SmartGrids ERA-Net

2nd SmartGrids ERA-Net Call for applied research proposals

Application deadline: 15.03.2011, 17:00 hours CET

Involved funding agencies[1]:

-The Research Council of Norway
-Energinet.dk
-The Swiss Federal Office of Energy
-The Basque Government
-The Scientific and Technological Research Council of Turkey – (TUBITAK)
-Nordic Energy Research

Summary: In order to support joint research on European smart grids EU´s initiative SmartGrids ERA-Net launches a second call for research projects. At least three partners from three different participating countries must participate in each project. The SmartGrids ERA-Net is facilitating the call process on behalf of the participating national funding agencies. The call is done in a two-step process.

[1] The German funding agency Forschungszentrum Jülich GmbH - Projektträger Jülich is not an official partner in this SmartGrids ERA-Net call but can support joint projects between German researchers (under the national funding scheme) and 2nd call SmartGrids ERA-Net projects.

1. The objectives of the SmartGrids ERA-Net

The SmartGrids ERA-Net (2008-2012) is an EU initiative that aims at contributing to European research cooperation in the area of smart grids. It provides co-ordination of related research activities within the national and regional public (co)funded RTD. The initiative creates a network of programme managers, closely connected to policy makers and industry that undertakes joint activities.

The SmartGrids ERA-Net is actively cooperating with existing smart grids initiatives such as the SET-plan/EU Electricity Grid Initiative (EEGI) and the European Technology Platform (ETP). In addition an alignment with the existing FP7 ongoing research projects will be sought.

One instrument within the SmartGrids ERA-Net is joint calls. In the 2nd call, projects are encouraged to contribute to the fulfilment of the EEGI-roadmap or the ETP-strategic research agenda. Relevant documents related to EEGI-roadmap and ETP-strategic research agenda can be found at the web site of SmartGrids ERA-Net (www.eranet-smartgrids.eu).

2. General information about the 2nd SmartGrids ERA-Net call

2.1 The aims of the 2nd call for proposals

The aims of the 2nd SmartGrids ERA-Net call is to:

- Generate joint European relevant applied research activities on smart grids with focus on the thematic areas specified in section 2.3.
- Create added value in national and regional R&D activities in the field of smart grids through planned transnational cooperation for the benefit of scientists, public funding agencies, industry, regulators, utilities and society.
- Bring together different national research communities, industry and actors within distribution/transmission to create a critical mass for cross-disciplinary research.
- Complement R&D activities in FP7.

2.2 A definition of a smart grid

SmartGrids ERA-Net uses the same definition of a smart grid as is being used in the Strategic Deployment Document (SDD) of the SmartGrids Technology Platform[2]:

> *A SmartGrid is an electricity network that can intelligently integrate the actions of all users connected to it - generators, consumers and those that do both – in order to efficiently deliver sustainable, economic and secure electricity supplies.*

[2] http://www.smartgrids.eu/documents/3rdGA/SmartGrids_SDD_Draft_25_sept_2008.zip

A SmartGrid employs innovative products and services together with intelligent monitoring, control, communication, and self-healing technologies to:

- *better facilitate the connection and operation of generators of all sizes and technologies;*
- *allow consumers to play a part in optimizing the operation of the system;*
- *provide consumers with greater information and choice of supply;*
- *significantly reduce the environmental impact of the whole electricity supply system;*
- *deliver enhanced levels of reliability and security of supply.*

SmartGrids deployment must include not only technology, market and commercial considerations, environmental impact, regulatory framework, standardization usage, ICT (Information & Communication Technology) and migration strategy but also societal requirements and governmental edicts.

2.3 Preferred focus areas and scientific content

The 2nd SmartGrids ERA-Net call is open for project proposals which fit into the thematic areas below. In a proposal the connection and support of the EEGI-roadmap, the SET-plan, or the ETP-strategic research agenda should be explicitly specified, except possible for proposals in the "legal and regulatory"-theme (last paragraph in this section).

Social aspects and consumer incentives

These thematic areas cover a range of issues relating to the consumer side of the development of smart girds. Possible topics include, but are not necessarily limited to:

- Public acceptance of transmission infrastructure
- Design of ICT systems for demand response

Smart grids related cross border issues including transmission challenges

This thematic area covers a range of issues concerning cross border issues of developing smart grids. Projects in this area look at the technical challenges related to smart grids in a cross border perspective. Possible topics include, but are not necessarily limited to:

- Energy storage
- Vehicle to grid
- Transmission grids and challenges related to improved transmission capacity
- Balancing of renewable energy

Research projects related to smart grid demos

The call invites research projects related to smart grids demonstration-projects, for example preparatory work, models, tools etc. Financing of the demo equipment is not eligible cost but should be arranged or funded outside by a third party, such as TSOs, DSOs or other funding agencies etc. Research related to the demo projects in the EEGI-road map will be prioritized.

Legal and regulatory smart grids frameworks
This thematic area covers a range of issues concerning the legal and regulatory challenges and ramifications of developing European smart grids. Possible topics include, but are not necessarily limited to:

- Design of market place
- Distributed generation and virtual power plants
- Implications of the third market package
- Distribution and retail related to new services in smart grids

2.4 Involved countries/regions and programmes

The countries/regions participating in this 2nd SmartGrids ERA-Net call are: Norway (with the *RENERGI programme*), Denmark (with *the ForskEL programme*), Switzerland *(*with the research programme "*Grids*"), The Basque Country (with the *GAITEK programme)*, and Turkey (with *The Support Programme for Scientific and Technological Research Projects (1001)*).

The German funding agency Forschungszentrum Jülich GmbH - Projektträger Jülich is not an official partner in this SmartGrids ERA-Net call but can support joint projects between German researchers (funded by Forschungszentrum Jülich GmbH - Projektträger Jülich under the national funding scheme) and 2nd call SmartGrids ERA-Net projects. For more information on the requirements for German researchers see: http://www.ptj.de/netze_fuer_die_stromversorgung

2.5 Funding arrangements

Research will be funded from national and regional sources and will be subject to national and regional funding rules. Each participating funding agency has made separate arrangements for funding the national/regional participants. The public funding available for the individual projects funded in the frame of this call follow the national/regional rules. Additional co-financing from stakeholders is expected following national and European rules for R&D funding. The total funding budget is limited. For details please contact your national/regional agency, see page 8 in this document.

Public funding from the 2nd SmartGrids ERA-Net call partners will be provided as shown in table 1.

Country /region	Funding body	Approx. 2nd call funding in €	Link to relevant funding programmes
Norway	Research Council of Norway	500 000	http://www.forskningsradet.no/servlet/Satellite?c=Page&pagename=renergi%2FHovedsidemal&cid=1226993846874
Denmark	Energinet.dk	500 000	http://www.energinet.dk
Switzerland	Swiss Federal Office of Energy	250 000	http://www.bfe.admin.ch/forschungnetze/
Basque Country, Spain	The Basque Government	600 000	http://www.euskadi.net/r33-2695/es/contenidos/ayuda_subvencion/gaitek_2005/es_8857/es_gaitek.html http://www.euskadi.net/bopv2/datos/2009/12/0906799a.pdf
Turkey	TUBITAK	500 000	http://www.tubitak.gov.tr/

Table 1: The countries/regions and links to the programmes participating in the 2nd SmartGrids ERA-Net call

3. Type of project proposals & consortia - requirements

3.1 Type of project proposals

Projects should involve actual cooperation/task sharing between the project partners. The consortia of this 2nd SmartGrids ERA-Net call should include partners from at least three of the countries/regions participating in this call as shown in Table 1 (any German partners in addition). The projects should last maximum 3 years.

3.2 Consortium composition – who can apply?

Within the framework of the national/regional limitations the 2nd SmartGrids ERA-Net call is open to any resident researcher/eligible institution/business within the participating countries/regions shown in table 1 – complying in each case with the national/regional regulations on public funding, unless specified otherwise by the specific programme.

4. Submitting project proposals

4.1 Submitting procedure

The 2nd SmartGrids ERA-Net call is structured as a two-stage process.

Stage 1: Each consortium submits a pre-proposal. These will be evaluated by experts in the funding bodies or involved programmes.
Stage 2: Pre-proposals will be selected for the second stage according to the evaluation criteria in section 5. The chosen consortia are then asked to write full

proposals. Full proposals will be selected by the processes described in section 5. The chosen projects can begin after national/regional funding decisions.

Stage 1	Publication date – invitation for pre-proposals	15 January 2011
	Deadline for submitting pre-proposals	15 March 2011, 17 hours CET
	Selection of pre-proposals to be invited to submit full proposals	15 April 2011
Stage 2	Deadline for submitting invited full proposals	10 June 2011
	Deadline peer evaluation of full proposals	4 July 2011
	Deadline national/regional funding decisions	7 July 2011
Project	Start of first projects	From Autumn 2011

Table 2: The timeline for the 2nd SmartGrids ERA-Net call procedure

4.2 Application forms and language

The pre-proposals and the full proposals are to be written in English. See the list of suggested topics in 2.3 for thematic guidance.

The pre-proposals have to be submitted via an electronic form, which is available on the website of the SmartGrids ERA-Net www.eranet-smartgrids.eu. This electronic form cannot be saved and edited. The submitters are asked to give brief descriptions of the following:

- Problem description.
- Objectives.
- Expected project results and impacts.
- Participants.
- Method, work plan and milestones.
- Expected costs.
- Possible sources and amount of co-financing.

For the invited full proposals another electronic form available on the web site of the SmartGrids ERA-Net has to be used. This full proposal form can be saved and edited until submission.

Pre-proposals and full proposals will be rejected if they have not been submitted within time limits or not with a properly filled-in electronic form.

5. Evaluation of projects proposals

5.1 The evaluation procedure and timelines

The pre-proposals of the 2nd SmartGrids ERA-Net will be evaluated by experts in the funding bodies or involved programmes. Full proposals of the 2nd SmartGrids ERA-Net will be evaluated by independent international experts (peers). The final decisions on what projects to support will be made by the involved funding bodies

based on evaluations from the international experts (peers), national/regional priorities and funding criteria and European collaboration perspectives.

5.2 Evaluation criteria

There will be complementary evaluation criteria for pre-proposals in the first stage and the full proposals in the second stage.

Evaluation criteria for pre-proposals:

- Relevance to the scope and objectives of the call.
- Feasibility of the project plan.
- Contribution to a reliable, sustainable and affordable energy supply.
- Quality of international collaboration and chance of project success.
- Possible impact on society.
- Degree of novelty and applicability.
- Conformity to national/regional funding programmes, their objectives and criteria.
- Economic and environmental impact.
- Contribution to the fulfilment of the EEGI-roadmap and/or the ETP-strategic research agenda.

Evaluation criteria for full proposals:

- Scientific quality.
- Feasibility of the research and budget plan.
- Actual task sharing.
- Competence and expertise of the applicant/research team/consortium.
- International contact networks of the applicants/consortia
- Added value generated by the consortium (transnational, multi- or interdisciplinary).
- Knowledge reinforcement and dissemination.
- Strategic vision.
- Costs and co-financing.
- Conformity to national/regional funding programmes, their objectives and criteria. Not a criteria for proposals regarding "Legal and regulatory theme".

5.3 Communication of project evaluation decisions

The outcome of the evaluation of the pre-proposals and the full proposals will be communicated to applicants. Brief feedback from the international experts' (peers) consensus evaluation will be given to the submitters of full proposals.

5.4 Management of the decision process and the start of projects

The formal funding decisions will be taken by the funding agencies after the full proposals have been evaluated by the international experts (peers). Accepted projects will be funded by the involved funding bodies of the respective countries/regions. Each country/region will fund its own researchers.

When final decisions have been conveyed to project participants, successful applicants must enter into individual contractual agreements with their national/regional funding agencies. A consortium agreement must be concluded between the project participants to inter alia regulate intellectual property rights (IPR) issues. A template consortium agreement will be made available. Both the consortium agreement and the above mentioned individual contractual agreements are prerequisites for the first payments made to the project participants from the

regional/national funding agencies. The involved funding agencies will monitor and supervise the funded projects (reporting).

6. Additional information and contact information

6.1 SmartGrids ERA-Net web site

On the SmartGrids ERA-Net web site (www.eranet-smartgrids.eu) there are information/functions related to the call, e.g.:

- Application forms for the pre-proposal and the full proposal.
- Documents related to the EEGI-roadmap and the ETP-strategic research agenda.
- As an option there is a Partner Search Form for finding partners to a project team (as a "matchmaking function"): find potential partners, and/or upload your own research interest profile.

6.2 National/regional contact persons

Applicants should contact the national/regional funding agency in order to get information about prioritized focus areas and other national specific information. The following persons are contact persons for the call in the involved countries/regions:

Research Council of Norway, www.rcn.no

- Mr. Erland Eggen, Tel. +47 91 51 45 29, e-mail: ese@forskningsradet.no

Energinet.dk, www.energinet.dk

- Ms. Jeanette Møller Jørgensen, Tel. +45 7622 4417, e-mail: jmj@energinet.dk

Swiss Federal Office of Energy, www.bfe.admin.ch

- Mr. Michael Moser, Tel. +41 31 325 36 23, e-mail: michael.moser@bfe.admin.ch

Basque Goverment, www.euskadi.net **/ Innobasque,** www.innobasque.com

- Ms Oihana Blanco, Tel. +34 94 420 9488, e-mail: oblanco@innobasque.com

Turkey, www.tubitak.gov.tr

- Mr. Murat Aydos, Tel. + 90 (312) 468 5300 (Ext: 3309), e-mail: smartgridseranet@tubitak.gov.tr
- Ms. Ilknur Yilmaz, Tel. + 90 (312) 468 5300 (Ext: 3926), e-mail: smartgridseranet@tubitak.gov.tr

For overall call management: Nordic Energy Research, www.nordicenergy.net

- Ms. Lise Jørstad, Tel. +47 92 43 58 88, e-mail: lj@nordicenergy.net
- Mr. Mats Andersson, Tel. +47 95 08 51 54, e-mail: mba@nordicenergy.net

Appendix

Outcome of the 1st call

The 1st SmartGrids ERA-Net call was published 15 January 2010 as a collaboration between the following countries/regions: Austria, Basque country, Belgium, Denmark, Estonia, France, Latvia, Norway and Switzerland.

10 pre-proposals were submitted, 6 were invited to go to the second stage and submit full proposals. After an international peer review, four projects were selected for funding. These projects and their participations are shown in the tables below.

1. The Impact of Prosumers in Smart Grid based Energy Market	
The project idea focuses on prosumer (combined producer and consumer) roles and behaviour in a market model for integration in power grids.	
Denmark	Aarhus School of Business/ Jan Thøgersen
	SEAS-NVE/ Jan Rasmussen
	NOE Net AS/ Flemming Paulsen
	GridManager AS/ Morgens Birkeland
Norway	Inkubator Halden AS/ Bernt Bremdal (project leader)
	Inkubator Halden AS/ Dieter Hirdes
Switzerland	University of St. Gallen/ Moritz Loock
	Bacher Energy Ltd./ Rainer Bacher

2. Efficient identification of opportunities for distributed generation based on smart grid technology	
The project is developing a planning tool for finding optimal connection points for renewable distributed generation.	
Denmark	Balslav/ Helena Segerberg
Norway	Sweco Norge AS/ Kåre Borgund (project leader)
Latvia	Institute for Physical Energetics/ Anna Mutule
Switzerland	Bacher Energy Ltd./ Rainer Bacher

3. Quality and Safety	
The project idea focuses on power quality, protection of equipment and safety requirements for people working with smart grid technology.	
Austria	Graz University of Technology/ Lothar Fickert
Estonia	Tallin Univ. of Technology/ Tõnu Lehtla (project leader)
Latvia	Riga Technical University/ Leonids Ribickis

4. Optimizing green energy and grid load by geographical steering of energy consumption	
The project studies the technological challenges and potential benefits of exploiting geographical load shifting in addition to time shifted energy consumption.	
Austria	Austrian Institute of Technology/ Matthias Stifter
	Vienna University of Technology/ Friederich Kupzog
Basque country	Fundacion Labein/ Inaki Laresgoiti
	Semantics System, S.L/ Mikel Renteria
Belgium	IBBT/ Peit Demeester
	Vito/ Raf Ponnette (project leader)
Switzerland	Università della Svizzera Italiana/ Umberto Bondi