



EERA
European Energy Research Alliance



The European Energy Research Alliance

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EERA News

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Spring 2012: Selection of new Executive Committee

EERA Partners (Executive Committee members) have been appointed for a term ending in spring 2012. In spring 2012, the Executive Committee (ExCo) will be (re)selected from the current EERA members.

To this end, a call has been published on the EERA website. Through this call the (existing) EERA ExCo invites eligible organisations to express their interest to apply for the new ExCo. The call closes **1st of February 2012**.

4 EERA new joint programmes approved

EERA grows: the Executive Committee approved four new JPs at its last meeting in Vienna on November, 3rd 2011.

The new Joint Programmes are:

- Smart Cities,
- Fuels Cells and Hydrogen,
- Energy Storage,
- Advanced Materials and Processes for Energy Applications (AMPEA).

Including these new Joint Programmes, EERA gathers more than 2,000 researchers in more than 150 research organisations.

Participation in the Horizon 2020 consultation

The Commission is in the process of preparing Horizon 2020, the successor to FP7 that also integrates the competitiveness programme (CIP) and EIT. EERA has submitted to the European Commission its vision on Horizon 2020 and was explicitly mentioned in some internal institutional working documents.

FP7 Energy Work Programme 2013

The Commission has recently initiated the process of defining the FP7 Energy Work Programme. Based on their Descriptions of Work, the EERA JPs have supplied the Commission with suggested priorities and topics for 2013 in the field of energy research. It is expected that the dialogue for the Commission on the Work Programme will be continued at topical level.

EERA Business Model

With all Joint Programmes approved, EERA moves from the phase of programme definition into the phase of programme implementation. This also requires changes in EERA's business (operational) model and the role EERA plays in the various initiatives under the SET Plan.

Members of the Executive Committee agreed on a vision for EERA's future role and funding. A dedicated ExCo task force currently works on the definition of a potential business model for EERA. One of the objectives is to ensure the sustainability of the Alliance through the elaboration of a medium and long term strategy.

Rules of Procedure

The Rules of Procedure (RoP) is a document that intends to consolidate EERA's governance rules. The Secretariat has drafted a first version of this document, reflecting existing rules and procedures.. This first version will now be elaborated with updates and changes that are necessary for the effective and efficient operation of EERA, and will be rewritten in a legally sound manner. The document is available from the EERA Secretariat on request.

The Secretariat will also work on a public version of this document that will be published on the website.

New website

A new EERA website has been launched. Simpler and more attractive, it will be the source of frequently updated information on Joint Programmes, meetings, workshops, conferences, the Annual Congress, the selection of the new Executive Committee, and background to the EERA. An information service (newsletter and dedicated information) will be provided to external stakeholders with an interest in staying informed about EERA and its activities.

2012 EERA Annual Congress

The 2nd EERA Annual Congress will take place next year, on the 25th and 26th of April, in Brussels; details about the programme, venues and speakers will be published on the new EERA website

The EERA at the SET Plan Event

The new Joint Programmes of the EERA will be officially launched in the occasion of the 2012 SET-Pan Event, taking place in Warsaw on the 28th and 29th of November, under the Polish Presidency

JP Implementation

The Descriptions of Work (DoWs) define the activities in the Joint Programmes. To implement these activities requires funding. This implies that the activities must match the topics in funding programmes (and vice versa). DoWs have been formulated such that for the short term, funding is covered through existing projects.

To the extent that activities in the DoW are not yet covered, funding needs to be secured from national and European programmes. This section describes some successful examples of JPs that have been able to secure funding for their activities.

1. FP7

- **JP Nuclear Materials (JPNM): MATTER – EURATOM FP7**

Description: MATTER (MATERial Testing and Rules) is a EURATOM FP7 collaborative project in the work programme 2010 (ref: *FP7 - Fission – 2010/CP-IP*) coordinated by Pierto Agostini (ENEA). In this FP7-CP all JPNM participants are beneficiaries and it covers part of activities performed in EERA JP Nuclear Materials.

Objectives:

1. Perform pre-normative research to develop Design Rules and Harmonized Test Procedures for design and construction of Generation IV components and materials. Special emphasis to support the design and construction of prototypes and demonstrators to be launched as part of European Industrial Initiatives (ESNII: Fast reactors SFR+LFR/GFR, EII on co-generation HTR?).
2. A second objective is to use this project as a platform to get a head start for EERA Nuclear Materials and its co-ordination.

Duration and funding: 2 years, with a 6.000.000 € submitted under the EERA-topic.

- **JP CSP: OPTS – ENERGY FP7**

Description: the OPTS project (OPTimization of a Thermal energy Storage system with integrated Steam Generator), recently submitted by a number of the participants of the EERA JP on Concentrated Solar Power has been granted for a contribution by the European Commission.

Objectives: The project, aiming at developing relatively cheap Thermal Energy Storage (TES) systems, will create a new Thermal Energy Storage system based on single tank configuration using stratifying Molten Salts as heat storage, integrated with a Steam Generator (SG), to provide efficient, reliable and economic energy storage for the next generation of trough and tower plants.

Duration and funding: 3 years, with a contribution of 8.649.500 €.

- **JP Wind energy**

Description: the DTOC project (EERA Design Tools for Offshore Wind Farm Clusters) submitted by a number of the participants in the EERA JP on Wind Energy has been awarded a grant by the European Commission.

Objectives: The project aims to establish an integrated and validated design tool combining the state-of-the-art wake, yield and electrical models, as a plug-in architecture with possibility for third party models to extend and enhance predictions. This will enable more precise predictions of the energy yield.

Duration and funding: 3,5 years, with a contribution of 2.899.857 €

2. JP Smart Grids: INCO

The Joint Programme on Smart Grids is exploring the possibilities for cooperation with international counterparts. To this end, a workshop was organised at the National Renewable Energy Laboratory (NREL) in Golden, Colorado. The purposes of the workshop were to **convene experts** from leading smart grid R&D institutions and to **exchange information** on medium-to-long-term smart grid research agenda, progress, and successes.

The workshop was sponsored by the EERA Joint Programme and the US Department of Energy. It was attended by more than 80 researchers and electric utility stakeholders from the US, EU, and Japan. A follow-up workshop is planned in May 2012 in Milan. Eventual purpose is to come to a alignment of various research programmes. In the mean time, the possibilities for joint research activities by exploiting opportunities in EU and US funding programmes are explored.

Further, dialogues with leading organizations from Japan and Korea engaged in very significant R&DD activities on smart grids, are also ongoing in the framework of the JP on Smart grids.

4 New Joint Programmes

1. Smart Cities

Participants: 35 institutes and universities from 10 countries
Resources: 190 person-year/year
Coordinator: Brigitte Bach (AIT)

Sub-programmes:
energy in cities
urban Energy networks
energy-efficient Interactive Buildings (EeIB)
urban City-related Supply Technologies



Dr. Brigitte Bach graduated with a PhD in Technical Physics from Vienna University of Technology and is Head of Energy Department at the Austrian Institute of Technology AIT (Vienna) since 2009. In her position at AIT she is responsible for the department's research activities and strategy in the field of "Energy for the Built Environment" and "Electric Energy Infrastructure". In addition, Brigitte Bach is an active member in the supervisory board of Graz University of Technology, Austria, and in other bodies, like the AGE - Advisory Group on Energy for the 7th Framework Programme for the European Commission. She became Vice Chair of the IEA Experts Group on Science for Energy and the European Heat Pump Association (EHPA). In autumn 2009 Brigitte Bach received the award "Austrian of the Year" in the category research.

The ambition of the JP on Smart Cities is the development of scientific methods and concepts supporting the transformation of European cities into "smart cities". Unlocking the full potential for significant increase in energy-efficiency in cities and massive integration of renewables into urban

infrastructure shall be enabled through intelligent planning, design and operation of energy systems at urban scales. The JP is based on a long-term research strategy and shall be developed in parallel with the Smart Cities and Communities Initiative (EII) recently launched within the SET Plan.

Based on the thematic framework focusing on energy, the JP on Smart cities has been structured around 4 major research areas related to urban energy technology integration. SP 1 deals with the understanding of the complexity of entire urban energy systems by means of newly developed tools for energy concepts and dynamic energy flow simulations. SP 2 is dedicated to urban network integration based on multi-energy sources and sophisticated ICT infrastructure. SP 3 outlines the concept of energy-efficient buildings acting as interactive elements in the energy system and their interfaces with the energy grid and consumer. SP 4 focuses on large-scale application of renewables, momentarily solar thermal and heat pumps, in urban areas supported by newly developed design and simulation frameworks and advanced testing and monitoring infrastructure.

Currently more than 60 research institutions are involved in the JP coming from 14 different European countries. The anticipated research questions will be tackled by multi-disciplinary teams through an integrated system approach. The high commitment of the partners contributing research capacity of 193 py/y can be seen as a clear added value supporting the principal ideas behind EERA.

More details are on the EERA web site: <http://www.eera-set.eu>

For further information please contact Massimo Busuoli (massimo.busuoli@enea.it) and/or Marco Carulli (marco.carulli@enea.it).

2. Fuel Cells and Hydrogen technologies (FCs&H2)

Participants:	17 institutes and universities from 11 countries
Resources:	131 person-year/year
Coordinator:	Angelo Moreno (ENEA)

Sub-programmes:

1. Electrolytes
2. Catalyst and Electrodes
3. Stack Materials and Design
4. Systems
5. Modelling, Validation And Diagnostics
6. Hydrogen Production and Handling



Dr. Ing. Angelo Moreno is currently responsible of hydrogen and fuel cells project at ENEA. His research activities have been in nuclear waste management since 1974 to 1995 and in hydrogen and fuel cells since 1995. The ambition of the JP on FCH2 is to create a technical-scientific basis for further improvement of Fuel Cells and Hydrogen technologies by aligning medium- to long-term research activities of participating institutes.

There are two main obstacles to commercialisation of fuel cell and hydrogen technologies: life time and costs. In this JP we identify the main areas where long-term research activities will help these technologies to reach breakthroughs towards real market applications.

Initially, the JP will focus on fuel cell and water electrolyser issues and related electrochemical aspects, in addition to a sub programme on non-electrochemical hydrogen production and handling.

Key to the programme is that we explore the possibilities for joint European technology development, and identify and exploit the potential synergies in such collaboration. We aim to complement existing activities in the field, notably the Fuel Cell and Hydrogen Joint Undertaking, by focusing on long-term research topics and by harmonising research efforts at Member State level.

*More details on the specific areas are on the EERA web site under <http://www.eera-set.eu>
For further information please contact Bas van Bree (vanbree@ecn.nl)*

3. Energy storage

Participants:	26 institutes from 12 countries
Resources:	306 person-years/year committed
Coordinator:	Hans J. Seifert (KIT)

Sub-programmes:

1. Electrochemical Storage
2. CHEMICAL STORAGE
3. Thermal Energy Storage
4. Mechanical Storage
5. SMES
6. Energy Storage Techno-Economics



Hans J. Seifert is head of the Institute for Applied Materials (IAM-AWP) at the Karlsruhe Institute of Technology (KIT) and Professor in Materials Science and Engineering.

The idea behind this Joint Programme is to overcome diverse research activities on Energy storage in Europe and join forces to support the establishing of reliable, cost effective and competitive energy storage technologies and thus promote European leadership in this area.

This JP will introduce a joint strategic research programme, which should be a great opportunity for the community and sector in Energy Storage. This programme is in accordance, complementary and supportive to other SET-Plan initiatives. However energy storage is up to now not an issue of the European energy technology scenarios. Therefore, pioneer efforts will be necessary in supporting decision making and reducing risks for government and industry. A platform for Integrated Energy Storage Simulation (IESS) should be established for coordinated modelling and linking sub-programmes. The JP will maintain close relations to the newly launched European Association for Storage of Energy (EASE) which is dominated by private companies within the electricity and energy sector in general. The links between EASE and the JP will secure the optimal coordination of R&D efforts in private industry and public research organizations.

*More details to the specific areas are on the EERA web site under <http://www.eera-set.eu>
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4. AMPEA (Advanced Materials)

Participants: 24 institutes from 10 countries
Resources: 249 person-years/year committed
Coordinator: Hervé Bercegol (CEA)

Sub-programmes:

1. Material Sciences
2. Science of Transport phenomena and physical chemistry of processes
3. Characterisation platforms for materials and devices
4. Multiscale, multiphysics simulation
5. Artificial Photosynthesis Network



Dr Hervé Bercegol is currently programme leader at CEA/Physical Sciences branch. His research activities have been in the fields of materials science, physical chemistry of surfaces and light/matter interaction. The ambition of AMPEA is to mobilise the innovative power of basic, multi-disciplinary research for future emerging energy technologies.

AMPEA will be composed of two main pillars: SP1, devoted to basic materials science and SP2 about the science of chemical and physical. Three cross cutting subprogrammes will be SP3, dedicated to experimental characterisation platforms for materials and devices, SP4, a multiscale multiphysics simulation programme, and SP5 which will aim at building a European network of laboratories involved in Artificial Photosynthesis.

AMPEA mission statement has been defined by all participants of the joint programme and states that EERA JP AMPEA has to develop new horizons for science for energy, visible in Europe at the industrial and political level. Thus its main objective is harness and integrates materials science and process innovation for high performance sustainable energy technologies to enhance the long term competitiveness of European Industry. EERA JP AMPEA will work with other EERA-JPs and with Universities (EPUE*) to bridge fundamental and applied research fields.

More details are on the EERA website: <http://www.eera-set.eu/>
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