JOINT CALL 2019 ON ENERGY STORAGE SOLUTIONS ("MICALL19")

CALL FOR PROPOSALS

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1 TIMELINE OF THE JOINT CALL 2019

This document is an invitation to respond to the Joint Call 2019 for integrated energy storage systems projects. The total available budget is over 22 Mio €.

Call opening	18 September 2019
Launch and matchmaking events	Events fall 2019 Online events fall 2019
Compulsory advisory period	18 September 2019 – 22 January 2020
Compulsory registration of interest deadline	12 November 2019, 14:00 CET
Proposal submission deadline	22 January 2020, 14:00 CET
National/regional eligibility and evaluation period	January – April 2020
Selection period	April – May 2020
Deadline funding decision feedback	5 May 2020
Expected project start	Before 15 December 2020

Registration of interest and project proposals must be submitted electronically. More information, about the call and the online Electronic Submission System, can be found at the ERA-Net SES website (Joint Call 2019).

2 BACKGROUND

A fundamental transformation of our energy systems towards a sustainable, low carbon and climate-friendly economy that is designed to last is required to meet the obligations of the Paris agreement. Achieving a largely decarbonised energy system by 2050 will require the integration of many new energy solutions and 'first of a kind' technologies.
To exploit the full potential of renewable energy sources, new, holistic solutions for energy storage are critical. As renewable energy sources are inherently variable, storage of surplus energy to provide peak load supply security is crucial. A large surplus of energy is also necessary for inter-seasonal energy storage.
Strong, innovative and competitive companies should provide the technology and services needed to deliver low carbon energy solutions that provide energy efficiency and security. Energy is a critical commodity and essential for full participation in modern society. Consumers are therefore also at the centre of this ambition. The development and delivering of local

energy solutions to meet local needs, linking local generation to local use is a path to unlocking vibrant local energy economies.

3 PARTICIPATING COUNTRIES AND REGIONS

The countries and regions participating in the Joint Call 2019 consists of a subset of national and regional funding partners from the ERA-Net Smart Energy Systems (ERA-Net SES) initiative and external partners connected to the Mission Innovation (MI) initiative. An overview of participating countries and regions is depicted below.

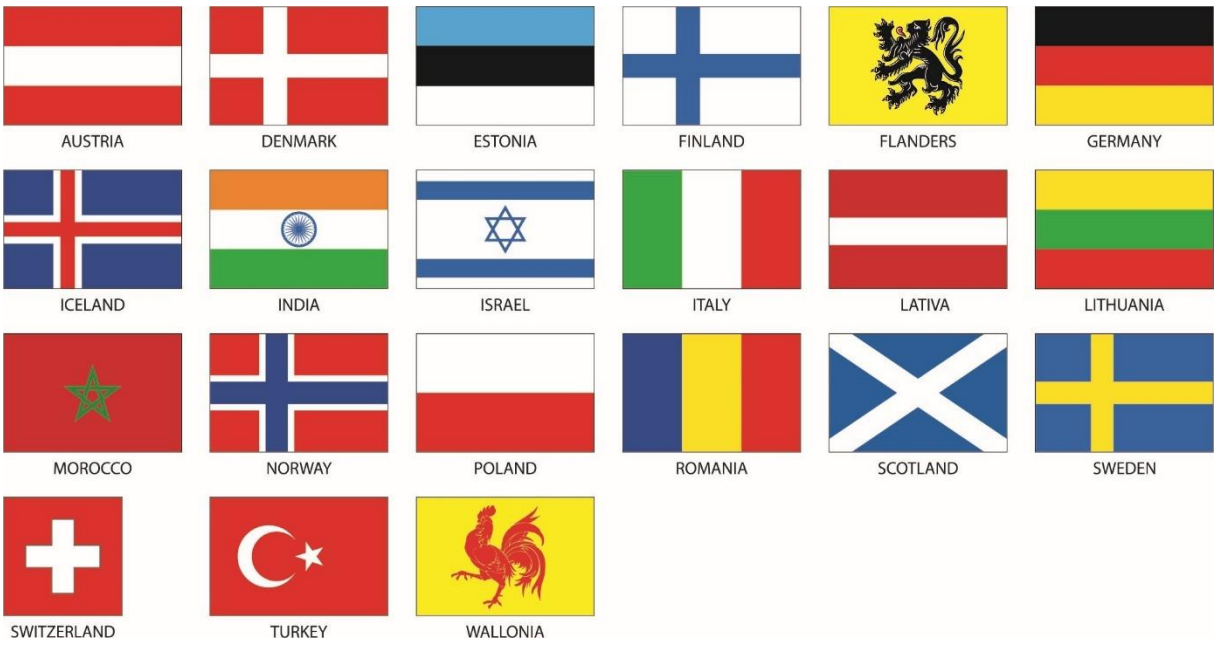


Illustration: Joint Call 2019 on energy storage solutions partner countries and regions

4 AIM, SCOPE & CHALLENGES OF THE JOINT CALL 2019

Transforming the global landscape of energy supply and solutions will need technologies that can be replicated and scaled. Our need and ability to store and control energy is being driven by increased renewable energy generation spawning a growing demand for storage, technological innovation, smarter networks and the growth of the digital economy. The shift to renewable generation in areas with little or no spare grid capacity has led to innovation in business and network management and private/public partnerships at local and national levels.

The challenge of renewable intermittency is a significant barrier. Global investment in renewable energy generation is growing and making renewables increasingly cost competitive. However, as more renewable energies are deployed, the issue of intermittency is becoming ever more critical for the stability of the energy system. Storage can serve as a buffering

between energy generation and consumption and as such, the market for energy storage technologies is significant and global.

The energy future will need to be more flexible, with more options for domestic and business users. New and smarter ways to generate and store renewable energy will lead to fresh opportunities for consumers allowing them to reduce both their carbon footprint and their energy bills. Increased use of energy storage reduces congestion, curtailment and grid constraints and the need to import energy. By better integrating variable renewable energy sources, storage and intelligent grids, we can reduce costs and reduce fuel poverty.

Regional and local energy systems and networks will have to cope with this fundamental transformation in the coming years. They will have to respond to the increasing uptake of new and improved technologies for decentralised energy systems, the boosting digitalisation and associated business models as well as to current societal trends. Future systems will be composed of locally and regionally available energy sources, built infrastructure, specific production and consumption characteristics as well as consumer structures from different sectors, including the transportation system. They are part of the living environment of citizens, including municipalities and regions with highly ambitious clean energy goals. These regional and local innovation ecosystems and value chains will have to play an important role in the energy system transition.

The Joint Call 2019 for projects focuses on the development of integrated storage systems and will support solutions answering to identified challenges within this area. It is highly encouraged to identify and involve "need-owners" [1] in the solution development answering to the specified challenge.

This call will support RDD projects that contribute to the development of sustainable, integrated storage solutions for both short- and long-term storage within areas such as:

- Electrical storage
- Electrochemical storage
- Material storage
- Thermal storage
- Mechanical storage

The call will focus on challenge areas where different types of partners from different parts of society collaborate (e.g. SMEs can collaborate with organisations and communities) to offer solutions to existing energy systems. Examples of such types of challenges are, but not limited to:

- Innovative storage systems and their application (collaborative field trials and demonstrations enabling accumulation of experience and evaluation of performance), such as:

[1] By „**need-owner**" this call refers to the role of an entity (e.g. public agency, local/regional authority, energy grid manager/owner, company, building owner etc.), that seek a solution to a specified need (problem) within its area of operation. The "need-owner" has practical insights into what the actual need is and an interest to be involved in the development of a solution. This ensures the development of an optimal solution and facilitates the "need-owner(s)" acceptance and implementation of the solution. There can be more than one "need-owner" to the same need.

  - balancing output from community scale renewables projects (wind, solar, marine, geothermal) with community scale storage (e.g. batteries, hydrogen, small pumped hydro)
  - using vehicle to grid technology to create a virtual large-scale storage service at district level which could offer a service to grid operators
  - integrating thermal storage into individual buildings or district heating systems as a means of absorbing excess renewable electricity on the grid or even a means of seasonal storage of energy at large scale
  - storage technologies for enhanced grid resilience
- Materials and systems engineering research to resolve key technology cost and performance challenges of known and emerging storage technologies. In particular, proposals should aim at new storage technologies with a significant improvement on the reduction of capital cost, increasing system efficiency and extension of life cycle over the state of art performance.
- Validation of the safety, reliability, and performance focused on degradation and failure mechanisms and their mitigation, accelerated life testing and monitoring
- 'First of a Kind' innovative storage systems

Projects are typically expected to utilise innovative combinations or deployments of existing technologies. However, projects demonstrating first of a kind innovative storage would be welcomed. Deployment of energy storage capacities are not always profitable and new business models are needed. All solutions will therefore be expected to provide crosscutting strategies relating to innovative and resource efficient business models. These should address supply chain dependencies/activities and asset ownership/management principles for storage devices/systems.

5 PROPOSAL SET-UP AND PROJECT REQUIREMENTS

The priority behind each project is to develop sustainable, integrated storage solutions that address identified challenges within short- or long-term storage in a specific regional/local energy system. Projects are strongly encouraged to involve "need-owner(s)" and relevant stakeholders from the regional innovation ecosystem in all project phases to maximise market acceptance and uptake within the development of technologies and solutions.

The project consortia applying for the Joint Call 2019 are asked to elaborate on:

1. **Identification of challenges for storage solutions and their "need-owner(s)"**: Description of processes and methodologies for identifying critical needs, in collaboration with the most significant "need-owner(s)" and other stakeholders in the local and regional energy systems (e.g. infrastructure operators, end users, communities etc.) Optimally, more than one region is addressed.

2. **Description of RDD activities and co-creation of solutions:**
   - Description of activities in the fields of research, development and demonstration and/or real environment testing.

- Description of chosen processes and methods for collaboration between project partners, "need-owner(s)" and other stakeholders.
- Description of how "need-owner(s)" and relevant stakeholders (such as technology and service providers, innovators, start-ups, end-users and communities) should participate in the planned R&D demonstration and transfer activities to ensure that the viewpoints, knowledge and expertise of the "need-owner(s)" and relevant stakeholders are involved in all solution development stages, from concept creation to demonstration (i.e. co-creation process).

3. **Scaling up, replication and dissemination strategy**: Description of the potential for subsequent scaling up, replication and achieving market-readiness (TRL 8-9) for the solutions developed in the course of the project (see section 5.1). Description of IPR, knowledge sharing and open data strategies, including identifying solution synergies and developing next steps.

   Opportunities for follow-up projects with market uptake measures (TRL 8-9) that could be supported by 2019 call funding partners or associated partners, subject to state aid rules where applicable, should be considered in the proposals. The opportunities for creating policy briefs and guides or other deliverables in the framework of the ERA-Net SES Knowledge Community should also be considered (ERA-Net SES/Knowledge Community). Projects supported by ERA-Net SES partners is expected to actively participate in knowledge sharing and learning as organised by the ERA-Net SES Knowledge Community, together with other projects resulting from this call, previous calls, additional experts and associated partners (see section 5.2).

Synergies with other relevant national or international projects, current and concluded, should be maximised in the project proposals.

5.1 Project requirements

The following criteria apply for project proposals in the Joint Call 2019. Projects should:

- be transnational by nature, involving at least two independent, actively participating, partners from two different countries, participating in the Joint Call 2019 (national/regional funding partners). The involvement of more than two countries will be encouraged.

- develop integrated energy storage solutions, as well as prepare or implement demonstration projects. Projects should address solutions within Technology Readiness Level 5 – 8 (TRL - see definitions in Annex D). Activities with lower TRL levels (3-6) may be included if they contribute to the higher project goal. Projects may expand on results from and connect to ongoing or recently finished demonstration projects (utilise test infrastructure, utilise knowledge, cooperation of key demos, transfer of results, establishment of new business activity, etc.). They however must show complementary and added value, avoiding duplication. Projects should develop new solutions with the potential to become best practice by 2025.

- aim to develop clearly defined integrated storage solutions and a relevant set of KPIs

- implement the Three-Layer Research Model encompassing *Stakeholder/Adoption*, *Goods and services* and *Technology* (see Annex A). This normally includes considering business models, market strategies and consumer needs and engage private and public stakeholders in co-creating eco-systems. Projects are expected to incorporate all three layers of the model. However, projects involving only one or two layers can be considered if sound arguments for doing so are presented. Generally, projects implementing all three layers will be given priority.

- consider aspects of replicability and transferability of solutions. If starting from concrete needs in a specific region, projects should at the same time have markets of solutions and technologies in mind. High flexibility and adaptability of developed solutions will increase the applicability on the global markets. A specific case are digital business processes and services, which should preferably be developed by leveraging on already existing digital platforms.[2]

- show a critical mass of participants and critical size according to their subject (e. g. adequate number of involved households, involving intermediaries with large outreach potentials, connecting different types of storages, demonstrating Virtual Power Plants of a suitable size, platforms that host an adequate number of stakeholders etc.). 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 €5 000 000, but this does not exclude smaller/larger projects. There should be a fair balance between project partners in the division of project budget and tasks.

- consider diversity perspectives related not only to gender, but also ethnicity, age, socio-economic status, physical abilities, political beliefs, geography etc. throughout the project. Adoption and success of new energy solutions in local communities, and in society in general, requires careful consideration of the prosumer and end user needs. To be able to evaluate the highly variable consumer needs and to inspire the most creative and effective solutions, the composition of a successful project consortium ideally should reflect the diversity in society.

Project proposals should refer to:

- the existing European roadmaps and implementation plans, such as the SET-Plan Action 4 Implementation Plan[3], the ETIP SNET R&I roadmap 2017-26[4] or the Cross-Cutting

[2] SET-Plan Action 4 Implementation Plan – Innovation Action A4-IA2.3-1.
Some of the ERA-Net SES Associated Partners are able to provide such platforms. Specifications and conditions can be found on the ERA-Net SES Associated Partners website.
[3] SET-Plan Action 4 Implementation Plan
[4] ETIP SNET R&I roadmap 2017-26

Technology Roadmap of the European Technology Platform on Renewable Heating and Cooling[5]

- the existing eight innovation challenges (ICs) as defined by Mission Innovation (MI)[6]
- existing reference architecture models and common standards[7] as they exist as well as to relevant public documents of the ERA-Net SES/Knowledge Community

National/regional eligibility criteria must be respected in addition to the Joint Call 2019 project requirements.

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

5.2 Knowledge Community – background and requirements

All European based applicants in this call should participate in the ERA-Net SES Knowledge Community (see Standard Work Package, Annex E). Cooperation and facilitation in the below-mentioned activities are mandatory for all projects funded in the Joint Call 2019. The final organisation and execution of these activities will be the result of an iterative process between the Knowledge Community Management and each funded project, as applicable. The project proposal should include the mandatory work package that implements these activities (see section 5.2 and Annex E). In the design of their own dissemination and exploitation strategies, projects should consider potential synergies with and contributions to the ERA-Net SES Knowledge Community.

Participation of non-ERA-Net SES project partners in the Knowledge Community is not mandatory, as the meetings take place in Europe, but highly recommended as the participation may contribute to the dissemination and global integration of project results. Collaboration between the selected projects in the Joint Call 2019 and previously selected projects may also aid the discovery of synergies between projects and greatly enhance the development of the projects. Inclusion of participation in the Knowledge Community should be as per the prevailing guidelines of the relevant funding agency.

[5] Cross-Cutting Technology Roadmap

[6] http://mission-innovation.net/our-work/innovation-challenges/

[7] Including Smart Grid Architecture Model developed under standardisation mandate M/490 and follow-up activities, regulatory environment for privacy, data protection, data management and alignment of data formats (e.g. the work of the ad-hoc group on "My Energy Data" and its respective follow-up), cyber security, smart grid deployment, infrastructure and industrial policy (http://ec.europa.eu/energy/en/topics/markets-and-consumers/smart-grids-and-meters/smart-grids-task-force).

5.2.1 Background

The Joint Call 2019 Coordination Team implements advanced and innovative follow-up, monitoring and transfer activities to create an ERA-Net SES Knowledge Community. It is organised by the ERA-Net SES Knowledge Community Management[8].

The goal of the Knowledge Community is to enable knowledge exchange between the projects and with national and international experts to leverage synergies of efforts. The Knowledge Community aims to present state-of-the-art knowledge and discussions in the field of Smart Energy Systems and to be a hub and voice for all information related to national/regional Smart Energy RDI (Research, Development, and Innovation). To this end, the Knowledge Community will link experts from the funded projects[9] and actors of other national, transnational and international smart energy activities. It will also provide connections to policy makers, stakeholder organisations, programme owners, SMEs and academia from outside the Knowledge Community to offer knowledge and to aid them in making strategic decisions. To involve key stakeholder groups and exploit specific potentials, the Knowledge Community will involve so called Associated Partners that can contribute specific knowledge, tools or means of approaching stakeholders.

The key means of managing a lively Knowledge Community are Living Documents and physical and virtual Working Groups meetings. Cooperation and knowledge are being managed on the comprehensive expera web-platform.

The Knowledge Community Management 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 and communicate it to the involved funding partners. 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 international level.

The Knowledge Community is an integral part of the Joint Call 2019 concept. It is therefore important that applicants fully consider this concept and its content when formulating the project proposal (e.g. by applying and accessing the expera platform as an expert).

6 GUIDANCE FOR APPLICANTS

6.1 Call procedure

The call procedure has three steps;

- the proposal phase
- the national eligibility and evaluation phase
- the selection phase

During the proposal phase, there will be a compulsory advisory period and registration of interest for all potential project applicants. During the advisory period, the project applicants are obliged to seek support and guidance from their respective agencies. This is to increase the suitability of the projects with respect to national/regional requirements. The applicants

[8] http://www.eranet-smartenergysystems.eu/About/Our_Organisation

[9] including funded projects from previous ERA-Net SES calls

are also obliged to submit a registration of interest by the 13th November 2019 in the online Electronic Submission System (link). The registration includes provisional information about project name, short description of topic, approximate amount of funding applied for and potential partners.

During the national eligibility and evaluation phase, the project proposals will be submitted to a full national/regional eligibility check and a trans-national evaluation. The project proposals have to include all necessary information and documentation, as well as any information needed to fulfil national/regional requirements. If these formal requirements are not met, the project proposal will not pass the evaluation phase. The different steps of the evaluation are described in more detail in the following sections (6.1.1–6.1.4).

The ERA-Net SES Call Management[10] will facilitate the call process.

Call procedure timings		
Proposal phase	Call opens	18 September 2019
	Compulsory advisory period	18 September – 22 January 2020
	Compulsory registration of interest deadline	12 November 2019, 14:00 CET
	Proposal submission deadline	22 January 2020, 14:00 CET
National/regional eligibility and evaluation phase	Preliminary eligibility check	30 January 2020
	Transnational expert evaluation and national/regional eligibility check	January – April 2020
Selection phase	Decision communicated to applicants	5 May 2020
Project phase	Project start date	Before 15 December 2020

6.1.1 Project proposals

The project proposal phase opens on 18 September 2019. Consortia are required to submit their project proposals and any supporting documents in English via the Electronic Submission System, available on the ERA-Net SES website by **22 January 2020 at 14:00 CET**. Text and page limits are 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.

[10] http://www.eranet-smartenergysystems.eu/About/Our_Organisation

Please note that some national/regional funding agencies may require additional documentation from the project partners according to national/regional regulations[11]. These should ***not*** be submitted in the central ERA-Net SES 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 a compulsory advisory period during the proposal submission period, during which the applicants are obliged to contact their national/regional funding agencies. The applicants may receive feedback on their proposed project ideas from their individual national/regional funding agency in terms of scope, eligibility of partners and desirability of the project proposal depending on national/regional regulations. This will give the project partners the opportunity to revise their ideas and re-evaluate the participating partners and obtain necessary national/regional funding agency requirements information.

The national/regional contact points may provide information on the national/regional requirements for the project proposals, such as the potential requirement to 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 documents 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, submitted a registration of interest and submitted a full proposal through the Electronic Submission System, and to national/regional funding agencies where required, will be considered for eligibility during the evaluation phase.

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 C). No preference is given to projects with partners from numerous different countries/regions. Different project types require different numbers 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 comprise three steps, which are explained in detail below:

[11] Including regulations adopted to implement EU State aid rules

1. National/regional eligibility check

The national/regional funding agencies will consider the proposals based on the eligibility criteria (section 5.1) and, if required on a national/regional level, the evaluation criteria (Annex C), in conjunction with specific national/regional requirements (Annex B).

Consortia with three or more participating countries involved are requested to offer fallback strategies for cases in which one of the involved funding agencies considers the project as ineligible. The fall-back strategies must be part of the risk assessment of the proposal and could be structured as follows:

- Scenario A: Project partners from country A are not eligible: The project can still be implemented, because…
- Scenario B: Project partners from country B are not eligible: The project cannot be implemented anymore because…
- etc.

Project proposals which do not pass the national/regional eligibility check in at least two countries and which do not provide a fall-back strategy will not be considered for funding and will not be forwarded to the selection 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 Joint Call 2019 (see Annex C). 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. Selection and outcome

The final step of the evaluation process is a joint meeting of the Joint Call 2019 consortium to select projects for funding according to the ranked list from the independent experts. The outcome will be reported to the applicants by the 5th May 2020.

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, monitoring of the projects and mandatory reporting to the European Commission and Mission Innovation.

6.2 Consortia

Consortia may be constructed from at least two active partners from at least two different countries/regions participating in the Joint Call 2019. They have to abide by the requirements given in chapter 5.1 and the regional/national eligibility rules in Annex B.

Partners from countries that are not members of Joint Call 2019 (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 Joint Call 2019 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. They should ensure that the agreements are not in conflict with the regulations of the relevant national/regional funding agencies. Model consortium agreements can be found at https://www.iprhelpdesk.eu/library/useful-documents.

6.3 Funding arrangements

The total funding available for the Joint Call 2019 projects amounts to over € 22 Mio.

Funding partners			
Country/ region	**Funding (€)** (regional/national funding available)	**Organisation name**	**Acronym**
Austria	2 900 000	Austrian Research Promotion Agency	FFG
Belgium - Flanders	1 000 000	Flanders Innovation and Entrepreneurship	VLAIO
Belgium - Wallonia	500 000	Public Service of Wallonia	SPW
Denmark	3 000 000	Energy Technology Development and Demonstration Program	EUDP
Finland	3 000 000	Business Finland	Business Finland
Germany	2 000 000	Forschungszentrum Jülich GmbH	PtJ
India	2 000 000	Department of Science and Technology	DST
Israel	600 000	Ministry of Energy	MOE
Italy	600 000	Ministry of Education, Universities and Research	MIUR

Morocco	(tbc[12])	Research Institute for Solar Energy and New Energies	IRESEN
Nordic and Baltic region	600 000	Nordic Energy Research	NER
Poland	600 000	National Centre for Research and Development	NCBR
Romania	500 000	Executive Agency for Higher Education, Research, Development and Innovation Funding	UEFISCDI
Scotland	2 000 000	Scottish Enterprise	SCOTENT
Sweden	2 000 000	Swedish Energy Agency	SWEA
Switzerland	500 000	Federal Department of the Environment, Transport, Energy and Communications DETEC – Swiss Federal Office of Energy SFOE	DETEC
Turkey	750 000	The Scientific and Technological Research Council of Turkey	TÜBITAK
Total	22 550 000		

6.4 Project duration

Projects are required to start before 15 December 2020 and must be completed (including all reporting) by 15 December 2023. The maximum duration of a project should be 36 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 a transnational level. Any substantial change in an on-going project must be reported immediately to the funding agencies involved, and subsequently reported to the Call Management. Project partners should be aware that changes may have implications on past, present and planned future funding.

In addition to the national/regional requirements, Joint Call 2019 projects are required to deliver the following:

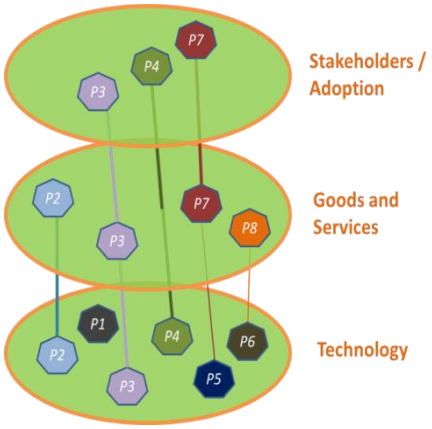
1. Participation in and presentation at meetings to report on the status of and results from the project. Detailed requirements for the contribution at these seminars will be specified in due course.

[12] Participation subject to approval. Please check the website for the latest information.

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 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 Knowledge Community Management will affect the work and composition of the projects (see Annex E). Active participation in knowledge-sharing and formative evaluation activities organised by the Knowledge Community Management must be considered (e.g. in terms of resource allocation) when planning and managing the project workplan, set-up and budget.

ANNEX A – THREE-LAYER RESEARCH MODEL



To reach the goals and desired impacts of the ERA-Net SES and MI initiatives in a multi-dynamic environment, it is necessary to continue developing and introducing the right enabling technologies, develop and structure the market with new goods and services, and to learn more about how to overcome barriers built into communities and society. This indicates the need for a cross-sectoral and interdisciplinary approach, including regionally available renewable resources, system integration of technologies, services, tools, business processes, market architectures and regulatory regimes, potential synergies in infrastructures, convergence of technology and application areas as well as basic design principles (security and privacy, resilience, energy and resource efficiency of equipment and components).

The essential innovations to be achieved can be visualised in these **three layers**:

Stakeholders / Adoption – *overcoming: why do or don´t we do it?*

(innovation and transition processes with stakeholders, consumer acceptance, education, policy, retail, community and society, social research, etc.)

Goods and Services – *structuring: how do we organize it?*

(business models, regulatory framework, market design with new goods and services, economic research etc.)

Technology – *enabling: which technologies do we need?*

(incl.: how can we make technologies form other sectors available for the energy system? Areas such as telecommunications, machine learning, cross energy carrier solutions, grid automation, technological research etc.)

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. economy, 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.

Projects that cover more than one of these three research layers (ideally all three) will be preferred. Projects covering stakeholder/adoption and/or goods and services layers as well, will be given priority over single layer projects. Projects should therefore clearly state goals for the stakeholder/adoption and goods and services layers in relation to technological issues.

ANNEX B – NATIONAL/REGIONAL REQUIREMENTS

Austria

Funding agency name	**Austrian Research Promotion Agency (FFG)**
Programme name and link	Energieforschung https://www.ffg.at/eranet/regsys
Contact person	Urban Peyker, urban.peyker@ffg.at, +43 5 77 55 5049
Eligible applicants	- Companies, SMEs. - Research organisations (e.g. universities and other research orgs.).
Eligible costs	All project related costs (e.g. Personnel, Equipment, Consumables, Training, Travels, etc.).
Type of research funded	Applied research (Industrial research to experimental development); pre-competitive, application-oriented R&D with high risk.
Require separate national/ regional full application	Yes.
Funding available	€ 2 927 640
Further specifications	*FFG will use two existing funding programmes from the Austrian Federal Ministry for Transport, Innovation and Technology amounting to 2. Mio Euro and the Austrian Energy and Climate Fund amounting to 927.640.- Euro to fund relevant projects.* *The amount of funding requested nationally for the project is between €100,000 and €2 million. The minimum value shall be seen as a guiding value. The ceiling of €2 million is fixed and must not be exceeded.*

Belgium - Flanders

Funding agency name	**Flanders Innovation and Entrepreneurship (VLAIO)**
Programme name and link	Company R&D instrument (Knowledge intensive projects, development projects)
Contact person	Geert Carchon: geert.carchon (at) vlaio.be, +32 2 432 4294
Eligible applicants	All companies with operational activities in Flanders can be funded.

Eligible costs	The national rules on eligible costs for Flemish participants are available from the VLAIO website https://www.vlaio.be/nl/subsidies-financiering .
Type of research funded	The Agency potentially supports the following types of RTD, namely: support to R&D by companies: research projects, development projects.
Require separate national/ regional full application	The project quality will be evaluated by the ERANET, this evaluation will be used as a part of the regional evaluation. The evaluation of the project valorisation in Flanders will require a regional application. This application is only a part of a full regional application.
Funding available	€ 1 000 000 (regional budget)
Further specifications	*none*

Belgium - Wallonia

Funding agency name	**Service Public de Wallonie (SPW)**
Programme name and link	2019 joint call ERA-Net SES and MI
Contact person	Gilles Tihon, gilles.tihon@spw.wallonie.be, +32 81 48 63 53 Laurence Polain (alternate), laurence.polain@spw.wallonie.be, +32 81 48 63 42
Eligible applicants	Universities,Research Centers,SME, large companies settled in Wallonia
Eligible costs	Fundings vary according to TRL and type of supports (see available link above) Participation of a private company is mandatory (minimum 40% of total Walloon budget).
Type of research funded	-Industrial Researches (TRL 3 to 5) -Experimental Development (TRL 6 to 7 (8)): only SMEs and large companies
Require separate national/ regional full application	Yes
Funding available	€ 500 000
Further specifications	Eligibility criteria:

	- The project cannot receive double funding; - The budget for the Walloon partners should follow the SPW-DGO6 cost model; - The funding rate will be the maximum allowed by the decree of the 3rd of July 2008, modified; - The beneficiary must have a stable financial situation; A financial viability check has to be carried out before being recommended for full proposal. - The beneficiary must have Operational offices in the Walloon Region; - The project must add benefit to the regional economy; - All information needed for evaluation should be available; - A Walloon complementary funding request's form must be submitted to the SPW-DGO4 for full proposal within five working days after the call deadline

Denmark

Funding agency name	**EUDP**
Programme name and link	EUDP - Energy Technology Development and Demonstration Program (administrated by an independent board with a secretariat within the Danish Energy Agency) https://ens.dk/en/our-responsibilities/research-development/eudp
Contact person	Annika Fischer afi@ens.dk +45 25 72 82 93
Eligible applicants	- Public and private enterprises - Universities - Research organizations, knowledge institutes (incl. approved technological service institutes). 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. *Support must be in accordance with European state aid rules and the EUDP rules.*
Eligible costs	All project related costs (e.g. personnel, training, travels, subcontracting, overhead, materials etc.)
Type of research funded	EUDP support projects that are in compliance with the EUDP strategy. This includes storage. EUDP primarily supports projects within TRL 4-8*: **EUDP can support research activities that feed directly into development and demonstration activities. Projects that include research activities will have this part evaluated by Innovation Fund Denmark.*
Require separate national/ regional full application	Yes. The independent EUDP Board must approve a national application, which will be evaluated nationally.
Funding available	€ 3 000 000
Further specifications	

Finland

Funding agency name	**Innovation Funding Agency Business Finland**
Programme name and link	Smart Energy https://www.businessfinland.fi/en/for-finnish-customers/services/programs/smart-energy-finland/
Contact person	Pia Salokoski, pia.salokoski@businessfinland.fi, +358505577672
Eligible applicants	Companies, Research organisations and companies in co-innovation projects
Eligible costs	Project costs according to national funding rules
Type of research funded	Applied research, development and demonstrations in the call theme
Require separate national/ regional full application	Yes

Funding available	€ 3 000 000
Further specifications	

Germany

Funding agency name	**Forschungszentrum Jülich GmbH (PtJ)**
Programme name and link	7th Federal Programme on Energy Research: "Research for an environmentally-friendly, reliable and affordable energy supply" https://www.bmwi.de/Redaktion/DE/Downloads/B/bekanntmachung-forschungsfoerderung-im-7-energieforschungsprogramm.html
Contact person	Paul Kunzemann, p.kunzemann@fz-juelich.de, +49 2461-61 96998 Dr. Mathias Hoffmann, mat.hoffmann@fz-juelich.de, +49 2461-61 96423
Eligible applicants	• 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.
Eligible costs	All project related costs (e.g. personnel, equipment, consumables, travel expenses, etc.).
Type of research funded	Focus on applied research.
Require separate national/ regional full application	Yes - but only after positive funding decision feedback
Funding available	€ 2 000 000
Further specifications	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).

	BMWi funding of the call will be provided as delineated in the "Förderbekanntmachung zur angewandten nichtnuklearen Forschungsförderung im 7. Energieforschungsprogramm Innovationen für die Energiewende". National funding procedure: Based on the full proposal a national eligibility check including a technical evaluation will be performed. In case the proposal is eligible and will be selected for funding through the ERA-NET, the German applicants will 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).

India

Funding agency name	**Department of Science and Technology (DST), Ministry of Science and Technology, Government of India**
Programme name and link	Department of Science and Technology (DST), Technology Mission Division (Energy, Water and Others) http://dst.gov.in/technology-mission-clean-energy-and-water
Contact person	Dr. Sanjay Bajpai, Head-TMD(EWO), sbajpai@nic.in, (011) 2659283 / Dr. GV Raghunath Reddy, Scientist-E, raghunath.reddy@nic.in, (011) 26590604
Eligible applicants	Faculties/Scientists working in regular position in recognized Academic Organization /Public funded R&D Institution/ Laboratories, DSIR recognized SIRO organization (50% of project cost), Technology Buisness Incubators (TBIs). Participation of industries and industry association is also strongly recommended. However, they would be required to partner with Academia or R&D organizations. Start-ups are eligible to apply through their TBIs.
Eligible costs	Equipment, Prototype design & fabrication, Manpower, Work to be outsourced, Consumables, National Travel, International Travel, Contingency, Miscellaneous, Overheads
Type of research funded	Project should address solutions within Technology Readiness level 5-7. Projects such as Research and Development projects,

	Lab Scale Demonstration of Technology, Pilot Scale Demonstration for technology, upscaling, Prototype, etc. Activities with lower TRL levels (3-6) may be included if they contribute to the higher project goal.
Require separate national/ regional full application	The applicant is required to submit a full copy (both hard & soft) of the proposal to Department of Science and Technology. There may be requirement of online submission on DST website which will appear on September 18, 2019.
Funding available	€ 2 000 000
Further specifications	All the funded projects would be bound by guidelines stipulated by Department of Science and Technology from time to time. The detailed guidelines for this call will appear on DST website on September 18, 2019, which will supercede anything stated here.

Israel

Funding agency name	**Ministry of Energy (MOE)**
Programme name and link	Academic Support program /Start-ups support program/ Pilot and Demonstration Support Program Link: https://www.gov.il/he/departments/guides/rd_grants
Contact person	Gideon Friedmann, gideonf@energy.gov.il Yael Harman Yaelh@energy.gov.il +972-54-4519447
Eligible applicants	Academic Institutions, citizens, Companies, Municipalities
Eligible costs	All costs related to a development project, except overhead type of costs (eg office lease, insurance, office supplies), which are already covered as overhead. Salaries cannot exceed 200,000 ILS per year per full time job.
Type of research funded	1. Academic 2. Early stage (proof of concept, prototype). (TRL 2-4) Pilot stage (TRL 5+)
Require separate national/ regional full application	Yes
Funding available	€ 600 000
Further specifications	

Italy

<table>
<tr><th>Funding agency name</th><th>Ministry of Education, Universities and Research (MIUR)</th></tr>
<tr><td>Programme name and link</td><td>FIRST (Fondo per gli Investimenti nella Ricerca Scientifica e Tecnologica) and IGRUE account for the EU cofunding.</td></tr>
<tr><td>Contact person</td><td>Giorgio Carpino, giorgio.carpino@miur.it, +39 06 5849 7147
Aldo Covello, aldo.covello@miur.it, +39 06 5849 6465</td></tr>
<tr><td>Eligible applicants</td><td>The following entities are eligible, providing that they have stable organization in Italy: enterprises, universities, research institutions, research organizations in accordance with EU Reg. n. 651/2014 of the European Commission - June 17, 2014.
Any participant, in order to be eligible, must comply with the eligibility criteria listed in the art. 2.4 of the ”Linee guida al DM 593/2016”.</td></tr>
<tr><td>Eligible costs</td><td>All activities classifiable as Industrial research and Experimental development are eligible for funding. Furthermore, Industrial research activities must be predominant with respect to Experimental development activities (in terms of costs).
<table>
<tr><th colspan="2" rowspan="2">Applicant typology
Activity typology</th><th colspan="4">Funding Rates</th></tr>
<tr><th colspan="3">Enterprises and private research bodies (which do not meet the requirements of research organization under EU Reg. no. 651/2014 of the Commission - June 17, 2014)</th><th rowspan="2">Universities, public research institutions, research organizations (public and private) in accordance with Reg. EU n. 651/2014 of the Commission - June 17, 2014)</th></tr>
<tr><th></th><th>Small Enterprises</th><th>Medium Enterprises</th><th>Big Enterprises</th></tr>
<tr><td>Industrial Research</td><td>grant</td><td>40%</td><td>30%</td><td>20%</td><td>50%</td></tr>
<tr><td>Experimental Development</td><td>grant</td><td>30%</td><td>20%</td><td>10%</td><td>25%</td></tr>
</table>
All costs incurred during the lifetime of the project under the following categories are eligible: Personnel, Equipment, Consulting and equivalent services, Consumables and Overheads.
Overheads (“Spese generali”) shall be calculated as a percentage of the personnel costs and cannot be higher than 50% of them.</td></tr>
</table>

	Travel expenses, dissemination and coordination costs are to be included in the overheads.
Type of research funded	The amount of funding which can be granted to each beneficiary is calculated multiplying the eligible costs for the funding rate listed in the following table. On request of applicants a pre-payment may be done. The amount of the pre-payment is defined in the "Avviso integrativo nazionale". The remaining part of contribute will be paid in instalments after each financial and progress reporting period.
Require separate national/ regional full application	In addition to the project proposal, which shall be submitted at European level, the Italian participants are requested to submit further documentation to MIUR, through the national web platform, available at the following link: http://banditransnazionali-miur.cineca.it These national additional documents must be submitted by the same deadline established for the proposal phase submission as defined in the international joint call. Any participant who does not submit its national documents by the deadline of the proposal phase, will be considered not eligible for funding. MIUR will require to all Italian participants admitted for funding some additional documents describing more in detail the participant and its research activities within the project. It is strongly recommended to contact the National Contact Persons already in early stage of project preparation. The admission for funding is subject to the adoption of the necessary accounting and administrative measures for the allocation of the resources. Funded participants will be requested to submit financial and scientific reports to MIUR.
Funding available	Overall funding commitment for the call: € 600 000 A maximum grant of 150 000 Euro can be awarded to each project proposal, even if it includes more than one Italian participant. A maximum of two Italian participants per project proposal, requesting funding to MIUR, is admitted. A Principal Investigator can participate (either as coordinator or as partner) in only one project proposal, requesting funding to MIUR, independently from the call topics.

Further specifications	The criteria and provisions provided herewith are intended only for informative purposes. The complete list of criteria and provisions legally valid, which must be respected by all the Italian participants, is included in the "Avviso integrativo nazionale", published on the dedicated web page on MIUR website (http://www.ricercainternazionale.miur.it/era/eranet-cofund-(h2020)/en-sgplusregsys.aspx) and in the applicable Italian laws. Applicable laws and rules (http://www.ricercainternazionale.miur.it/evidenza/normativa-prog-internazionali.aspx): – Decreto legge n. 83/2012 – Decreto Ministeriale n. 593 del 26 luglio 2016 – Linee guida al D.M. del 26 luglio 2016 n. 593 – Procedure operative per il finanziamento dei progetti internazionali ex art. 18 D.M. del 26 luglio 2016 n. 593 Useful links: – http://www.ricercainternazionale.miur.it/era.aspx – http://www.ricercainternazionale.miur.it/era/eranet-cofund-(h2020)/en-sgplusregsys.aspx – http://banditransnazionali-miur.cineca.it http://www.ricercainternazionale.miur.it/evidenza/normativa-prog-internazionali.aspx

Morocco

Funding agency name	**IRESEN (**Participation subject to approval. Please check the website for the latest information.)
Programme name and link	
Contact person	
Eligible applicants	
Eligible costs	
Type of research funded	
Require separate national/ regional full application	

Funding available	
Further specifications	

Nordic and Baltic region

Funding agency name	**Nordic Energy Research (NER)**
Programme name and link	Nordic Energy Storage Programme
Contact person	Karina Barnholt Klepper, Karina.Klepper@nordicenergy.org Sofia Elamson, Sofia.Elamson@nordicenergy.org
Eligible applicants	Research within public and private entities e.g.: - Universities - Research institutes - Companies (subject to state aid rules) - Municipalities Projects with partners applying for funds from Iceland, Norway, Estonia, Latvia and Lithuania will be given priority in order to expand Nordic involvement and transnational collaboration in the Nordic and Baltic region. Remaining funds may also be issued to applicants from Denmark, Finland and Sweden. A minimum of two Nordic and/or Baltic partners must be involved in a project for the project to be eligible for funding from NER. Each project may apply for up till €200 000 in support. For further information please check the Nordic Energy Storage Programme website.
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	No
Funding available	€ 600 000
Further specifications	Planning grants may be offered to Nordic and Baltic project partners through NER's open call for planning grants.

Poland

Funding agency name	National Centre for Research and Development (NCBR)
Programme name and link	ERA-Net Smart Grids Plus (4th Call) https://www.ncbr.gov.pl/programy/programy-miedzynarodowe/wspolpraca-wielostronna/inicjatywy-typu-era-net/era-net/technology/smartgrids-plus/iv-konkurs/
Contact person	Jolanta Drożdż, jolanta.drozdz@ncbr.gov.pl, +48 22 39 07 106
Eligible applicants	Enterprises: micro, small, medium or large Groups of entities (consisting of min. one research organisation and min. one enterprise: micro, small, medium or large)
Eligible costs	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	- Industrial research - Experimental development
Require separate national/ regional full application	Yes, after selection of projects to be funded.
Funding available	€ 600 000
Further specifications	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. 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.

<table>
<tr><td></td><td>Types of research funded including the maximum state aid intensity for enterprises:
<table>
<tr><th rowspan="2">Type of Applicant</th><th colspan="2">Type of research funded</th></tr>
<tr><th>Industrial research</th><th>Experimental development</th></tr>
<tr><td>Micro/Small enterprise</td><td>50+20+15 (max 80%)</td><td>25+20+15 (max 60%)</td></tr>
<tr><td>Medium enterprise</td><td>50+10+15 (max 75%)</td><td>25+10+15 (max 50%)</td></tr>
<tr><td>Large enterprise</td><td>50+15 (max 65%)</td><td>25+15 (max 40%)</td></tr>
</table>
All detailed information about financial rules and national procedure is available on the NCBR's homepage:
https://www.ncbr.gov.pl/programy/programy-miedzynarodowe/wspolpraca-wielostronna/inicjatywy-typu-era-net/era-net/technology/smartgrids-plus/iv-konkurs/</td></tr>
</table>

Romania

Funding agency name	Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) www.uefiscdi.gov.ro
Programme name and link	P3 – European and International Cooperation
Contact person	Elena Simion +4021.307.19.93 elena.simion@uefiscdi.ro
Eligible applicants	Legal entities established in Romania are eligible to get funding, i.e. public and private accredited universities, national R&D institutes, other research organizations, SMEs, large industrial enterprises with R&D activity within their domains. We can fund only Romanian research teams. For universities, public institutions, R&D national institutions funding is 100%, and for SMEs and Large companies, financing is under the permit NASR Decision no 9281/8.13.2015 approving the scheme of State aid for Program 3: European and international cooperation.
Eligible costs	The following categories of expenses are eligible: A. **Staff costs** (researchers, technicians and support staff, including all corresponding state and social contributions;

	these contributions are subject to national regulations in force); B. **Consumables** (materials, supplies or similar); C. **Equipments** (in full compliance with state aid regulations), no more than 30% of the total funding from the public budget; D. **Subcontracting** (max. 25% of the total funding from the public budget); E. **Travel expenses** (in Romania or abroad, only for project teams' members); F. **Overheads** (calculated as a percentage of direct costs: staff costs, travel expenses and logistics costs - excluding capital costs). Indirect costs will not exceed 20% of direct costs, excluding subcontracting. Expenses are eligible if incurred after signature of the contract. Subcontracting of special tasks (i.e. IT services, etc): Yes, expenditure on services performed by third parties cannot exceed 25 % of the funding from the public budget. The subcontracted parts should not be core/substantial parts of the project work.
Type of research funded	UEFISCDI will fund mainly applied research projects implemented by research organisations and/or SMEs, according to the European State Aid legislation. The projects will be funded through the National Plan for Research, Development and Innovation III (PNIII), Programme 3 – European and Interantional Cooperation, Subprogramme 3.2 – Horizon 2020, ERA-NET / ERA-NET Cofund.
Require separate national/ regional full application	No official paperwork and/or supporting information are requested by UEFISCDI before the submission deadline.
Funding available	€ 500 000 *The maximum funding for one project from the public budget is € 250 000 if Romania is the coordinator of the transnational project.
Further specifications	Applicants have to consult and respect the guideline according to the National Plan for Research, Development and Innovation 2015-2020, for ERA-NET Cofund projects.

Scotland (UK)

Funding agency name	**Scottish Enterprise (SCOTENT)**
Programme name and link	Era Net SES MICall 2019
Contact person	Morag Clark morag.clark@scotent.co.uk
Eligible applicants	Scottish Enterprise region SMEs (EU definition), companies, Universities (in a consortium led by a company, having at least two companies, and with at least one of these being Scottish-based and undertaking R&D in Scotland and limit of one research organisation).
Eligible costs	Project-specific costs including: up to £60k salaries, overheads, depreciated equipment, consultancy, training, materials, trials, IP, in whole or in part as per full pre-defined criteria available on request.
Type of research funded	Industrial research/Experimental development (EU definitions) aimed at the creation of new products, processes, or services in achieving business growth.
Require separate national/ regional full application	yes
Funding available	€ 2 000 000
Further specifications	Co-funding rate of 35-50% of eligible costs and subject to Scottish Enterprise policy and procedures and EU State Aid Regulation with preference to proposals with the greatest economic impact against the requested co-financing rate.

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 165442112
Eligible applicants	Public and private entities e.g.: - Universities - Research institutes - Companies - Municipalities

	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.
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	€ 2 000 000
Further specifications	SWEA also provides practical assistance and, in some cases, support for the applications to the various energy programmes.

Switzerland

Funding agency name	**Federal Department of the Environment, Transport, Energy and Communications DETEC – Swiss Federal Office of Energy SFOE**
Programme name and link	R&D: SFOE Research & Development Program «Grids» P&D: SFOE Pilot & Demonstration Program
Contact person	Dr Michael Moser, +41 58 465 36 23, michael.moser@bfe.admin.ch
Eligible applicants	Universities (including ETH-domain), universities of applied science, further research organizations and the private sector in Switzerland. The participation of young scientists in the research teams is encouraged.
Eligible costs	R&D: Researchers in the public and private sector can apply for personnel costs and expenses according to the SFOE rates. Proposals can be funded up to a maximum of 80%. Wherever possible and reasonable, the participation of commercial and industrial partners – especially utilities (DSO, TSO, ESP) and small and medium-sized enterprises (SME) – is strongly recommended to ensure the relevance of the research to technological development and to the needs of society. An adequate share of own and third-party contributions (in-kind and/or cash) is expected. P&D: Funding of Swiss participants is limited to 40% (in exceptional cases 60%) of the eligible project costs. Eligible projects costs cover only the additional project costs that

	cannot be amortized over the expected lifetime of the developed installation or solution. Additional projects costs are defined as the additional project costs when compared to the costs of implementing an equivalent, conventional technology or solution. See the program directive for the list of admission criteria as well as the expected deliverables of the pilot- and demonstration program projects.
Type of research funded	R&D: Application oriented research projects (TRL 2–5) should explore industrially relevant ideas with a high potential for significant scientific and technical impacts. A significant step beyond the state-of-the-art is a pre-requisite. The research questions treated by Swiss applicants have to be of technical nature and directly related to the system integration of storage; the system has to include the electrical grid at least. Research focussing on socioeconomic or regulatory aspects cannot be funded. The development of specific conversion or storage technologies can only be funded in exceptional cases (to be checked with contact person in advance). P&D: Whereas the focus of R&D projects is limited to the system integration of storage, P&D projects (TRL 5-7) may cover any energy relevant aspects of integrated storage systems.
Require separate national/ regional full application	Yes, by 22 January 2020. The official forms have to be used: R&D (to be sent to michael.moser@bfe.admin.ch) P&D (to be sent to pilot_demo@bfe.admin.ch)
Funding available	R&D: CHF 600'000 (approx. € 500'000) P&D: no limit for this call Any contract shall be subject to the approval of annual credit facilities by the Swiss Parliament.
Further specifications	The funded Swiss partner may use and commercialize the project results. In return the project results will be made publicly available by SFOE. SFOE disclaims the IPRs. The subsidy recipients can utilize the project results. Direct communication with the national contact person at SFOE is strictly required at least one month prior to the submission of the proposal.

Turkey

Funding agency name	**The Scientific and Technological Research Council of Turkey (TÜBİTAK)**
Programme name and link	1071 Programme - Support Programme for Increasing Capacity to Benefit from International Research Funds and Participation in International R&D Cooperation http://www.tubitak.gov.tr/sites/default/files/242bk-ek2_0.pdf
Contact person	Önder Zor, onder.zor@tubitak.gov.tr, +90 312 298 9456 Tayyip Kösoğlu, tayyip.kosoglu@tubitak.gov.tr, +90 312 298 1806 (contact person for 1071 Programme)
Eligible applicants	Higher education institutions, their institutes, public R&D centres, SMEs and large companies established 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 and innovation.
Require separate national/ regional full application	Yes.
Funding available	€ 750 000 (national budget)
Further specifications	• Project application to TÜBİTAK's 1071 Programme is mandatory and should be made in accordance with the call timeline. A call announcement including deadline for national application will be available on TÜBİTAK's website. • The national project cannot start before the ERA-Net Smart Grids Plus joint project. Funding rate is 100% for higher education institutions, their institutes, public R&D centres, 60% for large companies and 75% for SMEs.

ANNEX C – EVALUATION CRITERIA

Evaluation criteria	
Scores 0 – 5 (0 = Fail/Missing; 1 = Poor; 2 = Fair; 3 = Good; 4 = Very good; 5 = Excellent)	
(a) Excellence	
1. Relevance to the call - Proposed piloting, validation and demonstration fit the call aim - Proposed project is clearly based on a specific need, involving (a) specific "need-owner(s)" or clearly demonstrates engagement with relevant stakeholder	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, including a clear description of the range of innovation (i.e. is it innovation on a local/international/worldwide scale) and type of innovation (such as process innovation, product innovation etc.) - Feasibility of innovation and innovative content as a whole	Score 0-5
3. State-of-the-art, link and contribution to past and ongoing, relevant international initiatives in energy storage - 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 and description of how the project builds on relevant international initiatives, knowledge and systematics	Score 0-5
4. Working methods and models <u>- Excellence in collaboration:</u> ➢ Approaches and methods for collaboration are clearly defined, enabling relevant stakeholders to participate in co-creation of solutions ➢ IPRs described and handled appropriately (licenses, patents etc.). ➢ Gender and diversity perspectives are considered - Coverage of three-layer research model: ➢ More than one layer 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). ➢ Specific adoption/market challenges related to technology development are addressed	Score 0-5

➢ Theories and methods behind social or market assumptions are 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.	
(b) Impact	
1. Expected impacts - Expected impacts are feasible and desirable, and include consideration of societal, environmental and sustainability impacts - Short-term and long-term impacts contribute to the call's aim - Implementation contributes to the expected impacts	Score 0-5
2. Scaling-up, reproducibility, replicability and interoperability potential - High scaling-up potential. - High reproducibility/replicability potential. - High interoperability potential.	Score 0-5
3. Transnational value - Added value of the project being transnational (as opposed to being only national) - Benefits and relevance of the project internationally and contribution to fulfilling international sustainable energy initiatives' objectives	Score 0-5
4. Appropriateness of measures for dissemination and exploitation of results - 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	Score 0-5
(c) Quality and efficiency of the implementation	
1. Quality and relevant experience of project team - Experience, specific expert experience (CVs) - Relevant interdisciplinary experience (complimentary expertise) - Beneficial team composition (national and competence diversity – skills shall match the working areas identified in the project)	Score 0-5
2. Appropriateness of the management structure and resource allocation - Management structure (roles) clearly defined and appropriate	Score 0-5

- Manageability of consortium (number of partners, key players etc.) - Resources are allocated suitably depending on specific expert competencies	
3. Work plan/implementation feasibility and manageability - Detailed, clear and logical work/implementation plan - Feasibility of deliverables and milestones with clearly defined KPIs - Project delivers results efficiently in relation to the project budget	Score 0-5
4. Risk identification, analysis and preventive measures - Risks appropriately identified, including a mitigation strategy for loss of project partners (if applicable) - 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	Score 0-5
Total maximum score sum	**60**

Please note! Projects that achieve a total score of less than 30 points by the expert evaluation panel or a score of 0 on relevance to the call ((a) Excellence, section 1) will not be forwarded to the selection phase by the experts.

ANNEX D – 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.

ANNEX E – 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 SES Knowledge Community Management in cooperation with the funded projects. Task 3 will be organised by the Joint Call 2019 funding partners with involvement of the ERA-Net SES Knowledge Community Management.

Task 1. Involvement in formative evaluation

Task 1.1 – Profiling

- Participate in an online survey per year on project experiences and deliverables related to topics of the Knowledge Community. The Project will answer about 25 questions about scope, targets and results of the projects in an online tool according to an "evaluation and profiling"-manual that will be handed out to the projects at their start.

Task 1.2 –Feedback

- Receive written feedback and consider recommendations of evaluators.
- Review results of survey, partly in face-to-face or virtual meetings with the evaluating experts.
- Participate in the annual 2-day Knowledge Community joint project event including a feedback meeting with experts and key project members (can partially be a *virtual meeting*).

Task 1 resource requirement estimation: 15 – 20 days/year/project.

Task 2. Crosscutting Knowledge Community activities

Task 2.1 – Working Groups

- Participate in, prepare for and follow-up 6 working groups:
  - System Architecture & Modelling
  - Regulatory & Market Development
  - Consumer & Citizen Involvement
  - Storage and Cross Energy Solutions
  - Interoperability & Standardisation
  - Regional Matters

in physical and web-based meetings. For every working group *projects are expected to participate in a minimum of 1 physical and 2 virtual working group meetings per year*).

Task 2.2 – Living documents

- Work with the knowledge sharing platform expera, mainly contributing to the development of living documents (related to the topics of the abovementioned working groups), spotlights and policy briefs. Consortium members will contribute own and 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 (joint) communication and dissemination activities.
- Participate in a minimum of 1 joint project presentation activity organized by Knowledge Community.

Task 2 resource requirement estimation: 25 – 40 days/year/project.

Task 3. Deliverables to the joint call initiative (in addition to national/regional funding agency requirements, if applicable).

- Task 3.1 – Annual reporting (in 2021, 2022 and 2023)
- Task 3.2 – Final reporting (2023-2024, depending on project end date)
- Task 3.3 – Annual project event
- Task 3.4 – Final joint call event
- Task 3.5 – Abstract of the main results

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 abovementioned tasks will be the result of an iterative process between the Knowledge Community Management 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.

The advised minimum total resource allocation is €70 000 regardless of project duration.

Joint Call 2019 energy storage solutions partners

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