

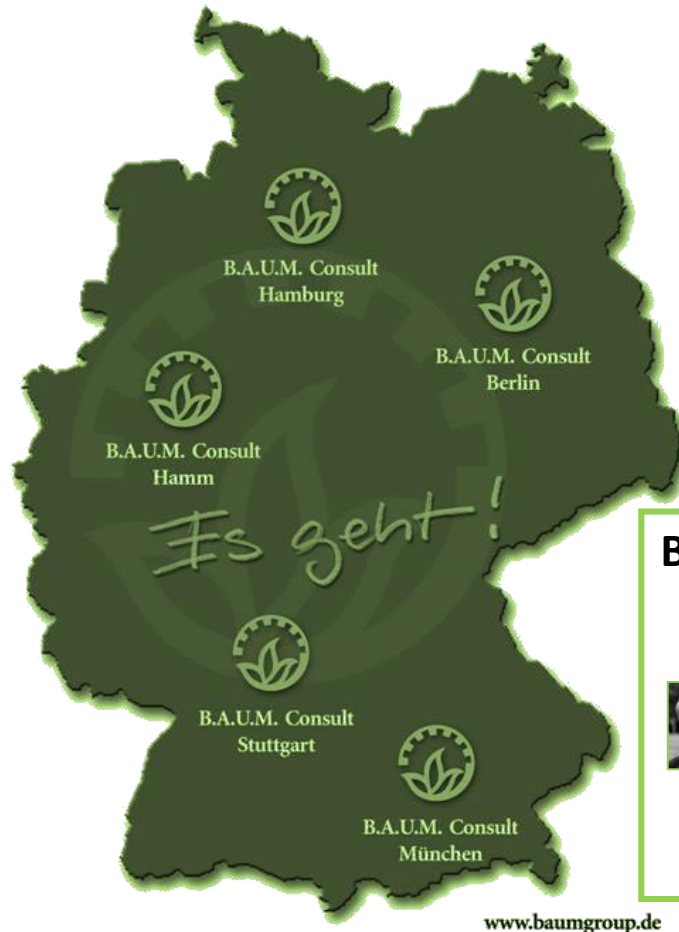


# **ERA-Net Smart Energy Systems**

**Horizon 2020 Project Factory On Energy Technologies, 1 October 2019**

Laura Börner, B.A.U.M. Consult GmbH Munich

ERA-Net SES Knowledge Community Management



more than 600  
enterprise members

## B.A.U.M. Group

B.A.U.M. Consult  
GmbH - Hamburg



B.A.U.M. Consult  
GmbH - München

Berlin

Stuttgart

B.A.U.M. Consult  
GmbH - Hamm



members in  
> 20 countries

action fields	services and activities
<b>Research and Development</b>	Managing projects and programmes on Smart Grids, electric mobility, renewable energies, rural and city development, sustainable development
<b>Consulting for national and local authorities</b>	Creating master plans for city and rural sustainable development, facilitating regional and city development processes, implementing climate protection concepts
<b>Consulting for enterprises</b>	Sustainability strategies and reporting, implementing environmental and energy efficiency management systems, supporting certification processes, technology networking

# Examples B.A.U.M. Consult



Integrated Climate  
Protection and Mobility Plans

Smart Energy and  
Smart Mobility

German and European  
Research



## ERA-Net Cofund Scheme

- Funding instruments designed to support public-public partnerships instruments, mainly 'tops-up' funding by EC for single joint calls and transnational actions.
- New Approach to European Partnerships:
  - Co-programmed partnerships
  - **Co-funded partnerships**
  - Institutionalised partnerships

# Joint Programming Platform Smart Energy Systems ...

## 30 funding partners from 23 European countries and regions

Austria, Croatia, Denmark, Finland, Flanders, France, Germany, Hungary, Ireland, Israel, Italy, Latvia, Lombardy, Norway, Poland, Portugal, Romania, Scotland, Slovenia, Spain, Sweden, Switzerland, the Netherlands, Turkey & Wallonia



ERA-Net Smart Energy Systems has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements No. 64603 and No. 775970.

## Joint Programming for Flourishing Innovation: From Local and Regional Trials towards a Transnational Knowledge Community

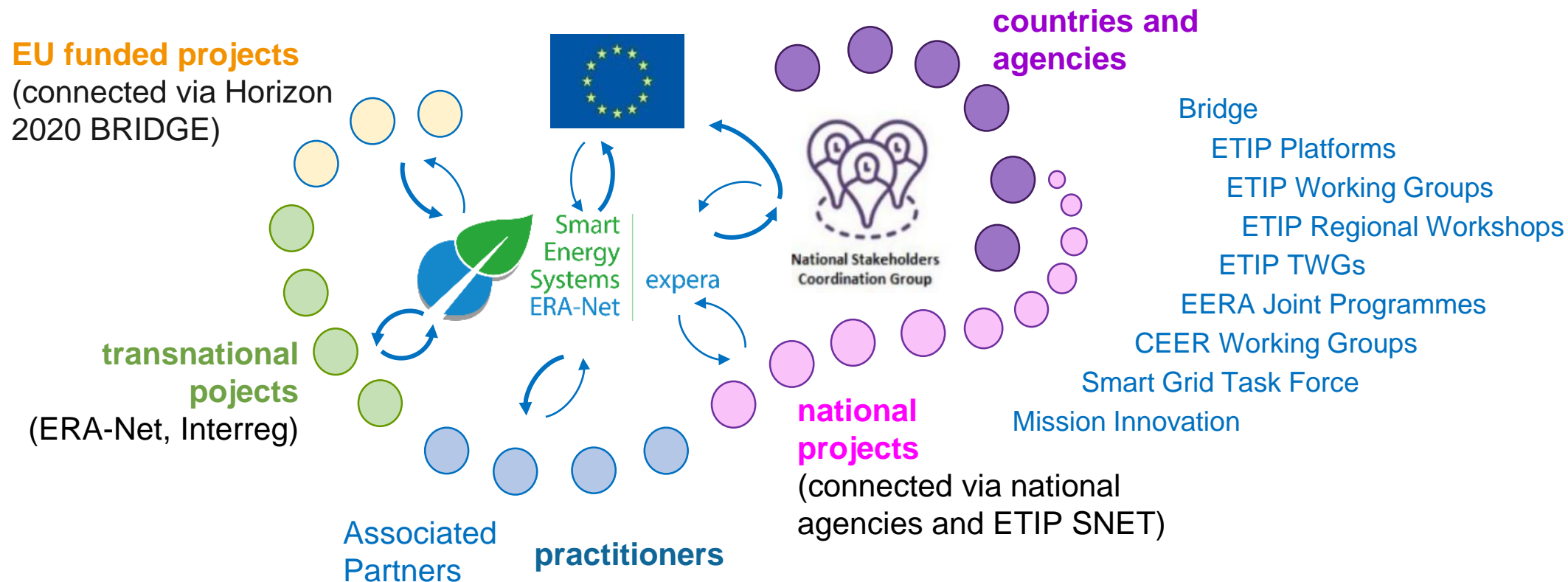


## Goal

Organize the learning to enable the right technologies, market designs and customer adoption to achieve the smart energy system vision & goals of Europe

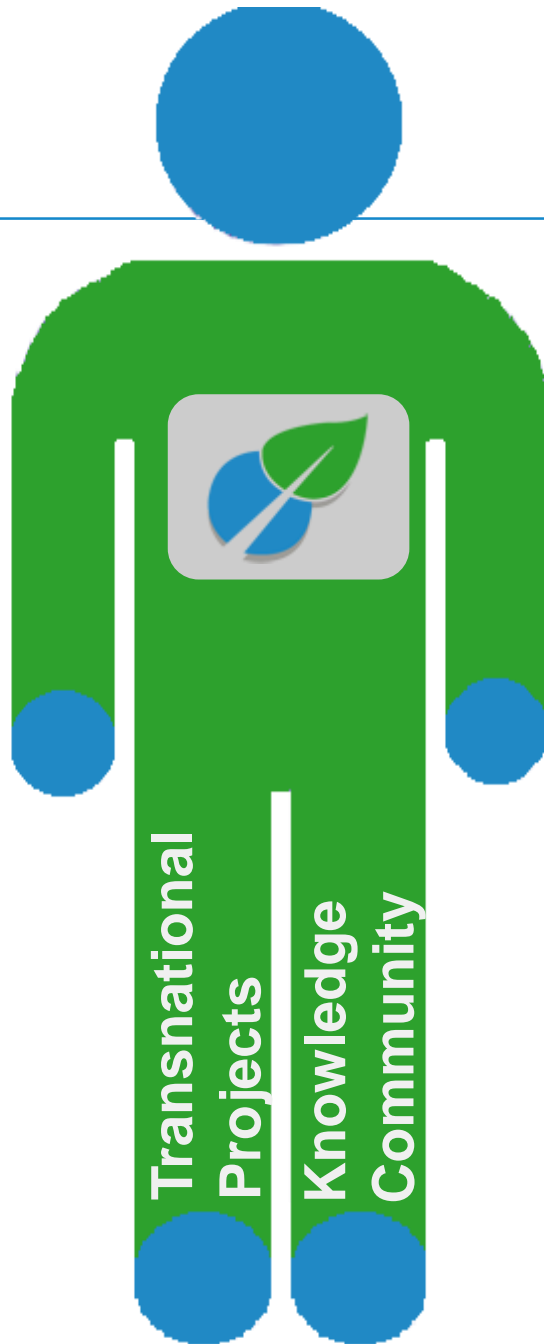
[www.eranet-smartenergysystems.eu](http://www.eranet-smartenergysystems.eu)

# ERA-Net SES Linking Worlds



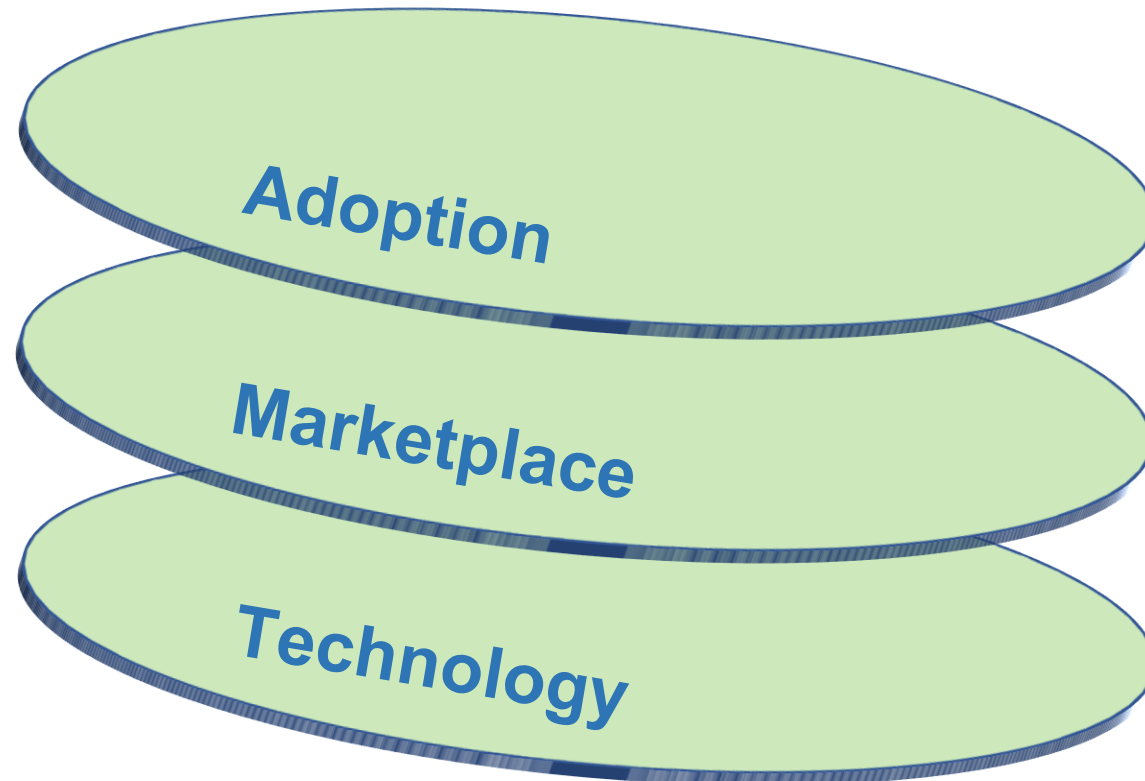


## Walking on two legs



- Transnational Projects
  - national funding with EU top-up funds
  - selected in ERA-Net SES Calls
  - communication and evaluation by Support Team
- Knowledge Community
  - from and for the ERA-Net SES projects
  - national and international experts
  - unique networking and knowledge base

# General Principle 1: The three Layer Research Model





## General Principle 2: Three Dimensions of Integration

### cross sectoral integration:

- transport
- industry and trade
- municipal infrastructure
- agriculture
- ...

### local and regional development:

- governance
- planning
- innovation system
- SMEs and startups
- transnational knowledge base
- ...

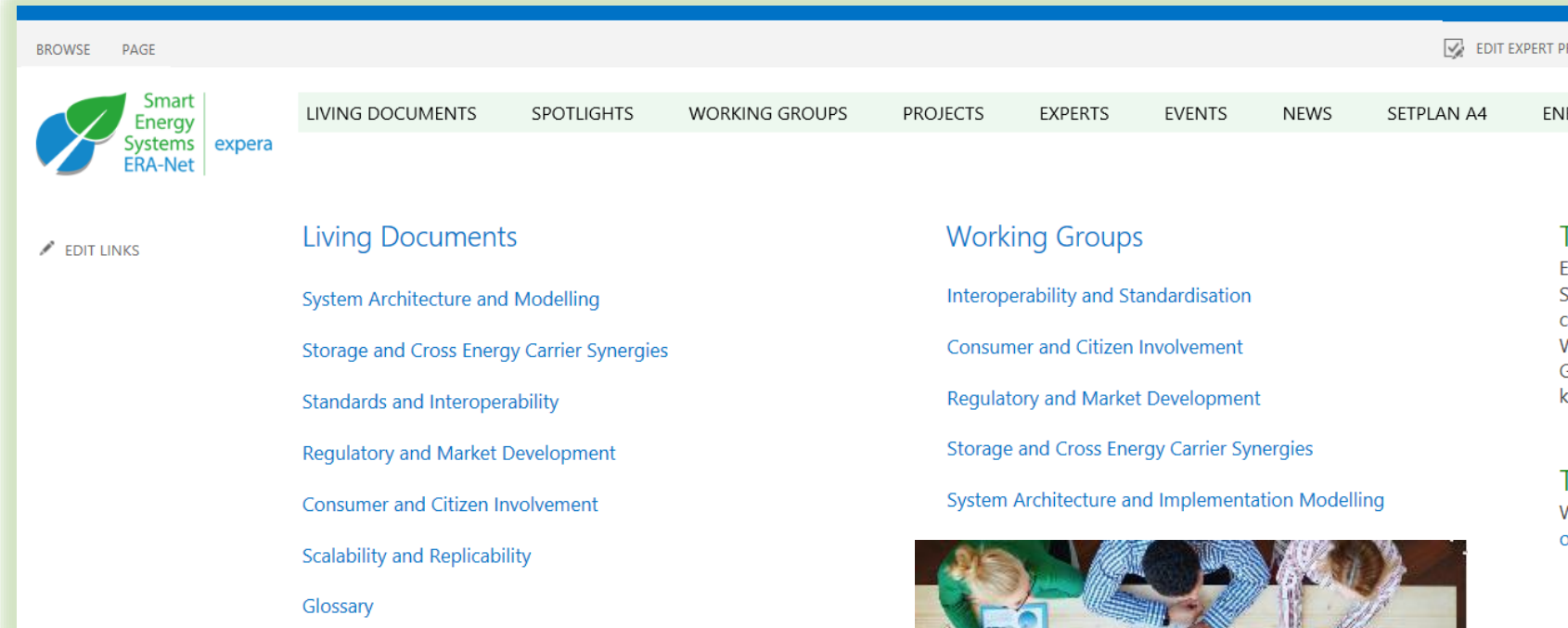
### smart energy system:

- renewable energy
- distributed generation
- cross carrier synergies
- automation ...



## Members

- ERA-Net SES projects
- (Trans-)National key projects
- International RDD projects
- Smart Grids practitioners
- Agenda setters and policy makers



[www.smartgridsplus.eu](http://www.smartgridsplus.eu)



# Associated Partners

Joining forces with many kinds of non-funded partners to ...

- jointly foster development of technology and business solutions
- make sure that projects meet real needs of energy efficiency and energy transition processes
- link local and regional level to overall energy system
- connect to business domains way beyond the energy sector
- give RDD consortia confidence that their results will be adopted.

Involvement of stakeholders as Associated Partners does not only improve the quality of the funded RDD projects but increase their overall impact.

# Associated Partners (April 2019)



## Smart Grids Plus

(Start 2015)

- 3 multilateral calls
- > 30 projects
- > 80 mio € funds

## Integrated Regional Energy Systems

(Start 2018)

- Extended scope – sector coupling
- Involvement of Associated Partners
- First multilateral call May 2018 (> 30 mio € funds)

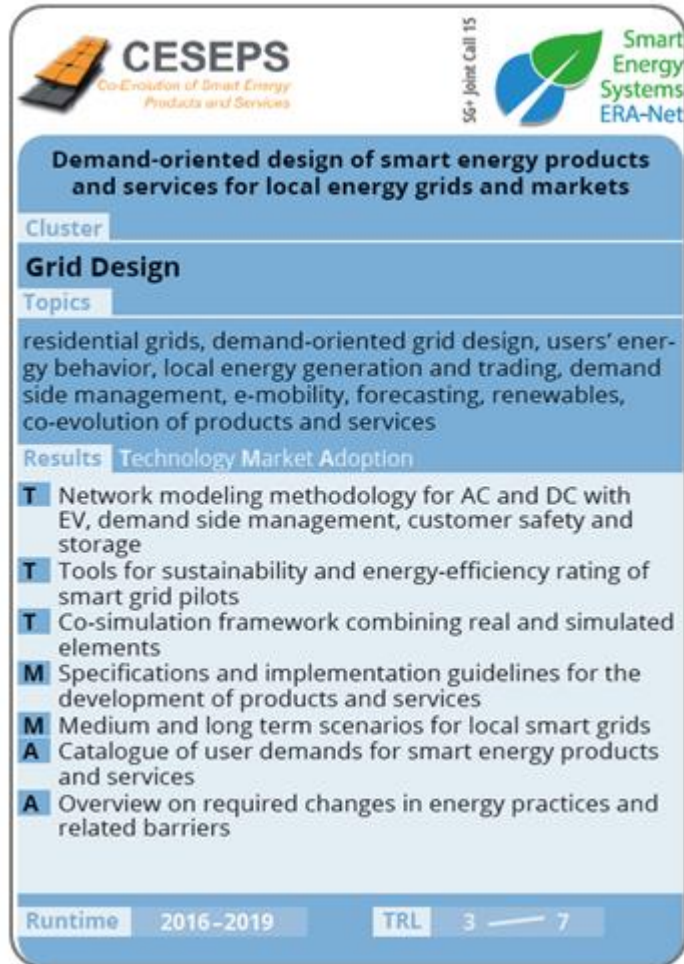
## Storage Systems

(Start 2019)

- Electrical, chemical, thermal, mechanical
- Multilateral call Autumn 2019
- Together with Mission Innovation (MlCall19)



# It's not a game ...



**CESEPS**  
Co-Evolution of Smart Energy Products and Services

5G+ Joint Call 15 Smart Energy Systems ERA-Net

**Demand-oriented design of smart energy products and services for local energy grids and markets**

**Cluster**

**Grid Design**

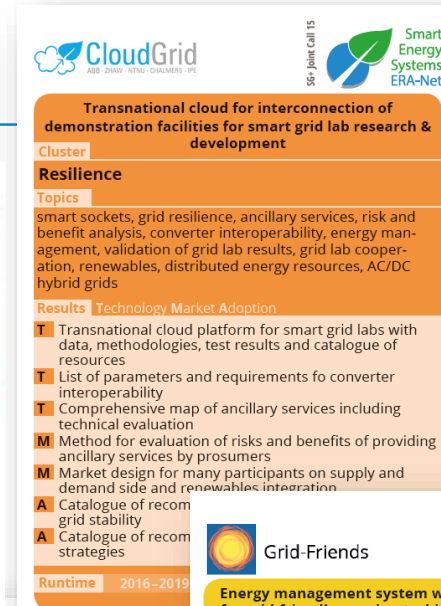
**Topics**

residential grids, demand-oriented grid design, users' energy behavior, local energy generation and trading, demand side management, e-mobility, forecasting, renewables, co-evolution of products and services

**Results** Technology Market Adoption

- T** Network modeling methodology for AC and DC with EV, demand side management, customer safety and storage
- T** Tools for sustainability and energy-efficiency rating of smart grid pilots
- T** Co-simulation framework combining real and simulated elements
- M** Specifications and implementation guidelines for the development of products and services
- M** Medium and long term scenarios for local smart grids
- A** Catalogue of user demands for smart energy products and services
- A** Overview on required changes in energy practices and related barriers

**Runtime** 2016-2019 **TRL** 3 — 7



**CloudGrid**  
5G+ Joint Call 15 Smart Energy Systems ERA-Net

**Transnational cloud for interconnection of demonstration facilities for smart grid lab research & development**

**Cluster**

**Resilience**

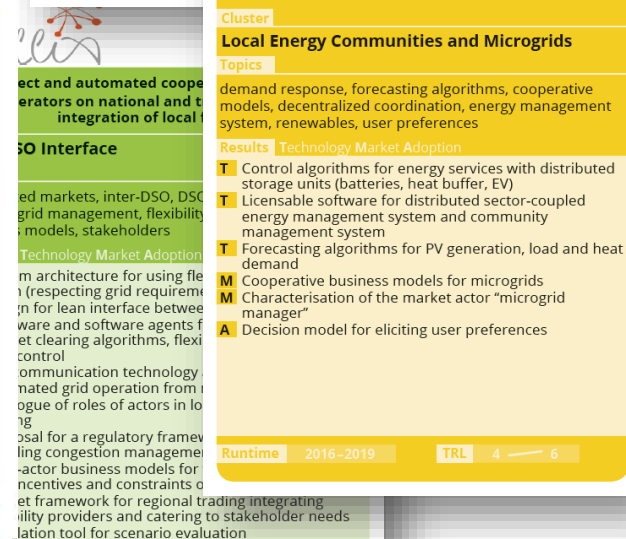
**Topics**

smart sockets, grid resilience, ancillary services, risk and benefit analysis, converter interoperability, energy management, validation of grid lab results, grid lab cooperation, renewables, distributed energy resources, AC/DC hybrid grids

**Results** Technology Market Adoption

- T** Transnational cloud platform for smart grid labs with data, methodologies, test results and catalogue of resources
- T** List of parameters and requirements for converter interoperability
- T** Comprehensive map of ancillary services including technical evaluation
- M** Method for evaluation of risks and benefits of providing ancillary services by prosumers
- M** Market design for many participants on supply and demand side and renewables integration
- A** Catalogue of recommendations for grid stability
- A** Catalogue of recommendations for grid stability

**Runtime** 2016-2019



**Grid-Friends**  
5G+ Joint Call 15 Smart Energy Systems ERA-Net

**Energy management system with demand response for grid-friendly quasi-autarkic energy cooperatives**

**Cluster**

**Local Energy Communities and Microgrids**

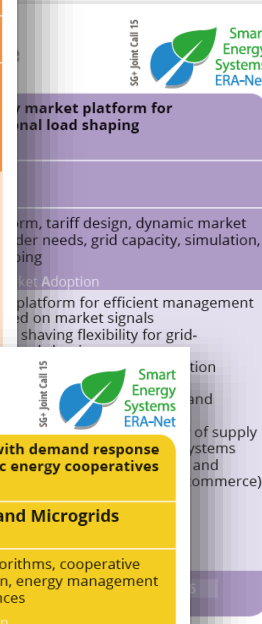
**Topics**

demand response, forecasting algorithms, cooperative models, decentralized coordination, energy management system, renewables, user preferences

**Results** Technology Market Adoption

- T** Control algorithms for energy services with distributed storage units (batteries, heat buffer, EV)
- T** Licensable software for distributed sector-coupled energy management system and community management system
- T** Forecasting algorithms for PV generation, load and heat demand
- M** Cooperative business models for microgrids
- M** Characterisation of the market actor "microgrid manager"
- A** Decision model for eliciting user preferences

**Runtime** 2016-2019 **TRL** 4 — 6



**Market platform for local load shaping**

5G+ Joint Call 15 Smart Energy Systems ERA-Net

term, tariff design, dynamic market needs, grid capacity, simulation, ...

**Results** Technology Market Adoption

platform for efficient management and on market signals shaving flexibility for grid-

- topics
- results
- runtime
- TRL reached
- project consortium
- partners for further development



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**MISSION  
INNOVATION**

accelerating the clean energy revolution



Smart  
Energy  
Systems  
ERA-Net

# Joint Call 2019

## on Energy Storage Solutions

# Joint Programming Platform Smart Energy Systems ...

## 30 funding partners from 23 European countries and regions

Austria, Croatia, Denmark, Finland, Flanders, France, Germany, Hungary, Ireland, Israel, Italy, Latvia, Lombardy, Norway, Poland, Portugal, Romania, Scotland, Slovenia, Spain, Sweden, Switzerland, the Netherlands, Turkey & Wallonia



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**Joint Programming for Flourishing Innovation:**  
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Transnational Knowledge Community



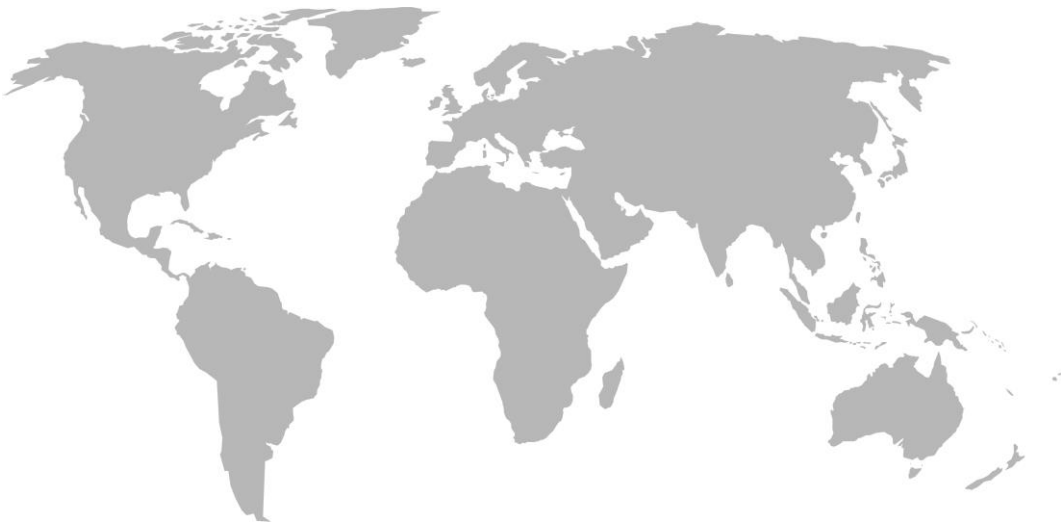
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**Organize the learning to enable the right technologies, market designs and customer adoption to achieve the smart energy system vision & goals of Europe**

[www.eranet-smartenergysystems.eu](http://www.eranet-smartenergysystems.eu)

Accelerating the clean energy revolution

**25** partners from  
around the globe



**Goal** Mission Innovation is a global initiative  
of 24 countries and the European  
Commission, working to accelerate  
clean energy innovation.



Australia



Chile



Finland



Indonesia



Morocco



Saudi Arabia



United States



Austria



China



France



Italy



Netherlands



Sweden



Brazil



Denmark



Germany



Japan



Norway



United Arab Emirates



Canada



European Union



India



Mexico



Republic of Korea



United Kingdom



# Joint Call 2019 on Energy Storage Solutions

21 countries and regions  
from around the globe

>22 M€ budget

FCT  
Fundação para a Ciência e a Tecnologia

FFG  
Promoting innovation.

Federal Ministry  
for Economic Affairs  
and Energy

Federal Ministry  
Republic of Austria  
Transport, Innovation  
and Technology

ADEME



Agence de l'Environnement  
et de la Maîtrise de l'Énergie



NATIONAL RESEARCH, DEVELOPMENT  
AND INNOVATION OFFICE  
HUNGARY



Schweizerische Eidgenossenschaft  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation  
Innosuisse - Swiss Innovation Agency

Ministry of Energy  
www.energy.gov.it

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Regione  
Lombardia



Nordic Energy  
Research

The National Centre  
for Research and Development

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INNOVATION &  
ENTREPRENEURSHIP

Flanders  
State of the Art

Wallonie  
énergie  
SPW

ue-fiscadi

Schweizerische Eidgenossenschaft  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Federal Office of Energy SFOE

Scottish Enterprise

seai  
SUSTAINABLE  
ENERGY AUTHORITY  
CHIRELAND

PTJ  
Projetmgr Jülich  
Forschungszentrum Jülich

MINISTERO  
DELL'ISTRUZIONE  
E DELLA RICERCA

eUDP  
Energyplus, adding up innovation

Swedish  
Energy Agency

The Research Council  
of Norway

Innovation Fund Denmark



DEPARTMENT OF  
SCIENCE & TECHNOLOGY  
Ministry of Science and Technology  
Government of India

BUSINESS  
FINLAND



AUSTRIA



DENMARK



ESTONIA



FINLAND



FLANDERS



GERMANY



ICELAND



INDIA



ISRAEL



ITALY



LATVIA



LITHUANIA



MOROCCO



NORWAY



POLAND



ROMANIA



SCOTLAND



SWEDEN



SWITZERLAND



TURKEY



WALLONIA

# Joint Call 2019 on Energy Storage Solutions

- **Deadlines:** expression of interest 14:00 CET, November 12, 2019  
proposal submission 14:00 CET, January 22, 2020
- **Compulsory advisory period:** September 18, 2019 – January 22, 2020
- **Call budget:** **>22 MEUR**
- **Funders:** JPP SES and Joint Call 2019 Funding Partners

Projects shall develop **sustainable integrated energy storage systems** for both **short- and long-term** storage including electrical, electrochemical, material, thermal and mechanical storage. The **new solutions for existing energy systems** shall contribute to **solving challenges** defined by Mission Innovation and European roadmaps. Also, solutions shall enable **collaboration between stakeholders** (e.g. SMEs, organisations and communities). Identifying and **involving need-owners** is highly encouraged.

[www.eranet-ses.eu/JointCall19](http://www.eranet-ses.eu/JointCall19)



# Joint Programming Platform – Smart Energy Systems Conference 2019



## Launch of the Joint Call 2019

on Energy Storage Solutions

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MISSION  
INNOVATION

accelerating the clean energy revolution



Smart  
Energy  
Systems  
ERA-Net

## Project Result Pitches

& appraisal by expert panel

## Matchmaking

for the Joint Call 2019

## Knowledge Community Meetings

with Working Groups  
and peer feedback



ERA-Net Smart Energy Systems has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements No. 64603 and No. 775970.

## Join us in Namur, Belgium on October 7-9!

More info and registration on [www.eranet-smartenergysystems.eu](http://www.eranet-smartenergysystems.eu)

# Upcoming Events & Matchmaking Opportunities

## Webinars:

- October 2, 2019, 13:00-14:00 CEST
- October 22, 2019, 13:00-14:00 h CEST
- November 26, 2019, 13:00-14:00 h CET

Register [here](#).

## Events:

- European Call Launch, 7 October 2019, 16:00-18:00 (CEST) in Namur, Belgium
- Matchmaking, 8 October 2019, 9:00-13:00 (CEST) in Namur, Belgium
- Find all events on our [website](#).

## Partner Search and Matchmaking Platform:

- Present your cooperation profile
- Search & find cooperation partners
- Link to representatives of the ERA-Net SES community

Register [here](#).

# ERA-Net SES – Web Information and Contact Points

ERA-Net SES Website

[www.eranet-smartenergysystems.eu](http://www.eranet-smartenergysystems.eu)

Knowledge Sharing platform expera

[www.smartgridsplus.eu](http://www.smartgridsplus.eu)

LinkedIn

<https://www.linkedin.com/in/eranet-smartgridsplus/>

Newsletter registration

[www.eranet-smartenergysystems.eu](http://www.eranet-smartenergysystems.eu)

Webinars & other events

[https://eranet-smartenergysystems.eu/News\\_Events/Events](https://eranet-smartenergysystems.eu/News_Events/Events)



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# Contacting the Initiative

## Office

[office@eranet-smartenergysystems.eu](mailto:office@eranet-smartenergysystems.eu)

## Call Management

[callmanagement@eranet-smartenergysystems.eu](mailto:callmanagement@eranet-smartenergysystems.eu)

## Knowledge Community

[knowledgecommunity@eranet-smartenergysystems.eu](mailto:knowledgecommunity@eranet-smartenergysystems.eu)

## Coordination

**Austrian Ministry for Transport, Innovation and Technology**

Coordinator: Michael Hübner





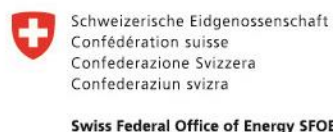
# JPP SES and Joint Call 2019 Funding Partners



ADEME



Agence de l'Environnement  
et de la Maîtrise de l'Energie



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