

Special Newsletter Best Practices



EERA
European Energy Research Alliance



The European Energy Research Alliance

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EERA Best Practices

Content:

Materials for Nuclear

In less than 4 years, the European Energy Research Alliance has gone from 10 founding members to its current status of more than 150 participating institutions. Today the alliance runs 13 EERA Joint Programmes which bring together researchers in key energy research areas such as Wind Energy, Advanced Materials, Geothermal Energy or Smart Cities. Together with colleagues from the European Industrial Initiatives, European Technology Platforms and other private and public stakeholders, the EERA Joint Programmes aim to help realise the goals of the European Commission's Strategic Energy Technology Plan (SET-Plan)

Ocean Energy

All EERA Joint Programmes must follow certain EERA rules, but within these framework conditions the Joint Programmes each find different modus operandi for coordinating European research in their field.

Smart Grids

In this special edition EERA newsletter, we have chosen examples of best practice from three of our Joint Programmes. Each best practice case provides a view into the EERA joint Programmes. We hope they will be of interest to our readers and invite all interested to contact our secretariat representatives or the Joint Programme Coordinators for more information.

JP NAM Best practices:

In December 2012 the EERA Joint Programme for Nuclear Materials (JPNM) launched 11 Pilot Projects. The Pilot Projects are expected to become important organising principles for increasing the joint research activities in the JPNM. This article provides a short introduction to the process of setting up JPNM Pilot Projects.

The objective of the EERA Joint Programme for Nuclear Materials (JPNM) is to identify key priority topics and funding opportunities with the purpose of supporting in an efficient way the development and optimisation of a sustainable nuclear energy.

The objectives and the timescale of the EERA JPNM have been defined in order to support the development of JPNMs industrial counterpart in EERA; the European Sustainable Nuclear Industrial Initiative (ESNII). ESNII foresees the development of innovative fast neutron and nuclear waste transmutation systems. These systems have a prototypical and demonstration character for the implementation of industrial facilities. The activities of the JPNM are strongly coordinated with the ESNII activities and are linked to the Strategic Research and Innovation Agenda of the Sustainable Nuclear Energy Technology Platform (SNETP)

The JP Steering Committee approved different measures for the implement the objectives, which are described in more details in the JP Guidelines.

The instruments for implementation so far are:

- Joint Technical Teams
- Task Forces
- Pilot Projects
- Training and Mobility Schemes

The Joint Technical Teams should foster the exchange of information among experts in specific fields, while Task Forces can be formed by experts from different field to address urgent questions. The Training and Mobility Schemes are thought to implement the exchange of scientists between associations and to ease the access to unique experimental facilities. Each instrument and related rules are explained in detail in the guidelines.

In the following we shall have a closer look at the JPNMs Pilot Projects (PP). The PPs focus on specific topics (no more than two) within a more general theme outlined in one of the JPNMs Sub-Programmes (SP). The results of the PP are an integral part of one, or more than one, SP, if the PP is cross-cutting, and the results are primarily reported through deliverables.

The PPs have the following features:

- They are based on the principles of coordination of use of resources and complementarity
- They should include at least 3 participants.
- They should have a duration of at least 1 year and an effort of at least 1 PY/Y.

- Non-EERA JP partners can be associated through EERA JP partners and participate to the PP with a limited duration. However, a PP can only be coordinated by JPNM participants.
- Concerning the Intellectual Property Rights (IPR) of a PP, the EERA IPR rules should in general be followed. However, in some cases a PP could have to consider more binding specific agreements. These items will always be analysed by the JPMB and proposed for decision to the JPSC.
- An official template for the PP proposal is used by the participants to submit the proposal.
- A PP can be proposed by Sub-Programme coordinators, Task Forces, and Joint Technical Teams.

The procedure for a PP approval foresees several steps. The JPMB identifies dates for PP proposals to be submitted, which in general happens twice a year and one month prior to a JPMB meeting. The initial PP proposal is evaluated by the EERA Participants (via e-mail) and by the JPMB. Then the proposal is presented to the whole EERA JPNM community either via e-mail or in a meeting. Finally the Pilot Project is approved by the JPSC (at the JPSC meeting or via e-mail). This process has proven to ensure high quality PPs which have also provided a good basis for exploring further funding opportunities.

Following months of discussion and preparation, eleven PPs were approved by the JPSC and started December 2012. The title and PP coordinator are listed below:

SP and title	Coordinator
SP1	
• Creep-Fatigue	Karl-Fredrik Nilsson, JRC-IET
• SAFE_COAT : Safety and reliability enhancement of nuclear systems through coatings and surface modification engineering	Alfons Weisenburger, KIT
• Mechanical tests of fuel cladding tubes	Karl-Fredrik Nilsson; JRC-IET
• Investigation of Environment Assisted Degradation of material properties in liquid lead alloys and development of mitigation approach	Serguei Gavrilov, SCK•CEN
SP2	
• Characterization of ODS alloys for fast nuclear reactor cladding	Marta Serrano, CIEMAT
• Fuel cladding chemical interaction	Karl-Fredrik Nilsson JRC-IET
SP3	
• Ternary carbides (MAX phases) and their composites as candidate materials with superior liquid metal corrosion resistance for use in Gen-IV lead fast nuclear reactors.	Konstantina Lambrinou, SCK•CEN
• Development and characterization of environmental barrier coating on SiC/SiC pin-clad tube geometry for high T applications in GFR helium coolant.	Marie-Francoise Maday, ENEA
• Development and characterization of joints for hermetic sealing thin-walled, small diameter SiC/SiC tubes representative of GFR pin-fuel clad	Marie-Francoise Maday, ENEA

SP4	
• Design-Oriented MOdelling of Plastic Localisation effects in irradiated austenitic and ferritic steels and supporting Experiments – DOMOPLEX	Lorenzo Malerba, SCK•CEN
• Modelling of embrittling features in irradiated F/M steels and alloys (MEFISTO)	Lorenzo Malerba, SCK•CEN
• Modelling of irradiation creep and swelling in F/M and austenitic alloys (MOIRA)	Lorenzo Malerba, SCK•CEN
• Screening of irradiation creep and swelling mechanisms in austenitic and ferritic alloys using atomic- and dislocation-level simulations, and modelling-oriented experiments	Lorenzo Malerba, SCK•CEN

If you are interested to know more please visit the JP web-page [here](#) or contact Holger Ihssen (Holger.Ihssen@Helmholtz.de) and Concetta Fazio (concetta.fazio@kit.edu).

Ocean Energy

JP Ocean Energy State of Activities:

The EERA Joint Programme on Ocean Energy has proven to be a good example of how EERA helps coordinate European research and active participation in policy consultations. A little over one year after its launch, the Joint Programme on Ocean Energy has produced Joint Papers, developed Joint Programmes and increased the general level of cooperation in the field.

Since its launch in 2011 the JP Ocean Energy has built up a coordinated European research community on ocean energy. The architecture of the Ocean Energy JP is based on six key research theme topics:

- Resources
- Devices and Technology
- Deployment and Operations
- Environmental Impact
- Socio-economic Impact
- Research Infrastructure, Education and Training

In the first year a series of workshops was set up to bring the European research experts together and establish ocean research theme groups. The aim of these groups is to provide an opportunity for valuable collaboration and coordination. The result of the workshops underpins the objectives of the JP. Only one year after its launch the JP Ocean Energy can present added value through:

- Increased and better coordinated collaboration
- Leading responses into FP calls
- Bringing together national programs

- Joint papers
- Joint projects
- As a voice to the European Commission
- Evolving guidance for future FP call and active participation in DG Mare consultations

The first EERA Ocean Energy Annual Assembly was held in September 2012 to give an overview of ocean energy research from all member states within the JP Ocean Energy. Key researchers and research funders from Europe attended the Annual Assembly and were part of the discussion on:

1. Research funding mechanisms and programmes in European countries,
2. The current status of ocean energy research in different European countries,
3. Identifying areas for future cross-theme collaboration

If you are interested to know more please visit the JP website [here](#) or contact Joint Programme Coordinator Henry Jeffrey (Henry.jeffrey@ed.ac.uk) or EERA secretariat representative Holger Ihssen (Holger.Ihssen@helmholtz.de).

Smart Grids

JP Smart Grids – increase integration and visibility through technical reports

The EERA Joint Programme on Smart Grids has successfully established a model for developing high quality technical reports based on the expertise available in the JP. The technical reports have become a resource for policy makers and international peers while providing grounds for strengthening collaboration in the JP on Smart Grids.

Pooling resources to strengthen European research and provide expert knowledge to society is a cornerstone of all EERA Joint Programmes. In the EERA Joint Programme for Smart Grids, Joint Programme Coordinator, Luciano Martini, and colleagues have found a good model for developing high quality technical reports on specific smart grid topics. These technical reports have already demonstrated their relevance in:

- Providing an opportunity to pool resources and build collaborations in the EERA JP
- Increasing the visibility of the Joint Programme both in the EU and outside due to the inclusion of non-EU reviewers
- Offer expert advice in easily accessible reports to policy makers and international peers.

Currently, two reports are available [here](#) and further five reports are in the making.

JP Smart Grids' technical reports focus on a specific topic of interest to the “grid” community and are drafted jointly by members of the JP. All reports are based on a common template to ensure that all Smart Grids reports are carries a homogenous *EERA* fingerprint.

Once the first draft is completed, it is circulated to all members of the JP for comments and formal approval. This is important to ensure that the report expresses the view of the entire JP.

Following internal review and approval, the report is submitted to external reviews by senior scientists or professionals. Normally, 3-5 experts are selected as reviewers. All reviewers accept by email not to disclose the content of the reports. The experts typically come from the Smart Grids European Technology Platform, EEGI (European Electricity Grid Initiative) or other European organisations. One non-EU expert is normally also invited as reviewer. The reviewers are asked to return their review in 3-4 weeks in a template format.

For dissemination purpose, a 6-page executive summary is written which can be submitted to international conferences and workshops. The whole report is disseminated by direct email contact to relevant stakeholders and via the JP [web-page](#). The JP currently considers to follow up with the dissemination of updated versions.

If you are interested to know more please visit the dedicated JP Smart Grid web-page [here](#) or contact EERA secretariat representatives Massimo Busuoli (massimo.busuoli@enea.it) or Salvatore Amico Roxas (salvatore.amicoroxas@enea.it).