distribution of the proposals selected for funding is shown in the graph below. France is taking the leading position with 4 proposals, followed by Germany and Spain**:**



1.7.4. Grant agreements signed

CS JU call 9 (SP1-JTI-CS-2011-02)	Number	CS JU contribution (€)	In-kind contribution (€)	Total contributions (€)
Sub-Total (signed GAPs)	0	0	0	0
Sub-Total (Proposals in Negotiation)	16	€ 6,128,781	€ 3,497,588	€ 9,626,369
TOTAL	16	€ 6,128,781	€ 3,497,588	€ 9,626,369

Due to the timing of this call, **no negotiation of GAPs was completed** at the end of the year; as a consequence, all 16 GAPs will be finalised in 2012. The list of GAP signed or in negotiation for this call 8 is provided with further details in annex 7.

1.8. Call 10 SP1-JTI-CS-2011-03

1.8.1. Summary information

Call Identifier	**SP1-JTI-CS-2011-03**
Publication date	19 July 2011
Deadline	12 October 2011
Evaluation	14-18 November 2011
Negotiation Kick-off	12 January 2012
Indicative Total budget (in €)	€ 26,197 millions
EU contribution after evaluation	€ 9,354 millions
In-kind contribution after evaluation	€ 4,109 millions
Number of topics	40
Reference to call topics	http://ec.europa.eu/research/participants/portal/page/cooperation?callIdentifier=SP1-JTI-CS-2011-0340topics

The Clean Sky JU published its **tenth call for proposals** open for **40 topics**[21] covering activities within all ITDs without the Technology Evaluator (TE). The 40 open topics were grouped in 13 areas, further re-grouped under the six ITDs as shown in the table below. The **total indicative budget** of the call was set to **€ 26,197,000**, of which the **EU contribution** could be up to **€ 19,647,750** (50-75% of the topic maximum budget indicated).

Identification	ITD - Area - Topic	Nr of topics	Indicative budget (K€)	Maximum funding (K€)
JTI-CS-ECO	Clean Sky - EcoDesign	10	2,735	2051.25
JTI-CS-GRA	Clean Sky - Green Regional Aircraft	8	3,400	2,550
JTI-CS-GRC	Clean Sky - Green Rotorcraft	3	1,322	991.5
JTI-CS-SAGE	Clean Sky - Sustainable and Green Engines	4	7,400	5,550
JTI-CS-SFWA	Clean Sky - Smart Fixed Wing Aircraft	5	5,650	4,237.5.
JTI-CS-SGO	Clean Sky - Systems for Green Operations	10	5,690	4,267.5.
TOTAL (K€)		**40**	**26,197**	**19,647.75**

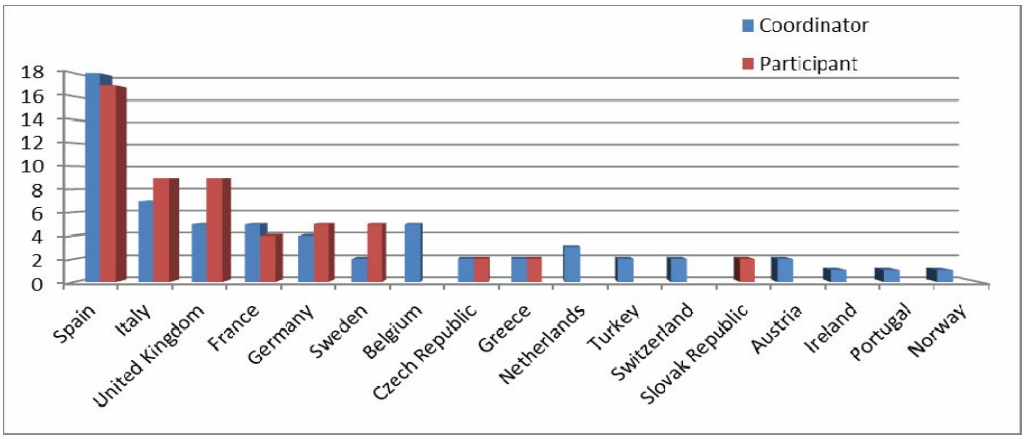
[21] Annex 8:CS JU call 10 (SP1-JTI-CS-2011-03). Topics overview

1.8.2. Analysis of proposals submitted

62 proposals were submitted in response to the 40 open topics addressed by the present call, involving applicants from **17 countries**. 2 were found to be ineligible and the remaining **60 eligible proposals** were evaluated by **75 independent experts**. The table below presents the distribution of participants in the submitted proposals:

Type participant[22]	Nr of participants in the Proposals	Nr of participants in the funded Projects	Participants success rate
REC	24	7	29%
HSE	22	11	50%
SMEs	**53**	**24**	**45%**
PRC	18	8	44%
PUB	0	0	0
OTH	0	0	0
Total	**117**	**50**	**43%**

Geographical distribution of the applicants is given in the figure below:



1.8.3. Evaluation results

The on-site evaluation of the proposals followed the established methodology. It was preceded by individual remote evaluations. To ensure high degree of transparency, the CS JU invited **one independent observer** to verify if the evaluations have been done according to the set evaluation guidelines and rules.

[22] –Refer to notes 6 and 7

In terms of the topics failed (because not answered or with no successful proposal selected), the final situation of successful topics vs. published ones was as follows:

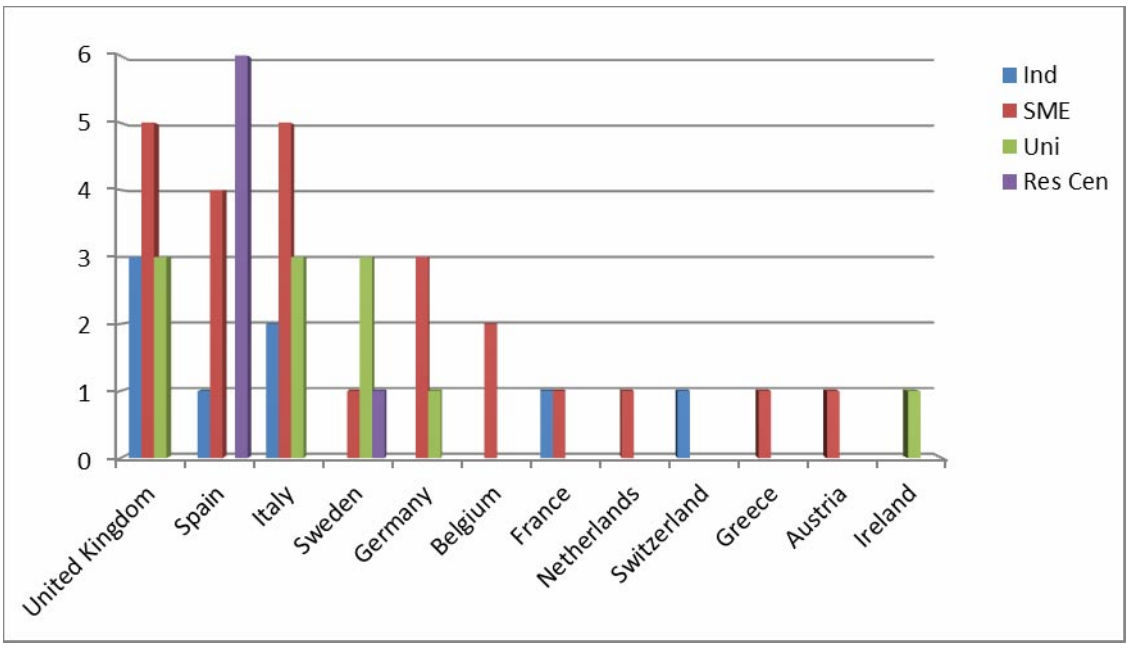
ITD		unanswered	failed
ECO	*Eco-Design*	4	1
GRA	*Green Regional Aircraft*	1	1
GRC	*Green Rotorcraft*	1	0
SFW	*Smart Fixed Wing Aircraft*	2	1
SGE	*Sustainable and Green Engines*	0	1
SGO	*Systems for Green Operations*	2	2
Total		**10**	**6**

The evaluation results, after processing all submitted proposals, are presented in the table below:

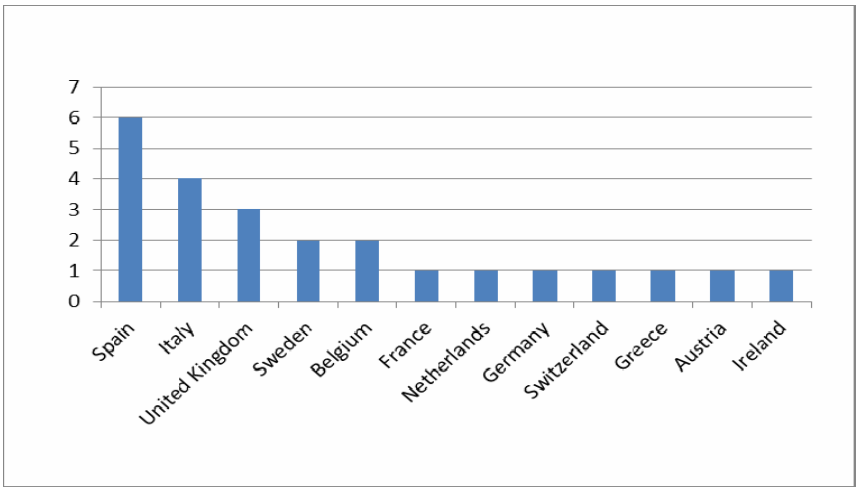
	Submitted proposal			Evaluation results				
ITD/Area	Submitted proposals	Eligible proposals	% of retained	Above threshold		Proposals selected for funding		Reserve list
SFWA	8	8	100.00%	2	25.00%	2	25.00%	0
GRA	19	18	94.74%	11	61.11%	6	33.33%	5
GRC	4	4	100.00%	3	75.00%	2	50.00%	1
SAGE	4	4	100.00%	3	75.00%	3	75.00%	0
SGO	14	13	92.86%	8	61.54%	6	46.15%	2
ED	13	13	100.00%	8	61.54%	5	38.46%	3
Total	**62**	**60**	**97.93%**	**35**	**59.86%**	**24**	**44.66%**	**11**

The **24 proposals** proposed for funding accounted for **50 participations** from **12 countries**. Of those, **11 (22%)** came from **academia, 8 (16%)** represented **the industry** and **7 (14%)** were **research institutions**. The **SME** participation was **48%** (24 companies were SMEs), requesting a total funding of **€ 4,225,949** (45.15% of the total requested funding).

– Below you may find the geographical distribution of the 50 participations by country and by type.



– The geographical distribution of the proposals selected for funding is shown in the graph below. Spain is taking on the lead with 6 winning proposals, followed by Italy, United Kingdom, Sweden and Belgium.



1.8.4. Grant agreements signed

Due to the timing of this call, **no negotiation of GAPs was completed** at the end of the year; as a consequence, all 24 GAPs will be finalised in 2012.

CS JU call 10 (SP1-JTI-CS-2011-03	Number	CS JU contribution (€)	In-kind contribution (€)	Total contributions (€)
Sub-Total (signed GAPs)	0	0	0	0
Sub-Total (Proposals in Negotiation)	24	€ 9,353,821	€ 4,108,737	€ 13,462,558
TOTAL	**24**	**€ 4,108,737**	**€ 13,462,558**	**€ 9,353,821**

The list of GAP signed or in negotiation for this call 10 is provided with further details in annex 9.

1.9. Grant agreements/project portfolio

1.9.1. Grant agreements signed (commitment amounts) for calls launched in previous years

Call number	Number	CS JU contribution (€)	In-kind contribution (€)	Total contributions (€)
SP1-JTI-CS-2009-01	1	€ 138,900	€ 50,700	€ 189,600
SP1-JTI-CS-2009-02	5	€ 2,660,745	€ 890,095	€ 3,550,840
SP1-JTI-CS-2010-01	31	€ 7,119,533	€ 3,556,189	€ 10,675,722
SP1-JTI-CS-2010-02	4	€ 3,279,920	€ 2,579,920	€ 5,859,840
SP1-JTI-CS-2010-03	21	€ 6,133,766	€ 2,510,329	€ 8,644,095
SP1-JTI-CS-2010-04	18	€ 7,564,532	€ 4,404,369	€ 11,968,901
TOTAL	**80**	**€ 26,897,396**	**€ 14,022,607**	**€ 40,888,998**

80 GAPs relating to Calls 1 to 6 were signed in 2011. The complete list of grants signed is provided per call with further details in annex 10.

1.9.2. Grant agreements for which activities have ended and/or final results are available

Activities related to 7 grant agreements have already ended in 2011. They were all signed under the call SP1-JTI-CS-2009-01. The total contribution on the projects (CS JU and in

kind) was on a wide range, varying from € 49,860 to € 398,388. The complete list is provided with further details in annex 11.

2. PROGRESS ACHIEVED BY THE IMI JU

2.1. Introduction to the IMI JU

The Innovative Medicines Initiative Joint Undertaking (hereinafter referred to as "IMI") has been established by Council Regulation (EC) 73/2008 of 20 December 2007 as a public-private partnership between the pharmaceutical industry, represented by the European Federation of Pharmaceutical Industries and Associations (EFPIA)[23], and the European Union, represented by the European Commission.

The IMI JU has been set up for a period up to 31 December 2017 with the main objectives to build a collaborative eco-system for pharmaceutical R&D in Europe[24] and to speed up the development of more effective and safer medicines for patients. In achieving this, IMI creates large-scale networks of innovation in pharmaceutical research. Joining forces in the IMI research and training projects, leading pharmaceutical companies and SMEs, academia, regulatory agencies and patients' organisations cooperate with each other to tackle the major challenges in drug development and to improve people's health. This brings up socio-economic benefits to European citizens and society and increases the competitiveness of the European pharmaceutical industry.

The objectives of the IMI JU are achieved through coordination of research activities that pool resources from public and private sectors. These activities are carried out by the members of EFPIA directly, and by partners selected through calls for proposals.

2.1.1. Budget

The maximum Union contribution to the IMI Joint Undertaking covering running costs and research activities shall be €1 billion. The contribution is paid from the appropriation in the general budget of the European Union allocated to the 'Health' theme of the Specific Programme "Cooperation" implementing the Seventh Framework Programme.

EFPIA provides monetary contribution to the IMI JU running costs, in an amount equal to the contribution of the Union. The pharmaceutical companies' members of EFPIA jointly fund the IMI research activities through contributions in kind at least equal to the financial contribution of the Union.

[23] EFPIA's mission is to promote pharmaceutical research and development in Europe and to create a favourable economic, regulatory and political environment, enabling the research-based pharmaceutical industry to meet the growing healthcare needs and expectations of patients. In 2010, the members of EFPIA comprise of 31 European national pharmaceutical associations and 38 companies undertaking research, development and manufacturing of medicinal products for human use.

[24] Europe in this context refers to the EU Member States and the countries associated to the Seventh Framework Programme of the European Union (2007-2013), i.e. Switzerland, Israel, Norway, Iceland, Liechtenstein, Turkey, Croatia, the Former Yugoslav Republic of Macedonia, Serbia, Albania and Montenegro.

2.1.2. Governing structure

2.2. Outline of the main activities and achievements in 2011

2011 was the second full year of autonomous operation for the Innovative Medicines Initiative Joint Undertaking (IMI), a year marked by consolidating its operations and structures and making further significant developments in establishing itself as a new model for drug development based on pre-competitive research and open collaboration, in line with the vision of its Founding Members.

The **revised IMI grant agreement** has been approved in November 2011. It improves the rules in order to better accommodate the expectations of both public and private partners in the collaborative projects. The new rules ensure in a flexible way that the public funds are well spent, while the industrial partners can optimize their commitment in the IMI projects using their usual accounting principles.

Several **operational procedures** have been simplified and streamlined in order to reduce the administrative burden for consortium partners, to shorten the time interval between the launch of the Calls for proposals and the initiation of the projects, and to improve the budget execution.

IMI has learnt from the experiences of the scientific teams in the **23 on-going IMI projects**. By responding to their feedback, IMI reinforces its commitment to radically change the ecosystem for pharmaceutical research. IMI is now even better equipped to engage public and private teams in collaborative projects, offering them a unique and attractive partnership to accelerate drug development in Europe.

2.2.1. Organisation of the team in IMI JU.

In total, the IMI JU could hire up to 34 staff (temporary and contract agents) in 2011, including one Executive Director, 8 project officers, one Head of Administration & Finance Unit, one Internal Audit Manager, one External Relations Manager, one Communication and Event Manager and other.

Recruitments were conducted in 2011 in line with the Staff Plan approved by the Governing Board and 12 new staff members were integrated as follows. The "Science" pillar increased

by 2 additional Scientific Project Officers and 1 Administrative Assistant. The "Communication" pillar grew by 1 Communication Officer (events) and 1 External Relations and Communications Assistant. The "Administration and Finance" pillar also expanded, with the following new staff joining: 1 Financial Manager, 1 HR Officer, 1 Finance and Procurement Officer, 1 Administrative Assistant, 1 IT Manager, 1 Legal Officer and the Head of Administrative and Finance. 32 positions were actually filled on 31/12/2011, in line with the Staff Establishment Plan.

2.2.2. Progress in the implementation of the Strategic Research Agenda,

To reflect the scientific advances and changes in industry, the IMI Scientific Committee initiated the **revision of the initial Strategic Research Agenda (SRA)** in 2010. After consultation with various stakeholders, the IMI Executive Office finalised the revision of the SRA in 2011 in conjunction with both Founding Members. The IMI SRA was revised in order to provide a new framework for the preparation of future IMI Calls for proposals with a focus on large-scale, game-changing projects. Two such topics were already introduced in the 4th Call for proposals launched in 2011.

In order to successfully tackle the challenges and opportunities created by recent major progress in science, as well as the significant changes and transformations in the pharmaceutical industry and healthcare systems in general, IMI has to foster strategic initiatives focused on 'game-changing' ideas and areas where the maximum number of companies can join forces.

Some of these areas had not been identified in the 2008 IMI SRA and are now included in the revised SRA, in which 8 new priorities have been defined:

1. Pharmacogenetics and Taxonomy of Human Diseases
2. Rare Diseases and Stratified Therapies
3. Systems Approaches in Drug Research
4. 'Beyond High Throughput Screening'- Pharmacological Interactions at the Molecular Level
5. API Technology (Drug Compound Development)
6. Advanced Formulations
7. Stem Cells for Drug Development and Toxicity Screening
8. Integration of Imaging Techniques into Drug Research

2.2.3. Major decisions taken by the Governing Board and other JU bodies

The Governing Board oversees the implementation of IMI's activities. As from April 2011, the European Commission chaired the Governing Board for a one year mandate. The Governing Board met three times during 2011 and held teleconferences for information purposes as from May 2011 on a monthly basis, when no face-to-face meetings were held.

The main decisions taken in 2011 by the Governing Board were:

- Adoption of the Annual Implementation Plan for 2012, including the Annual Budget Plan for 2012 and the preliminary draft budget for 2013

- Adoption of the Annual Activity Report for 2010, including the Annual Accounts for 2010,
- Adoption of the Mission Charter of the Internal Audit Service of the European Commission as regards IMI,
- Adoption of the Internal Audit Strategy,
- Adoption of the revised Strategic Research Agenda, Adoption of the revised Grant agreement,
- Adoption of Call 3 Stage 1 and 2 outcomes
- Adoption of Call 4 topics, documents and Stage 1 outcomes,
- Endorsement of Key Performance Indicators,
- Endorsement of the Communication Strategy and Action Plan,
- Nomination of Scientific Committee members.

2.2.4. Outcome of 1st interim evaluation

The objective of this evaluation was to assess the IMI JU against three criteria: quality, efficiency progress towards the objectives set. The Commission invited a panel of independent experts to perform the first interim evaluation. The experts reviewed evidence and interviewed stakeholders.

The evaluation panel issued its report on 20 December 2010[25]. The response from the Commission to the first interim evaluation of IMI has been published as a Staff Working Paper attached to the Partnering Communication (COM(2011)572) from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, which was published in September 2011. The staff working paper is also published on the mentioned IMI website.

The overall appreciation of the panel for the first interim evaluation of IMI is positive. The experts state that "*through the IMI JU Europe has succeeded in establishing a new business model between public and private sectors*" by bringing together the pharmaceutical industry, academia, SMEs as well as regulatory authorities and patient organisations. This cooperation "*enables mutual learning and the opportunity to build understanding of the respective rationales and approaches, with benefits to all parties*."

The experts consider that the implementation of certain aspects of the IMI governance should be refined in order to better align the different actors in IMI, namely the Governing Board, the Scientific Committee, the Executive Office and the States Representatives Group.

[25] The full report is available on the IMI website: http://www.imi.europa.eu/content/documents#imi_governance

Based on the identified weaknesses in the areas of governance structures, lack of proactive communication, not optimum exploitation of the advisory potential of stakeholders such as the European Medicines Agency and finally the lack of key performance indicators, the evaluation panel has come up with **seven recommendations** to make IMI better:

(1) Continuously improve stakeholder involvement in IMI supported research projects

(2) Continuously ensure EFPIA and Commission commitment

(3) Ensure excellence and exploit new ways to support IMI scientific objectives

(4) Improve IMI communication

(5) Reinforce and streamline decision making and well-functioning processes

(6) Ensure best use of IMI results and IMI sustainability

(7) Develop monitoring and evaluation processes.

2.2.5. Main communication activities

The IMI Communication Strategy and key messages have been further developed, approved and implemented. As the overviews below show, IMI has generated wider visibility and improved its image vis-à-vis its stakeholders through various events, publications and other communication actions.

In the second half of 2011, communication focused on IMI Calls, achievements and on process improvements. These topics have been widely covered by various target-oriented websites and other publications and have generated a positive interest among stakeholders and also outside the EU.

Key figures
6 events organized in 4 countries by the IMI office, gathering 60 to 250 participants per event
7 webinars held attended by 25 to 45 participants each
6 press releases published and sent directly to ~180 relevant journalists
Up to 9000 unique visitors /month on the IMI website
1500 IMI Newsletter subscribers
350 IMI LinkedIn Group members
56 tweets followed by 240 IMI Twitter followers
~30 articles in key media and journals of which 6 in key scientific journals (not counting scientific publications by IMI projects)
5000 brochures disseminated to relevant audiences

Key Events	Place Date (2011)	Target audience	Message	Comments
Press conference	Brussels 8 March	Press	Kick-off 2nd Call projects	14 journalists attending, positive media coverage
IMI Stakeholder Forum At eHealth week	Budapest 12 May	All stakeholders, Central/Eastern Europe + eHealth related audience	Achievements + announcement 4th Call	250 participants in morning plenary session, afternoon's IMI session less attended
Open Info Day 4th Call & webinars	Brussels 17 June & beyond	Potential applicants + multipliers	Opportunities of the 4th Call	215 participants representing all types of organisations including SMEs, academic and industry research, patient organisations and government & policy decision makers. Successful 4th Call launch, as indicated by the increased numbers of Expressions of Interest as compared to 3rd Call
IMI exhibition stand at FP7 Health Info Day	Brussels 9 June	Potential applicants + multipliers	Opportunities of the 4th Call	Visibility to large and interested audience
European Parliament session + exhibition	Brussels 4-6 Oct	Policy makers	Achievements of IMI	60 participants in IMI session, positive feedbacks from attendees, dialog initiated with several MEPs
IMI session at EuroBiotech	Krakow 12-14 Oct	Potential applicants in Central/Eastern Europe	What is IMI + Opportunities of future IMI Calls	Visibility to ~500, 50 participants in IMI session

The Communication Strategy of 2012 will further expand on these themes, in a more in-depth and target-group oriented way.

2.2.6. Success stories

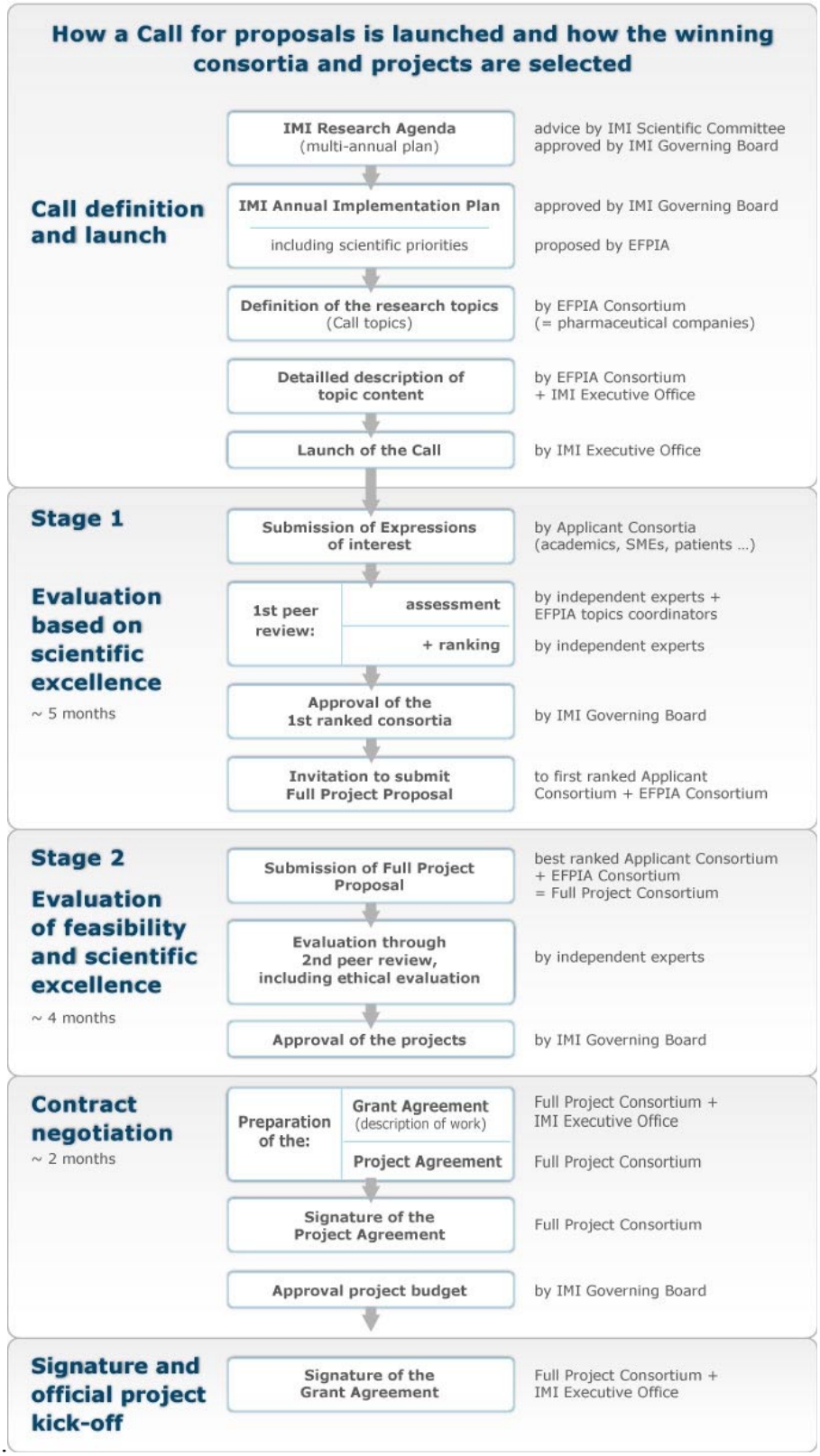
As successful project, NEWMEDS should be mentioned. In the area of depression and schizophrenia, the project NEWMEDS created new databases allowing the collection and warehousing of large datasets. This led to the assembly of the largest known repository of antipsychotic clinical trial data comprising 23,401 patients from the five leading pharmaceutical companies in this area.

2.3. Call implementation

Project participants are selected by IMI through open and competitive calls for proposals following a two-stage submission and evaluation process.

During the first stage (referred to also as "Stage 1") the call for proposals is announced. The interested parties from academia, SMEs, patient organisations, regulatory agencies and large non-EFPIA companies are invited to form applicant consortia and to submit their Expressions of Interest (EoIs) in response to the call. A first peer review is then performed, resulting in a shortlist of top-ranked consortia. The applicant consortia of the best ranked EoIs and the EFPIA consortium already associated to the topic are invited to form a full project consortium. They prepare a Full Project Proposal (FPP) containing a draft project agreement, which shall be concluded by the members of the consortium governing their relationship.

In the second stage of the call (referred to as "Stage 2"), the FPPs are evaluated during a second peer review based on the consistency with the original EoI, scientific excellence, quality of the implementation plan and potential impact. Ethical issues are also considered at this stage. Only FPPs that have been favourably reviewed in Stage 2 of the call can be selected for funding. The selected full project consortia are invited then to conclude a grant agreement governing their relationship with the IMI JU.


How a Call for proposals is launched and how the winning consortia and projects are selected
Call definition and launch
IMI Research Agenda (multi-annual plan)
advice by IMI Scientific Committee approved by IMI Governing Board
IMI Annual Implementation Plan
including scientific priorities
approved by IMI Governing Board
proposed by EFPIA
Definition of the research topics (Call topics)
by EFPIA Consortium (= pharmaceutical companies)
Detailled description of topic content
by EFPIA Consortium + IMI Executive Office
Launch of the Call
by IMI Executive Office
Stage 1
Evaluation based on scientific excellence
~ 5 months
Submission of Expressions of interest
by Applicant Consortia (academics, SMEs, patients ...)
1st peer review:
assessment
by independent experts + EFPIA topics coordinators
+ ranking
by independent experts
Approval of the 1st ranked consortia
by IMI Governing Board
Invitation to submit Full Project Proposal
to first ranked Applicant Consortium + EFPIA Consortium
Stage 2
Evaluation of feasibility and scientific excellence
~ 4 months
Submission of Full Project Proposal
best ranked Applicant Consortium + EFPIA Consortium = Full Project Consortium
Evaluation through 2nd peer review, including ethical evaluation
by independent experts
Approval of the projects
by IMI Governing Board
Contract negotiation
~ 2 months
Preparation of the:
Grant Agreement (description of work)
Full Project Consortium + IMI Executive Office
Project Agreement
Full Project Consortium
Signature of the Project Agreement
Full Project Consortium
Approval project budget
by IMI Governing Board
Signature and official project kick-off
Signature of the Grant Agreement
Full Project Consortium + IMI Executive Office

The evaluation criteria as listed in the table below are applied. Thresholds are set for some or all of the criteria, such that any expressions of interest or full project proposal failing to achieve the threshold scores will be rejected. A weight is also applied to some criteria. The fourth criterion at this stage was only assessing the existence of potential ethical issues to be reviewed in the next stage of the call.

№	Evaluation criterion	Score	Weight	Threshold
1.	Scientific and/or technological excellence	0 to 5	4	15/20
2.	Excellence of partnership	0 to 5	3	10/15
3.	Work plan outline	0 to 5	---	---
4.	Ethical issues	Yes/No	---	---

Implementation during 2011:

The deadline for submitting Expressions of Interest in the first stage of the **3rd Call** for proposals (3rd call for proposal, including seven topics, was launched on 22 October 2010) was **18 January 2011**. IMI received 32 Expressions of Interest in response to the 3rd Call; these were evaluated in February and March 2011.

Following the approval of the recommendations of the evaluation panels by the Governing Board, and the decision to launch the second stage of the Call process, the 7 first-ranked EoIs were invited to prepare a Full Project Proposal together with the pre-established EFPIA consortium and to submit the Full Project Proposals by 15 June 2011. The evaluation of the 7 FPPs was again conducted with the help of external experts working initially remotely and then at a consensus panel meeting. All 7 FPPs were recommended for funding by the experts and their selection for funding was approved by the Governing Board.

The EFPIA in-kind contribution committed to the 3rd Call projects is **€70.8 million**. The IMI JU contribution committed to these projects is **€111.8 million**.

Grant agreements were signed in December 2011 for 5 projects. This enabled IMI to proceed with pre-financing payments of €25,2 million to these projects. The pre-financings to the remaining 2 projects from the IMI 3rd call have been executed at the beginning of 2012 and will be reported on in next year's report.

The **4th Call** for proposals was published on 18 July 2011. The deadline for submitting Expressions of Interest in this first stage of the Call was **18 October 2011**. The successful dissemination of information about the 4th Call to potential IMI stakeholders translated into an increased number of Expressions of Interests being submitted (86 EoIs were received).

Further to the evaluation of eligible Expressions of Interest submitted in the first stage of the IMI JU 4th Call, the IMI Governing Board has approved on 14 December 2011 the result of the 1st stage and has decided to launch the second stage of the Call process. Accordingly, the first-ranked Applicant Consortia from Stage 1 have been invited to form Full Consortia with the corresponding EFPIA participants and to prepare and submit Full Project Proposals to IMI

JU by 13 March 2012. The call consisted of seven topics[26], already reflecting changes introduced in the revised Scientific Research Agenda:

The EFPIA in-kind contribution committed to the 4th Call for proposals **is €105 million**. Requested IMI JU contribution totals **€101.6 million**.

Preparations were made during the latter part of 2011 for further calls to be launched in 2012, which will be reported on in the 2012 report.

2.4. IMI -3rd Call - 2010

2.4.1. Summary information

Call Identifier	IMI -3rd Call - 2010
Publication date	22 October 2010
Deadline for submission of EoIs	18 January 2011
Evaluation	February-March 2011
Results 1st stage approved by GB	8 March 2011
Deadline for submission of FPPs	15 June 2011
GA signed	December 2011
Indicative Total budget (in €)	€ 114 million
EU contribution after evaluation	€ 111,8 million
In-kind contribution after evaluation	€ 70,8 million
Number of topics	7
Reference to call topics	http://www.imi.europa.eu/content/3rd-call-2010

[26]1. Building up a European Medical Information Framework (EMIF) of patient-level data to support a wide range of medical research. This Call theme consists of three topics: i. Information Framework / Knowledge Management Service Layer, ii. Metabolic complications of obesity, iii. Protective and precipitating markers for the development of Alzheimer's disease (AD) and other dementias. 2.eTRIKS: European Translational Information & Knowledge Management Services, Chemistry, Manufacturing and Control.3.Delivery and targeting mechanisms for biological macromolecules.4. In vivo predictive biopharmaceutics tools for oral drug delivery. 5. Sustainable Chemistry – delivering medicines for the 21st century Technology and Molecular Disease Understanding. 6. Human Induced Pluripotent Stem (hiPS) Cells for drug discovery and safety assessment. 7. Understanding and optimising binding kinetics in drug discovery

2.4.2. Analysis of proposals submitted

Number of proposals submitted, by topic:

32 Expressions of Interests (EoIs) were received from the 3rd Call for Proposals, among which **30** were eligible. Key figures regarding submitted EoIs are presented here below.

3rd Call topics title	**Number of submitted EoIs**	**Number of eligible EoIs**
1. Early prediction of drug-induced liver injury	8	8
2. Immunogenicity of biopharmaceuticals	3	3
3. Immunosafety of vaccines	3	3
4. Tuberculosis medicines research	5	4
5. Translational endpoints in autism	4	4
6. Personalised medicine in diabetes	6	5
7. Patient awareness on pharmaceutical innovation	3	3
Total	**32**	**30**

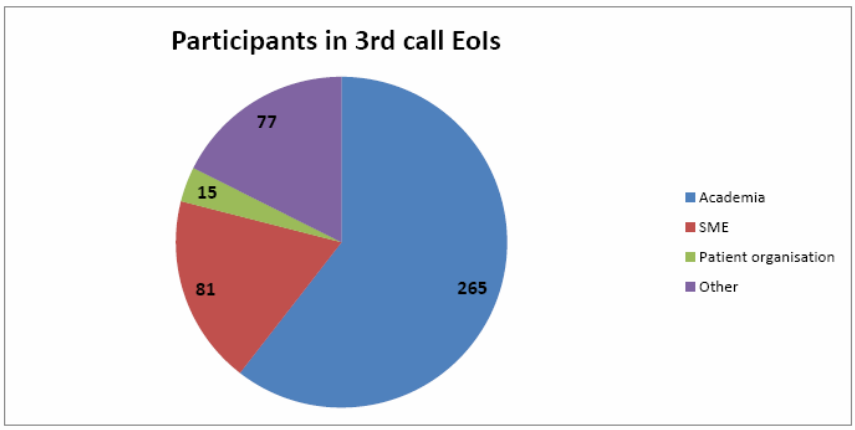
Number of participants in the submitted proposals:

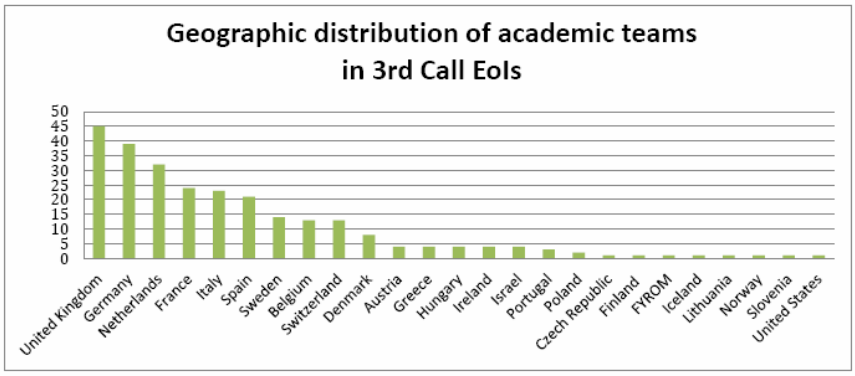
The Expressions of Interest involved **438 applicants** from **25 different countries.**

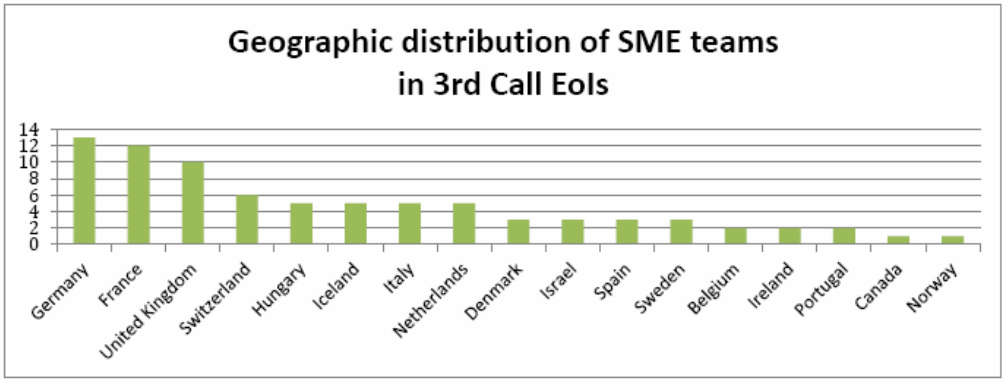
Number of participants by type, of which SMEs:

Type of participant	**Number of participants in the Proposals (EoIs)**
Public Bodies	-
Research organisations	-
Higher or secondary education (Academia)	265
Private for profit (excl. education)	-
SMEs	**81**
Patient organisations	15
Others	77
Total	**438**

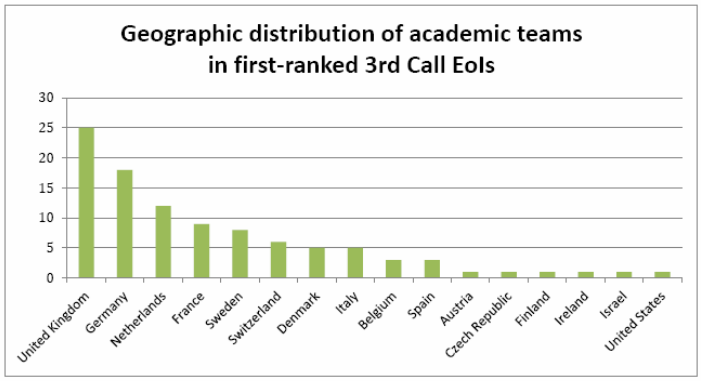
Participation distributed by type of participant and by country is illustrated in the graphs below. Special emphasis on the SME participation was put in the latest graph.

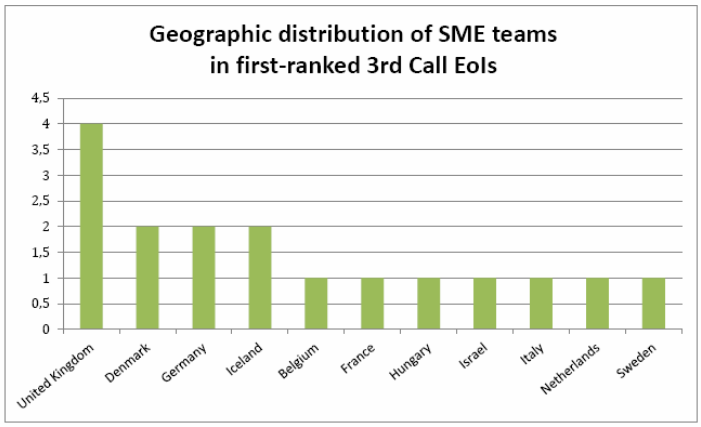






The evaluation of the EoIs was conducted by panels of independent experts from Europe and the United States of America working initially remotely and then at a consensus meeting. **45 external experts** worked in **7 panels** (1 panel per topic) moderated by IMI's Scientific Officers, in accordance with the 'IMI Rules for submission, evaluation and selection of Expressions of Interests and proposals'. Key figures of the first-ranked EoIs are presented here after:





2.4.3. Evaluation results

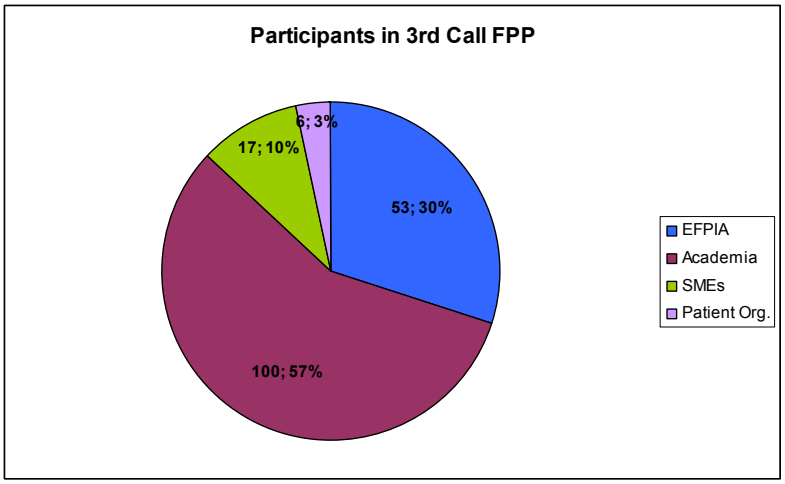
topic	topic title	Submitted EoIs	Eligible EoIs		Above threshold		Selected EoIs	
1	Early Prediction of drug-Induced Liver Injury	8	8	100,00%	5	62,50%	1	12,50%
2	Immunogenicity of biopharmaceuticals	3	3	100,00%	2	66,67%	1	33,30%
3	Inmmunosafety of Vaccines	3	3	100,00%	2	66,67%	1	33,30%
4	Tuberculosis Medicines Research	5	4	80,00%	3	75,00%	1	25,00%
5	Translational endpoints in autism	4	4	100,00%	1	25,00%	1	25,00%
6	Personalised medicines in diabetes	6	5	83,33%	2	40,00%	1	20,00%
7	Patient awareness on pharmaceutical innovation	3	3	100,00%	1	33,33%	1	33,33%
TOTAL		32	30	94,76%	16	52,74%	7	23,3%

Success rate by type of participant:

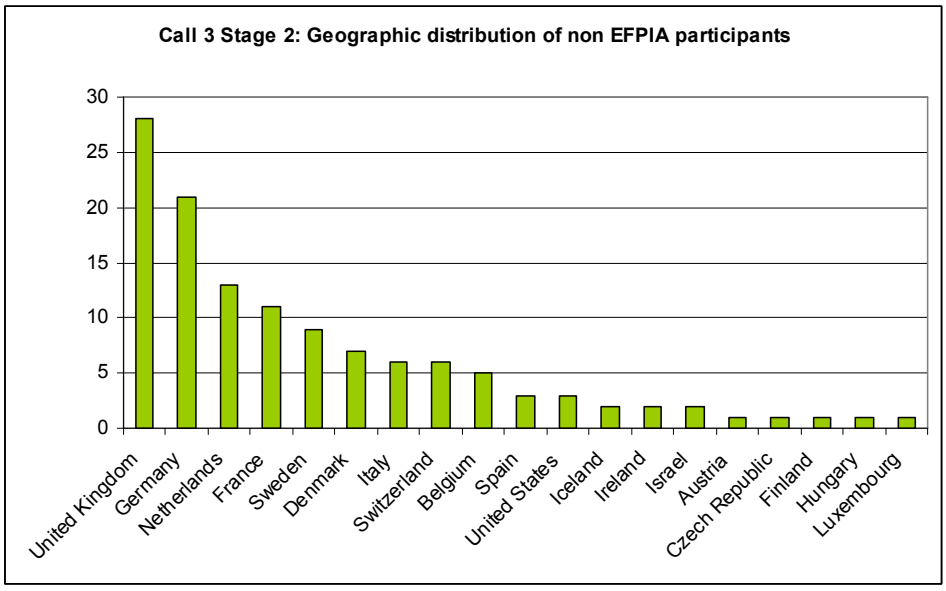
Type of participant	Nbr of participants in the Proposal (EoIs)	Nbr of participants in the funded Project (Non EFPIA)	Participants success rate
Public Bodies	-	-	-
Research organisations	-	-	-
Higher or secondary education (Academia)	265	100	37,74%
Private for profit (excl. education)	-	-	-
SMEs	**81**	**17**	**20,99%**
Patient Organisation	15	6	40,00%
Other	77	0	0,00%
Total	**438**	**123**	**28,08%**

Number of participants in the proposals selected for funding:

In total, **176 applicants** participated in the full project consortia that submitted the 7 FPPs proposed for funding. Of them, EFPIA member companies accounted for 53 participations - representing 30%. 123 were the non-EFPIA participants, of which 57% came from academia, 10% were SMEs and 3% – were patient organisations. This distribution is shown in the table below:



The non-EFPIA participants in the successful full project consortia originated **from 19 countries** – 15 EU Member States, Switzerland, United States, Iceland and Israel. The UK, as in the previous call, had the highest participation rate – 28 participants, followed by Germany and the Netherlands, respectively with 21 and 13 participants. The graph below illustrates in detail the participations per country in the end of that stage of the call:



Requested IMI JU contribution by 3rd Call consortia:

Project ID	Project Acronym	Requested IMI JU contribution (EUR)
115336	MIP-DILI	15.335.538
115303	ABIRISK	18.170.400
115308	BioVacSafe	17.425.666
115337	PreDICT-TB	14.778.856
115300	EU-AIMS	19.467.207
115317	DIRECT	21.388.645
115334	EUPATI	5.250.000
Total		**111.816.312**

2.5. IMI -4th Call - 2011

2.5.1. Summary information

Call Identifier	IMI -4rth Call - 2011
Publication date	18 July 2011
Deadline for submission of EoIs	18 October 2011
Evaluation	October – December 2011
Results of 1st stage approved by GB	14 December 2011
Deadline for submission of FPPs	13 March 2012
Indicative Total budget (in €)	€ 105 millions
EU contribution after evaluation	Not yet available
In-kind contribution after evaluation	Not yet available
Number of topics	7
Reference to call topics	http://www.imi.europa.eu/content/4th-call-2011

2.5.2. Analysis of proposals submitted

Number of Expressions of Interests per topic in the 4th Call:

The successful dissemination of information about the 4th Call to potential IMI stakeholders translated into an increased number of Expressions of Interests (EoIs) being submitted in comparison to the 3rd Call. **86 EoIs were received**, of which **80 were eligible**. Key figures regarding submitted EoIs are presented here after.

4th call topic title		**Number of submitted EoIs**		**Number of eligible EoIs**	
1. A European Medical Information Framework (EMIF) of Patient level Data to support a wide range of medical research	Subtopic 1: Information Framework/ Knowledge Management Service Layer	28	16	24	13
	Subtopic 2: Metabolic complications of obesity		8		7
	Subtopic 3: Protective and precipitating markers for the development of Alzheimer's disease (AD)-other dementias		4		4
2. eTRIKS: European Translational Information & Knowledge Management Services		5		4	
3. Delivery and targeting mechanisms for biological macromolecules		20		20	
4. In vivo predictive biopharmaceutical tools for oral drug delivery		2		2	
5. Sustainable Chemistry - delivering medicines for the 21st century		9		9	
6. Human Induced Pluripotent Stem (hiPS) Cells for drug discovery and safety assessment		11		10	
7. Understanding and optimising binding kinetics in drug discovery		11		11	
Total		**86**		**80**	

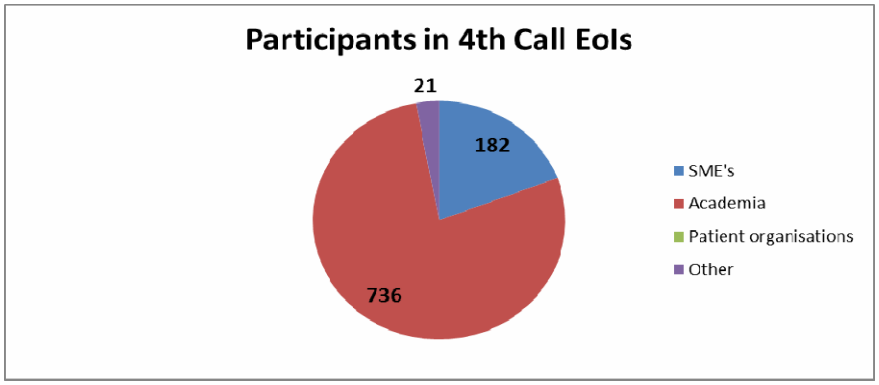
Number of participants in the submitted proposals:

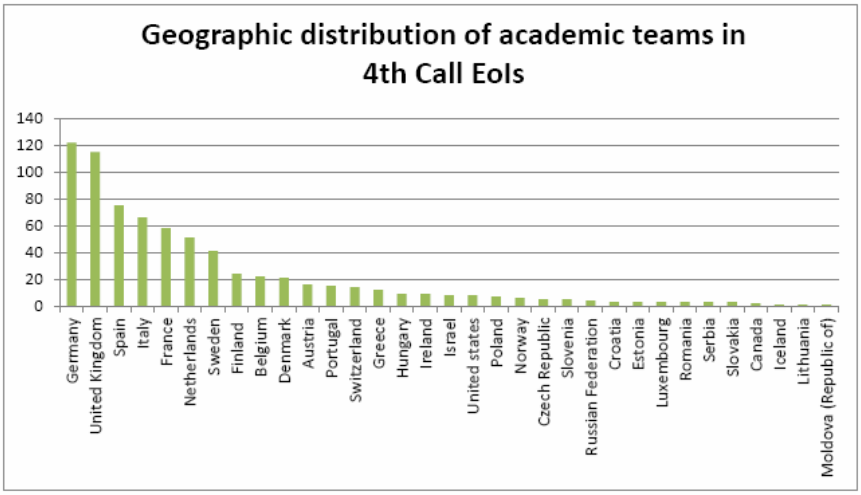
These EoIs involved **939 participants from 34 countries**.

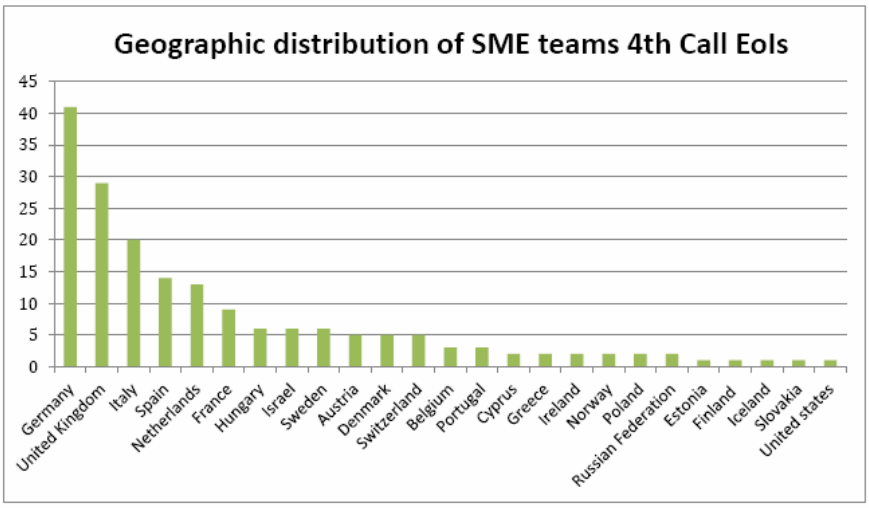
Number of participants by type, of which SMEs:

Type of participant	Nbr of participants in the proposals (EoIs)
Public Bodies	-
Research organisations	-
Higher or secondary education (Academia)	736
Private for profit (excl. education)	-
SMEs	**182**
Patient organisations	-
Others	21
Total	**939**

Participation distributed by type of participant and by country is illustrated in the graphs below. Special emphasis on the SME participation was put in the latest graph.

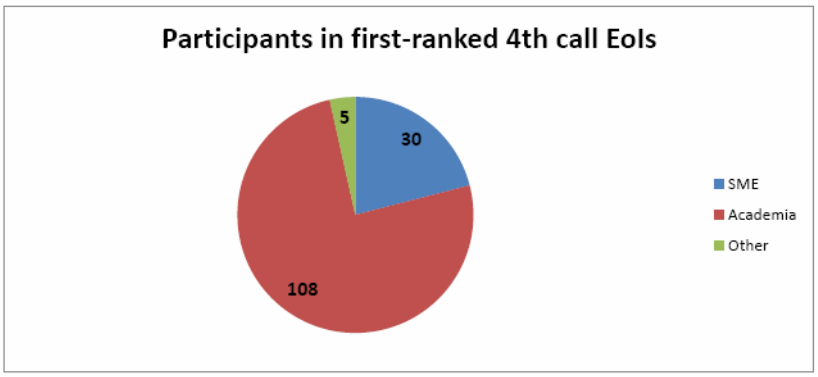


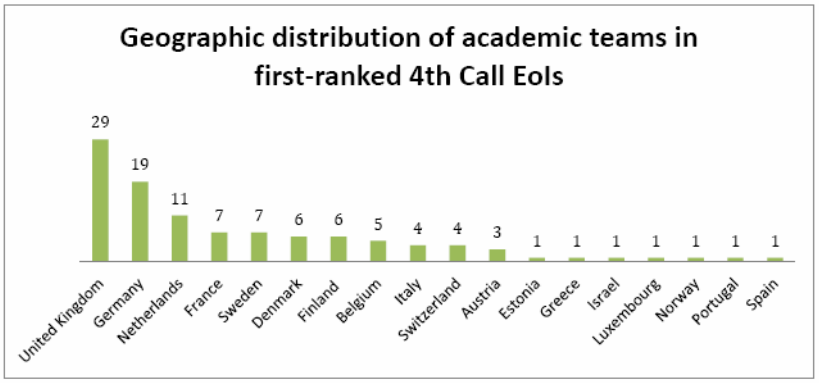


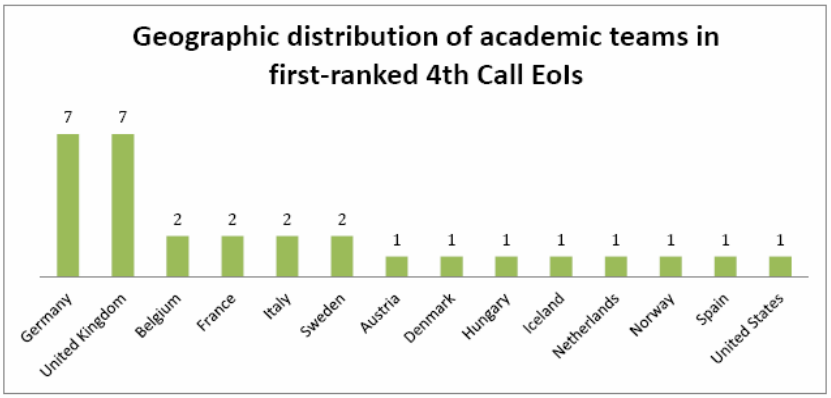


The evaluation was conducted following the same principles as described for the 3rd Call for proposals. Based on the independent observers' recommendations made during the previous Call, hearings (teleconferences) were organised with 4 of the 7 best-ranked EoIs following the remote evaluation. The two independent observers invited to the evaluation process considered that the hearings significantly improved the evaluation process.

Key figures of the first-ranked EoIs by the evaluation panels are presented below:







Requested IMI JU contribution by 4th Call consortia

4th Call Topic	Requested IMI JU contribution (EUR million)
EMIF	31,3
▪ *Service Layer*	*[12,0]*
▪ *Obesity*	*[11,3]*
▪ *Alzheimer*	*[8,0]*
eTRIKS	9,6
Biological macromolecules	10,1
Oral drug delivery	7,6
Sustainable chemistry	9,8
Induced pluripotent stem cells	25,7
Binding kinetics	7,4
Total	101,5

2.5.3. Evaluation results

topic	topic title	Submitted EoIs	Eligible EoIs		Above threshold		Selected EoIs	
1	A European Medical Information Framework (EMIF) of patient level data to support a wide range of medical research	28	24	85,70%	7	29,20%	1	4,20%
2	eTRIKS: European Translational Information& Knowledge Management Services	5	4	80,00%	3	75,00%	1	25,00%
3	Delivery and targeting mechanisms for biological macromolecules	20	20	100,00%	5	25,00%	1	5,00%
4	In vivo predictive biopharmaceutical tools for oral drug delivery	2	2	100,00%	2	100,00%	1	50,00%
5	Sustainable Chemistry - delivering medicines for 21st century	9	9	100,00%	5	55,60%	1	11,10%
6	Human Induced Pluripotent Stem (hiPS) cells for drug discovery and safety assessment	11	10	90,90%	4	40,00%	1	10,00%
7	Understanding and optimising binding kinetics in drug discovery	11	11	100,00%	4	36,40%	1	9,10%
TOTAL		86	80	93,00%	30	37,5%	7	8,8%

Success rate by type of participant:

Type of participant	Nbr of participants in the proposals (EoIs)	Nbr of participants in funded Projects (Non EFPIA)	Participants success rate
Public Bodies	-	-	-
Research organisations	-	-	-
Higher or secondary education (Academia)	736	108	14,67%
Private for profit (excl. education)	-	-	-
SMEs	**182**	**30**	**16,48%**
Patient organisations	-	-	-
Others	21	5	23,81%
Total	**939**	**143**	**15,23%**

2.6. Grant agreements/project portfolio

After the 3rd Call, the total IMI JU contribution amounts to **€302 million** matched by the EFPIA in kind contribution of **€267 million**. Arising from the 3rd call there is a deficit of committed EFPIA in kind contribution, which will be recuperated in the coming calls.

Call	Call 1 - 2008	Call 2 - 2009	Call 3 - 2010	TOTAL
Nbr projects	15	8	7	30
Signed projects	15	8	5	28
IMI JU	109.593.433	80.740.072	111.816.312	302.149.817
EFPIA	132.613.466	65.872.527	68.884.442	267.370.435
TOTAL	242.206.899	146.612.599	180.700.754	569.520.252

2.6.1. Grant agreements signed (commitment amounts) or under negotiation

IMI Call 2 - 2009	Number	IMI JU contribution (€)	In-kind contribution (€)	Additional own resources (€)	Total contributions (€)
Sub-Total (signed GAPs)	8	€ 80,740,072	€ 65,872,527	€ 25,094,966	€ 171,707,565
Sub-Total (Proposals in Negotiation)	0	0	0	0	0
TOTAL	8	€ 80,740,072	€ 65,872,527	€ 25,094,966	€ 171,707,565

IMI Call 3 - 2010	Number	IMI JU contribution (€)	In-kind contribution (€)	Additional own resources (€)	Total contributions (€)
Sub-Total (signed GAPs)	5	€ 78,867,056	€ 49,406,263	€ 24,257,136	€ 152,530,455
Sub-Total (Proposals in Negotiation)	2	€ 32,949,256	€ 19,478,179	€ 10,401,609	€ 62,829,044
TOTAL	7	€ 111,816,312	€ 68,884,442	€ 34,658,745	€ 215,359,499

In 2011, 13 grants agreements were signed: 8 relating to the 2nd Call and 5 to the 3rd Call. Besides, grant agreements for 2 projects of Call 3 are planned to be signed early in 2012. The complete list is provided with further details in annex 12.

2.6.2. Grant agreements for which activities have ended and/or final results are available

No grant agreements were ended in 2011. No final results from previous calls are yet available.

3. PROGRESS ACHIEVED BY THE FUEL CELLS AND HYDROGEN (FCH) JU

3.1. Introduction to the FCH JU

The Fuel Cells and Hydrogen Joint Undertaking (hereinafter referred to as "FCH JU") has been established by Council Regulation (EC) N° 521/2008 of 30 May 2008 as an industry-led public-private partnership supporting research, technological development and demonstration (RTD) activities in fuel cell and hydrogen energy technologies in Europe. The FCH JU members are the New Energy World Industry Grouping (NEW-IG)[27], representing the fuel cell and hydrogen industries, the N.ERGHY Research Grouping[28], representing the research community, and the European Union, represented by the European Commission.

The FCH JU has been set up for a period up to 31 December 2017 with the main objective to significantly accelerate the market introduction of fuel cell and hydrogen technologies, realising their potential as an instrument in achieving a carbon-clean energy system. The broader use of fuel cells, as an efficient power conversion technology, and hydrogen, as an environment-friendly energy carrier, can contribute to reduce greenhouse gas emissions[29], and lower the dependence on hydrocarbons, and to stimulate the economic growth. The aim of the FCH JU is to bring these benefits to Europeans through a concentrated effort from all sectors pooling together public and private resources.

3.1.1. Budget

The maximum EU contribution to the FCH JU is € 470 million, covering running costs (€ 20 million) and operational costs (€ 450 million). The EU contribution is paid from the appropriations in the general budget of the European Union allocated to themes "Energy", "Nanosciences, Nanotechnologies, Materials and New Production Technologies", "Environment" and "Transport" of the Specific Programme "Cooperation" under the FP7. For operational costs, the EU contribution shall be matched by all the legal entities participating in the FCH JU activities.

[27] The New Energy World Industry Grouping "Fuel Cell and Hydrogen for Sustainability" (NEW-IG) is a non-profit association open to industrial companies dealing with fuel cell and hydrogen R&D activities in Europe, including the EU Member States, the countries in the European Economic Area and the EU associate and candidate countries. By the end of 2011, the Industry Grouping had 60 members. They varied from micro companies to large enterprises from across the fuel cells and hydrogen value chain..

[28] The N.ERGHY Research Grouping is a non-profit association representing the research community in Europe. The objective of N.ERGHY is to promote, support and accelerate the research and deployment process of fuel cell and hydrogen technology in Europe from the point of view of the research community. By the end of 2011, the Research Grouping had 66 research institutes and universities as members.

[29] The *European Strategic Energy Technology (SET) Plan* has identified fuel cells and hydrogen among the technologies needed for Europe to achieve the 2020 Energy and Climate Change goals – 20% reduction in greenhouse gas emissions, 20% share of renewable energy sources in the energy mix and 20% reduction in primary energy use, as well as to achieve the long-term vision for 2050 towards decarbonisation *[Communication from the Commission of 22 November 2007, COM (2007) 723 final]*.

3.1.2. Activities

The FCH JU programme of activities comprises long-term and breakthrough-orientated research, research and technological development, and demonstration and support actions. Project support is mainly granted following open and competitive calls for proposals, peer review evaluation and the conclusion of Grant Agreements. A small number of activities are implemented thorough calls for tender (i.e. public procurement).

The strategic research and demonstration priorities of the FCH JU are set out in the Multi-Annual Implementation Plan (MAIP). This document is critical since it outlines the activities to be supported by the FCH JU and serves as a basis to draft the Annual Implementation Plans (AIP) which contains inter alia the topics for the annual Calls for Proposals. The MAIP 2008-2013 outlines four main *application areas* (AA):

(1) *Transport & Refuelling Infrastructure* – It has as a main objective the development and testing of competitive hydrogen-fuelled road vehicles and corresponding hydrogen refuelling infrastructure, and the full range of supporting elements for market deployment and increased industrial capacity. Approximately 32-36% of the overall budget will be devoted to this application area

(2) *Hydrogen Production and Storage* – It aims to develop and, where possible, fully implement a portfolio of cost-competitive, energy efficient and sustainable hydrogen production, storage and distribution processes enabling supply of the anticipated hydrogen energy demand while demonstrating the role that hydrogen can play as an energy carrier in reaching Europe's key long term and mid-term energy objectives. Approximately 10-12% of the overall budget will be devoted to this application area

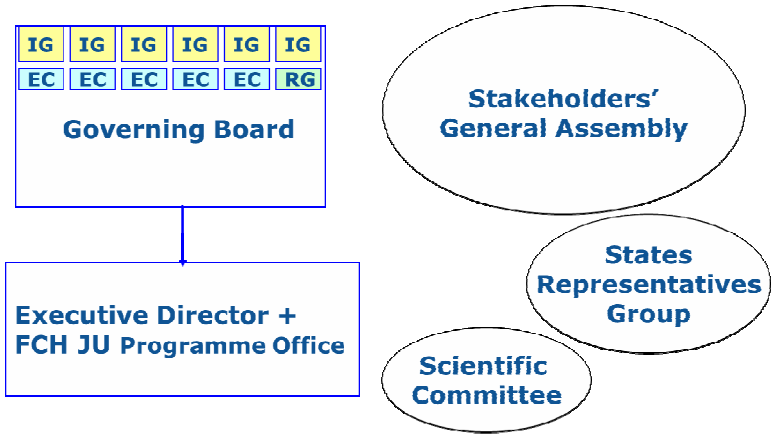
(3) *Stationary Power Production & Combined Heat and Power* – The overall objective is to improve the technology for fuel cell stack and balance of plant components to the level required by the stationary power generation and CHP (Combined Heat & Power) markets by bridging the gap between laboratory prototypes and pre-commercial systems. Approximately 34-37 % of the overall budget will be devoted to this application area.

(4) *Early Markets* – The aim is to develop and deploy a range of fuel cell-based products capable of entering the market in the near term and to turn into commercial success stories. Early markets are considered strategically important to build up and sustain an early manufacturing and supply base for fuel cells products and systems. Approximately 12-14 % of the overall budget will be devoted to this application area.

Cross-cutting activities have been established as a fifth area to provide programme level coordination. These include drafting of regulations and formulation of codes and standards, pre-normative and socio-economic research, technology and life cycle assessments, market support (particularly for SMEs), public awareness and education. Approximately 6-8% of the overall budget will be dedicated to these cross-cutting activities.

3.1.3. Governing structure

For coordinating the inputs of all the members and managing its activities, the Joint Undertaking's governance structure comprises of two executive bodies – the Governing Board and the Executive Director assisted by the Programme Office, and three advisory bodies – the Scientific Committee, the States Representatives Group (SRG) and the Stakeholders' General Assembly.



3.2. Outline of the main activities and achievements in 2011

The main operational objectives of the FCH JU in 2011 focused on the negotiation of grant agreements resulting from the 2010 call, the evaluation of proposals of the 2011 call, the management of on-going projects, the revision of the Multi Annual Implementation Plan (MAIP), the drafting of Annual Implementation Plan (AIP) 2012 and the communication activities.

In the field of administration and finance the most important achievements were the finalisation of the Establishment Plan, the adoption of the new procedures to complete and strengthen the internal control system, the validation of the accounting system and the mitigation of critical risks identified during the Risk Management Process.

Moreover, two key milestones were achieved during this period: (i) the adoption of Council Regulation (EU) N° 1183/2011 of 14 November 2011, amending the FCH JU founding regulation and (ii) the first interim evaluation of the FCH JU.

3.2.1. Organisation of the team in FCH JU.

Since June 2011 FCH JU has reached full capacity in staff recruitment, in line with its Staff Establishment Plan: 18 temporary agents and 2 contract agents.

3.2.2. Main operational activities and achievements

The key operational achievements are related to two Calls for Proposals**, FCH-JU-2010-1** and **FCH-JU-2011-1**. The former was concluded with the successful negotiation of 26 grant agreements with a financial contribution of the FCH JU of €83.8 M. In addition some public

tenders were also launched in order to produce comparative studies on the benefits of fuel cells and hydrogen in different application areas.

The RTD priorities and topics to be included in the AIP for the 2012 call were initially drafted by the Application Area Working Groups led by representatives of the member companies of the Industry Grouping. The AIP 2012 was completed after consultations with the relevant services of the Commission, the Scientific Committee and the FCH JU States Representatives Group. Based on the AIP 2102, the 2012 call for proposals will include 31 topics, with an estimated FCH JU financial contribution of € 77.5 million.

Another important achievement was the revision of the MAIP. The process was initiated by the end of 2010 and was completed during 2011.The revised version proposes new targets for the different Application Areas. These targets have been extended until year 2020 (instead of 2015) and updated taking into consideration the technical and scientific progress achieved since the first MAIP. The current version is ambitious and competitive in comparison with efforts world-wide and will be used in the elaboration of the coming Annual Implementation Plans of the FCH JU (i.e. 2012 and 2013).

As a result of the MAIP review, some topics will not be considered in future calls (Cryogenic hydrogen storage, Hydrogen Internal Combustion Engines (ICE), Rail propulsion, Application readiness of stationary Fuel Cells, Manufacturing, assembly and testing of micro fuel cells and Pre-normative research and RCS of safe in-door use of fuel cells). On the other hand, the following 6 topics have been added:

- Optimization of electrolyzer design for energy storage
- Resource efficient production of hydrogen from biogas
- Resource efficient conversion of hydrogen to electricity
- Optimized systems for electricity storage and restitution from and to the grid via hydrogen
- Demonstration of portable and micro FCs for various applications
- Research and development of >1kW fuel cell systems and hydrogen supply for early market applications.

The operational indicators for the follow-up of the programme implementation are indicated in the table below.

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	Coverage of topics called for	100% by 2013	81%[30]

[30] Based on the evaluation results of the Call for Proposals 2011.

Fuel Cells and Hydrogen Joint Undertaking – RTD activities				
SPECIFIC OBJECTIVES		Result indicators		
		Indicator	Target	Latest known results
	commercialisation of FCH technologies as defined in the MAIP	Percentage of proposals which successfully address the criteria of scientific and/or technological excellence[31]	70% by 2013	86%[32]
		Percentage of projects which have fully achieved their objectives and technical goals and have even exceeded expectations	60%[33] by 2013	Data not yet available [34]
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[35]	70% by 2013	85%[36]
		Percentage of projects showing evidence that they will produce significant scientific, technical, commercial, social or environmental impacts	60%[37] by 2013	Data not yet available
		Percentage of industrial participation in the projects of which SMEs	50% of industrial participation by 2013	65%[38]
			15% of	24%[40]

[31] 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

[32] Based on the evaluation results of the Call for Proposals 2011.

[33] On finished projects (not all projects will be finished by 2013).

[34] The number of finished projects in 2011 (5 finished projects) is not representative.

[35] 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

[36] Based on the evaluation results of the Call for Proposals 2011.

[37] On finished projects (not all projects will be finished by 2013).

[38] Based on the funding granted under the 2010 Call for Proposals, including SMEs.

Fuel Cells and Hydrogen Joint Undertaking – RTD activities			
SPECIFIC OBJECTIVES	Result indicators		
	Indicator	Target	Latest known results
		SMEs participation by 2013[39]	
	Percentage of projects which generate one or more patent applications	30% by 2013	Data not yet available

3.2.3. Amendment of Council Regulation

Recognising the membership of the N.ERGHY Research Grouping, on November 2011, the 14th, the Council of Ministers adopted the Regulation (EU) No 1183/2011[41] which amended the original Council Regulation setting up the FCH JU. By this amendment the EU contribution shall now be matched by those from all FCH JU beneficiaries (including research centres and universities) and not only, as before the amendment, from industry. This will result *inter alia* in a better alignment of the FCH JU maximum funding rates with those of FP7 making them more attractive and predictable than at present. The amendment does not affect the Union contribution to the Joint Undertaking (i.e. no additional budget is requested) and has no impact on the FCH JU objectives, legal status, structure and/or statutes. It also clarifies a number of minor but important issues, including how to take national and regional funding into account, the possibility for the FCH JU members to pay their financial contribution in instalments.

3.2.4. Administrative and financial activities

The premises of the FCH JU Programme Office moved from COVE (Covent Garden) to the "White Atrium" (Avenue de la Toison d'Or 56-60) in January 2011. The new IT infrastructure was established and enhanced throughout the year and, in collaboration with the Accountant of the FCH JU, the inventory database for IT equipment and furniture was set up.

Since June 2011 the Staff Establishment Plan is fully filled. Eight new staff members took up their duties during the year. Furthermore, FCH JU rules governing trainees and their implementation were adopted and the first two trainees were hosted.

The Internal Audit Capability (IAC) carried out two assurance engagements ('Assessment of FCH JU users' access rights granted in ABAC' and 'Assessment of FCH JU users' access rights granted in FP7 IT systems'), provided consulting services on four distinct areas (Risk

[39] Based on funding granted to SMEs in projects

[40] Based on the projects funded under the 2010 Call for Proposals.

[41] OJ L 302, 19.11.2011, p.3, http://www.fch-ju.eu/sites/default/files/amendment%20to%20council%20regulation.pdf

Management, Annual Activity Report, Management Reporting and Internal Control Standards) and was responsible of the setting up of the ex-post audit process. In addition, the IAC carried out jointly with the Commission's Internal Audit Service (IAS) a risk assessment in order to establish a risk-based and coordinated audit plan for the period 2011-2013.

New procedures to complete and strengthen the internal control system were adopted, in particular for review and acceptance of periodic reports and cost claims and for ex-post audit of beneficiaries, and implemented as the first cost claims were received and the first audits were launched. The accounting system was validated by the Accountant of the FCH JU on 21 November 2011.

The identification of critical risks in the frame of the Risk Management process early 2011 (e.g. impact of funding rates on attractiveness of the programme, IT issues) enabled the development of corrective actions to mitigate them as confirmed by the risk management exercise carried out in October 2011.

3.2.5. Governance - Major decisions taken by the Governing Board and other JU bodies

3.2.5.1. FCH JU Governing Board

The FCH Governing Board held three meetings in 2011:

- The *8th Governing Board meeting* was held on 10 March 2011. The main decisions taken were: adoption of the first budget amendment for the financial year 2011; approval of the list of proposals to start negotiations for call FCH-JU-2010-1; adoption of the "*Implementing Rules on Access to documents*".
- At the 9th *Governing Board meeting* on 24 June 2011, Mr. Pierre-Etienne Franc, representing the NEW Industry Grouping was unanimously elected as the new chairman of the FCH JU Governing Board.
- The *10th Governing Board meeting* was held on 22 November 2011. The main decisions taken were: adoption of the revised MAIP; Decision to adopt the Amendment N°2 to the FCH JU Budget 2011; approval of the list of proposals to start negotiations of FCH-JU-2011-1; request to the IAS to act as independent auditor of the JU, together with the IAC, to carry-out the assessment of the level of in-kind contributions.

The following documents were adopted and/or approved by the FCH JU Governing Board via written procedure:

- Ex-post audit strategy
- Multi Annual Staff Policy Plan
- Annual Implementation Plan 2011
- Provisional and final annual accounts of financial year 2010
- FCH JU Budget 2012
- Staff Establishment Plan 2012
- FCH JU Annual Implementation Plan 2012
- FCH JU Annual Activity Report
- Coordinated IAS-IAC strategic audit plan for 2011-2013
- Negotiation results and decision for concluding a grant agreement for the (8) batches of projects from the Call FCH-JU-2010-1.

3.2.5.2. FCH JU Consultative bodies

The *Scientific Committee* met once during the year (14 June) and its members agreed to support the annual review of FCH JU and FP7 projects by advising on the process (templates and programme) and its follow-up (final report to be published). They also provided input on the scientific priorities of the AIP 2011 and AIP 2012 and on the revision of the Multi-Annual Implementation Plan (MAIP).

The *States Representatives Group* (SRG) held three meetings in 2011. The focus of the first two meetings was for the Programme Office, and for the Commission and the Industry Grouping, to provide updates to the Group members on the FCH JU progress and main issues. Discussions on the way to improve coordination between Member States (MS) and FCH JU

Programmes were on the agenda of the third meeting. They revealed different levels of advancement and commitment among the participant MS and difficulties to agree on jointly funded actions. The SRG was also consulted on the topics of the calls for proposals 2011 and 2012, and on the revision of the MAIP. It was also requested to provide with data on projects funded at MS level, as part of a "mapping exercise" carried out by SETIS, the Strategic Energy Technology Information System of the Joint Research Centre (JRC).

The *Stakeholders General Assembly* was held in Brussels on 22 & 23 November 2011, organised in two parts: first day on the review of on-going projects[42] and second day on a political session involving all the stakeholders, MEPs and international guests[43].

3.2.6. Outcome of 1st interim evaluation

The first interim evaluation of the FCH JU was carried out by the Commission with the assistance of a panel of independent experts. The evaluation had as an objective to assess the effectiveness, efficiency and quality of the FCH JU operations, both with regard to the Joint Undertaking and its operating bodies and the technical activities carried out by its members and project participants.

The primary outcome of the experts' report[44] is that the FCH JU is an achievement and represents a valuable instrument for the European Union that should be maintained and supported to implement its work as originally envisaged. However, the experts have also identified a number of issues encountered by the FCH JU as well as some areas where its operation could be improved.

The experts considered that the set-up of the FCH JU took too long and concluded that the current legal framework as a "Community/Union body" is not best-suited to industry led public-private partnerships like JTIs and should be streamlined. They also highlighted that funding rates for FCH JU projects have proved variable from year to year and, in addition, always considerably lower than those of FP7. They also expressed concerns about the inadequate resources of the Programme Office for effective project monitoring and management, the insufficient cohesion and collaboration with Member States' related programmes and the lack of a robust project monitoring and assessment and an international cooperation strategy.

In order to address these issues the experts' panel made a series of recommendations that aim to remove or reduce weaknesses as identified in the current operations of the FCH JU and to

[42] The pdf presentations of all the projects are available at http://www.fch-ju.eu/prpage/programme-review-22-november-2011-programme

[43] This event was web-streamed and all presentations are available at http://webcast.ec.europa.eu/eutv/portal/archive.html?viewConference=13475.

[44] The report published on 20 May is available on the web (http://www.fch-ju.eu/sites/default/files/EvalFuelCellHydroReport2011_ALLBROCHURE_WEB.pdf)

improve its effectiveness and quality. The specific recommendations are grouped in five broad categories:

(1) Reinforce portfolio management:

(2) Ensure high agility of operations and adaptability to changing competitive forces

(3) Improve visibility, communication and outreach

(4) Improve collaboration and alignment with Member States

(5) Ensure high efficiency of operations

3.2.7. Main communication activities

FCH JU communication activities mainly aim at raising awareness of the FCH technologies and their contribution to the current energy and environmental challenges. The presentation of FCH activities and the opportunities offered by the Calls for Proposals is made at national, European and international level. The main events and initiatives to be quoted are the following:

- Development of a new web site address[45] managed in-house, replacing the sub-site hosted by DG RTD. After a successful launch (15 March 2011), more than 40,000 visitors (47% new and 53% returning) have been recorded.
- Presence of an information stand in the Charlemagne building during the EU Sustainable Energy Week (10 to 14 April 2011).
- *Info Day* (Brussels, 12 May) and *brokerage event* (Berlin, 19 May) on call for proposals FCH-JU-2011-1. Industry and research met in Berlin to discuss proposals for Call 2011. The meeting was an opportunity for all parties interested in responding to the Call for proposals 2011 to receive detailed information about the call, discuss concrete project ideas and find partners for their project consortia. Approximately 130 representatives of industry and research joined this 3rd FCH JU Brokerage event, highlighting the importance of Fuel Cells and Hydrogen technologies for European energy future.

- The *Stakeholders General Assembly* (Brussels, 2 & 23 November 2011) proposed a review of the on-going projects (44 from FCH JU calls and 14 from FP7 calls)[46] on the one hand, and a political session involving all the stakeholders, MEPs and international guests[47]. About 400 people participated in these events, representatives from the industry (for a large majority), the research community, Member States, Regions and EU public authorities. A "Drive n'Ride" event was also organised by the

[45] www.fch-ju.eu

[46] The pdf presentations of all the projects are available at

http://www.fch-ju.eu/prpage/programme-review-22-november-2011-programme

[47] This event was web-streamed and all presentations are available at

http://webcast.ec.europa.eu/eutv/portal/archive.html?viewConference=13475.

industry, where more than 120 participants had the opportunity to experience driving in one of the 8 fuel cell electric cars displayed and see a fully mobile and compact hydrogen station.

- "*Innovation in action*": joint exhibition in the European Parliament in Brussels in collaboration with the other 4 Joint Undertakings from 4 to 6 October 2011, followed by a public conference, which counted on the presence of a number of MEPs.
- Promotion of the FCH JU hydrogen-powered fuel cell car on lease. This car is to demonstrate the readiness of this technology to EU policy makers and citizens. It was available for testing by Members of the European Parliament, Commissioners, EU Officials and other policy makers.
- Participation of the Executive Director and/or the Programme Office staff in some 25 external events and conferences in different MS and key non-European countries (US, Japan, Korea, China, Canada) to present the FCH JU developments and explore further potential collaboration.

- Besides these activities, the following events were organised: During the Challenge Bibendum event 2011, FCH Joint Undertaking organised an Information session to present its objectives and explain how companies and organisations can benefit from taking part in its activities (19 May 2011, Berlin). It was hosted at the Tempelhof Airport and welcomed about 30 representatives of industry, research and public administration.
- The first ADEL project International workshop[48] (20 October 2011, Sevilla). The first workshop from ADEL project, supported by FCH JU, would serve as a catalyst for communication and data exchange between international experts in energy vector production plants, integrating non-fossil energy sources. It was relevant to the scientific community and to industry representatives. Well-known speakers from both the scientific community and industry have been invited to present the latest information on their research and technologies, and to share their experience with participants.

Furthermore, FCH JU issued 5 press releases on 2011 main achievements, namely:

- New Board members for the Industry Grouping of the FCH JU (5 April 2011)
- Launch of FCH 4th annual call for proposals (3 May 2011)
- FCH JU driving a hydrogen-powered fuel cells car (4 October 2011)
- Early achievements of the Joint Technology Initiatives' €10 billion R&D programme highlighted at the European Parliament (6 October 2011)
- 4th stakeholders General Assembly (23 November 2011)

3.2.8. Success story

It is to underline that most projects need to wait until they are finished before one can call them really major successes. Nevertheless the following on-going project has already been

[48] For more information, please visit http://www.adel-energy.eu/workshop-electrolysis-concept.html

selected as an illustrative "societal story" for the communication campaign for the 2013 calls publication and should be mentioned.

A number of European cities are currently pioneering the development and introduction of city buses powered by environmentally-friendly hydrogen fuel cells. The Clean Hydrogen In European Cities Project (CHIC)[49] began in November 2010 to promote the development of hydrogen fuel cell (FCH) buses for public transport and prepare the way for the widespread use of this technology and its associated infrastructure starting in 2015.

The project which is co-financed by the Fuel Cells and Hydrogen Joint Undertaking, regions and local public transport authorities, brings together vehicle manufacturers, transport operators and hydrogen infrastructure providers in Belgium, Germany, Canada, France, Italy, the Netherlands, Norway, Switzerland and the UK.

The FCH buses use hydrogen fuel cells to generate electricity to drive the wheels. The buses are sometimes augmented in a hybrid fashion with batteries or a supercapacitor. The process of producing hydrogen from natural gas and steam is currently the most cost effective and reliable method and, as the industry expands, costs could be further reduced and sustainability further increased.

Under the CHIC project 26 hydrogen fuel cell powered buses are being deployed together with the necessary hydrogen refuelling infrastructure in normal city bus operations across a number of European cities. The partners in Phase 1 of the CHIC project include Aarau (Switzerland), Bolzano (Italy), London, Milan and Oslo.

In a second phase of the project, the CHIC project team together with the European Association for Hydrogen, Fuel Cells and Electro-mobility in European Regions (HyER), will facilitate the uptake of the use of FCH buses in a further group of European regions and cities - the so-called CHIC Phase 2 cities - that have expressed interest in using FCH buses in their public transport fleets.

In September 2011 two hydrogen-driven fuel cell hybrid buses successfully finished a four-month test period in Germany. The 18 metre long 'bendy' buses named "Phileas" are now taking up regular public transport service on inner-city and regional lines around the cities of Hürth and Brühl.

The CHIC project is an essential next step towards full commercialisation of hydrogen powered fuel cell buses. CHIC aims to reduce the 'time to market' for the technology and support 'market lift off'.

The CHIC project coordinator commented: "The CHIC project is based on a staged introduction and build-up of FCH bus fleets and the supporting infrastructure across Europe.

[49] http://chic-project.eu/

A phased approach will link together experienced and new cities in partnerships which will greatly facilitate the smooth introduction of the new systems now and into the future". "The expected results of CHIC will take the technology to the brink of commercialisation, leading in turn to very significant environmental and economic benefits for Europe and the community worldwide", the project coordinator adds.

3.3. Call implementation

The FCH JU launches **open** and **competitive** calls for proposals **annually** on the basis of which funding is granted for research, technological development and demonstration projects. The **topics** stem from the *FCH JU Annual Implementation Plan* (AIP) and are consistent with the five *Application Areas* described in the introduction and with the RTD priorities and key objectives for the respective year.

Two types of **funding schemes** are used to implement projects in the FCH JU: 1) collaborative projects, and 2) coordination and support actions. The schemes to be used in the different calls are announced in the call fiche.

– *Collaborative projects* are objective-driven research projects aiming at developing new knowledge, technology or product. Participants must form a consortium of at least three legal entities established in different EU Member States or FP7 associated countries, of which at least one should be a member of the Industry Grouping or the Research Grouping. Collaborative projects typically last two to five years.

– The second funding scheme allows also for two other types of actions to be financed: *coordination (networking) actions,* coordinating research activities and policies and *support actions* contributing to the *Annual Implementation Plan* and the preparation of future EU research and technological development policy. Coordination actions are normally completed in two to four years, while support actions have a shorter duration.

FCH JU's projects are selected through calls for proposals following a **single stage** submission and evaluation process. Applications must be submitted using a special web-based service before a strictly-enforced deadline. The notifications for calls for proposals are published in the Official Journal of the European Union and broadly announced through various communication channels, including on the FCH JU website, indicating call topics, indicative budget, funding scheme, deadlines for submission and links to the submission tool.

The whole call process is managed by the Programme Office of the FCH JU according to the principles of excellence, transparency, fairness and impartiality, confidentiality, efficiency, speed and ethical and security considerations and following the *FCH JU Rules for submission of proposals and the related evaluation, selection and award procedures*.

As a first step, the FCH JU performs an **eligibility check** to see whether the applicants meet the announced eligibility criteria. Then FCH JU appoints independent experts to assist with the **evaluation** of proposals and identify those of best quality for possible funding. All

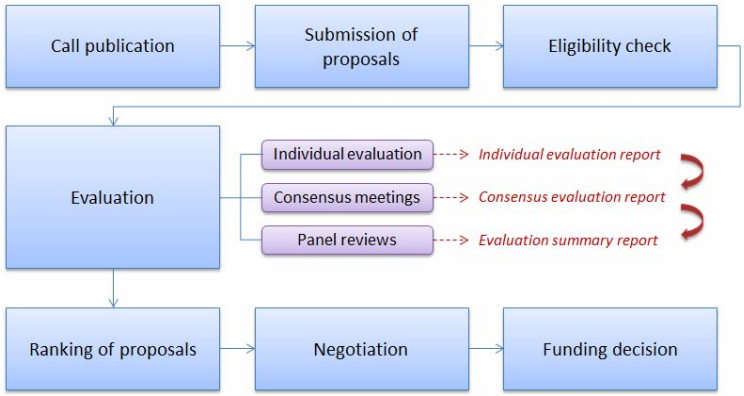
eligible proposals are evaluated with respect to the evaluation criteria and the associated weight and thresholds set for the call, outlined in the table below:

№	Evaluation criterion	Score	Weight	Threshold
1.	S/T Excellence	0 to 5	---	3/5
2.	Quality and efficiency	0 to 5	---	3/5
3.	Impact	0 to 5	---	3/5
	Total score:	**15**		**10/30**

Evaluations are done in three steps: remotely, through on-site consensus meetings and panel reviews. During the **remote evaluation**, proposals are assessed individually by a minimum of three experts and the results are included in an *individual evaluation report*. Once the experts complete their individual assessments, the evaluation proceeds to a **consensus assessment**, the objective of which is to exchange common views on the evaluated proposals. The results of the consensus meetings are included in *consensus evaluation reports*. The final step in the evaluation process is the panel review. The outcome of this review are the *evaluation summary reports* for each proposal, including a list of ranked proposals above thresholds for each application area, a list of proposals failing one or more thresholds and a list of ineligible proposals, if any. The presence of **independent observers** during the different evaluation stages verifies and guarantees that the above-mentioned rules and principles are followed.

After completing the evaluation and establishing ranked lists with proposals for funding for each application area and a reserve list, these lists are presented to the FCH JU Governing Board. Once the latter approves the list of proposals to be funded, the Joint Undertaking enters into **negotiations** with the coordinators. If a negotiation is successfully concluded, the project is selected and a grant agreement providing for a FCH JU financial contribution is signed.

The whole evaluation process is described in the figure below:



<u>Implementation in 2011</u>:

The FCH JU launched and evaluated **one call for proposals** (FCH-JU-2011-1). The evaluation was carried out by **37 independent experts** and 2 chairpersons who oversaw the

whole consensus phase. In addition, **1 independent observer** monitored that the evaluation procedure was carried out in a fair, impartial and confidential manner. The **individual remote evaluations** took place from 5 to 16 September and the **consensus meetings** from 19 to 21 September 2011, which were followed by **the final Panel meeting on 22 and 23 September 2011**. The details of the evaluation are provided in section below.

The indicative FCH JU funding per application area for this call FCH-JU-2011-1 is:

Application Area	Indicative FCH JU Funding (Million €)
1. Transportation & Refuelling Infrastructure	36.0
2. Hydrogen Production & Distribution	16.0
3. Stationary Power Generation & CHP	38.0
4. Early Markets	15.0
5. Cross-cutting Issues	4.0
Total indicative FCH JU Funding[50].	**109.0**

3.4. Call FCH-JU-2011-1

3.4.1. Summary information

Call Identifier	FCH-JU-2011-1
Publication date	3 June 2011
Deadline	18 August 2011
Evaluation	August-September 2011
Negotiation kick-off	22 November 2011
Indicative Total budget	€ 109 million[51]
EU contribution after evaluation	€ 111,328,441
In-kind contribution after evaluation	€ 102,283,790
Number of topics / Application areas	5
Reference to call topics	Annex 13
Any other information that might be relevant for this particular call.	

[50]The funding includes the FCH JU's own budget only. The final total funding for projects is to be increased by EFTA contributions (up to €2.3 M).

[51]The funding includes the FCH JU's own budget only. The final total funding for projects is to be increased by EFTA contributions (up to €2.3 M).

3.4.2. Analysis of proposals submitted

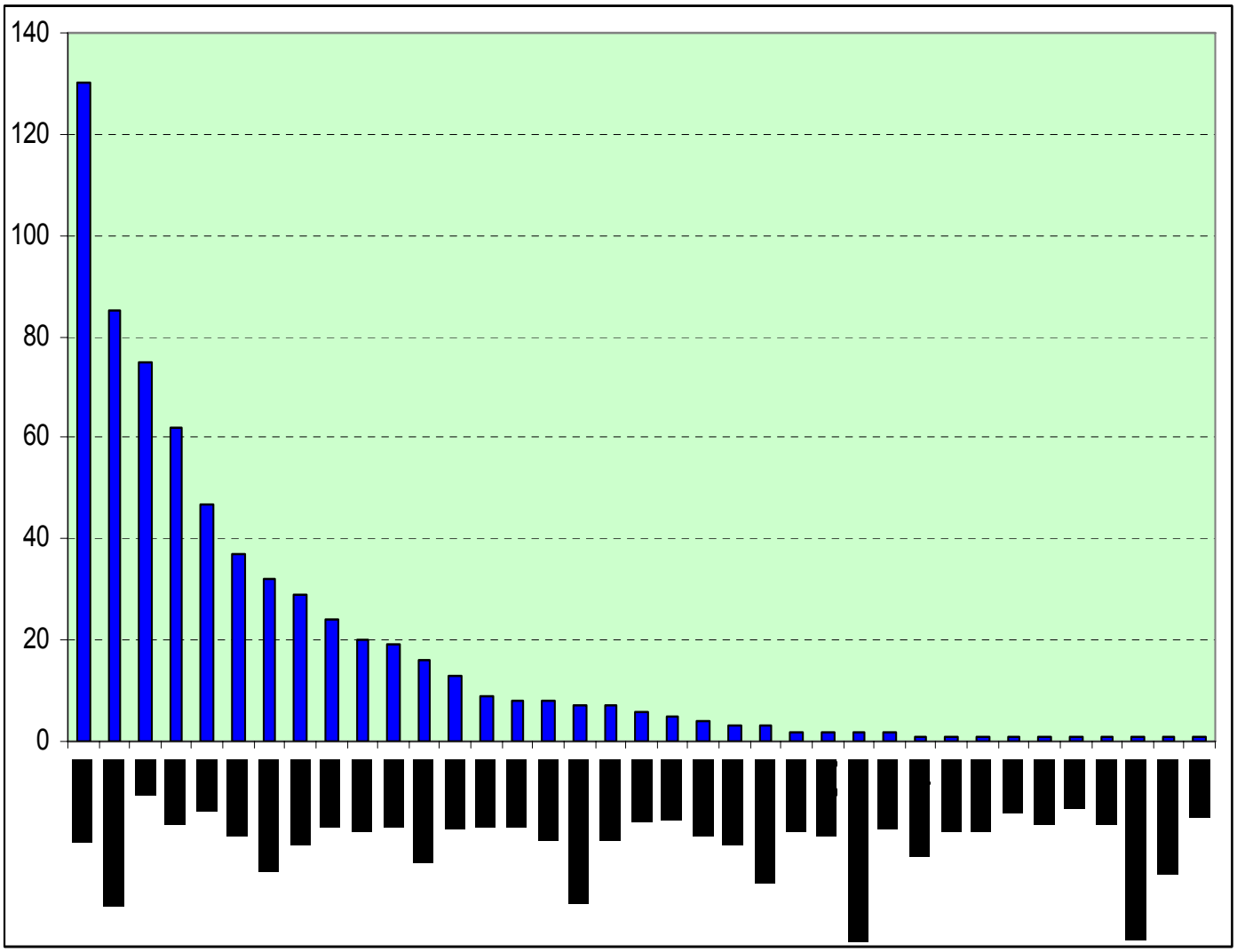
82 proposals were submitted and 80 met the eligibility criteria. The distribution by application area is presented below. A particular interest for the production and distribution of Hydrogen and stationary power generation and CHP (respectively more than 30% and 25% of the submitted proposals) is to be noted, the two topics being the most significant in terms of budget.

Application Area	Submitted	Eligible
1. Transportation & Refuelling Infrastructure	18	18
2. Hydrogen Production & Distribution	26	26
3. Stationary Power Generation & CHP	21	21
4. Early Markets	10	10
5. Cross-cutting Issues	7	5
Total:	**82**	**80**

Below you may find the number of participants to the call and the respective distribution and success rate by type of participants, of which SMEs:

Type of participants	Number of participants in the Proposals	Number of participants in the best-ranked Proposals	Participants success rate
Public Bodies	4	4	100%
Research organisations	180	127	71%
Higher or secondary education	141	80	57%
Private for profit (excl. education)	157	119	76%
SMEs	**174**	**126**	**72%**
Others	11	9	82%
Total	**667**	**465**	**70%**

In the next page you may find the geographical distribution of the 667 participants:



3.4.3. Evaluation results

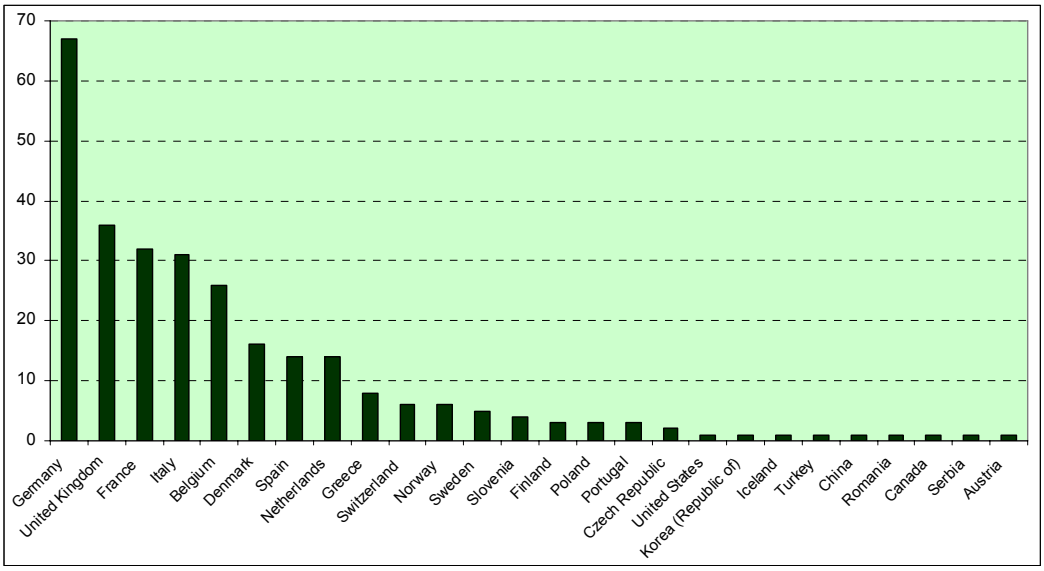
80 eligible proposals were submitted for evaluation, of which 53 passed the thresholds. The Governing Board approved on 22 November 2011 a ranked list of 30 proposals, to start negotiations with, and a reserve list of 23 proposals.

	4.2.1.submitted proposal			**4.1.3. evaluation results**				
Application Area	Submitted	Eligible	% of retained	Above threshold		Selected for funding		Reserve list
1. Transportation & Refuelling Infrastructure	18	18	100%	12	67%	10	56%	2
2. Hydrogen Production & Distribution	26	26	100%	15	58%	8	31%	7
3. Stationary Power Generation & CHP	21	21	100%	15	71%	6	29%	9
4. Early Markets	10	10	100%	7	70%	4	40%	3
5. Cross-cutting Issues	7	5	71%	4	57%	2	29%	2
Total	**82**	**81**	**99%**	**53**	**65%**	**30**	**37%**	**23**

The total number of participants in the 30 proposals selected for funding is 285. The distribution per type is illustrated below:

Type of participants	Number of participants in the proposals selected for funding
Public Bodies	3
Research organisations	77
Higher or secondary education	49
Private for profit (excl. education)	76
SMEs	**73**
Others	7
Total:	**285**

Geographical distribution of the participants in the proposals selected for funding. Germany is leading, followed by the UK, France and Italy.



3.5. Grant agreements/project portfolio

3.5.1. Grant agreements signed (commitment amounts) in 2011 (Call FCH-JU-2010-1)

Results from call FCH-JU-2010-1 are now available (Publication on 18 June 2010, with deadline for submission on 13 October 2010 and evaluation between 1-18 October 2010.)

The Governing Board approved on 10 March 2011 a list of **27 proposals with an additional 16 on the reserve list**, ranked in priority order according to the evaluation results, to start negotiations to conclude Grant Agreements.

The negotiations started on 18 March 2011 and were concluded during December 2011 with the approval of the Governing Board for funding of **26 projects** (from the initial 27 proposals,

two failed during the negotiation phase, and one proposal was selected from the reserve list). The negotiations were concluded with the signature of the following Grants Agreements (all before end 2011).

Call FCH-JU-2010-1	Number	CS JU contribution (€)	In-kind contribution (€)	Total contributions (€)
Sub-Total (signed GAPs)	26	€ 83,676,084	€ 101,840.924	€ 185,517,008
Sub-Total (Proposals in Negotiation)	0	0	0	0
TOTAL	**26**	**€ 83,676,084**	**€ 101,840.924**	**€ 185,517,008**

The complete list of grants signed is provided with further details in annex 14.

3.5.2. Grant agreements for which activities have ended and/or final results are available

Activities related to 5 grant agreements have already ended in 2011. They were all signed with starting date 01/01/2010. The initial requested funding on the projects was on a wide range, varying from € 257,075 to € 1,193,016. The total contribution is available for one grant (final payment was not made for the 4 others, therefore final amount is not yet available).

The complete list is provided with further details in annex 15.

4. PROGRESS ACHIEVED BY THE ARTEMIS JU

4.1. Introduction to the ARTEMIS JU

Growing out of the ARTEMIS European Technology Platform (ETP), the ARTEMIS Joint Undertaking (hereinafter referred to as "ARTEMIS JU") was established by Council Regulation (EC) 74/2008 of 20 December 2007 as a public-private partnership between the European Commission, the participating Member and Associated States (by now 23 countries)[52], and ARTEMIS-IA[53], a non-profit industrial association of R&D actors in the field of embedded computer systems.

The ARTEMIS JU has been set up for a period up to 31 December 2017 with the main objective to tackle the research and structural challenges in embedded systems faced by the industrial sector. The goal is to define and implement a *Research Agenda for Embedded*

[52] Austria, Belgium, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Slovenia and the United Kingdom.

[53] The ARTEMIS Industrial Association (ARTEMIS-IA) was established in January 2007 in the Netherlands by five companies: Philips, ST Microelectronics, Thales, Nokia and DaimlerChrysler. It represents the interests of the industry and the research community within the ARTEMIS Joint Undertaking.

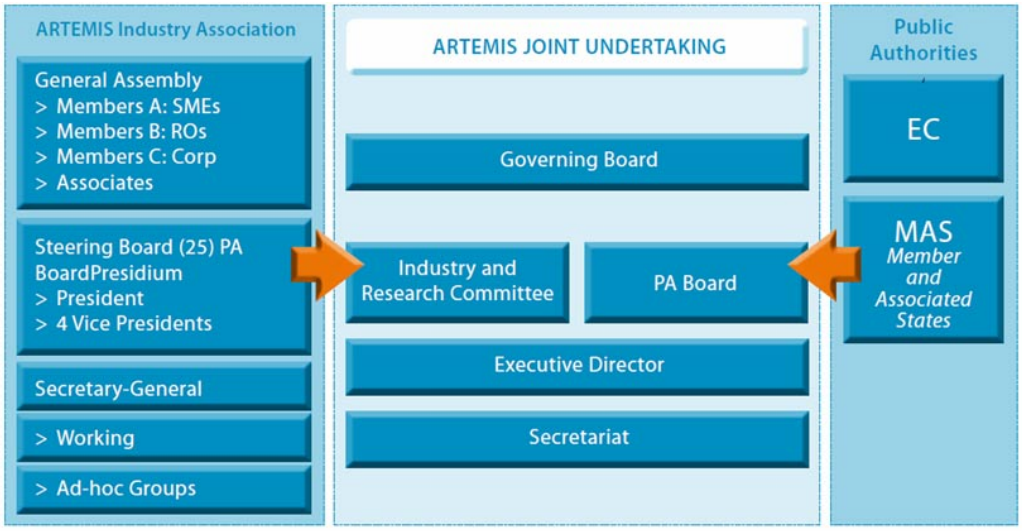
Computing Systems. ARTEMIS JU aims to help European industry consolidate and reinforce its world leadership in embedded computing technologies.

4.1.1. Budget

The maximum EU contribution to the ARTEMIS Joint Undertaking is set to € 420 million paid from the appropriations in the general budget of the European Union allocated to the theme "Information and Communication Technologies" of the Specific Programme "Cooperation" under the FP7. The research activities of the entity are supported also through financial contributions from the ARTEMIS Member States amounting to at least 1.8 times the EU contribution (€ 756 million) and through in-kind contributions by research and development organisations participating in projects, which at least match the contribution of the public authorities.

4.1.2. Governing structure

The ARTEMIS Joint Undertaking is managed by an Executive Director. Its governance structure comprises a Governing Board, a Public Authorities Board (PAB) and an Industry and Research Committee (IRC).



- **The Governing Board** has overall responsibility for the operations of the ARTEMIS Joint Undertaking. Its role is to oversee the implementation of the JU. It consists of representatives from Industry (ARTEMISIA) and Public Authorities including the Commission and Member States. Voting rights are split equally: 50% for Industry and 50% for public authorities.

- **The Industry and Research Committee** represents the interests of industry and the research community through Artemisia, the Artemis Industrial Association. It consists of members appointed by ARTEMISIA. Its role is to draft the Multi-Annual Strategic Plan based on the Research Agenda. In addition, it drafts an Annual Work Programme for the activities of the JU including calls for research proposals.

- **The Public Authorities Board (PAB)** consists of representatives of the ARTEMIS Member States and the European Commission. It discusses and approves the Annual Work Programme. It is also responsible for the decisions on the scope and budget of the calls for proposals, launch of the calls, selection of proposals and allocation of public funds for selected proposals. A third of the voting rights are assigned to the Commission and the remaining two thirds are allocated to Member States.

- **The Executive Director** is the chief executive of the Joint Undertaking whose role is to ensure its day-to-day management. He is appointed by the Governing Board, for a period of three years and is supported by a secretariat - the ARTEMIS-JU Office - which handles the operational aspects of the JU.

4.2. Outline of the main activities and achievements in 2011

After its establishment, ARTEMIS gradually developed operational capacity. It was granted administrative and operational autonomy from the Commission on 26 October 2009 and 2011 was the second full year of independent functioning of the Joint Undertaking. Together with the other JUs, the JU has its premises in the White Atrium building in Brussels since January 2011.

4.2.1. Key milestones

- Launch of the ARTEMIS fourth call for proposals;
- Grant agreements signature and kick-off of the selected proposals in the 2010 call;
- Monitoring and review of the ongoing 2008 and 2009 calls for proposals;
- Definition of an IAS Strategic Audit Plan 2012-2014;

4.2.2. Organisation of the team in ARTEMIS JU

In 2011, ARTEMIS JU staff increased from 11 employees to 13, 8 Temporary agents and 5 Contract agents (out of 7 authorised by budget 2011).

4.2.3. Progress in the implementation of the Strategic Research Agenda

ARTEMIS European Technology Platform (ETP) issued its first Strategic Research Agenda in 2006 to set the scene on R&D and innovation on Embedded Systems in Europe and recommended that a Joint Undertaking should be established in order to create an extra initiative in Europe to achieve the goals set out in the SRA 2006.

Since 2006 new technical options and challenges have occurred and it was time to update the agenda in accordance with the new challenges. The revised SRA is to give a clear perspective of what is needed in Europe in the next decade from all R&D and innovation actors, to make Europe the leader in Embedded Systems. The ARTEMIS Industry Association presented the updated SRA 2011 in Brussels on 18 May 2011.

4.2.4. Governance - Major decisions taken by the Governing Board and other JU bodies

The running of the Governing Board and the PAB run smoothly in 2011. The Governing Board held 3 meetings in 2011 and the PAB met twice. Besides, there were four written procedures.

The main decisions taken by the Governing Board during the year were related to the following topics:

- Ex-post Audit Strategies;
- Annual Implementation Plan and Budget Plan 2012;
- Multi-Annual Strategic Plan and Research Agenda 2012-2014;
- Decision allowing the JU to hire seconded national experts
- Annual Accounts and Annual Activity Report for the year 2010;
- Multi-Annual Staff Policy Plan 2011-2013;
- Adoption of the JU's Annual Implementation Plan 2010 and Annual Budget Plan 2011.

4.2.5. Outcome of the first interim evaluation[54]

In accordance with Article 11.2 the Commission had to carry out an interim evaluation of the ARTEMIS and ENIAC JU with the assistance of independent experts by the end of 2010. A panel of 8 independent experts was invited by the Commission to simultaneously evaluate both ARTEMIS and ENIAC JUs as they were set up using an identical design.

Their work started in May 2010 and the final report by the evaluation panel[55] was issued on 30 July 2010, followed by a communication by the Commission[56], published on 16 December 2010. The communication highlighted the findings and recommendations of the experts, formulated the Commission response and set out follow-up measures.

The objective of the first interim evaluation was to assess ARTEMIS and ENIAC, with respect to their:

- Relevance: The continuing validity of the assumptions set at the start/planning phase of the JTIs;
- Effectiveness: The progress towards meeting the objectives set;
- Efficiency: The extent to which the JTIs have been managed and operated efficiently; and

[54] First interim evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives COM(2010) 752 final of 16.12.2010

[55] First Interim Evaluation of the ARTEMIS and ENIAC Joint Technology Initiatives,

http://ec.europa.eu/dgs/information_society/evaluation/rtd/jti/artemis_and_eniac_evaluation_report_final.pdf

[56] COM(2010) 752

- Research Quality: The extent to which the JTIs sponsor world-class research that helps propel Europe to a leadership position globally.

The evaluation panel recognised the value of a tripartite structure for JTIs in the fields of embedded computing systems and nanoelectronics, pooling resources from industry, the EU and Member States to leverage a strategic vision for Europe. The panel affirmed the importance of continuing the coordination at European level of research and technology in these fields and called for a refocusing, involving all stakeholders, on evolving and implementing their strategic research agendas.

The panel also highlighted some difficulties to tackle to go forward:

- the overall investments from Member States, industry and the EU into research and technology development in the JTIs areas have not increased as much as expected;
- the funding commitment by member States is significantly below that which was expected, jeopardising the JTIs' ability to establish a critical mass of activity and severely constraining the construction of appropriate portfolios of projects;
- the process for selection of projects gives insufficient consideration to the JTIs' European strategic objectives;
- the JTIs have not so far implemented activities specifically targeted at improving the innovation environment in Europe; and
- certain features of the Council Regulations that govern ARTEMIS and ENIAC, as well as financial regulations and other administrative requirements, inhibit rather than enable the realisation of their aims.

The evaluation panel made a set of **18 recommendations** that would benefit to the improvement of the JTIs efficiency. Those recommendations concern all stakeholders: the Commission, the Member States, the industrial associations and the JU. An appropriate follow-up will be part of the 2nd interim evaluation scheduled to be completed by the end of 2013.

4.2.6. Main communication activities

- Key events in 2011

An important and key activity is the promotion of the ARTEMIS Call 2011 that was launched on 1 March 2011. **In December 2010**, ARTEMIS Industry Association gave the start signal with the ARTEMIS Brokerage Event.

Following this event, **National ARTEMIS and Brokerage events** were organized by the respective national platforms in cooperation with ARTEMIS Programme Officers:

– ARTEMIS Networking event in Vienna - organized by the ARTEMIS Austria Platform (1 February 2011);

- ARTEMIS Networking Event in London - organized by the Electronics Knowledge Centre (11 February 2011);
- ARTEMIS Networking event for Call 2011 in Paris - organized by UBI France (10 March 2011);
- National ARTEMIS/ENIAC event for Call 2011 in Prague - co-organized by the Ministry of Education, Youth and Sports, OKO ICT Branch Contact Organization and Technology centre (21 March 2011);
- National ARTEMIS information event in Madrid - co-organized by the Ministry de Industria, Turismo, y Comercio, CDTI, PROMETEO (23 March 2011);
- Support of National events in Sweden and Finland through material and mailing to Brokerage participants via ARTEMIS Industry Association.

On 14 June 2011 ARTEMIS JU took part in the **ARTEMISIA Summer Camp** – a high-level strategic meeting defining the R&D agenda in embedded systems in Europe.

After the summer break, the **ARTEMIS Technology Conference** 2011 took place from 12 to 13 **September 2011** in Bologna. The preparations started in the previous months with a registration website, registration, badges and logistics – PR material was shipped to the venue. The Executive Director delivered the keynote speech at the Conference. The Conference itself was perceived as successful. The event was announced in the ARTEMIS Magazine 10 and through e-mailings to the relevant target group in the database of the Industry Association. This public, open event, organised by the ARTEMIS-JU Call 2008 SOFIA project, was hosted and co-organised by the University of Bologna and Indra Sistemas S.A. The conference gave three running 2008 & 2009 Call projects - SOFIA, SMARCOS & CHIRON, the valuable chance to present their results to an international audience of colleagues in the same field, to get critical feedback on the presented ideas and to network with people who share similar interests. The event was attended by 65 people from 6 European countries. A student Corner was included in the demo area. This was a fruitful event with attendees from Austria, Belgium, Finland, Italy, Spain and The Netherlands, ensuring further discussion outside the conference and new and further multi-project collaboration.

On 27 September 2011, the **Conference on Nanoelectronics and Embedded Systems for Electric Mobility "Auto.E-Motion**", took place in Graz, Austria. The conference focused on the nanoelectronics and embedded systems technologies for electric mobility applications and their impact on the future of electric and hybrid electric vehicles. The ARTEMIS projects POLLUX and Internet of Energy (IoE) organized this conference, together with their ENIAC counterpart. ARTEMIS Magazine gave visibility to this event in publication 11.

One of the significant communication activities throughout the year was the participation of ARTEMIS at the **Innovation in action** event of the 5 Joint Technology Initiatives in Brussels on **4-6 October 2011**. This event was the first joint event of the 5 JTIs and took place in the venue of the EP. It included a poster and stand exhibition surrounded by conference sessions. The theme of this joint JTI event was 'Innovation in Action' and featured an overview of the key achievements of all five JTIs, as well as presentations by high-level policy makers from the European Parliament and Commission. It was hosted by MEP Maria Da Graça Carvalho, with parallel "Thematic Sessions" proposed by each JU. As for ARTEMIS one, it was

sponsored by MEP Lambert Van Nistelrooij. The event was felt to be very successful in Brussels, although results are expected on a long term perspective. Meanwhile ARTEMIS has got visibility, for example, in the e-journal *Science and Business* and on the Portugese national television. A report on the event was published in the ARTEMIS Magazine 11.

The peak of the events was the **ARTEMIS-ITEA2 Co-Summit 2011 – Helsinki**, which took place on **25 and 26 October 2011**. This annual event, with ARTEMIS presentations and an exhibition space for 34 presently running projects, is organised together with ITEA 2. It is by far the biggest event to organise for ARTEMIS, as an important showcase of the ARTEMIS projects to the ARTEMIS community and the public authorities. As done in 2010, a **"student day"** was also organised this year, this time in cooperation with TEKES. Extra ARTEMIS actions were involved such as the SME-ARCADIA/SYSMODEL round table meeting. The project eSONIA was granted the ARTEMIS prize for best exhibition stand, where the main criterion is the clarity of the presentation of the work being done and the results achieved. The set-up of the ARTEMIS exhibition appeared to be very successful and should continue during next summits.

Publications

- During the year, ARTEMIS published also several information brochures on the ongoing and the future calls for proposals, and three numbers of the quarterly ARTEMIS Magazine.
- Interaction with the press occurred mainly via press releases and arranged interviews on different topics – briefings on the Co-Summit and on the ARTEMIS Brokerage event, an informative release on the submitted proposals in the 2011 call, etc.

Apart from the ARTEMIS magazine that contains interviews to key people in the embedded systems area, the following events were reported:

January to June 2011:

- The pre-announcement for the ARTEMIS Proposers Day was wired to the press database;
- A press conference to announce the ARTEMIS message and launch of the call took place on 2 December in Nuremberg during ARTEMIS Spring Event: 14 journalists attended the press meeting;
- A press corner was produced on the website with the relevant information in it;
- A press release of ARTEMIS project SYSMODEL was distributed;
- An interview with ARTEMIS project SCALOPES was arranged and will be published in ARTEMIS Magazine and on the websites of SCALOPES and ARTEMIS.
- The press meeting took place during the ARTEMIS Spring Event, attended by 14 journalists.
- A press release of the ARTEMIS SRA launch was distributed.
- A press meeting on the SRA was organised with participation of the Executive Director, Chair, Secretary General, SRA co-chair. An interview was arranged with one of the SRA experts.

July to December 2011:

- The pre-announcement for the Co-summit was wired to the press database

- The ARTEMIS SRA message was wired to the press database
- The invitation and programme for the Co-summit 2011 were wired to the press
- Four press releases have been sent out: on JTI event, Co-summit (pre-press release & post press release) ANDARTEMIS-Brokerage Event in which the Call 2012 is pre-announced.
- JTI event got exposure in *Science & Business* (twice) and Portuguese television.
- At the Co-summit, a press programme and event have been organised. The press present at the Co-summit 2011 was:

Country	**Publication**
Belgium	Datanews (published)
Czech Republic	Elektronika (article expected)
Finland	Freelance journalist writing for multiple Publications (published)
Italy	News Impresa (published)
Netherlands	Technologiekrant / de Ingenieur (published)
Norway	Peak magazine (article expected in January 2012)
Pan-European	Parliament & Research Magazine (article expected)
Sweden	Elektronik Norden (article expected)
Germany	SafeTrans (article published)

- In the last months of 2011, a Call 2012 brochure was realised and presented to the NCPs, Brokerage participants, ARTEMIS members, EC, JU office etc.

Besides, the web site (http://www.artemis-ju.eu) has been an important tool for the ARTEMIS JU for publishing its objectives and announcements on the calls, but also for providing up-to-date information to the stakeholders. The Undertaking also improved it visual identity, by re-designing its logo.

4.3. Call implementation

Calls for proposals

The ARTEMIS JU supports R&D activities through **open** and **competitive calls for proposals** published on a **yearly** basis, to attract the best European research ideas and capacities in the field of embedded computing systems. The ARTEMIS JU manages and coordinates research activities through a 7-year, € 2.5 billion research programme on embedded computing systems. The programme is open to organisations in the EU Member States and Associated Countries. Selected projects are co-financed by the Joint Undertaking and the Member States that have joined ARTEMIS. The ARTEMIS JU implements significant parts of the *ARTEMIS–ETP Strategic Research Agenda* co-funded by industry, research organisations, Member States and the Commission's own ICT programme.

ARTEMIS applies **a two-stage procedure**: proposers must first submit *Project Outlines* (POs), followed by the submission of *Full Project Proposals* (FPPs). The submission of an eligible PO is mandatory for the submission of a FPP. Projects are selected for funding based on the quality of this document. The evaluation criteria and sub-criteria, including weights and thresholds, and the selection and award criteria are set out in the *ARTEMIS Annual Work Programme 2011*. They are introduced in the next paragraphs:

4.3.1. Evaluation of Project Outline

The Project Outline will be assessed on the basis of the following criteria:

1. Relevance to the topic(s) of the work programme in a given call and to the objectives of a call.
2. Relevance and contribution to the overall ARTEMIS targets.
3. Soundness of the concept.
4. Clarity and quality of the objectives and expected results.
5. Contribution, at the European and/or international level, to the expected impacts listed in the Work-programme under the relevant sub-programme.
6. Degree of application-innovation in the context of the sub-programmes addressed.
7. Expected market impact of the results for the industrial partners.
8. Quality of the consortium as a whole including complementarities, balance and involvement of SMEs.

4.3.2. Evaluation of Full Project Proposal

The evaluation criteria against which full project proposals will be judged are set out in the document ARTEMISPAB-4-08: "ARTEMIS Joint Undertaking selection and evaluation procedures related to Calls for proposals". They are listed in the table below:

№	Evaluation criterion	Score	Weight	Threshold
1.	Relevance and contributions to the objectives of the call	1-10	1	6
2.	R&D innovation and technical excellence	1-10	1	6
3.	S&T approach and work plan	1-10	1	6
4.	Market innovation and market impact	1-10	2	6
5.	Quality of consortium and management	1-10	1	N/A
	Total score:	**/60**		**40/60**

Proposals submitted to ARTEMIS JU calls undergo a **technical evaluation** and selections process carried out with the assistance of independent experts. This process ensures that allocation of the ARTEMIS Joint Undertaking's public funding follows the principles of equal treatment, excellence and competition.

Funding for ARTEMIS projects follows a **unique tripartite model**. Much of the funding is provided to the partners by their own government or regional agency, with whom a grant agreement is set up. The ARTEMIS Joint Undertaking also provides funding directly to the partners to the amount of 16.7% of their eligible costs. This funding model has been working well in the first years of the Joint Undertaking, but with certain limitations – mainly due to the strongly reduced level of commitments from the Member States in the context of the economic and financial crisis.

The ARTEMIS JU managed its fourth call for proposals in 2011 as planned. It was launched on 1 March 2011 and the negotiations have started on 8 December 2011. Since the outcome of the negotiations was planned for January 2012, the definitive list of grant agreements signed under this call will be presented next year.

4.4. Call 4 ARTEMIS-2011-1

4.4.1. Summary information

Call Identifier	ARTEMIS-2011-1
Publication date	1 March 2011
Deadline for submission of Project Outlines (POs) - Stage 1	31 March 2011
Evaluation of Project Outlines - Stage 1	30 May 2011
Deadline for submission of Full Project Proposals - Stage 2	1 September 2011
Evaluation of Full Project Proposals - Stage 2	3-7 October 2011
Negotiation	From December 2011
Indicative Total budget (in €)	€ 72.423 million
EU contribution after evaluation	Not available
In-kind contribution after evaluation	Not available
Where relevant, the contribution from the Member States or National funding, or other contributions	€ 46.725 million
Number of topics / Artemis Sub Programmes	4 main topics – 8 sub programmes
Reference to call topics	http://www.artemis-ju.eu/call2011

The results from projects following the 2011 call were expected to demonstrate their contribution to the ARTEMIS JU high-level objectives set out below. ARTEMIS set an over-arching objective to close the design productivity gap between potential and capability, as a necessary pre-requisite to advancing Europe's competitive position on the world market:

- Reduce the cost of the system design from 2005 levels by 15% by 2013;
- Achieve 15% reduction in development cycles, especially in sectors requiring qualification or certification – by 2013;
- Manage a complexity increase of 25% with 10% effort reduction by 2013;
- Reduce the effort and time required for re-validation and recertification after change by 15% by 2013;
- Achieve cross-sectoral reusability of embedded systems devices developed using the ARTEMIS JU results.

The ARTEMIS call for proposals 2011 had to address the design, development and deployment of ubiquitous, interoperable and cost-effective, powerful, safe and secure electronics and software systems. It should deliver on **three *industrial priorities***: i) Reference designs and architectures, ii) Seamless connectivity and middleware, and iii) Design methods and tools.

In addition to the industrial priorities, ARTEMIS JU proposals had to fit into one of the **8 specific *ARTEMIS Sub-Programme (ASP)* priorities for 2011**, which were determined in the *ARTEMIS Annual Work Programme* for 2011 as follows:

- ASP1. Methods and processes for safety-relevant embedded systems;
- ASP2. Embedded Systems for Healthcare systems;
- ASP3. Embedded Systems for Smart environments;

- ASP4. Manufacturing and production automation;
- ASP5. Computing platforms for embedded systems;
- ASP6. ES for Security and Critical Infrastructures Protection;
- ASP7. Embedded technology for sustainable urban life;
- ASP8. Human-centred design of embedded systems.

The total budget for the call included an **indicative ARTEMIS JU contribution** of **€ 25.69 million** and **contributions from the Member States** estimated at **€ 46.725 million**. The exact commitment by Member State is shown in the table below:

ARTEMIS JU Member States (M€)			
Austria	3	Hungary	0
Belgium	2.5	Ireland	1
Cyprus	0	Italy	5
Czech Republic	1.1	Latvia	0.075
Germany	8	Netherlands	4
Denmark	1.3	Norway	1.5
Estonia	0.3	Portugal	0
Spain	4	Romania	0
Finland	6	Sweden	3
France	2	Slovenia	0.75
Greece	0	United Kingdom	3.2

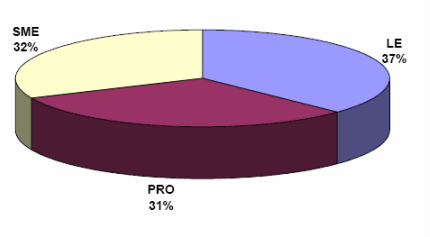
4.4.2. Analysis of proposals submitted

The PO phase yielded **41 proposals**, all satisfying the eligibility criteria. They were reviewed and feedback was given to the applicants. For the FPP phase, **27 proposals** were received by 1 September 2011 and the evaluations were completed in October 2011.

4.4.2.1. Stage 1 – Project Outlines

In total, **41 eligible POs** have been submitted for evaluation. The total **individual participations** are presented in the figure below. The **total number of participants** is **667** (including 656 participants from ARTEMIS member states).

Participation by Partner Type (Large Enterprise – LE, SME or Public research organisation – PRO) was hampered at this stage by the necessity to use unverified, self-declaration of the partner type as submitted. The data for the proposals eligible for evaluation of the PO phase are detailed in the following chart:



With regard to geographical distribution of the POs, **29 countries** took part in the first stage of the call. The participation in each of the ARTEMIS Member States (AMS) can be found in the table below. In addition, participations were proposed from Poland[57], Russia, Turkey and the USA. The Total Costs of these non-ARTEMIS Member State partners was roughly €4.9 million.

PARTICIPATION Overview by Country						
	Tot Cost	**Requested Nat Funding**	**Budget**	**Over-subscription Ratio**	**Partici-pations**	**in Proposals**
AT	20.323.381,00	5.627.976,00	3.000.000,00	1,88	30	15
BE	9.997.821,00	3.287.172,00	2.000.000,00	1,64	18	13
CY	-	-	-	-	-	-
CZ	5.400.845,00	3.501.979,00	1.100.000,00	3,18	17	8
DE	70.386.274,00	30.050.018,00	8.000.000,00	3,76	81	21
DK	6.830.477,00	3.755.873,00	1.300.000,00	2,89	13	7
EE	-	-	-	-	-	-
EL	600.000,00	-	-	-	2	1

[57] Poland joined the ARTEMIS Member Sates later, in December 2011.

ES	72.156.718,00	25.969.816,00	4.000.000,00	6,49	141	32
FI	59.766.673,00	27.268.464,00	6.000.000,00	4,54	88	25
FR	28.653.911,00	5.081.682,00	2.000.000,00	2,54	38	17
HU	2.308.211,00	334.826,00	-	-	4	4
IE	- (*)	-	1.000.000,00	-	-	-
IT	52.334.044,00	16.403.901,00	5.000.000,00	3,28	79	26
LV	731.221,00	445.000,00	75.000,00	5,93	6	2
NL	62.535.967,00	14.282.068,00	-	-	52	17
NO	8.544.615,00	3.911.124,00	1.500.000,00	2,61	12	5
PT	1.593.404,00	1.046.955,00	-	-	7	6
RO	-	-	-	-	-	-
SE	25.205.311,00	8.415.598,00	3.000.000,00	2,81	37	11
SI	874.257,00	280.090,00	750.000,00	0,37	3	2
UK	21.229.254,00	7.743.667,00	3.200.000,00	2,42	28	13

(*) No participations from Ireland despite the availability of budget.

The **total costs** proposed are €454.4 M, with a requested National funding of €157.4 M requested, which gives a general over-subscription of 3,73 times over the available National commitments of €42.2 M. This oversubscription is in line with the general expectation. In terms of EFTA contribution, it represented € 1,023,400.00 for the operational credits allocated to the call 2011[58].

As a comparison between Call 2011 and Call 2010, the major reduction in the Member States' commitments to this call – a drop of 30% - has resulted in an even more severe drop in the number of POs submitted. However, the equivalent drop in number of participations and the corresponding total costs indicates that the community has responded by applying greater focus on the scale of their activity, in order to improve their chance of selection and funding. This is borne out by comparing the average size of the projects in the POs: the average size (total cost) of a PO has increased by 13% compared to 2010, with the budget per participation remaining roughly constant.

[58] Source: SINCOM data from budget appropriation BGUE-B2011-09.040102-C1-CE that corresponds to the operational credits for the ARTEMIS JU for 2010.

	Call 2010	Call 2011	Ratio 2011:2010
MS Commitment (M€)	60,22	42,23	70,12%
Number of POs	72	41	56,94%
Number of Participations	1028	667	64,88%
Total requested costs (M€)	703,80	454,36	64,56%
Average PO size	9,77	11,08	113,37%
Average budget per participation	0,685	0,681	99,50%

As a tool to help the participating ARTEMIS Member States in preparing their budget allocations, and also to provide valuable feedback for monitoring the programme, the assessors have been requested to evaluate the relative maturity of each project outline, classifying them on a scale of 1 ("very mature") to 4 ("below average"): MI=3 is regarded as "average" while MI=2 is "strong"). This **Maturity Index** (MI) information was given only to the PAB members, and not distributed to the proposers or otherwise outside the JU. The distribution of the MI for all 41 proposals is shown below. The distribution shows a distinct peak at MI=3, which is perfectly normal (MI=3 is the "average, to be expected" value).

MI	Count	%
1	3	7%
2	10	24%
3	19	46%
4	9	22%
Total	41	

The experts were also asked to assess the **participation of SME in the proposals**, via a SME index, with the following results. The ARTEMIS programme has no difficulty in attracting SMEs with useful contributions. Participants are well aware that one of the evaluation criteria is to address SME engagement (only 6 out of 41 proposals (around15%) are not addressing the SME engagement at all). The distribution of MI vs. SME index is homogenous, with a slight bias towards MI=4 of the weaker SME-engagement proposals (SME index=C).

	Maturity Index				Total
SME	1	2	3	4	
A	2	4	13	6	25
B	1	3	5	1	10
C		3	1	2	6
Total	**3**	**10**	**19**	**9**	**41**

4.4.2.2. Stage 2 – Full Project Proposals

Out of the 41 POs, **27 FPPs** were successfully submitted by the deadline. As anticipated, all of the "MI=1" proposals from the PO phase have been submitted and 3 of the "MI=4" proposals have been submitted.

In terms of **geographical distribution**, a total of **22 countries** took part at the second stage of the call:

- The submitted proposals have partners from **18 ARTEMIS Member States (AMS)**, though there is no participation in four AMS (CY, EL, IE, RO). Besides, there are 2 participations in AMS who had not committed a budget (HU, PT). This indicates a strong will to participate in those countries.
- In addition to participations in ARTEMIS Member States (which includes Norway – an Associated State of the FP7), there are **2 participations in Associated States (TR and PL**, who is a candidate AMS).
- There are **two non-EU partners in the proposals** (**RU** – St Petersburg University, who have long expressed interest in collaboration with ARTEMIS projects and General Motors in the **USA**).

The **Total Requested costs** in the proposals is €**370.245 M,** with a request of €**127.438 M** funding from the **National budgets**. The Over-Subscription Rate (OSR) on National Budgets is therefore 2,79.

The following charts, tables and explanations give an overview of the participation in the 2011 Call in terms of its contribution to the programme.

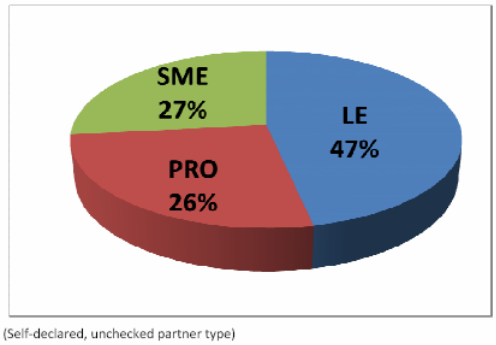
- About ***Maturity index of the PO***, as found in the FPP submitted: the table shows that feedback to the participants on the estimated Maturity index of their project may have resulted in a reduced number of "average" and "weak" proposals (MI=3 and 4 respectively) that are re-submitted as FPPs.

MI as PO	FPPs	POs	Resubmission
MI=1	3	3	100%
MI=2	9	10	90%
MI=3	12	19	63%
MI=4	3	9	33%

- The **total requested cost** per Member State and per partner type are detailed in the following table.

	Total Requested Costs				
	Country	LE	PRO	SME	Grand Total
Of which in Brussels	AT	8.756.412,00	3.601.754,00	3.419.367,00	15.777.533,00
1.286.571,00	BE	4.050.812,00	1.244.124,00	5.454.496,00	10.749.432,00
	CY				-
	CZ	873.480,00	2.011.799,00	2.308.594,00	5.193.873,00
	DE	40.340.134,00	8.144.722,00	16.389.194,00	64.874.050,00
	DK	630.197,00	3.485.765,00	2.009.547,00	6.125.509,00
	EE			257.160,00	257.160,00
	EL				-
	ES	20.655.553,00	15.137.441,00	16.671.382,00	52.464.376,00
	FI	10.006.042,00	17.034.743,00	16.488.479,00	43.529.264,00
	FR	13.243.430,00	9.222.979,00	9.762.044,00	32.228.453,00
	HU		161.952,00		161.952,00
	IE				-
	IT	23.559.930,00	10.393.254,00	6.370.931,00	40.324.115,00
	LV	140.053,00	54.022,00	53.634,00	247.709,00
	NL	34.129.314,00	10.878.267,00	11.127.032,00	56.134.613,00
	NO	2.432.086,00	5.684.437,00	547.474,00	8.663.997,00
	PT		991.600,00	80.400,00	1.072.000,00
	RO				-
	SE	7.364.451,00	4.888.041,00	2.728.192,00	14.980.684,00
	SI	508.282,00			508.282,00
	UK	5.187.285,00	4.818.231,00	5.304.273,00	15.309.789,00
	PL		233.280,00		233.280,00
	TR	876.000,00	151.680,00		1.027.680,00
	RU		154.000,00		154.000,00
	US	228.000,00			228.000,00
Grand Total		172.981.461,00	98.292.091,00	98.972.199,00	370.245.751,00
		46,7%	26,5%	26,7%	

– **Participation** in the second stage of the ARTEMIS 2011 call per **partner type** is represented here below:



(Self-declared, unchecked partner type)

Requested national funding during the second stage of the ARTEMIS 2011 call. All proposals before evaluation are presented in the table below.

	Requested National Funding - all proposals						
	Country	LE	PRO	SME	Grand Total	Budget	OSR
Of which in Brussels	AT	1.313.463,00	2.125.034,00	1.078.702,00	4.517.199,00	3.000.000,00	150,6%
739.867,00	BE	1.686.502,00	594.585,00	2.122.905,00	4.403.992,00	2.500.000,00	176,2%
	CY					-	
	CZ	727.609,00	1.675.829,00	849.592,00	3.253.030,00	1.100.000,00	295,7%
	DE	14.056.984,00	6.506.572,24	5.961.472,00	26.525.028,24	8.000.000,00	331,6%
	DK	367.405,00	2.061.640,00	970.611,00	3.399.656,00	1.300.000,00	261,5%
	EE			149.924,00	149.924,00	300.000,00	50,0%
	EL					-	
	ES	5.529.640,00	5.900.013,00	6.575.774,00	18.005.427,00	4.000.000,00	450,1%
	FI	3.040.137,00	8.924.646,00	7.988.840,00	19.953.623,00	6.000.000,00	332,6%
	FR	1.513.976,00	3.497.765,00	1.251.424,00	6.263.165,00	2.000.000,00	313,2%
	HU		134.906,00		134.906,00	-	
	IE					1.000.000,00	
	IT	7.260.758,00	3.366.865,00	1.891.814,00	12.519.437,00	5.000.000,00	250,4%
	LV	77.250,00	45.000,00	27.655,00	149.905,00	75.000,00	199,9%
	NL	6.587.021,00	3.555.233,00	2.727.324,00	12.869.578,00	4.000.000,00	321,7%
	NO	835.704,00	2.718.330,00	180.667,00	3.734.701,00	1.500.000,00	249,0%
	PT		825.103,00	26.773,00	851.876,00	-	
	RO					-	
	SE	1.534.042,00	2.357.093,00	1.027.052,00	4.918.187,00	3.000.000,00	163,9%
	SI	127.071,00			127.071,00	750.000,00	16,9%
	UK	1.454.599,00	1.930.501,00	1.677.256,00	5.062.356,00	3.200.000,00	158,2%
	PL		-		-		
	TR	379.308,00	65.677,00		444.985,00		
	RU		154.000,00		154.000,00		
	US	-			-		
Grand Total		46.491.469,00	46.438.792,24	34.507.785,00	127.438.046,24	46.725.000,00	**2,73**
		36,5%	36,4%	27,1%			

4.4.3. Evaluation procedure

27 Full Project Proposals submitted for the Call 2011 were evaluated. All satisfied the eligibility criteria for FPP. The evaluation was conducted according to the rules described in the *ARTEMIS Joint Undertaking selection and evaluation procedures related to calls for*

proposals. The 27 FPPs were submitted to a group of **49 independent experts** as per the defined **remote evaluation** procedures.

The resulting individual evaluation reports were consolidated into *Evaluation Summary Reports (ESR)* and an ordered list was established through a **panel meeting**, held in Brussels from 3 to 7 of October 2011.The ESRs were each reviewed by the Executive **Director**, who would also ensure consistency of the quality of the ESR and more generally acted as a fine-grained filter quality control. The consistency of the results so achieved gives a very high level of confidence in the quality of the technical selection process.

Out of the 27 Full Project Proposals, **16 proposals** were evaluated **above threshold** (40 points minimum on a maximum of 60) and **11 proposals below threshold.**

4.4.4. Evaluation results

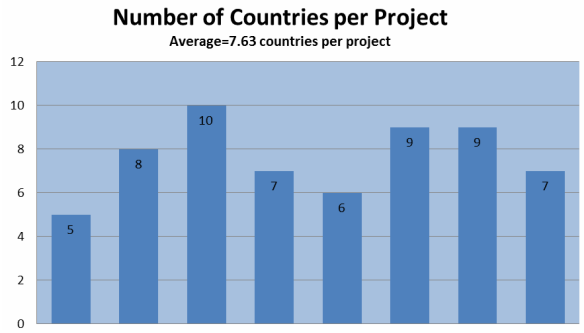
Further to the evaluation, the ranking list has been presented to the PAB for discussion during the meeting of 25 October 2011. A selection decision was taken the same day, following eligibility checks performed by the national authorities. Mandate for negotiation was given to the Executive Director, for **eight proposals** and a **ninth project was put on a reserve list**. The remaining 7 projects were deemed not feasible financially.

Overall, the Public Authorities Board allocated €63.4 million of public funds to 8 projects with a total eligible cost of €133.2 million and €22.2 million of Union funding.

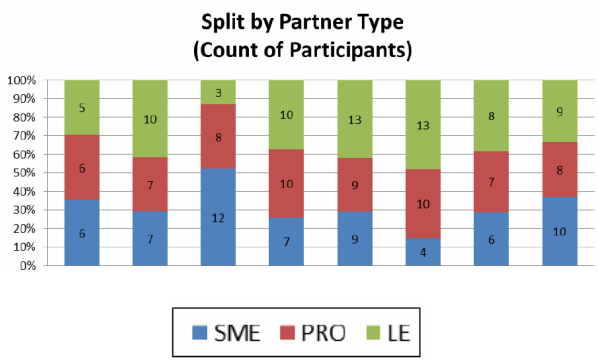
Within this group of projects under negotiation, the average number of partners is 24.6, and the average number of countries in each is 7.63 (10 maximum, 5 minimum).

Regarding the partners per project:

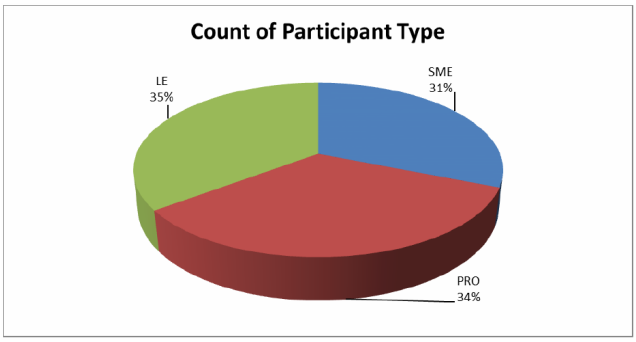
- Increasing number of countries involved in a project (maximum is 10, minimum -4, Average – 7.3). The following figure shows the **number of countries per project**.



- Medium to large initiatives with number of partners ranging between 17 and 31. The following figure show the **partner types per project, in the 8 successful projects**.



The figure below presents the **relative split of partner type based on the number of participants**. It can be observed that all projects invited for negotiations have a good balance among **SMEs (31%)**, LEs and academic institutions.



Regarding costs, to be noted: a balanced distribution of the costs among medium and large size projects (having between 10% and 19% of the total costs each) with only one project that could be considered as relatively small (5%) in costs, but not as potential impact.

General overview of the full process (from submission to selection for funding) is summed up in the table below.

		4.1.2. Submitted proposals						4.1.3. Evaluation results		
Topic number	ranking	proposal ID	proposal acronym	Proposal Title	Submitted POs	Eligible POs	retained	Above threshold	Selected POs for ~~2nd stage~~ or for funding	Reserve list
SP1-JTI-ARTEMIS-2011-7	1	295378-2	e-GOTHAM	Sustainable-Smart Grid Open System for the Aggregated Control	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-1	2	295311-2	VeTeSS	Verification and Testing to Support Functional Safety Standards	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-5	3	295371-2	CRAFTERS	ConstRaint and Application driven Framework for Tailoring Embe	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-3	4	295372-2	DEMANES	Design, Monitoring and Operation of Adaptive Networked Embe	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-1	5	295373-2	nSafeCer	Safety Certification of Software-intensive Systems with Reusabl	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-1	6	295364-2	DESERVE	DEvelopment platform for Safe and Efficient dRiVE	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-1	7	295354-2	SESAMO	Security and Safety Modelling	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-1	8	295397-2	VARIES	VARiability In safety critical Embedded Systems	Yes	Yes	Yes	Yes	Yes	---
SP1-JTI-ARTEMIS-2011-5	9	295440-2	PaPP	Portable and Predictable Performance on Heterogeneous Embed	Yes	Yes	Yes	Yes	(yes, at a later stage)	Yes
SP1-JTI-ARTEMIS-2011-1	10	295349-2	S34M (SEAM	Seamless and Sustainable Software Methods and Modelling Tech	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-7	11	295428-2	eNEIDA	Energy Efficiency In District Areas	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-2	12	295350-2	MediSAR	MediSAR - Medical Open System Architecture	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-3	13	295381-2	PETIT	Pan-European Embedded Systems for Intelligent Transport	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-2	14	295385-2	COACH-ME	Open Platform to Promote Healthy Lifestyle through Physical Ac	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-1	15	295384-2	D100LIVES	Designing a 100 years living resilient processing devices	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-3	16	295422-2	PACOA	Power-Aware Component-Oriented Approach	Yes	Yes	Yes	Yes	No	No
SP1-JTI-ARTEMIS-2011-1	17	295415-2	SNET	Industrial applications of next generation of wireless sensor net	Yes	Yes	Yes	No - failing critierion 3	No	No
SP1-JTI-ARTEMIS-2011-4	18	295423-2	BEeM	Business Effectiveness with eMaintenance	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-5	19	295402-2	DECISIVE	DECISIon and platform support for model-based eVolutIonary de	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-2	20	295398-2	IriSpect	A common image processing and decision support platform for	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-6	21	295377-2	CIVIL-PROT	Intelligent Real-Time Control System for Protection Managemer	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-4	22	295294-2	E2Plant	Energy Efficient Plant	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-7	23	295419-2	GPMOS	Global Platform for Motorways Of the Sea and CO2 Emissions Ma	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-2	24	295390-2	HBOX	Health Tool Box	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-1	25	295442-2	DeSRe	Design Safety Relevant Software Intensive Systems	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-6	26	295426-2	IoT3	Towards the Internet of Trusting and Trusted Things	Yes	Yes	Yes	No	No	No
SP1-JTI-ARTEMIS-2011-7	27	295353-2	IUrC2020	Intelligent Urban Computing 2020	Yes	Yes	Yes	No	No	No

				Submitted POs	Eligible POs	% of retained	Above threshold	Selected POs for ~~2nd stage~~ or for funding	Reserve list
			TOTALS	27	27	100	16	8	1

4.5. Project Portfolio

4.5.1. Grant agreements signed or under negotiation

ARTEMIS – 2010-1	Number	Total costs (€)	Total national funding (€)	Artemis JU contribution (€)	Additional own resources(€)
Sub-Total (signed GAPs)	10	**€ 167,451,747**	**€ 54,938,050**	**€ 27,964,442**	**€ 84,549,255**
Sub-Total (Proposals in Negotiation)	0	0	0	0	0
TOTAL	10	**€ 167,451,747**	**€ 54,938,050**	**€ 27,964,442**	**€ 84,549,255**

The complete list is provided with further details in annex 16.

ARTEMIS-2011-1	Number	Total costs (€)	Total national funding (€)	Artemis JU contribution (€)	Additional own resources(€)
Sub-Total (signed GAPs)	0	0	0	0	0
Sub-Total (Proposals in Negotiation)	9	€ 142,111,772.38	€ 45,194,850.71	€ 23,668,871.97	€ 73,248,049.70
TOTAL	9	**€ 142,111,772.38**	**€ 45,194,850.71**	**€ 23,668,871.97**	**€ 73,248,049.70**

The decision giving the Executive Director the mandate to negotiate the top-8 ranked projects was adopted at the PAB meeting on 7 December 2011. The consortia were invited to negotiate the signature of the grant agreements. The complete list is provided with further details in annex 17.

4.5.2. Project reviews

Project review of the projects signed under past calls and for which activities are still ongoing (12 for call 2008 and 12 for 2009) is reported in annex 18.

4.5.3. Grant agreements for which activities have ended and/or final results are available

Final results from 3 grants signed during previous calls are already available.

GA №	Date GA signed	Project Acronym	Project title	Initial requested funding/ Total costs
100029	29/05/2009	SCALOPES	Common Embedded Security InfRAstructure SCAlable LOw Power Embedded platformS	€ 36,059,013.19

100008	12/11/2009	CAMMI	Cognitive Adaptive Man-Machine Interface	€ 7,315,506.00
100204	01/06/2010	pSHIELD	Pilot embedded Systems arcHItecturE for multi-Layer Dependable solutions	€ 5,392,809.07

The SCALOPES project held its final review in Brussels on 29 March 2011. This is the first ARTEMIS project that is ending. It started in January 2009 with duration of 2 years (+3 months extension) with participation of 36 partners from 11 countries.

Despite its short duration and many administrative difficulties, the project delivered the results to prove that it meets the initial goals (reduced power consumption combined with increased performance for a variety of applications). The technological innovations comprise of horizontally structured multi-domain solutions, platforms for real-time data processing and methods for high productivity software development. A final report is available. During the review there were several impressive demonstrations that illustrated these achievements.

In summary, the project enables an industrially sustainable path for the evolution of low-power, multi-core computing platforms for application domains with strategic value for European competitiveness.

Two more projects, CAMMI and pSHIELD ended in December 2011. Information on their respective reviews is provided in the project review, in annex 18. The innovative output of these projects was the following:

The Camni project provided innovative solutions for intelligent multi-modal interactive systems:

- Cognitive Monitor: To monitor human cognitive state through operator and performance data acquisition and data processing, in order to optimize MMI interactions through workload mitigation methods.

- Workload Mitigator: To assess and manage the measured cognitive state in order to understand any mismatch between the operator's current workload and the operational situation and to select the correct automatic MMI adaptation strategy.

- Adaptive MMI: Implementation of workload-related adaptive strategies in order to trigger levels of automation assistance in multiple task and critical situations.

The pSHIELD is a pilot project aimed at addressing Security, Privacy and Dependability (SPD) in the context of Embedded Systems (ESs) as "built in" rather than as "add-on" functionalities, proposing and perceiving with this strategy the first step toward SPD certification for future ES. The leading concept is to demonstrate composability of SPD technologies.

Starting from current SPD solutions in ESs, the project developed new technologies and consolidated the available ones in a solid basement basis that would become the reference milestone for a new generation of "SPD-ready" ESs. SHIELD would approach SPD at 4 different levels (node, network, middleware and overlay). For each level, the state of the art in

SPD of single technologies and solutions will be improved and integrated (hardware and communication technologies, cryptography, middleware, smart SPD applications, etc.).

The SPD technologies will be enhanced with composable functionality, in order to fit in the SHIELD architectural framework. The composability of SHIELD architectural framework would have great impact on the system design costs and time to market of new SPD solutions in ESs. At the same time, the integrated use of SPD metrics in the SHIELD framework would have impact on the development cycles of SPD in ESs because the qualification, (re-) certification and (re-) validation process of a SHIELD framework instance would be faster, easier and widely accepted.