



Pan-EU R&I community: Stakeholders involvement and enhanced collaboration opportunities

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Sofia
2nd July 2019

PANTERA

Workshop

PAN European Research and Innovation activities for Smart Grids, Energy Storage and Local Energy Systems

02 July 2019, Sofia, Bulgaria

Background:

15 European countries account for less than 5% of the EU research and innovation funds¹. PANTERA (PAN European Technology Energy Research Approach, www.pantera-platform.eu) is an EU H2020 project aimed at setting up a European Forum composed of Research & Innovation (R&I) stakeholders active in the fields of smart grids, storage and local energy systems, including policy makers, standardisation bodies and experts in both research and academia representing the EU-28 energy system to collectively work for raising interest and bridging current gaps in R&I activities in EU.

Topics:

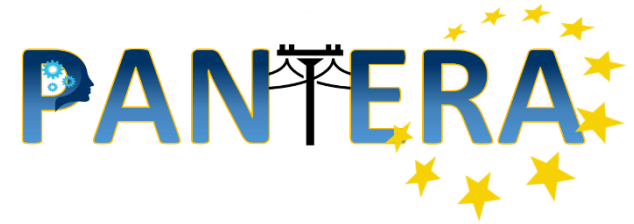
- Concepts and future trends in Smart grids, Storage and Local Energy Systems;
- European Commission (EC) R&I policy and trends;
- EU and national R&I funding opportunities;
- Local and Pan-European R&I challenges and gaps;
- Good R&I practices from different countries with both high and low activities in this field.

Scope & Objectives:

- Identify and establish communication links with local R&I stakeholders active in the fields of smart grids, storage and local energy systems including policy makers, standardization bodies and experts in both research and academia in the region.
- Identify the key challenges in accelerating R&I activities in the region.
- Engage and bring under the same activity umbrella facilitated by PANTERA all active entities / stakeholders in the field of smart grids / storage and local energy systems to leverage synergies and maximize benefits.



Fostering a Pan-European R&I community

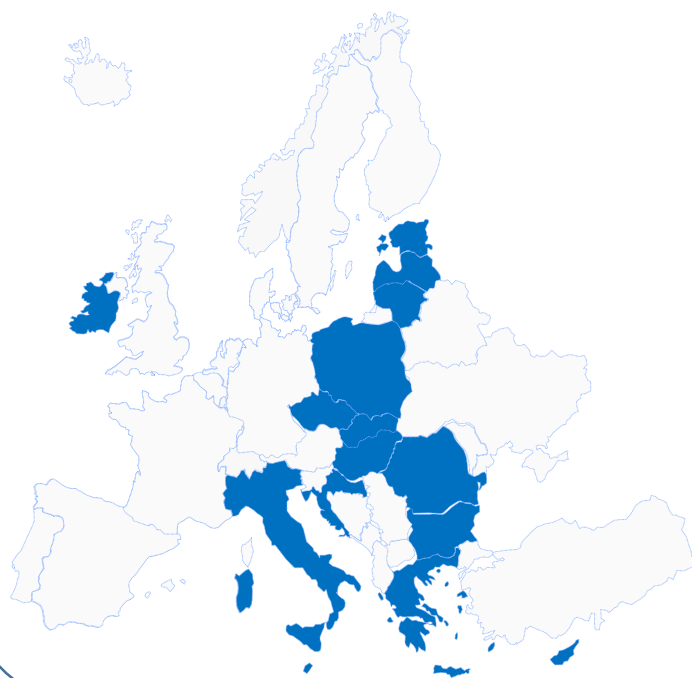


One of main objectives of the Pantera projects is to **identify and establish communication links and close interactions** with **R&I stakeholders** active in the fields of smart grids, storage and local energy communities. Special effort is paid to involve stakeholders from the 15 EU countries that account for less EU R&I funds per capita.



- ❖ Research centers
- ❖ Academia
- ❖ Utilities
- ❖ Funding agencies
- ❖ Standardization bodies

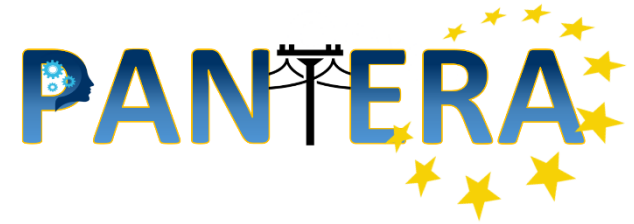
PANTERA targeted countries:

A map of Europe with 15 countries highlighted in a solid blue color. These countries are Ireland, Greece, Cyprus, Malta, Czech Republic, Italy, Latvia, Lithuania, Romania, Estonia, Slovakia, Poland, Hungary, Croatia, and Bulgaria. The rest of the European continent is shown in a light grey color.

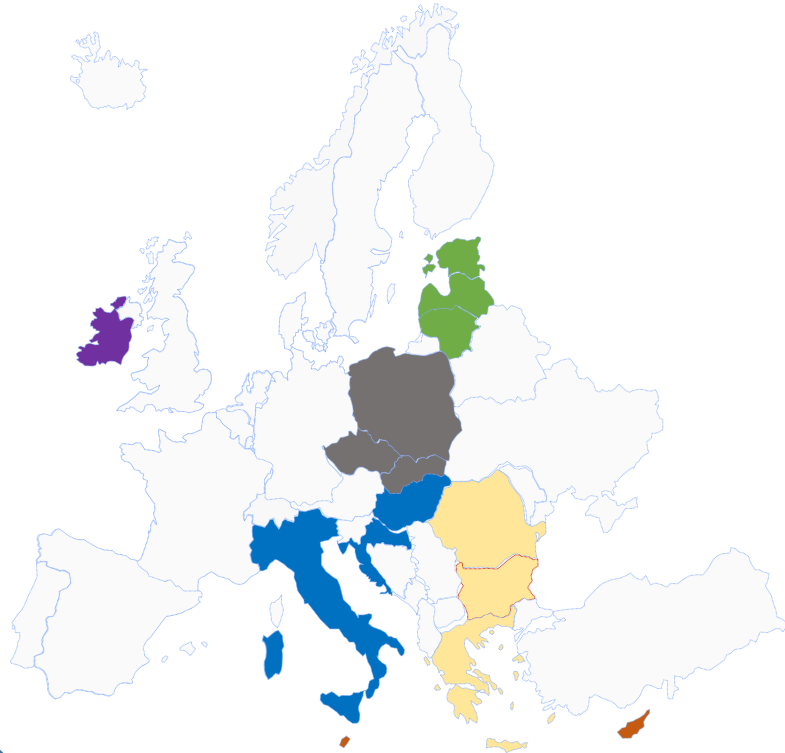
- Ireland (IE)
- Greece (EL)
- Cyprus (CY)
- Malta (MT)
- Czech Republic (CZ)
- Italy (IT)
- Latvia (LV)
- Lithuania (LT)
- Romania (RO)
- Estonia (EE)
- Slovakia (SK)
- Poland (PL)
- Hungary (HU)
- Croatia (HR)
- Bulgaria (BG)



Regional approach



PANTERA identified regions

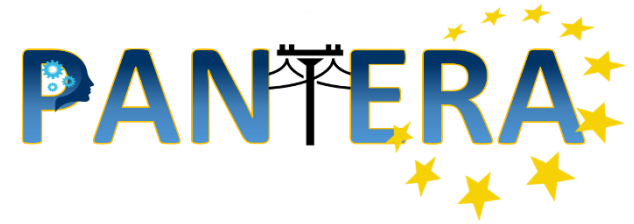


A regional approach in order to better organise the stakeholders participation

PANTERA partners



Fostering a Pan-European R&I community



Interactions with European platforms and initiatives/organizations

- ❖ Interaction with European level initiatives such as: **ETIP SNET, BRIDGE and EERA**
- ❖ **Collaboration with ETIP SNET** and contribution to the Regional Workshops

Enhanced collaboration opportunities

- ❖ Involvement of key stakeholders from European and global initiatives on smart grids such as **IWG4, ERA-Net SES, ISGAN and Mission Innovation IC1**



From a fragmented EU advisory to an integrated framework



**A new focus on
innovation /
implementation
and on sector
coupling**

2016



Main objective is to address the innovation challenges in **energy system** and **market evolution** necessary for achieving climate protection and **renewables integration** with affordability and security of supply
... beyond smart electricity grids
(whole energy system)

ETIP SNET's stakeholders



Transmission System
Operators (TSOs)



Distribution System
Operators (DSOs)



National
Representatives



Research
& Academia



Storage
(technology and services
providers)



Consumers
(aggregated and
not aggregated)



Thermal Generation
(flexible)



Renewable Energy
Sources Generation



ICT, Network and Software
providers



Equipment
manufacturers
and suppliers (non-ICT)



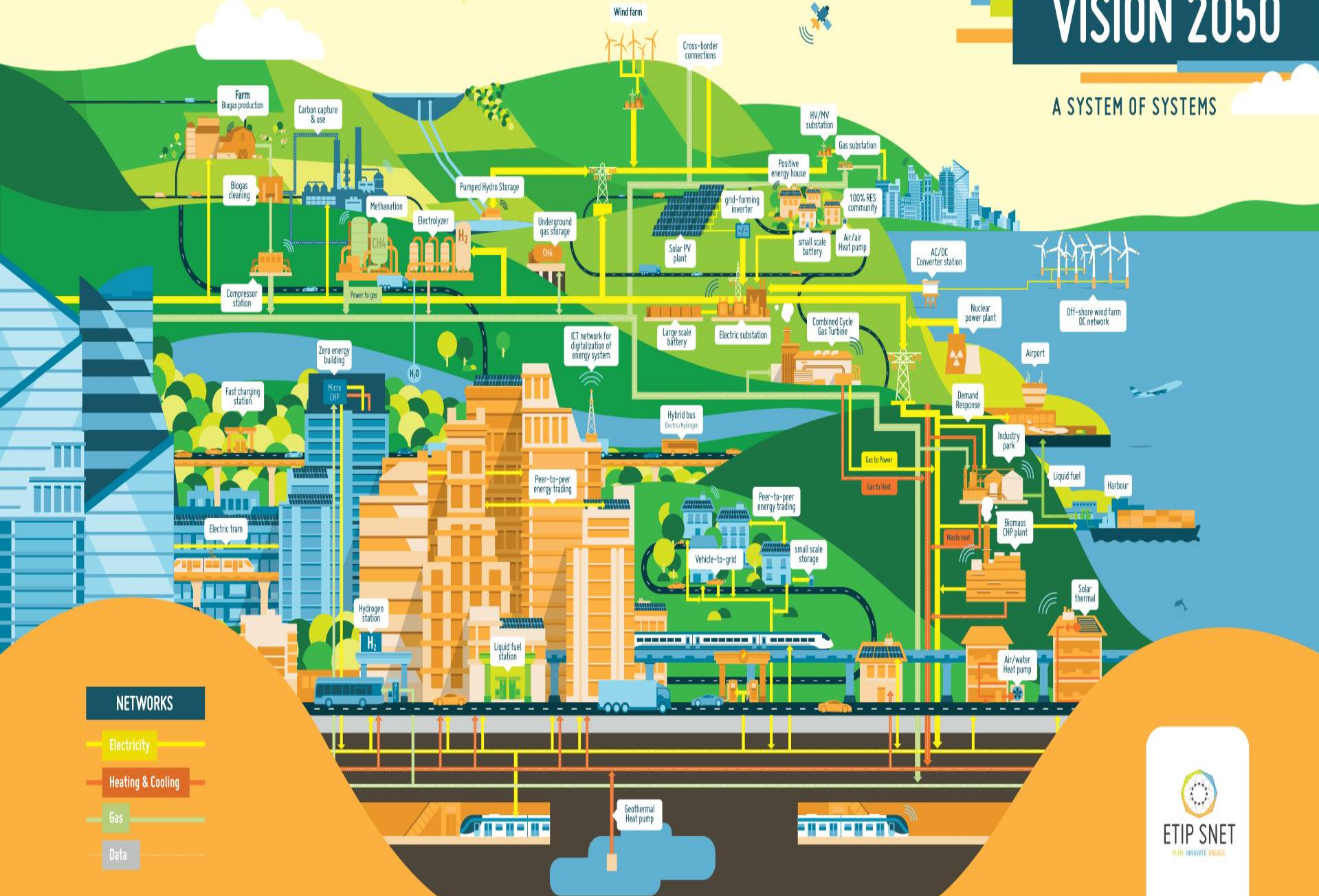
Interface to Other
Energy Carriers
(Heat, Transport, Gas, ...)



Regulators

VISION 2050

A SYSTEM OF SYSTEMS



NETWORKS

- Electricity
- Heating & Cooling
- Gas
- Data

The European Energy Research Alliance



The European Energy Research Alliance (EERA) is an association of European public research centres and universities active in low-carbon energy research



www.eera-set.eu

EERA official mission is to catalyse European energy research for achieving the Paris Agreement target:

- Help streamline regional, national and European research efforts
- Deliver research results from basic research to the demonstration phase (TRL 2 to 5) and ensure efficient transfer to industry and market

EERA is the research pillar in the European Union's Strategic Energy Technology Plan (SET-Plan), which aims to accelerate the development and deployment of low-carbon technologies.



EERA JP technology portfolio supporting the SET Plan



MATERIALS

AMPEA
Advanced
Materials and
Processes for
Energy
Application

**Materials
for Nuclear**

TECHNOLOGIES

Bioenergy

FCH
Fuel Cells and
Hydrogen

**Energy
Storage**

Geothermal

**Wind
Energy**

**Ocean
Energy**

CSP
Concentrated
Solar Power

CCS
Carbon
Capture and
Storage

**Hydro-
power**

PV
Photovoltaic
Solar Energy

SYSTEMS

**Smart
Cities**

**Smart
Grids**

**Energy
efficiency in
Industrial
Processes**

E3S
Economic,
environmental
and social
impacts

**Energy
System
Integration**



EERA JP SG countries and sub programmes

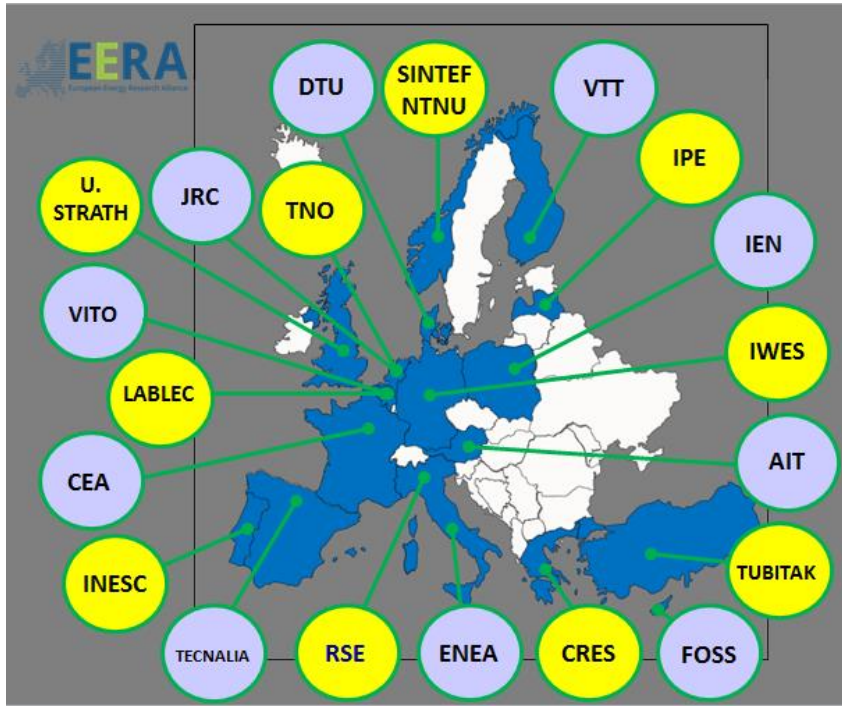
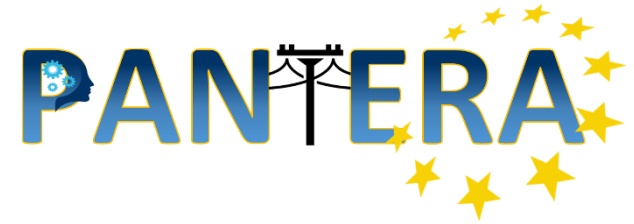
42 participants from 17 European Countries

JP Sub-Programmes:

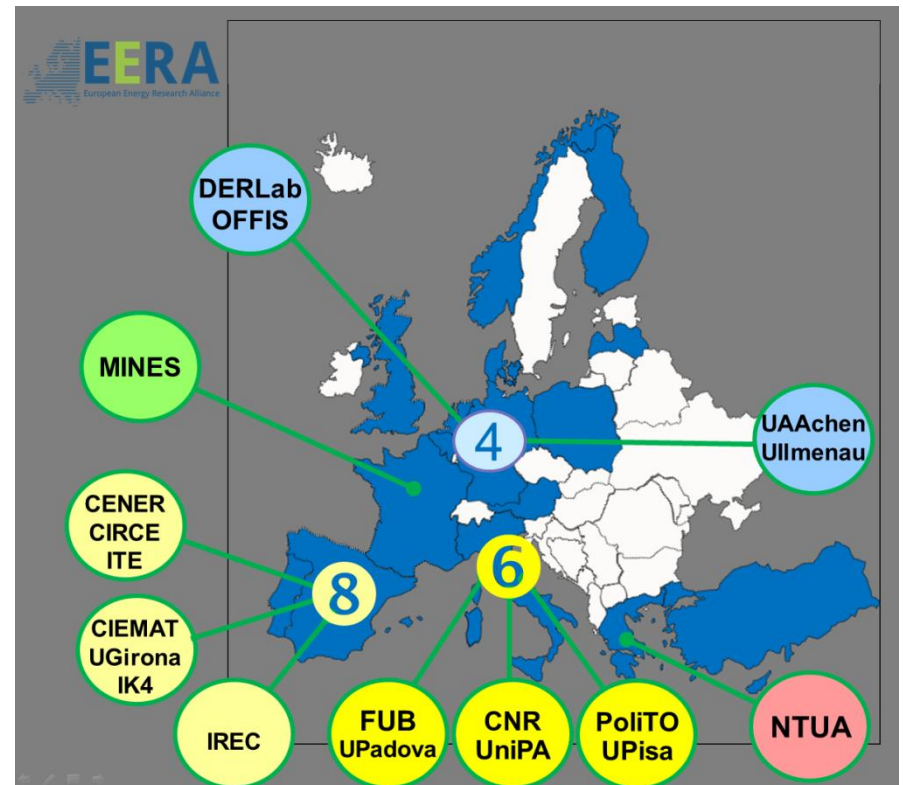
- **SP1** Technologies and tools for the management of future power systems
- **SP2** Storage integration
- **SP3** Distribution Network Flexible operation
- **SP4** Consumer and Prosumer activation and Engagement through digitalization and ICT
- **SP5** Flexible transmission network



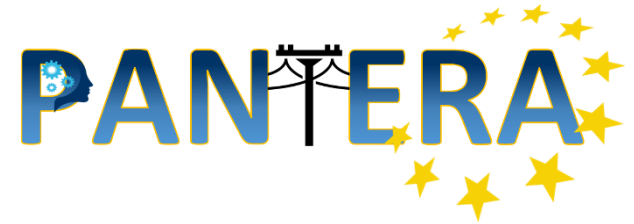
EERA JP on Smart Grids participants



42 Research Organizations



Mission Innovation



To dramatically accelerate the availability of clean, affordable and reliable clean energy around the World by:

- 1. Doubling public sector investments in clean energy RD&D**
- 2. Increasing private sector engagement and investment**
- 3. Facilitating new and strengthened partnerships and collaboration**
- 4. Engaging and informing MI members and the wider clean energy innovation community**



Mission Innovation Innovation Challenges



		Australia	Austria	Brazil	Canada	Chile	China	Denmark	EC	Finland	France	Germany	India	Indonesia	Italy	Japan	Mexico	Norway	Republic of Korea	Saudi Arabia	Sweden	The Netherlands	UAE	UK	USA
1	Smart Grids Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Lead	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
2	Off Grid Access to Electricity Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
3	Carbon Capture Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
4	Sustainable Biofuels Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
5	Converting Sunlight Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
6	Clean Energy Materials Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
7	Affordable Heating and Cooling of Buildings Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
8	Hydrogen Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant



Lead



Participant





**SMART
GRIDS**



**OFF-GRID
ACCESS**



**CARBON
CAPTURE**



**SUSTAINABLE
BIOFUELS**

MI 2020 SOLUTIONS

3RD MI MINISTERIAL 2018

**CONVERTING
SUNLIGHT**



**CLEAN ENERGY
MATERIALS**



**AFFORDABLE
HEATING AND
COOLING OF
BUILDINGS**



HYDROGEN



Mission Innovation Innovation Challenge 1 IC1 on Smart Grids



Mission Innovation Challenges 1 on Smart Grids (IC1) aims to accelerate the development and demonstration of smart grid technologies in order to facilitate the cost effective uptake of renewable energy.



MI Smart Grids



IC1 on Smart Grids: R&D Tasks



No.	Smart Grids Launched R&D asks	Italy	China	India	Australia	Brazil	Canada	Denmark	EC	Finland	France	Germany	Indonesia	Mexico	Netherlands	Norway	Saudi Arabia	South Korea	Sweden	UK	USA	IEA	IRENA	Austria	
1	Improve STORAGE INTEGRATION at all time scales (in operation for system services but also when performing planning studies as an additional degree of freedom) as a source of flexibility																								
2	Use of DEMAND RESPONSE for system services with well-defined interactions between market players and network operators (& TSO-DSO exchange of information)																								
3	Developing REGIONAL ELECTRICITY HIGHWAYS with both AC and DC technologies																								
4	Identify and support improvements of suitable FLEXIBILITY OPTIONS (RES generation, flexible thermal power generation, load, storage) to ensure adequacy and security of the whole power system																								
5	Study and demonstration of NEW GRID CONTROL ARCHITECTURES both at transmission and distribution level																								
6	Focus on POWER ELECTRONICS technologies, to improve development of advanced components and optimal control scenarios and to further accelerate adoption and insertion of power electronics into the electrical grid in order to improve qualities of the system.																								
		Task leader			Task participant			To be confirmed			No contribution														

ISGAN – International Smart Grid Action Network

Created under the auspices of:



the Implementing Agreement for a Co-operative Programme on Smart Grids

an initiative of the Clean Energy Ministerial (CEM)

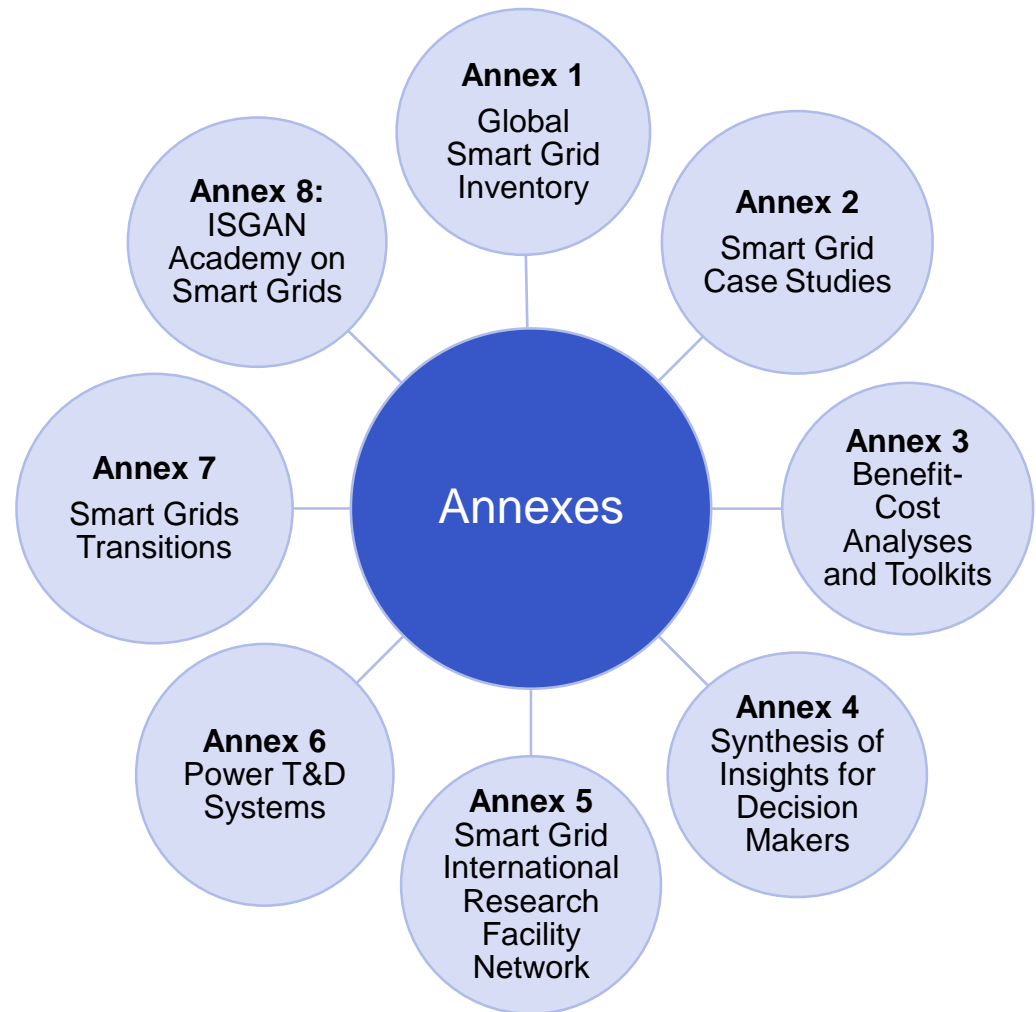
ISGAN's worldwide presence:
26 Contracting Parties



Strategic platform to support high-level government knowledge transfer and action for the accelerated development and deployment of smarter, cleaner electricity grids around the world

Our Work

- The activities of ISGAN are organized into eight Annexes.
- The Annexes are standing working groups continuously dealing with certain topics and updating their plans and objectives for the upcoming year at spring ExCo meetings.
- Only Annex 1 Smart Grid Inventories delivering a general picture of on-going Smart Grid project deployment has been completed.



ISGAN Value proposition



Strategic partnerships

IEA, CEM, GSGF,
Mission Innovation, etc.

Broad international expert network

ISGAN

**Knowledge sharing,
technical assistance,
project coordination**

Global, regional & national policy support

Workshops



Casebooks

Stakeholders questionnaire



First step for stakeholders involvement



- Gathering information about PANTERA stakeholders
- Better organisation PANTERA activities

Please find the questionnaire at:

<http://pantera-platform.eu/stakeholders/>

The screenshot shows the 'PANTERA Stakeholder questionnaire' form. It includes a header with the PANTERA logo and title. Below the header is a paragraph explaining that PANTERA is an EU project aiming to set up an European Forum of R&D policy makers, R&D actors, and experts in smart grids, storage, and local energy systems. A privacy notice follows, stating that the project consortium will manage data in compliance with GDPR. Below the notice are two radio button options: 'Yes, I read and understood' and 'No, do not continue'. The form then contains five numbered questions, each with a text input field: 1. Country, 2. Your organization/company name, 3. City, and 5. Main organisation/company location (if different from the above indicated city). Each input field contains the placeholder text 'Inserisci la risposta'.





THANK YOU FOR YOUR ATTENTION !

Contact information: luciano.martini@rse-web.it



ETIP SNET's mission



- ▶ **Set-out a vision for RD&I for Smart Networks for Energy Transition** and engage stakeholders in this vision.
- ▶ **Prepare and update the Strategic Research and Innovation Roadmap.**
- ▶ Report on the **implementation of RD&I activities at European, national/regional and industrial levels.**
- ▶ Provide **input to the SET Plan action 4** which addresses the technical challenges raised by the transformation of the energy system.
- ▶ **Identify innovation barriers**, notably related to regulation and financing.
- ▶ Develop enhanced knowledge-sharing mechanisms that **help bring RD&I results to deployment.**
- ▶ Prepare **consolidated stakeholder views** on Research and Innovation to European Energy Policy initiatives.