



European Research Area Network – Smart Grids Plus

Call for proposals

Opening of call	14 September 2017
ERA-Net Smart Grids Plus Call Announcement and Launch Events	8 June Bucharest, Romania 3-5 October Amsterdam, The Netherlands 12 July, 14 September, 12 October online web events
Advisory period	14 September – 14 November 2017
Project proposal deadline	14 November 2017, 14:00 CET

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1 TIMELINE OF THE 2017 CALL

ERA-Net Smart Grids Plus is an initiative of 21 European countries and regions. The overall goal of ERA-Net Smart Grids Plus is to support knowledge sharing between European smart grids initiatives by promoting and financing joint projects. This document is an invitation to respond to the 2017 joint transnational call for Smart Grids projects in Europe. The total available budget is 8.5 Mio €.

Call launch	14 September 2017
ERA-Net SG+ 3rd Call Announcement and Launch Events	8 June Bucharest, Romania 3-5 October Amsterdam, The Netherlands 12 July, 14 September, 12 October online web events
Compulsory advisory period	14 September – 14 November 2017
Proposal deadline	14 November 2017, 14:00 CET
Preliminary national/regional eligibility check	27 November 2017
Change of ineligible partner deadline	1 February 2018, 14:00 CET
Second preliminary national/regional eligibility check	8 February 2018
Deadline funding decision feedback	4 May 2018
Expected project start	1 July 2018 – 1 December 2018

Project proposals must be submitted electronically. More information, about the call and the online Electronic Submission System, can be found at the ERA-Net Smart Grids Plus website: www.eranet-smartgridsplus.eu.

2 BACKGROUND: ERA-NET SMART GRIDS PLUS

The vision for smart grids in Europe is to create an electric power system that integrates renewable energies and enables flexible consumer and production technologies. This can help to shape an electricity grid with a high security of supply, coupled with low greenhouse gas emissions, at an affordable price. Our aim is to support the development of the technologies, market designs and customer adoptions that are necessary to reach this goal.

The ERA-Net Smart Grids Plus will advance the integration of smart grids system technologies, stakeholder adoption and market processes to help Europe make progress towards achieving its short-term 2020, medium-term 2035 and long-term 2050 energy targets. Cross-sectorial and interdisciplinary system innovation will be essential to realising these targets.

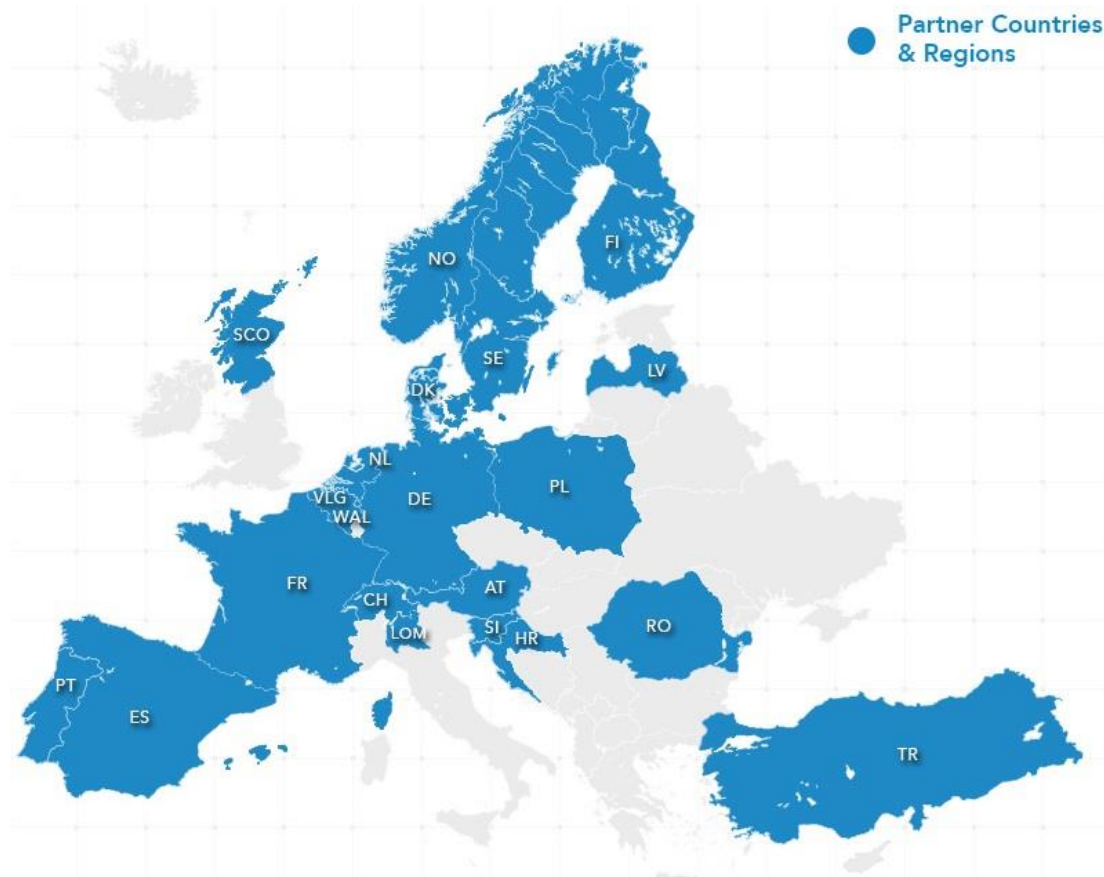


Illustration: Map of ERA-Net Smart Grids Plus partner countries and regions

3 SCOPE AND AMBITION OF THIRD JOINT CALL

ERA-Net Smart Grids Plus will promote piloting and demonstration in the field of smart grids. Projects shall develop technologies, systems and solutions that make it possible for energy systems to supply, host and utilize up to 100% renewable energy. This includes solutions within new local energy communities as well as through the integration of various regional and local energy systems into a larger pan-European energy system. Focus will be given to validation, scale-up and replication. The three research layers of *Stakeholder/Adoption*, *Marketplace* and *Technology* (see section 3.1) should be an integrated part of this focus. The aim is to push solutions to meet Technology Readiness Levels (TRLs, see definitions in Annex C) 5-6 to TRLs 6-7.

The main challenges are:

1. Enabling an increased flexibility of the power system to cope with the growing share of intermittent, variable and decentralised renewable generation and managing the complex interactions between large energy stakeholders and local/regional energy stakeholders.
2. Increasing network capacity to support increased generation and transmission resulting from renewables and to strengthen the internal energy market.

3. Providing information, services, market architectures and privacy guarantees to support open markets for energy products and services, whilst facilitating the active participation of customers.

The scope and ambition are defined based on:

- The existing European roadmaps and implementation plans concerning smart grids, i.e.:
 - The ETIP SNET Research and Innovation Roadmap 2017-26.
 - ENTSO-E Roadmap 2017-2026 (Research, Development & Innovation Roadmap 2017–2026) ¹
 - ENTSO-E R&D Implementation Plan 2016-2018 ²
 - The Smart Grids Strategic Research Agenda (SRA) 2035 with its Priorities defined by the European Technology Platform Smart Grids, also considering necessary updates according to the Integrated Roadmap, GRID+ and Mapping and Gap Analysis EEGI Member States Initiative 2012.
- The EC communication on a European Energy Union i.e.:
 - COM(2015) 80 final, ENERGY UNION PACKAGE, A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy
 - COM(2016) 860 final, Clean Energy For All Europeans
 - COM(2016) 864 final, Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on common rules for the internal market in electricity
- Existing national/regional smart grids demonstration (e.g. transfer of results, new developments/demonstrations, scalability, replicability, interoperability and validation). This can relate to previous background material on European smart grids projects and the areas of interest for transnational cooperation identified in the preparation process of the ERA-Net Smart Grids Plus initiative³.
- Adhering and/or demonstrating applicability to the Three-Layer Research Model described below (section 3.1).
- The transnational added value of European smart grids projects.

3.1 Three-Layer Research Model

To move towards a common energy system in Europe, is necessary to link the energy technology research and development to the organisation of the energy market and to learn more about how to overcome barriers built into communities

¹ http://riroadmap.entsoe.eu/wp-content/uploads/2016/06/entsoe_ri_roadmap_2017-2026.pdf

² <https://www.entsoe.eu/publications/research-and-development-reports/rd-implementation-plan/Pages/default.aspx>

³ For all background material, see <http://www.eranet-smartgridsplus.eu/downloads>

and societies. The essential innovations that need to be achieved are divided into three layers:

Stakeholders/Adoption

- *Goal:* overcome barriers to widespread user adoption.
- *Research targets:* people, community, stakeholders, society, industry. Please note; it is important that the stakeholders are clearly identified, and there should be a clear strategy for how to engage them.
- *Typical topics:* innovation and transition, consumer acceptance, prosumer interaction, education, policy, retail, community, society, human behaviour, privacy, business modelling methods, social research, etc.
- *Necessity for transnational cooperation:* practices are different all over Europe and essential experiences can be gained through this diversity (comparisons, similarities, differences, etc.). Such cooperation will comprise findings sharing on, for instance, typical observed behaviours.

Marketplace

- *Goal:* create solutions for energy market participants to leverage smart resources across national borders and participate in changing energy market structures.
- *Research targets:* goods and services. Please note; the methodologies for researching market related issues should be clearly identified in terms of the type of data that needs to be collected, how it will be collected, and how it will be analysed.
- *Typical topics:* retail market and interfaces, business modelling methods, standards, abolition of barriers between European countries, prosumer interaction, forecast, demand side management, integration of microgrids, flexibility, integration of small scale operators in local energy systems, energy exchange with neighbours, economic research, etc.
- *Necessity for transnational cooperation:* smart technologies create stability challenges in all countries and divergent solutions lead to market failure at the borders. Such cooperation will comprise several projects by transnational consortia on convergent issues and different aspects of future energy market structures.

Technology

- *Goals:*
 - Develop innovative technological concepts for sustainable energy systems (Low TRL).
 - Bring these solutions towards a transnational Proof of Concept and possibly Demonstration (Medium TRL).
 - The new technological concepts should preferably be accompanied by studies of technology adoption and/or business models to reveal the potential of and possible barriers for the innovative technologies in question. In this way, the goals of the adoption and marketplace layers can be related to the technological layer in an interdisciplinary and integrated approach.
- *Research targets:* (energy and ICT) technology.
- *Typical topics:* energy storage, ICT aspects, balancing, HVDC, power quality, integration of microgrids, standards, security, energy exchange with neighbours, integration of renewable energy sources, power

system planning – balancing local energy systems and centralised large scale energy production, big data, etc.

- *Necessity for transnational cooperation:*
 - It integrates a wider range of requirements to a technical solution that leads to better scalability and transferability.
 - Transnational consortia have a better chance to disseminate their findings to a wider audience. Transnational cooperation can open wider markets for innovative technologies.

Please note that the methodologies and approaches to study the layers included in the project should be clearly defined. The work plan and deliverables should reflect all included layers and the potential interconnections between them. For projects covering more than one layer, interdisciplinary teams including partners and/or experts with different backgrounds (e.g. economics, market design, management, social sciences, technology) may be of great value for the project. It is also important that the risk assessments for the projects fully consider all layers involved in the project, not only potential technological aspects.

The ERA-Net Smart Grids Plus initiative will prefer projects that cover more than one of these three research layers. Projects covering stakeholder/adoption and/or marketplace layers as well, will be given priority over single layer projects. Projects should therefore clearly state goals for the stakeholder/adoption and marketplace layers in relation to technological issues.

3.2 Knowledge Community

The ERA-Net Smart Grids Plus Coordination implements advanced and innovative follow-up, monitoring and transfer activities to create an ERA-Net Smart Grids Plus Knowledge Community. It is organised by the ERA-Net SG+ Support Team.

The goal of the Knowledge Community is to enable knowledge exchange between the projects and with international experts to prevent duplication of efforts. The Knowledge Community aim to present state-of-the-art knowledge and discussions in the field of Smart Grids to establish ERA-Net SG+ as a hub and voice for all information related to national/regional Smart Grids RDD. To this end, the Knowledge Community will link experts of ERA-Net Smart Grids Plus projects and actors of other smart grids projects. It will also provide connections to policy makers, stakeholder organisations, SMEs and academia from outside the ERA-Net SG+ community.

The Knowledge Community refers to the European knowledge base (e.g. findings, resources and expertise from the European SET-Plan Initiative, The European Smart Grids Taskforce, The Grid+ Storage Project, the Future Internet PPP, the SEN/CENELEC/ETSI working group or the Council of European Energy Regulators (CEER) etc.). It will offer knowledge to aid policy makers, program managers/owners, EU level representatives and stakeholders in making strategic decisions.

The Support Team will further implement an interactive, formative evaluation process where the projects' results are assessed against state-of-the-art knowledge and through which the projects get the opportunity to monitor their progress and

results. The evaluation will emphasise the importance of interoperability, scalability and replicability of the results. It may also aid the deployment of the solutions on a national and European level.

The Knowledge Community is an integral part of the ERA-Net Smart Grids Plus concept. It is therefore important that applicants fully consider this concept and its content when formulating the project proposal.

Applicants for this call should be aware that they will be expected to participate in the ERA-Net Smart Grids Plus Knowledge Community (see Standard Work Package, Annex D). Cooperation and facilitation in the above-mentioned activities are mandatory for all projects funded by the ERA-Net Smart Grids Plus. The final organisation and execution of the abovementioned activities will be the result of an iterative process between the Support Team and each funded project, as applicable. The project proposal (see section 6.1) should include the mandatory work package that implements these activities (see Annex D). In the design of their own dissemination and exploitation strategies, projects should consider potential synergies with and contributions to the ERA-Net Smart Grids Plus Knowledge Community.

4. ELIGIBILITY

The following eligibility criterion apply for project proposals in the ERA-Net Smart Grids Plus call:

- Project must be transnational by nature, involving at least two independent entities and from at least two different countries of the ERA-Net Smart Grids Plus partners⁴.

It is mandatory that each project partners contact their respective national/regional contact points during the advisory period.

National/regional eligibility criteria are additional and separate to the ERA-Net Smart Grids Plus eligibility criteria given above.

A summary of national/regional eligibility requirements is provided under Annex A. It is essential that applicants familiarise themselves with their respective funding agency's rules. They should contact their national/regional contact point during the advisory periods for clarifications prior to submitting a full project proposal.

⁴ See list of funding partners under section 6.3 'Funding arrangements'.

5. DESIRABLE CHARACTERISTICS OF PROJECTS

The ERA-Net Smart Grids Plus partners have established a set of desirable characteristics for project proposals. It is important that the projects incorporate the three layers described in Ch. 3.1 in the four typical project types outlined below. Please note that these characteristics are non-binding examples of possible approaches to project proposals, and are constructed as guidance to applicants. They constitute neither eligibility nor evaluation criteria.

1. Meta-analysis, cross-cutting issues of existing demonstration projects

Projects may perform validation of different approaches to existing demonstration projects that are analysed by meta-analysis, interdisciplinary approaches and through collaboration between partners from corresponding market segments (horizontal cooperation).

Characteristics: Scalability, replicability and validation of demonstrated solutions for a case scenario(s) where a specific technology or concept is investigated, e.g. issues related to security aspects. It is desirable to have at least five demonstration projects and three ERA-Net partner countries/regions involved.

2. Comparative validation of technologies and concepts of existing demonstrations

Projects may involve a case study where different approaches to the utilisation of a specific technology or concept is investigated. This can be performed by comparing and analysing the technology or concept with respect to economic, technical, scaling-up, replication, and user-acceptance aspects.

Characteristics: Existing technologies and concepts (e.g. smart voltage regulation in distribution grids with high penetration of PV panels, building to grid concepts, integration of local energy systems with existing power grid etc.) from different environments and demonstration projects are validated jointly in the consortium. It is desirable to have at least two ERA-Net partner countries/regions involved, and at least three demonstration projects involved.

3. New demonstration project

Projects may present a new demonstration, building on other existing demonstration projects, i.e. development, validation and demonstration in a new demonstration environment and/or site by using replication.

Characteristics: Technologies and concepts are demonstrated or validated for the first time by using the elaborated and experienced setting of an existing demonstration project in a new industrial environment. Alternatively, technologies and concepts from an existing project are replicated in a new environment. Demonstration of new concepts for local energy communities are also of interest.

It is desirable to have at least one existing demonstration project and two or more ERA-Net partner countries/regions involved. Demonstrations of market

business models, technologies' acceptance and adoption induction models is just as needed as demonstration of technological solutions. All models shall preferably be developed in close interconnection.

4. Further development of technologies and concepts

Projects may build on the outcomes, developments and validations of existing demonstration projects, or further development of smart grids technologies from the current state of play.

Characteristics: Improvement, reengineering, scaling-up etc. Outcomes are ideally demonstrated or validated in the elaborated and experienced setting of an existing demonstration project in a new industrial environment. It is desirable to have at least one existing demonstration project and two or more ERA-Net partner countries/regions involved. It would be preferred if the demonstration project also include consumer adoption and/or business model development.

Projects may typically include R&D, technology development, demonstration and dissemination activities, performed by different partners from e.g. research, grid operators and industry, located in different countries/regions. Thus, it is crucial for applicants to ensure eligibility and available funding schemes for the different activities and partners with the respective national/regional funding agencies (see Annex A for contact information and a brief overview of requirements).

Project volumes are individual for each unique project proposal, and should be relevant to the proposed action and specific project demands. The expected (typical) volume of total costs for projects is between €1 000 000 to €10 000 000, and expected (typical) volume of total requested funding from the ERA-Net Smart Grids Plus partners is between €500 000 to €4 000 000.

6. GUIDANCE FOR APPLICANTS

6.1 Call procedure

The call procedure has four steps; the proposal phase, the proposal adjustment and clearing phase, the evaluation phase and the selection phase. During the proposal phase, there will be a compulsory advisory period where the applicants are obliged to seek support and guidance from their respective agencies regarding their project proposals. This is to ensure suitability of the projects with respect to national/regional requirements.

During the proposal adjustment and clearing phase, projects that are found to be ineligible due to partners within the project may change this partner to become eligible for funding. A partner change may not introduce changes in the scope of the project or introduce major budgetary changes.

Projects that are found eligible during the first or second preliminary eligibility check, will be forwarded to the evaluation phase. In this phase, the project proposals will be submitted to a trans-national evaluation and a full national/regional evaluation of eligibility. The project proposal should include all necessary information and documentation, as well as any information needed to

fulfil national/regional requirements. If these requirements are not met, the project proposal will not pass the evaluation phase. The different steps are described in more detail in the following sections (6.1.1–6.1.4). Nordic Energy Research, in cooperation with NordForsk, is facilitating the call process on behalf of the ERA-Net Smart Grids Plus partners.

Call procedure timings		
Proposal phase	ERA-Net Smart Grid Plus call open	14 September 2017
	Compulsory advisory period	14 September – 14 November 2017
Proposal adjustment and clearing phase	Deadline project proposal	14 November 2017, 14:00 CET
	Preliminary national/regional eligibility check	27 November 2017
	Deadline change of project partner	1 February 2018, 14:00 CET
Evaluation phase	Second preliminary national/regional eligibility check	8 February 2018
	Transnational expert evaluation and national/regional eligibility check	February – April 2018
Selection phase	Decision communicated to applicants	4 May 2018
Project phase	Project start date	1 July 2018 – 1 December 2018

Applications and any supporting documents must be in English and submitted via the Electronic Submission System, available on the ERA-Net Smart Grids Plus website (www.eranet-smartgridsplus.eu). A text and page limit is set within the Electronic Submission System, and applicants are advised to include information only directly relevant to this call to preserve focus, structure and clarity in the application.

All project applications are managed and submitted through the central ERA-Net Smart Grids Plus Electronic Submission System available at www.eranet-smartgridsplus.eu, apart from specific national/regional documentation requirements (see box under section 6.1.3 and Annex A).

6.1.1 Project proposals

The project proposal phase opens on 14 September 2017. The deadline for submission of the project proposals is 14 November 2017 at 14:00 CET.

Please note that some national/regional funding agencies may require additional documentation from the project partners according to national/regional regulations. These should **not** be submitted in the central ERA-Net Smart Grids Plus Electronic Submission System, but directly to the relevant funding agency through their national/regional submission system (if applicable). Please consult your national/regional funding agency regarding this issue during the advisory

periods. It is the responsibility of each individual project partner to ensure that all the necessary documents are submitted on time to the appropriate recipient.

6.1.2 Advisory period

There will be an advisory period during the proposal submission period (14 September – 14 November, 2017). The applicants may receive feedback from their individual national/regional funding agency in terms of scope, eligibility and desirability of the project proposal. This will give the project partners the opportunity to revise their proposal, expand or contract its scope, re-evaluate the participating partners and obtain necessary national/regional funding agency requirements information. Thereby the quality and success rate of the project proposals may be increased.

The national/regional contact point will also provide information on the national/regional requirements for the project proposals. Such a requirement may be that a relevant project partner(s) must also submit a full *national/regional* proposal (i.e. in the national/regional funding agencies' submission system and language, adhering to national/regional regulations). Each project partner is responsible for the preparation and submission of all required reports according to their respective national/regional funding agency's eligibility rules. The advice given by the funding agencies to the project partners is non-binding. The advice provided does not engage the funding agencies with respect to acceptance or rejection of the full project proposal.

Only consortia that have contacted their respective national/regional funding agencies during the advisory period are eligible to submit a full project proposal.

6.1.3 Evaluation and eligibility process

The evaluation criteria are built upon three main criteria:

- a. Excellence.
- b. Impact.
- c. Quality and efficiency of the implementation.

For a more detailed explanation of each criterion, please see Annex B. No preference is given to projects with partners from numerous different countries/regions. Different project types require different amounts and types of partners (industry, academia etc.). The roles and activities of each partner within a project consortium should clearly add value to the objectives of the proposed project. Manageability of the consortium is key and must be demonstrated.

The evaluation and eligibility process comprises four steps, which are explained in detail below.

1. Preliminary national/regional eligibility checks

This is the first step of the evaluation and eligibility process. The agencies will inform their respective applicants of the result of the discussions. The project applicants will be given the opportunity to exchange ineligible project partners by the 1st February.

A new preliminary national/regional eligibility check of the performed partner changes will be performed on the 8th February. Projects that are found eligible after this second check will be forwarded to the evaluation phase.

2. Transnational evaluation of the project proposals

In the evaluation phase a panel of at least three independent experts will evaluate each project proposal, based solely on the evaluation criteria specific to the ERA-Net Smart Grids Plus (see Annex B). Each independent expert will first individually evaluate the assigned project proposals. Afterwards, the experts will meet to form a consensus evaluation. This process will be overseen by an independent observer. The consensus evaluation will result in a ranked list of project proposals.

All evaluators and observers selected are required to declare their independence to the projects to avoid conflict of interest. They must adhere to the confidentiality conditions of the evaluation process.

3. Final national/regional evaluation

The projects will be considered on a national/regional basis, governed by national/regional funding agency regulations. The national/regional funding agencies will evaluate the proposal based on the eligibility criteria (section 4. 'Eligibility') and, if necessary, the evaluation criteria (Annex B), in conjunction with specific national/regional requirements. Ineligible project proposals will not be considered for funding and will not go through to the selection phase.

4. ERA-Net Smart Grids Plus selection and outcome

The final step of the evaluation process is a joint meeting of the ERA-Net Smart Grids Plus consortium to select projects for funding according to the ranked list from the independent experts. The ranked list will not be available for the funding agencies prior to the fulfilment of the national eligibility checks. The outcome will be reported to the applicants by the 4th May 2018.

6.1.4 Confidentiality

Handling of project proposals and any information relating to them will be kept confidential in accordance with the applicable national/regional regulations. Project proposals will not be used for any purpose other than the evaluation of the applications, funding decisions and monitoring of the projects.

6.2 Consortia

Partners from countries that are not members of ERA-Net Smart Grids Plus (see list of funding partners under section 6.3 'Funding arrangements') are encouraged to join a project consortium as additional partners. However, these additional partners must finance their activities from other sources, as each ERA-Net Smart Grids Plus funding agency will only fund partners from their own country/region.

The project partners are required to sign a consortium agreement to agree on Intellectual Property Rights (IPR) and other relevant issues dealing with

responsibilities within the project and exploitation of results. Thereby, they ensure that these are not in conflict with the regulations of the relevant national/regional funding agencies. Model consortium agreements can be found at <https://www.iprhelppdesk.eu/library/useful-documents>.

6.3 Funding arrangements

The total funding available for ERA-Net Smart Grids Plus projects amounts to € 8.5 Mio, made up of national/regional budgets.

Funding partners			
Country/ region	Funding (€)	Organisation name	Acronym
Croatia	300 000	Environmental Protection and Energy Efficiency Fund	FZOEU
Denmark	500 000	Energy Development and Demonstration Programme	EUDP
Germany	2 000 000	Forschungszentrum Jülich GmbH	PtJ
Norway	1 200 000	Research Council of Norway	RCN
Poland	500 000	National Centre for Research and Development	NCBR
Romania	500 000	Executive Agency for Higher Education, Research, Development and Innovation Funding	UEFISCDI
Sweden	1 000 000	Swedish Energy Agency	SWEA
Turkey	2 500 000	The Scientific and Technological Research Council of Turkey	TÜBİTAK
Total sum	8 500 000		

6.4 Project duration

Projects are required to start between 1 July 2018 and 1 December 2018, and must be completed (including all reporting) by 1 December 2021. The maximum duration of a project is as such 41 months (limited to national/regional specific requirements). The minimum allowed duration of a project is 24 months.

6.5 Project monitoring and expected deliverables

Each project partner will be responsible for the necessary reporting to their funding agency according to national/regional rules. Yearly reports are required to obtain and maintain funding during the lifetime of their portion of the project. Apart from

the national/regional project review, the transnational cooperation aspects will be monitored on the ERA-Net Smart Grids Plus level. Any substantial change in an on-going project must be reported immediately to the funding agencies involved. Project partners should be aware that changes may have implications on past, present and planned future funding.

In addition to the national/regional requirements, ERA-Net Smart Grids Plus projects are required to deliver the following:

1. Participation in and presentation at meetings to report on the status of and results from the project. Detailed requirements for the contribution at these seminars will be specified in due course.
2. An annual, common interim report. This interim report will be available to the funding organisations involved, but will not be made public. Detailed requirements (e.g. template) for this report will be specified in due course.
3. A single publishable and public final project report, which describes the activities and outcomes of the work. This should include an exploitation plan that states how the results of the project will be used. Detailed requirements for this report will be specified in due course. An abstract of the main results of the project will also be part of this report. Detailed requirements for the abstract will be specified in due course.

Applicants should be aware of the core ideas of the Knowledge Community and how the Support Team will affect the work and composition of the projects (see section 3.2). Active participation in knowledge-sharing and formative evaluation activities organised by the Support Team must be considered (e.g. in terms of resource allocation) when planning and managing the project work plan, set-up and budget.

1. Annex A – National/regional requirements

Croatia

Funding agency name	Environmental Protection and Energy Efficiency Fund (FZOEU)
Programme name and link	Educational, research and development studies, programmes, projects and other activities - international cooperation.
Contact person	Maja Rajčić, maja.rajcic@fzoeu.hr , +385 1 5391 914
Eligible applicants	- Companies (private and public). - Research organisations and universities.
Eligible costs	All project related costs (e.g. Personnel, Subcontracting, Equipment, Training, Travels, Overhead, etc.).
Type of research funded	Basic and applied research, experimental development, demonstration.
Require separate national/ regional full application	Yes.
Funding available	€300 000
Further specifications	Eligible applicants must comply with FZOEU regulation (http://fzoeu.hr/hrv/index.asp?s=propisi). Funding is available in rate of up to 40% of eligible cost for all eligible applicants. <i>List of documentation required for national application and description of the submission procedure will be available to eligible applicants during the advisory period in FZOEU, upon individual request.</i>

Denmark

Funding agency name	EUDP (under Energistyrelsen)
Programme name and link	EUDP (Energy Technology Development and Demonstration Programme, administrated by an independent Board with a secretariat within the Danish Energy Agency) https://ens.dk/en/our-responsibilities/research-development/eudp
Contact person	Wickie Bekker Lassen, wbl@ens.dk ,

	+45 30 92 30 58
Eligible applicants	<ul style="list-style-type: none"> - Public and private enterprises - Universities - Research organisations, knowledge institutes (incl. approved technological service institutes). <p>EUDP can co-fund foreign participants in projects, which contribute to advancing technological development and demonstration activities in Denmark, if the project owner is registered in Denmark.</p> <p><i>Support must be in accordance with European rules for state aid.</i></p> <ul style="list-style-type: none"> - <i>Projects including research must be worthy of support based on a research-technical assessment, and such projects will be evaluated by Denmark's Innovation Fund</i>
Eligible costs	All project related costs (e.g. personnel, training, travels, subcontracting, overhead, materials etc.)
Type of research funded	<p>Primarily within TRL 4-8*:</p> <ul style="list-style-type: none"> - New energy technologies. - More efficient use of energy - Renewable energy and technologies for conversion and storage of energy. <p>*Research activities should feed directly into development and demonstration activities in order to receive support.</p>
Require separate national/ regional full application	<p>Yes.</p> <p>The independent EUDP Board must approve the national application.</p>
Funding available	€500 000
Further specifications	<p>The objective of the EUDP programme is to primarily support development and demonstration of energy technologies, spur collaboration between public and private actors, as well as promote involvement in international activities within the area.</p> <p>EUDP focuses on exploiting and developing the commercial potential of Danish energy technologies in order to promote growth, employment, turnover and export.</p>

Germany

Funding agency name	Forschungszentrum Jülich GmbH (PtJ)
Programme name and link	- 6th Federal Programme on Energy Research; "Research for an environmental friendly, reliable und economical feasible energy supply".
Contact person	Paul Kunzemann, p.kunzemann@fz-juelich.de , +49 2461 61-96998
Eligible applicants	<ul style="list-style-type: none"> - Institutions receiving institutional funding from the federal and state governments may be subject to restrictions in the level of funding. - Companies. - Research organisations. - Compound projects involving at least one industrial participant are the normal composition of the project participants. - Individual topical calls may specify further requirements depending on the nature of the topic.
Eligible costs	All project related costs (e.g. personnel, Equipment, Consumables, Travels, etc.).
Type of research funded	Focus on applied research.
Require separate national/ regional full application	Yes.
Funding available	€2 000 000
Further specifications	<p>Project Management Jülich (PtJ) manages the majority of the application-oriented projects dealing with research and development in the area of power grids funded by the Federal Ministry for Economic Affairs and Energy (BMWi).</p> <p>BMWi funding of the call will be provided as delineated in the</p> <p><i>"Bekanntmachung zur Forschungsförderung im 6.Energieforschungsprogramm Forschung für eine umweltschonende zuverlässige und bezahlbare Energieversorgung"</i></p> <p>German applicants may be asked to submit a formal national application in addition to the full proposal. For this application, it is mandatory to use the electronic application system "easy-online" (https://foerderportal.bund.de/easyonline).</p>

Norway

Funding agency name	Research Council of Norway (RCN)
Programme name and link	ENERGIX http://www.forskningsradet.no/prognett-energix/Forside/1253980140037
Contact person	Erland Staal Eggen, ese@rcn.no , +47 91 51 45 29
Eligible applicants	Funding can be awarded to Norwegian participants in ERA-NET R&D&D-projects.
Eligible costs	All project related costs (e.g. personnel, equipment, consumables, travels, etc.). The maximum support intensity is described in http://www.forskningsradet.no/no/Statsstotteregulverket/1254004171884 .
Type of research funded	The funding available is for research and development contributing to the goals of the ENERGIX program in the topical area of smart energy systems. See http://www.forskningsradet.no/prognett-energix/Om_programmet/1253980140060 .
Require separate national/ regional full application	No.
Funding available	€1 200 000
Further specifications	

Poland

Funding agency name	National Centre for Research and Development (NCBR)
Programme name and link	ERA-Net Smart Grids Plus (3 rd Call) http://www.ncbr.gov.pl/programy-miedzynarodowe/era-net-co-fund/smartgrids-plus/
Contact person	Jolanta Drożdż, jolanta.drozd@ncbr.gov.pl , +48 22 39 07 106
Eligible applicants	Scientific consortia (consisting of min. one research entity and min. one enterprise: micro, small, medium or large)
Eligible costs	<ol style="list-style-type: none"> 1. Personnel costs (W) 2. Costs of instruments, equipment and intangible assets (A) 3. Purchase of land and real estate (G) 4. Costs of subcontracting (E) 5. Other costs including travel costs (Op) 6. Overheads (O) [O = (W + A + G + Op) x max. 25%]

Type of research funded	<ul style="list-style-type: none"> - Industrial research. - Experimental development. 														
Require separate national/ regional full application	Yes, after selection of projects to be funded.														
Funding available	€500 000														
Further specifications	<p>After international evaluation of full proposals and the selection of projects to be funded, Polish participants will be invited to submit a National Application Form (NAF). The NAFs will be examined for the appropriateness of funding requested.</p> <p>The Polish participants are obliged to use the rate of exchange of the European Central Bank dated on the day of opening of the call.</p> <p>Types of research funded including the maximum state aid intensity for enterprises:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Type of Applicant</th> <th colspan="2" style="text-align: center;">Type of research funded</th> </tr> <tr> <th style="text-align: center;">Industrial research</th> <th style="text-align: center;">Experimental development</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Micro/Small enterprise</td> <td style="text-align: center;">50+20+15 (max 80%)</td> <td style="text-align: center;">25+20+15 (max 60%)</td> </tr> <tr> <td style="text-align: center;">Medium enterprise</td> <td style="text-align: center;">50+10+15 (max 75%)</td> <td style="text-align: center;">25+10+15 (max 50%)</td> </tr> <tr> <td style="text-align: center;">Large enterprise</td> <td style="text-align: center;">50+15 (max 65%)</td> <td style="text-align: center;">25+15 (max 40%)</td> </tr> </tbody> </table> <p>All detailed information about financial rules and national procedure is available on the NCBR's homepage: http://www.ncbr.gov.pl/programy-miedzynarodowe/era-net-co-fund/smartgrids-plus/</p>	Type of Applicant	Type of research funded		Industrial research	Experimental development	Micro/Small enterprise	50+20+15 (max 80%)	25+20+15 (max 60%)	Medium enterprise	50+10+15 (max 75%)	25+10+15 (max 50%)	Large enterprise	50+15 (max 65%)	25+15 (max 40%)
Type of Applicant	Type of research funded														
	Industrial research	Experimental development													
Micro/Small enterprise	50+20+15 (max 80%)	25+20+15 (max 60%)													
Medium enterprise	50+10+15 (max 75%)	25+10+15 (max 50%)													
Large enterprise	50+15 (max 65%)	25+15 (max 40%)													

Romania

Funding agency name	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI)
Programme name and link	https://uefiscdi.ro/p3-cooperare-europeana-si-internationala Subprogramul 3.2 - Orizon 2020 (Romanian version) Subprogram 3.2 - Horizon 2020 (English version)

Contact person	Marius Mitroi, marius.mitroi@uefiscdi.ro , +4021 307 19 93
Eligible applicants	<ul style="list-style-type: none"> - Companies. - Research organisations.
Eligible costs	Personnel, travel, equipment, materials and consumables, indirect costs (overhead).
Type of research funded	Applied research.
Require separate national/ regional full application	No.
Funding available	€500 000
Further specifications	-

Sweden

Funding agency name	Swedish Energy Agency (SWEA)
Programme name and link	National Energy Research and Innovation programme.
Contact person	Fredrik Lundström, fredrik.lundstrom@energimyndigheten.se , +46 165 442 112
Eligible applicants	<p>Public and private entities e.g.:</p> <ul style="list-style-type: none"> - Universities - Research institutes - Companies - Municipalities <p>Decisions on funding research, development and innovation in the energy area are taken according to the ordinance SFS 2008:761 in the Swedish Code of Statues.</p>
Eligible costs	Personnel, travel costs, consultancy, material costs, laboratory costs, equipment costs, patent, indirect costs (only academia).
Type of research funded	Basic research, industrial research, experimental development.
Require separate national/ regional full application	Yes, full national application is required. For more information see http://www.energimyndigheten.se/forskning-och-innovation/forskning/soka-stod-och-rapportera/ .
Funding available	€1 000 000

Further specifications	SWEA also provides practical assistance and, in some cases, support for the applications to the various energy programmes.
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Turkey

Funding agency name	The Scientific and Technological Research Council of Turkey (TÜBİTAK)
Programme name and link	1509-International Industrial R&D Projects Grant Programme, http://www.tubitak.gov.tr/tr/destekler/sanayi/uluslararasi-ortakli-destek-programlari/icerik-1509-tubitak-uluslararasi-sanayi-ar-ge-projeleri-destekleme-programi
Contact person	Önder Zor, onder.zor@tubitak.gov.tr , +90 312 298 9498
Eligible applicants	SMEs and large companies settled in Turkey.
Eligible costs	Personnel, travel, equipment/tool/software, R&D services from domestic RTOs, consultancy/other services, material costs.
Type of research funded	Applied research, experimental development.
Require separate national/ regional full application	Yes.
Funding available	€2 500 000
Further specifications	<ul style="list-style-type: none"> Universities and research institutes are not eligible, but can benefit from the programme as subcontractors. Project application to TÜBİTAK's 1509 Programme is mandatory and should be made in accordance with the call timeline. A call announcement (which will also include deadline for national application) will be made on TÜBİTAK's website. The national project cannot start before the ERA-Net Smart Grids Plus joint project. Grant rate is 60% for large companies and 75% for SMEs. If there is more than one Turkish partner in a project, they should make a joint project application to 1509 Programme.

2. ANNEX B – EVALUATION CRITERIA

Evaluation criteria	
Scores 0 – 5 (0 = Fail/Not applicable; 1 = Poor; 2 = Fair; 3 = Good; 4 = Very good; 5 = Excellent)	
(a) Excellence	
1. Relevance to the call - Piloting, validation and demonstration, fit to call (aim). - Applicability to the three main challenges (see section 3), concerning stakeholder/adoption, marketplace and technology aspects. - Sustainability/environmental contributions and impacts.	Score 0-5
2. Degree of innovation and innovative content - Project represents something genuinely innovative and/or is a significant improvement on current knowledge and expertise. - Feasibility of innovation and innovative content as a whole.	Score 0-5
3. State-of-the-art and transnational value - Clear description of state-of-the-art within the project's field. - Clear positioning of the project in relation to the described state-of-the-art. - Added value of the project being transnational (as opposed to being only national). - Benefits and relevance of the project internationally.	Score 0-5
4. Applicability to the Three-Layer Research Model - More than one level covered. - Concrete methodological approach to the Three-Layer Model (if only a single layer project, the reasons for this must be clearly explained and justified). - The specific adoption/market challenges related to technology development need to be addressed. - The theories and methods that lie behind social or market assumptions must be relevant and clearly explained. - If market/social research or interventions are to be performed the methodologies should identify which kind of data to collect, how to collect it, and how to analyse it.	Score 0-5
(b) Impact	
1. Expected impacts - Expected impacts are feasible and desirable. - Short-term and long-term impacts contribution to the call's aim. - Implementation contributes to the expected impacts.	Score 0-5

<p>2. Scaling-up, reproducibility, replicability and interoperability potential</p> <ul style="list-style-type: none"> - Project is furthering past or ongoing demonstration projects. - High scaling-up potential. - High reproducibility/replicability potential. - High interoperability potential. 	<p>Score 0-5</p>
<p>3. Link and contribution to past and ongoing relevant European initiatives in smart grids and the European Knowledge Base</p> <ul style="list-style-type: none"> - Project builds on relevant European initiatives, knowledge and systematics (e.g. findings of the Working Groups of the Smart Grids Taskforce, SGAM Model, etc.). - Project is furthering past or ongoing demonstration projects. - High contribution to fulfilling European smart grids initiatives' objectives. 	<p>Score 0-5</p>
<p>4. Appropriateness of measures for dissemination, exploitation and IPR</p> <ul style="list-style-type: none"> - Target audience identified, clearly stating why they are important for the project and how they will be involved. - Suggested communication activities appropriate and related with identified stakeholders. - Means of dissemination and exploitation of results. - IPRs described and handled appropriately (licenses, patents etc.). 	<p>Score 0-5</p>
<p>(c) Quality and efficiency of the implementation</p>	
<p>1. Quality and relevant experience of project team</p> <ul style="list-style-type: none"> - Experience, specific expert experience (CVs). - Relevant interdisciplinary experience (complimentary expertise). - Beneficial team composition (competence diversity – skills shall match the working areas identified on the project). 	<p>Score 0-5</p>
<p>2. Appropriateness of the management structure and resource allocation</p> <ul style="list-style-type: none"> - Management structure (roles) clearly defined and appropriate. - Manageability of consortium (amount of partners, key players etc.). - Resources are allocated suitably depending on specific expert competencies. 	<p>Score 0-5</p>
<p>3. Work plan/implementation feasibility and manageability</p> <ul style="list-style-type: none"> - Detailed, clear and logical work/implementation plan. - Feasibility of Deliverables and Milestones. - Project delivers results efficiently in relation to the project budget. 	<p>Score 0-5</p>
<p>4. Risk identification, analysis and preventive measures</p> <ul style="list-style-type: none"> - Risks appropriately identified. 	<p>Score 0-5</p>

<ul style="list-style-type: none">- Risk analysis is clear, coherent and logical. It should be applied to the work packages and the investigation approach used in the projects.- Preventive/remedial measures are proposed, and measures seem feasible and valid.	
Total maximum score sum	60

3. ANNEX C – TECHNOLOGY READINESS LEVELS

The following definitions apply to TRLs:

- TRL 1 – basic principles observed.
- TRL 2 – technology concept formulated.
- TRL 3 – experimental proof of concept.
- TRL 4 – technology validated in lab.
- TRL 5 – technology validated in relevant environment.
- TRL 6 – technology demonstrated in relevant environment.
- TRL 7 – system prototype demonstration in operational environment.
- TRL 8 – system complete and qualified.
- TRL 9 – actual system proven in operational environment.

4. ANNEX D – KNOWLEDGE COMMUNITY STANDARD WORK PACKAGE

Knowledge Community Standard Work Package

Please insert the tasks below into your overall Work Plan as appropriate, and allocate the resources needed in the project budget (see budgeting estimation below). Task 1 and 2 are organised by the ERA-Net Smart Grids Plus Support Team in cooperation with the funded projects. Task 3 will be organised by the ERA-Net Smart Grids Plus initiative with involvement of the Support Team.

Task 1. Involvement in formative evaluation

Task 1.1 – Formative evaluation

- Participation in the annual ERA-Net Smart Grids Plus joint project event
- Participation in annual meeting on status of the project with key project members, including interviews (*virtual meeting preferable*).
- Participation in two short surveys per year on current issues affecting the ERA-Net Smart Grids Plus Knowledge Community.

Task 1.2 – Profiling through Key Performance Indicators (KPIs)

- Reporting the current scope and targets of the projects via project profiling. The projects will answer about 25 questions in an online tool according to an “evaluation and profiling”-manual that will be handed out to the projects at their start.

Task 1.3 – Review results of evaluation reports, partly in face-to-face or virtual meetings with the evaluating experts.

Task 1 resource requirement estimation: 14 – 17 days/year/project.

Task 2. Crosscutting Knowledge Community activities

Task 2.1 – Working groups

- Participation in, preparation for and follow-up from the working groups in physical and web-based meetings (*projects are expected to participate in a minimum of three working group meetings per year*).

Task 2.2 – Living documents and work with the Knowledge Sharing Platform

- Input to living documents reflecting involvement in working groups as well as other project results, e.g. clarify conclusions, give feedback, provide examples etc.

Task 2.3 – Cooperation on communication and dissemination activities

- Participate in teleconferences and workshops to detect synergies between the projects, and support and improve communication and dissemination activities.

Task 2 resource requirement estimation: 21 – 37 days/year.

Task 3. Deliverables to the ERA-Net Smart Grids Plus initiative (in addition to national/regional funding agency requirements, if applicable).

- Task 3.1 – Annual reporting (in 2019, 2020 and 2021)
- Task 3.2 – Final reporting (2021-2022, depending on project end date)
- Task 3.3 – Annual project event
- Task 3.4 – Final ERA-Net SG+ event
- Task 3.5 – Abstract of the main results for reporting to the European Commission

Task 3 resource requirement estimation: 15 days/year/project.

Budgeting of resources for the abovementioned tasks

The exact amount of resources to be committed depends on the project length, size, consortium composition and specific project focus. The final organisation and execution of the tasks will be the result of an iterative process between the Support Team and each funded project as applicable. The estimated resources required for Task 1, 2 and 3 are:

- i. 50 – 70 days/year/project.
- ii. €7 000 – €10 000/year/project for travel, accommodation and related expenses.

Advised minimum total resource allocation: €60 000 regardless of project duration.

Background Information

The Knowledge Community will enable monitoring of progress and results, emphasising and fostering interoperability, scalability and replicability of the results and solutions deployed on a national and European level within the ERA-Net Smart Grids Plus initiative. The Knowledge Community is already ongoing and more content information on the topics of formative evaluation (Task 1.1), KPI/profiling approach (Task 1.2), working groups (Task 2.1), scope of the living documents (Task 2.2), the functionalities of the Knowledge Sharing Platform (Task 2.2) and other issues can be obtained on the [ERA-Net Smart Grids Plus Knowledge Community](#).

The cornerstones to achieving the goals of the Knowledge Community are by the working groups and the virtual knowledge collaboration, organised by the ERA-Net Smart Grids Plus Support Team. In order to reduce physical meetings and travel costs, a web-based Knowledge Sharing Platform, *expera*, was implemented and host a variety of functions. Its main functionality is to facilitate collaborative work on so-called living documents by documenting the knowledge progress in the

working groups, and share knowledge and information beyond the working groups' scope.

The involvement in the Knowledge Community of the projects funded in this call can vary depending on their length, magnitude and focus topics. The final set-up of working groups will not be fixed for the entire duration of the initiative, as projects are encouraged to take part in shaping the Knowledge Community, such as creating additional working groups. Furthermore, the activities of the working groups will develop over time through an iterative process, and the requirements may change from year to year, making involvement flexible over time. Projects are expected to participate in a minimum of three working groups, and encouraged to join more. Projects can also write and share in the living document whilst not actively participating in that specific working group. Depending on available resources for personnel and travel costs, the projects should decide on a flexible involvement in different groups and allocate a certain amount of days and relating travel costs to join the Knowledge Community.

The annual formative evaluation reports are performed based on the projects' involvement. In addition, the Support Team facilitates profiling of the initiative on a reference level and of the individual projects via KPIs. The Support Team provides the projects with templates and manuals to profile their own efforts annually. This profiling is oriented along the lines of Technology Readiness Levels, the EEGI objectives etc. Please note that the ERA-Net Smart Grids Plus KPI approach is not supposed to rank the projects, but to ensure the complementary approach and inform the funding agencies and the initiative of existing R&D gaps that could be addressed in later calls.

ERA-Net SG+ funding partners



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