ERA-Net Smart Energy Systems

JPP SES CONFERENCE 2019

Minutes of the Public Sessions

7-8 October 2019

Conference and launch impressions

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Contents

1   The Smart Energy Systems Conference 2019

ERA-Net Smart Energy Systems is a Joint Programming Platform (JPP) of 30 national and regional funding partners financing transnational RDD projects and co-creating energy system innovation with additional stakeholders for implementing the European smart energy system vision. Since 2014, the network has been growing up to 30 funding partners from 25 countries.

From October 7 to 9, ERA-Net SES invited to its Smart Energy Systems Conference 2019. For this event, ERA-Net SES closely cooperated with E.DSO and EASE. Further partners are from the global Mission Innovation Initiative (MI). At the inspiring event, funded projects pitched final results, and a new Joint Call for projects (MICall19) was launched. Matchmaking sessions, networking opportunities and working groups of the JPP SES Knowledge Community allowed for co-creation of new projects.

Service Public de Wallonie offered kind support by hosting the event in Namur, Belgium.

Please find the reviews of the following adjacent meetings on our website:

- National Stakeholder Coordination Group Meeting (8 October, 9:00-13:00)
- Family Meeting (9 October, 9:00-15:00)

2   Status Conference

The Joint Programming Platform Smart Energy Systems (JPP SES) Conference 2019 started with a first of its kind conference with public pitches on the outstanding results of the first cohort of ERA-Net Smart Energy Systems projects ready for exploitation in front of an expert panel.[1] A video of the status conference can be viewed online.

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[1] The presentation of the session is available for download on expera for registered members (here).

2.1 Outline of the Session

<table>
<tr><td colspan="2" style="background:#2E9BD6;color:white">Smart Energy Systems Conference 2019
<strong style="font-size:larger">Status Conference with presentation of project results
Excellent results facilitated by an excellent programming platform</td></tr>
<tr><td>Time and Place</td><td>7 October, 14:00-16:00 | La Bourse, Place d'Armes 1, 5000 Namur</td></tr>
<tr><td>Hosts</td><td>ERA-Net Smart Energy Systems, EASE and E.DSO</td></tr>
<tr><td>Participants</td><td>

- Project consortia
- Representatives of EC DG Ener, ETIP SNET, SET-Plan WG 3&4 (tbc)
- ERA-Net SES Associated Partners and Board Members
- Media

</td></tr>
<tr><td>Agenda</td><td>

- Introduction by ERA-Net SES Knowledge Community Management (Ludwig Karg, B.A.U.M. Consult GmbH and Jatta Jussila, Clic Innovation)
- Welcome words by host (Gilles Tihon, SPW - Public Service of Wallonia)
- Perspectives for ERA-Net SES Family of Projects, Jatta Jussila (Clic Innovation)
- ERA-Net Smart Grids Plus project pitches with appraisal by an expert panel: Aleksandra Kronberga (EC DG Ener), Jan Gilot (Flux 50), Richard Vidlička, Josh Roberts (REScoop)
- Contributions from ERA-Net SES to the energy transformation process (Michael Hübner, bmvit, ERA-Net SES Coordinator)

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<tr><td>Benefits</td><td>

- Get insight in recent results of transnational projects:
- technology, business and market models, citizen involvement and adoption
- Identify potential partners for collaboration, uptake and future projects
- Dive deep into the core of JPP ERA-Net SES

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2.2 Welcome and Introduction

After a warm welcome by Ludwig Karg and Jatta Jussila, ERA-Net SES Knowledge Community Management, and Gilles Tihon, ERA-Net SES Steering Board member for Service Public de Wallonie and host, Jatta Jussila gave an input on the importance of collaboration in research, the core of what ERA-Net SES is about.

2.3 Pitches and Project Appraisal

Six projects funded by the SG+ Joint Call 2015 presented their results in a concise matter: CALLIA, DCSMART, EPR, MATCH, Poweralliance and RIGRID.

The following experts commented on the pitches of the concluding ERA-Net SES projects:

- Aleksandra Kronberga of the European Commission's DG Ener

- Jan Gilot of Flux 50

- Richard Vidlička of E.DSO

- Josh Roberts of REScoop

2.3.1 CALLIA

Thomas Brenner of EnergieAnalyse gave a presentation on the project CALLIA. Together with 11 further partners, they built a communication cascade, and explored how congestions in distribution grids can be prevented in an automated fashion. Brenner also expressed his thanks to funding agencies, partners and knowledge community.

Upon inquiries by the panel, Brenner added:

- the replicability of the outcome is fostered by a dedicated work package;
- flexibility is generated on a residential scale / at consumer level (not industrial), though large-scale solutions have also been tested and
- the degree of outreach to the citizens differed between countries.

The panel congratulated CALLIA for managing to overcome national frameworks and the high relevance of the project's results as flexibility is needed on DSO level. The experts highly advised establishing further links to other H2020 projects addressing similar aspects.

2.3.2 DCSMART

Bernd Wunder of IISB Fraunhofer pitched the results of the project DCSmart. A local DC microgrid control system was developed by Fraunhofer IISB. Also, batteries and battery management systems were developed, though the focus was on the development of power electronics (DC/DC converter). An analysis of the high-power DC grid was deployed for peek shaping and optimizing the smart, locally and centrally managed microgrid. An application platform for decentralized energy systems has been analysed.

Upon inquiries by the panel, Wunder added:

- a business case is already established, even without great economies of scale. Nevertheless, standardization is needed for further roll-out.

The panel praised DCSmart for their successful pilot project and useful study in a thematic area of high relevance and the promising results of the DC project. Furthermore, the experts noted that the prominent deployment of AC/DC may suppose difficulties for broad implementation, which should be considered.

2.3.3 EPR

Lars Olsson, Metrum, gave a presentation on the project European Pattern Recognition (EPR). This project focused on machine learning, artificial intelligence, data quality, and renewables. Highlighted results were improved hosting capacity, conservation voltage reduction and inertia support by wind turbines.

Upon inquiries by the panel, Olsson added:

- The main target group are DSO, but local system operators are also potential users.

- The customer readiness level is limited due to ongoing debates on data usage.

- For full support by regulators, more experimentation and demonstrations are required, though some utilities are already starting to deploy the developed techniques.

The panel praised EPR for developing a product of high use for Local Energy Communities as end customers.

2.3.4 MATCH

Michael Ornetzeder of AIT pitched the project MATCH which focused on social sciences more than technology. Ornetzeder underlined the importance of user friendliness for successful pilot projects. This includes the identification of different roles related to the developed technologies.

A socio-technical analysis of smart energy solutions has been performed, considering the interplay of technologies with social matters, e.g. user aspects. The main result is that to implement a local solution, a sophisticated energy system assessment is needed.

Upon inquiries of the panel, Ornetzeder added:

- Some cooperatives have also been analysed within the study

- Replication remains a challenge for pilots though some projects are confident about replication of their solutions. This may be due to the complexity of replication on one side and the close relation of replication success and characteristics of the developed solution (e.g. interoperability, degree of standardization vs. customization for the specific circumstances).

The panel encouraged MATCH to present their very relevant results on social innovation and related aspects to a working group at the EC and discuss customer engagement issues.

2.3.5 Poweralliance

Joachim Bagemihl of Alpiq presented the project Poweralliance, aimed at unlocking grid capacity and facilitating decarbonization. Power, heat and mobility sectors have been analysed. Heat and mobility resulted trickier to transform. The industrial sector was in focus, where, before, security of supply was highly important. Now, in change, new loads (e.g. electrolysers, PtX) do not need security of supply anymore at medium voltage level, where capacity can be doubled. Bagemihl noted that regulatory changes are urgent to allow further advances.

Upon inquiries of the panel, Bagemihl added:

- Though DSO don't care about price signals, aggregators make use of this information

- The territorial focus for the analysis of regulation was on Europe

- Though some local regulators may not be willing to change taxes, in future incentives will be needed for doubling generation and grid capacity to meet demand

- Even though PtX may also be used for generating food or chemicals, energy is expected to be a main output (over 80%).

2.3.6 RIGRID

Bartlomiej Arendarski, Fraunhofer IFF, introduced Rural Intelligent Grid (RIGRID). The project developed a solution for optimized planning and management of energy infrastructures in rural areas. Virtual reality is used to visualize scenarios and to overcome acceptance difficulties of wind mills, for example.

Upon inquiries of the panel, Arendarski added:

- The target audience for the toolkit are local communities
- Various options to acquire permissions to use the tool are offered, e.g. a licensing model.
- Though the net zero energy systems planned with the tool is electricity centered for now, it could also be adopted for heating in the future.

The panel praised RIGRID for the exceptionally high technology readiness level (TRL) achieved by the project and the involvement of the municipality along the development.

2.4 Prize for Highest Exploitation Potential

Via a live poll tool, the audience voted for the project best prepared for successful exploitation of its results. The project RIGRID was awarded this prize – congratulations!

2.5 ERA-Net SES Yesterday, Today and Tomorrow

Michael Hübner, of the Austrian Ministry for Transport, Innovation and Technology and ERA-Net SES Coordinator, reminded that the work for ERA-Net initiative started already in 2014, initializing with the call which now brought the remarkable pitched results. Since then, the transition of the energy system has advanced with innovation from outside as well as inside. Just like then, also now it is important to envision what is awaiting ahead and to start shaping the topics of tomorrow.

ERA-Net projects discussing with the European Commission (left) and Coordination Team (right) © fabricedor@SPW

3 Launch of the Joint Call 2019

After appreciating results of the first ERA-Net SES call, the launch of the new Joint Call 2019 on energy storage solutions (MICall19) was another highlight at the JPP SES Conference 2019.[2] A video of the launch session can be viewed online.

3.1 Outline of the Session

Smart Energy Systems Conference 2019 **European launch of the Joint Call 2019 for projects (MICall19)** ERA-Net SES and Mission Innovation jointly call for RDI projects	
Time and Place	**7 October, 16:00-18:00** | La Bourse, Place d'Armes 1, 5000 Namur
Hosts	**ERA-Net Smart Energy Systems in cooperation with E.DSO and EASE**
Participants	• Interested project applicants and consortia, practitioners and researchers in the field • Members of E.DSO, EASE and other EU level associations • Representatives of EC DG Ener, ETIP SNET, SET-Plan WG 3&4 • Global representatives of Mission Innovation countries • National and EU level policy makers • ERA-Net SES Board Members, Associated Partners and Knowledge Community • Media
Agenda	• Introduction by moderators from the Knowledge Community Management, Jatta Jussila (Clic Innovation) & Ludwig Karg (B.A.U.M. Consult GmbH) • Welcome and launch of the Joint Call 2019 by the chairs of ERA-Net SES Steering Board Michael Hübner (BMVIT) & Fredrik Lundstrom (Swedish Energy Agency) • Mission Innovation: Global collaboration platform for public funders • Dr. Raghunath Reddy (Department of Science and Technology, India) (tbc) • Keynote by E.DSO, Richard Vidlička (Chairman of E.DSO's Projects Committee) • Keynote by EASE, Thomas Otuszewski (EASE Project Officer) • Panel with EC (Aleksandra Kronberga, DG Ener), funded projects (RIGRID, Bartek Arendarski; EPR, Lars Olsson), funding agencies (Urban Peyker, FFG) and (potential associated) partners (Jan Gilot, Flux50; Josh Roberts, REScoop)
Benefits	• Get state-of-the art insights in RDI needs for call topic "storage solutions" • Receive first-hand information on the call characteristics and the application procedure • Be optimally prepared for the matchmaking session on October 8

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[2] The presentation of the session is available for download on expera for registered members (here).

3.2 Welcome and Introduction – ERA-Net SES Going Global

Ludwig Karg and Jatta Jussila (ERA-Net SES Knowledge Community Management) welcomed all participants before Michael Hübner, Coordinator of the ERA-Net initiative, introduced to the session.

Hübner announced a new era in the initiative with the integration of funding partners beyond Europe, evident also in the participation of the guest from Indian Ministry of Technology, Dr. Raghunath Reddy. This partnership was born in the joint activities of ERA-Net SES and Mission Innovation, an international initiative of 25 countries for overcoming the obstacles posed by climate change.

3.3 Official Launch of The Joint Call 2019

Fredrik Lundström, chair of the ERA-Net SES Steering Board, officially launched the Joint Call 2019 on energy storage solutions. Lundström highlighted that the value of the innovation is the most important part in the development of a project. Targeted communication and exchange with stakeholders bringing in varied perspectives are crucial for the success and exploitability of research projects. Accordingly, establishing strong links even beyond Europe, e.g. India and Morocco, can further increase a project's impact.

This is what the Joint Call 2019 aspires to, offering a total of more than € 22 M provided among 21 countries and regions from around the globe. To be eligible, consortia must be multinational and address aspects of replicability and transferability in the development of integrated energy storage solutions.

All information regarding the call is provided at the [ERA-Net SES website](#).

3.4 Collaboration Across the Globe

Dr. Raghunath Reddy of the Ministry of Science and Technology of India expressed the great importance of the call topic from Indian perspective. He illustrated the main characteristics and problems of the energy use in India and outlined the high potential and benefits of solar energy production in this country. As persisting challenges, he mentioned energy security, high levels of pollution and increased demand of flexibility. Dr. Reddy closed by emphasizing the opportunities to solve these challenges by collaborating globally.

3.5 E.DSO – the Trusted Voice of Distribution System Operators in Europe

Richard Vidlička, Chairman of E.DSO's Projects Committee, illustrated the E.DSO mission and targets. E.DSO promotes energy transitions processes with more interactions in a futures vision, covering all areas from generation, transmission, distribution and storage to supply. With its

44 members, E.DSO represents 350 M customers. With its expertise, E.DSO defines new and future roles related to smart metering, RES connection and smart network planning.

Vidlička highlighted digitalization as the key challenge for the future. He advocated for flexibility as an effective means for dealing with any energy condition and pointed out the potential of the Joint Call 2019 on energy storage to deliver replicable solutions.

3.6 Energy Storage: A Key Enabler to Achieve EU 2050 Targets (EASE)

Thomas Otuszewski of EASE, an association uniting key actors in the European energy market, illustrated the need of energy storage. He pointed out the key function of energy storage, both short- and long-term, for enabling flexibility and coupling sectors. It paves the way for achieving the ambitious energy policy of the EU aiming for climate neutrality by 2050.

Otuszewski highlighted the essential need to go beyond research and innovation for flexibility and demonstrate the varied, viable services provided by storage. In order to facilitate a broad roll-out, he demanded incentives for storage to be provided.

3.7 Words by the European Commission

Aleksandra Kronberga, of the European Commission's DC Ener, highlighted the importance of research, development and innovation for achieving Europe's clean energy transition. Kronberga noted that ERA-Net SES is the first EU-funded programme going international beyond Europe. Furthermore, she made reference to the importance of flexibility for allowing decarbonisation.
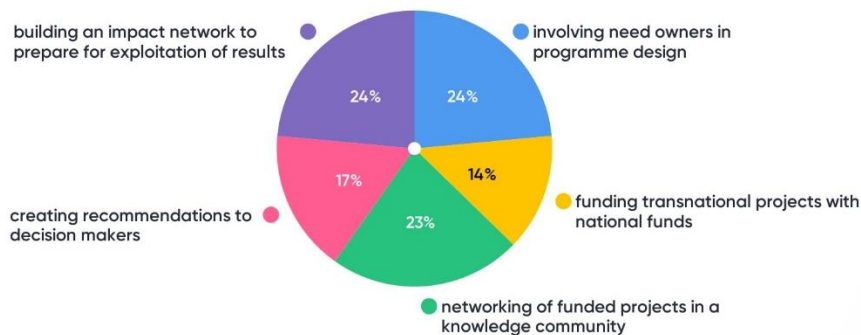
3.8 Questions to Audience, Speakers and Stakeholder Panel

After the varied speeches, the audience had the opportunity to ask questions to the speakers. Especially, the topic of long-term storage was addressed. Speakers added that proposals must include a viable idea to win funding. Good coordination skills of the consortium should be demonstrated, finding the right partners and creating an experienced consortium is key. Regarding long-term storage, thermal storage offers interesting opportunities. As the applications of storage in projects are diverse, different kinds of technology should be developed according to the different problems immanent in each country.

Also, the audience was asked about their opinion via a live poll. Regarding the biggest success factor of ERA-Net SES, the impact network for exploitation, involvement of need owners in the development process and networking among the knowledge community were appreciated as equally important. Creating recommendations for decision makers and collecting national funds for transnational projects were seen as a little less decisive (see graphic below).

What do you think is the biggest success factor of JPP ERA-Net SES?

Mentimeter

- building an impact network to prepare for exploitation of results — 24%
- involving need owners in programme design — 24%
- funding transnational projects with national funds — 14%
- networking of funded projects in a knowledge community — 23%
- creating recommendations to decision makers — 17%

Results of the first audience poll

Afterwards, the following panel of stakeholders discussed questions related to the Joint Call 2019 (see also picture below, fltr):

- Zsuszanna Bodi, ENoLL
- Bartlomiej Arendarski, Fraunhofer IFF (ERA-Net SES project EPR)
- Ewa Piatkowski, AIT (ERA-Net SES project LarGo!)
- Lars Olsson, Metrum (ERA-Net SES project EPR)

- Josh Roberts, REScoop
- Gaëtan Masson, Becquerel Institute
- Jan Gilot, Flux 50
- Urban Peyker, FFG (ERA-Net SES Funding Agency, not in the picture)

The panel

Key aspects of their contributions are summarized in the following paragraphs.

Reaching out beyond Europe holds significant potential for identifying new applications for European technologies as well as discovering the potential of technologies or regulatory solutions from abroad for the European context. In addition, a more diverse background increases the potential for innovation in research, development and demonstration (RDD).
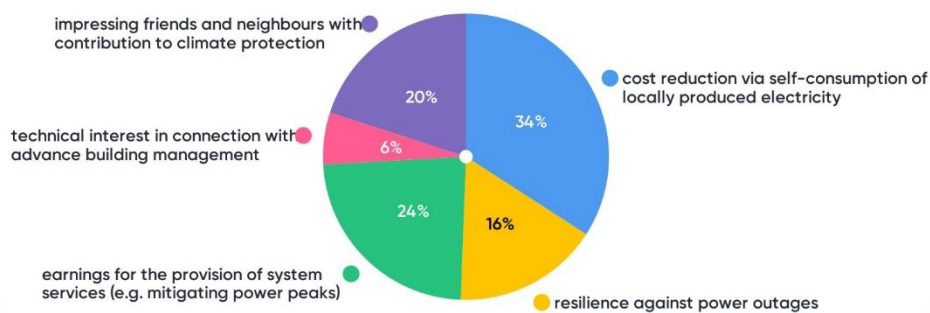
After so many years of research, is there still a need for research? It was noted that a focus on technology remains evident, while implementation is often neglected. This limits the impact of RDD projects.

In order to boost implementation, e.g. in terms of increased installation of storage in private homes, social acceptance is key. This demands for a positive image of storage in the local society, empowered e.g. by local ambassadors. Furthermore, proving success in regulatory sandboxes is needed, leading the way for regulatory changes.

By the audience, with regards to the drivers for private people to install storage in their homes, monetary incentives (savings and earnings) have predominantly been selected, followed by social status and increased energy security (see graphic below).

Results of the second audience poll

Speakers and panellists provided great inspiration for exchange during the adjacent coffee breaks.

4 Joint Call 2019 Matchmaking

4.1 Outline of the Session

Smart Energy Systems Conference 2019 **Matchmaking for MICall19 applicants & supporters** **Find consortium partners and draft outlines for the Joint Call for projects on storage**	
Time and Place	**8 October, 8:45-13:00** | La Bourse, Place d'Armes 1, 5000 Namur
Host	**ERA-Net Smart Energy Systems**
Participants	• Interested project applicants and consortia • Practitioners and researchers in the field • Representatives of EC DG Ener, ETIP SNET, SET-Plan WG 3&4 • Members of E.DSO, EASE and other EU level associations • ERA-Net SES Board Members, Associated Partners and projects • ERA-Net SES Knowledge Community
Agenda	• Welcome and Introduction • Pre-scheduled and ad hoc matchmaking sessions • Help-desk: call requirements (ERA-Net SES Call Management)
Benefits	• Build consortia and co-create project ideas with need owners and potential partners • Receive first-hand information on the call characteristics and the application procedure

4.2 Matchmaking

Tuesday morning started matchmaking for the Joint Call 2019 on energy storage solutions (MICall19) launched the day before. The call offers a total of more than € 22 M among 21 countries and regions from around the globe. For starting multinational consortia building and co-creating project proposals addressing aspects of replicability and transferability in the development of integrated energy storage solutions, more than 78 face-to-face meetings took place. Further, Fredrik Lundström, chair of the ERA-Net SES Steering Board and Call Management and Dr. Raghunath Reddy Mission Innovation partner from the Indian Ministry of Technology were available for questions.

On the dedicated ERA-Net SES matchmaking platform for the Joint Call 2019, more than 160 people from 21 countries are currently registered. Beyond scheduling sessions for the face-to-face meetings, the platform is available throughout the submission period for proposals to continue matchmaking online.

Matchmaking impressions ©fabricedor@SPW

5 Knowledge Community Meeting

5.1 Outline of the Session

Smart Energy Systems Conference 2019 **Knowledge Community Meeting & peer feedback sessions** Focused experts' discussions on challenges and solutions	
Time and Place	**8 October, 14:00-18:00** | La Bourse, Place d'Armes 1, 5000 Namur
Host	**ERA-Net Smart Energy Systems**
Participants	• Active and concluding ERA-Net SES projects • ERA-Net SES Knowledge Community • Practitioners and researchers in the field • Program managers and policy makers, representatives of EC DG Ener (tbc) • ERA-Net SES Board Members • ERA-Net SES Associated Partners
Agenda	Parallel ERA-Net SES Working Groups in subsequent sessions • Introduction to Knowledge Community • Parallel Knowledge Community Sessions
Benefits	• Get insight in challenges and effective solutions of transnational RDI projects: technology, business and market models, citizen involvement and adoption • Participate in experts' exchange and co-create a common body of knowledge • Share your perspective within the energy research community, as a basis for recommendations to high-level actors • Identify potential partners for collaboration, uptake and future projects • Dive deep into the heart of JPP ERA-Net SES

5.2 Introduction to Knowledge Community

Ludwig Karg (Knowledge Community Management) opened the meeting by presenting the principles of the ERA-Net SES Knowledge Community. Members of the ERA-Net SES Knowledge Community cooperate on finding approaches and solutions to cross-cutting topics of the three-layer research approach (technology, market, adoption). It was outlined how the family of projects jointly cooperate in the existing Working Groups and thematic Task Forces (as needed e.g. on Local Energy Communities). Within the Working Groups and Task Forces recent project results are being discussed, but also to other international and national project will be linked to the discussion. Eventually, the Knowledge Community will co-create a knowledge base for specific topics that will lead eventually to the generation and distribution of so-called spotlights and policy briefs. For the knowledge creation a new form of Living Documents has been implemented on expera with an advanced technology.[3]

The introduction to the Knowledge Community

5.3 Parallel Knowledge Community Sessions

In the following, parallel Knowledge Community Working Group sessions of 90 minutes took place. The sessions entailed presentations by ERA-Net SES projects on their results and impact followed by the peer-to-peer feedback. You may find the presentations and documentation for each Working Group on expera (in order to get access and to become a member of the Working Group, please send a message to office@eranet-smartenergysystems.eu):

- System Architecture and Implementation Modelling & Standards and Interoperability
- Regulatory and Market Development
- Storage and Cross Energy Carrier Synergies
- Consumer and Citizen Involvement

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[3] The presentation is available for download on expera for registered members (here).

- [Regional Matters: WG Meeting](#)

Further, 14 new projects under the focus initiative "Integrated, Regional Energy Systems" introduced themselves to the Knowledge Community with short pitches.[4]

5.4   Working Dinner

A guided walking tour through Namur with the Knowledge Community members was organised and hosted by the ERA-Net SES Funding Partner SPW - Public Service of Wallonia (Service Public de Wallonie). Thereby, participants got to know the beautiful city of Namur and its history. Afterwards, the Family of Projects and in particular new projects under the focus initiative "Integrated, Regional Energy Systems" were invited to a working dinner where they collaboratively expanded the jigsaw of the joint programming platform projects, highlighting their foci as well as the interfaces between them (see photo below).

Funding agencies from Europe and beyond, projects and the ERA-Net SES Support Team exchanging (left) and puzzle action (right) © fabricedor@SPW

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[4] The project pitches are available for download on expera for registered members ([here](#)).

The ERA-Net SES Family of Projects in Namur

ERA-Net SES funding partners