

# PANTERA platform content and functionality

PANTERA Workshop

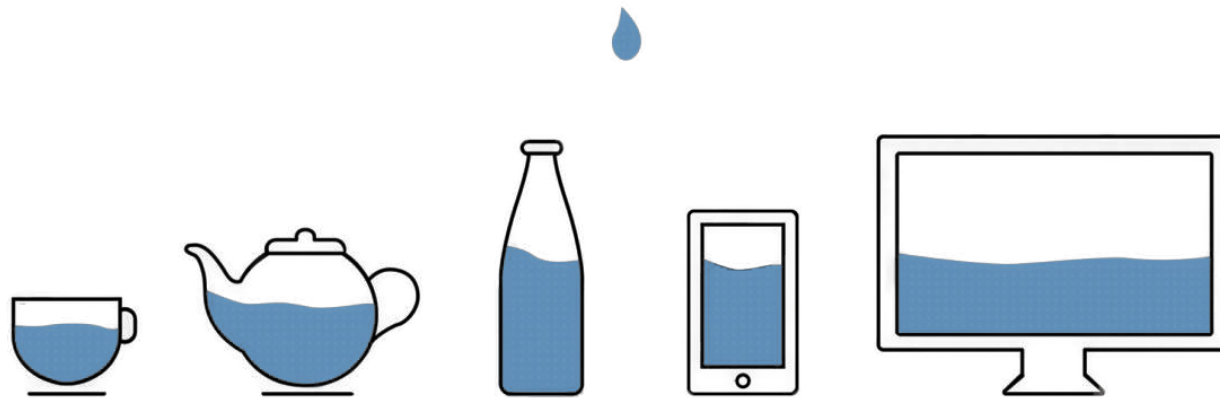
Dublin

2019-12-02

Andrei Morch, SINTEF Energi AS



# CONTENT IS LIKE WATER



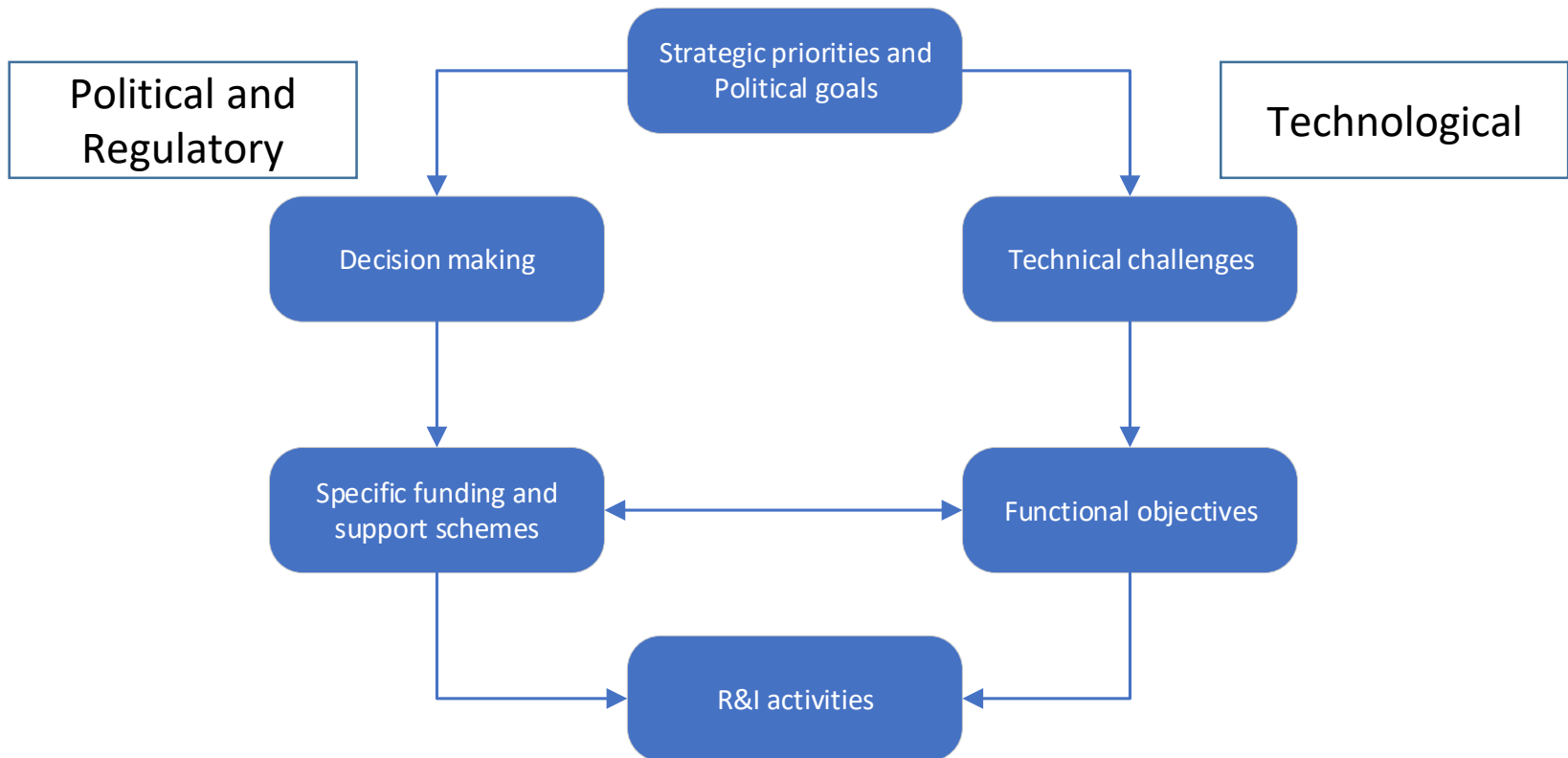
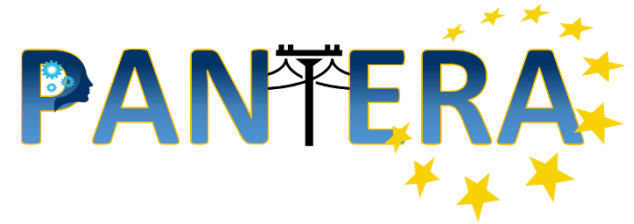
Content and  
functionality

“ You put water into a cup it becomes **the cup**.  
You put water into a bottle it becomes **the bottles**.  
You put it in a teapot, it becomes **the tea pot**. ”

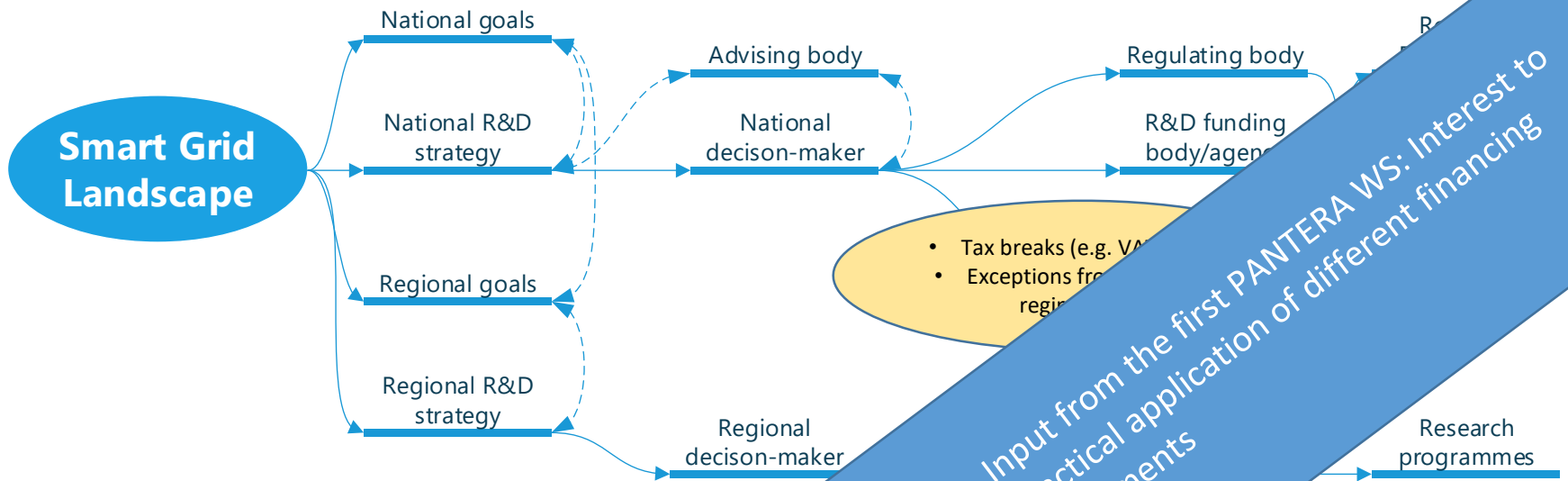
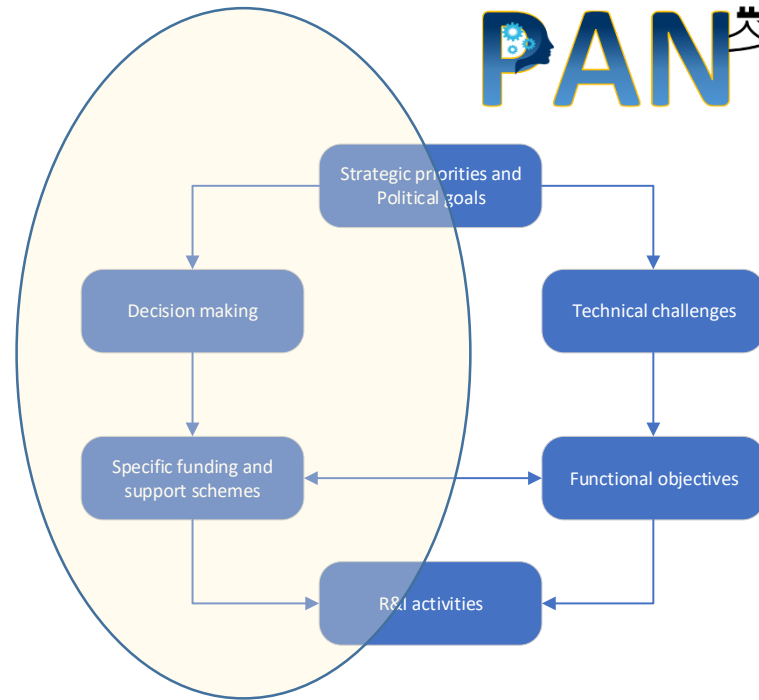
Josh Clark (*originally Bruce Lee*) - Seven deadly mobile myths

Illustration by Stéphanie Walter

# The overall structure of the content



# Political and regulatory: background



# Technical topics: background



## Detailed taxonomy of the Smart Grid domain in ETIP-SNET roadmap:

Cluster (main activity)	FO ID	Functional Objectives
C1 – Modernization of the network	T1	Optimal grid planning
	T2	Smart asset management
	T3	New materials and technologies
	T4	Environmental challenges and stakeholders
C2 – Security and system stability	T5	Grid observability
	T6	Grid controllability
	T7	Expert systems and tools
	T8	Reliability and resilience
	T9	Enhanced ancillary services
C3 - Power system flexibility from generation, storage, demand and network	T10	Storage integration
	T11	Demand response
	T12	RES forecast
	T13	Flexible grid use
	T14	Interaction with non-electrical energy networks
	T22	Flexible thermal power generation
C4 - Economic	T15	Market-grid integration
	T16	Business models
	T17	Flexible market design
C5 – Digitalization of power system	T18	Big data management
	T19	Standardization and data exchange
	T20	Internet of Things
	T21	Cybersecurity

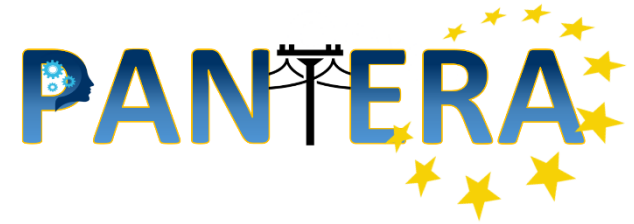
Cluster (main activity)	FO ID	Functional Objectives
C1 – Integration of smart customers and buildings	D1	Active demand response
	D2	Energy efficiency from integration with smart homes and buildings
C2 – Integration of decentralised generation, demand, storage and networks	D3	System integration of small DER
	D4	System integration of medium DER
	D5	Integration of storage in network management
	D6	Infrastructure to host EV/PHEV – Electrification of transport
	D7	Integration with other energy networks
	D14, 37, 38	Integration of flexible decentralised thermal power generation
C3 – Network operations	D8	Monitoring and control of LV network
	D9	Automation and control of network
	D10	Smart metering and other big data
	D11	Cybersecurity
	D12	Network security
C4 – Planning and asset management	D12	Network security
	D13	Network security



Input from the first PANTERA WS: The topics should be introduced sequentially, closed to roadmap pathway, following interdependencies between different technical elements.



# Envisaged Functionality of the Platform

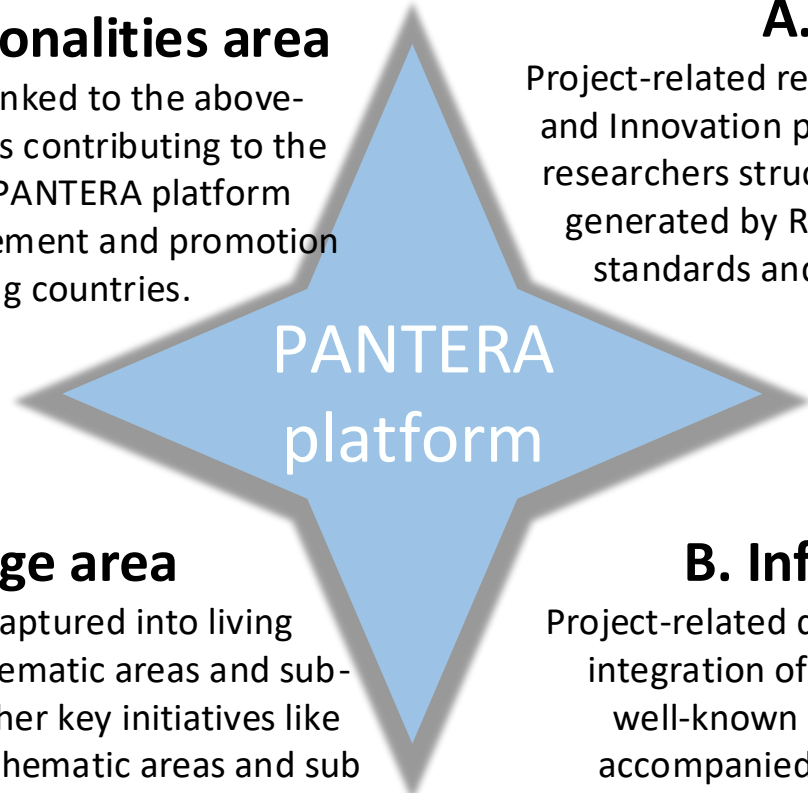


## D. Additional functionalities area

Functionalities not directly linked to the above-mentioned areas, nevertheless contributing to the overall functionality of the PANTERA platform towards collaboration enhancement and promotion of R&I in low-spending countries.

## A. Data area

Project-related results collected for EU Research and Innovation projects. Datasets uploaded by researchers structuring the results / outcomes generated by R&I projects. EU and National standards and regulations are captured.



## C. Knowledge area

Know how information captured into living documents, structured in thematic areas and sub-areas and synergies with other key initiatives like ETIP SNET. Best practices of thematic areas and sub areas are tracked. Latest progress in Regulation and Standardization.

## B. Information area

Project-related data and metadata through the integration of the PANTERA platform with well-known and established platforms, accompanied by the deployment of data analytics.



**THANK YOU FOR YOUR ATTENTION!**

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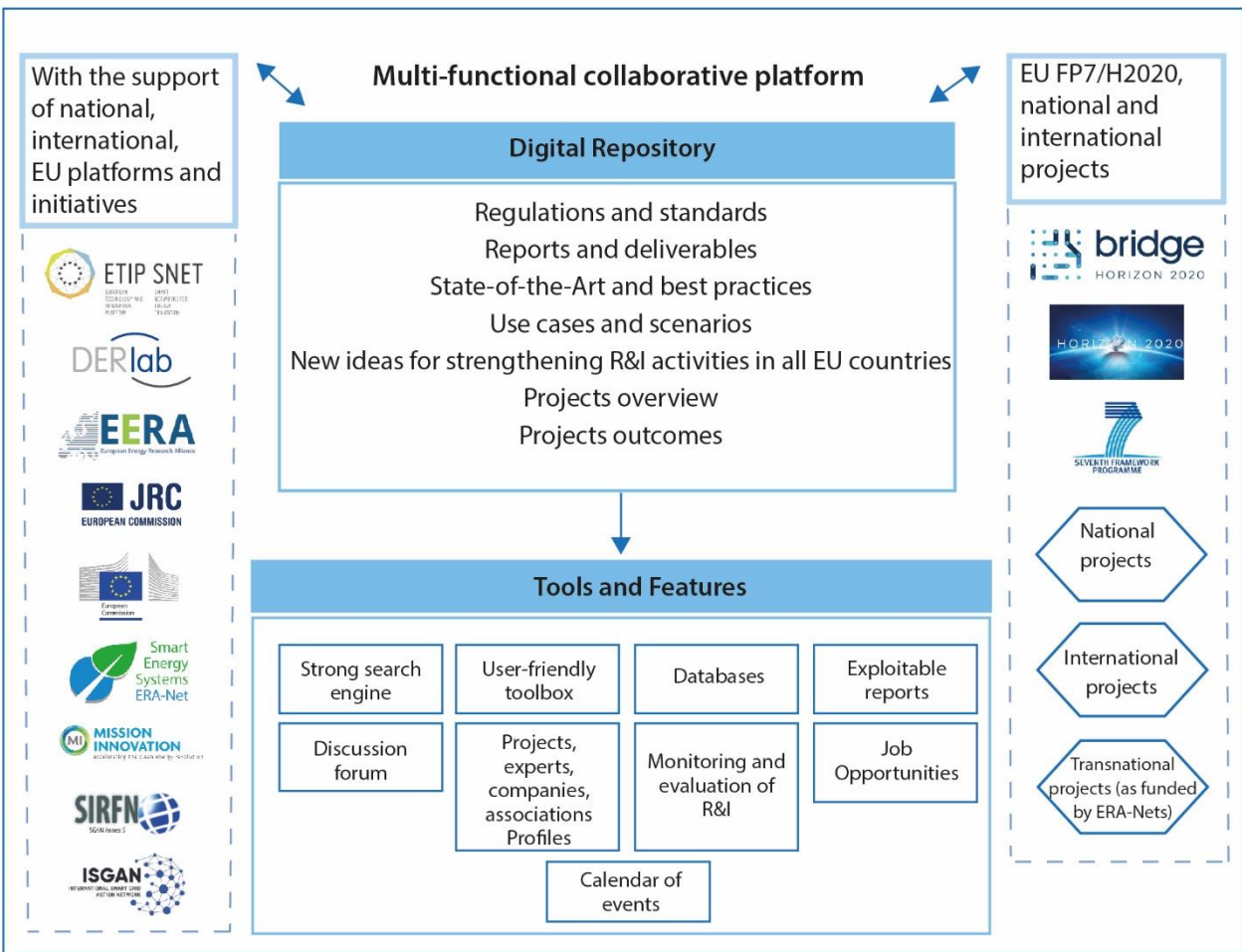
# **PANTERA project-A Pan European Technology Energy Research Approach towards synergies facilitation on smart grids**

## **Why the PANTERA Platform? What's in for you?**

Dr. Venizelos Efthymiou  
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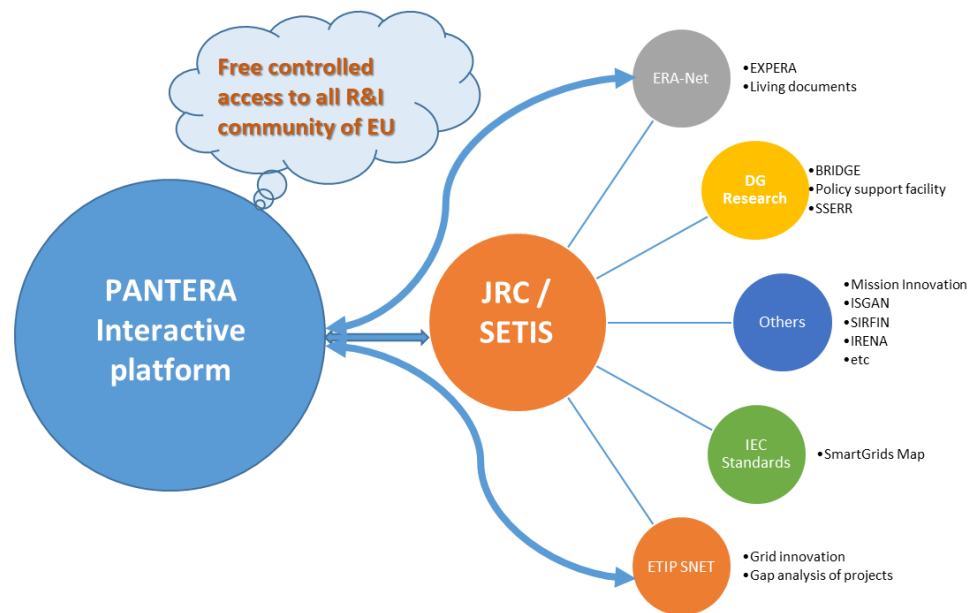


**Vision for a multifunctional collaborative platform to serve R&I in EU in support of the energy transition and more specifically energy systems**

# Development of an Interactive multi-functional platform in collaboration with PANTERA, JRC, ERA-Net SES and ETIP SNET



To connect the R&I community of EU to enhance collaboration, wider interest and use on the project results, avoid duplication and lost euros, strengthen the participation of all Member States in support of the fifth pillar of the Energy Union (RIC) and energy transition.

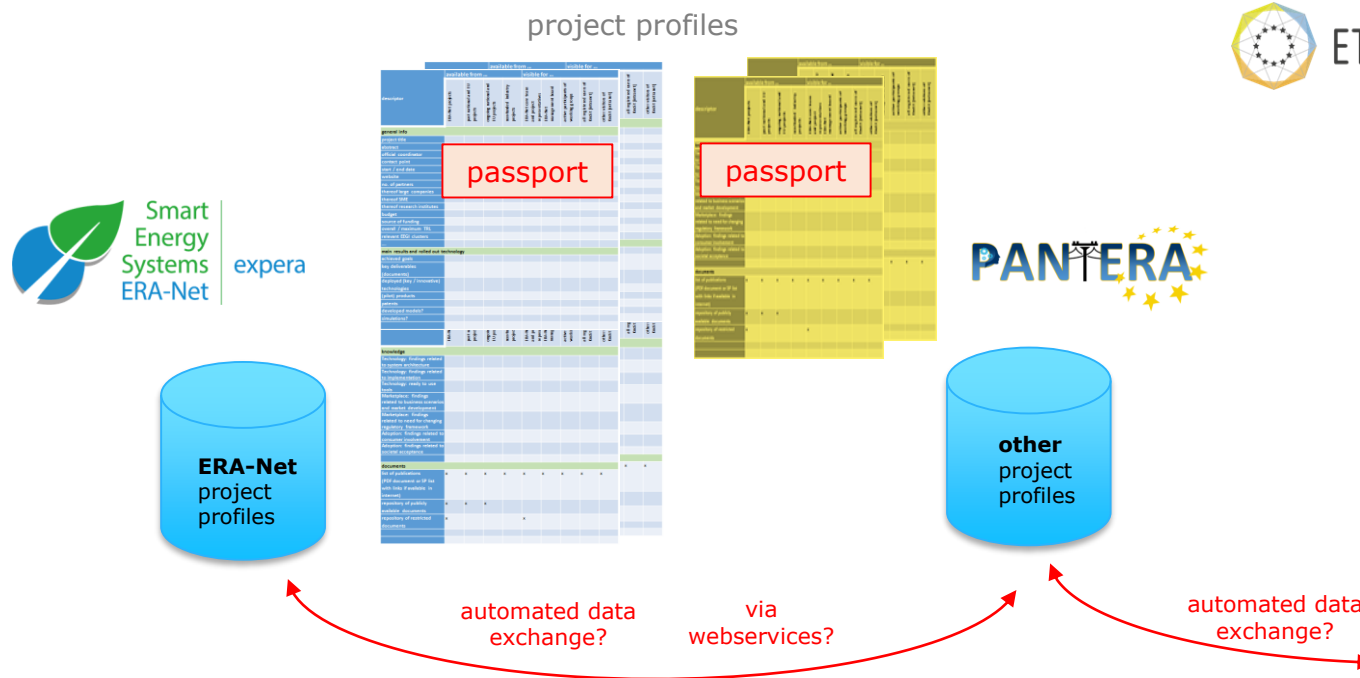


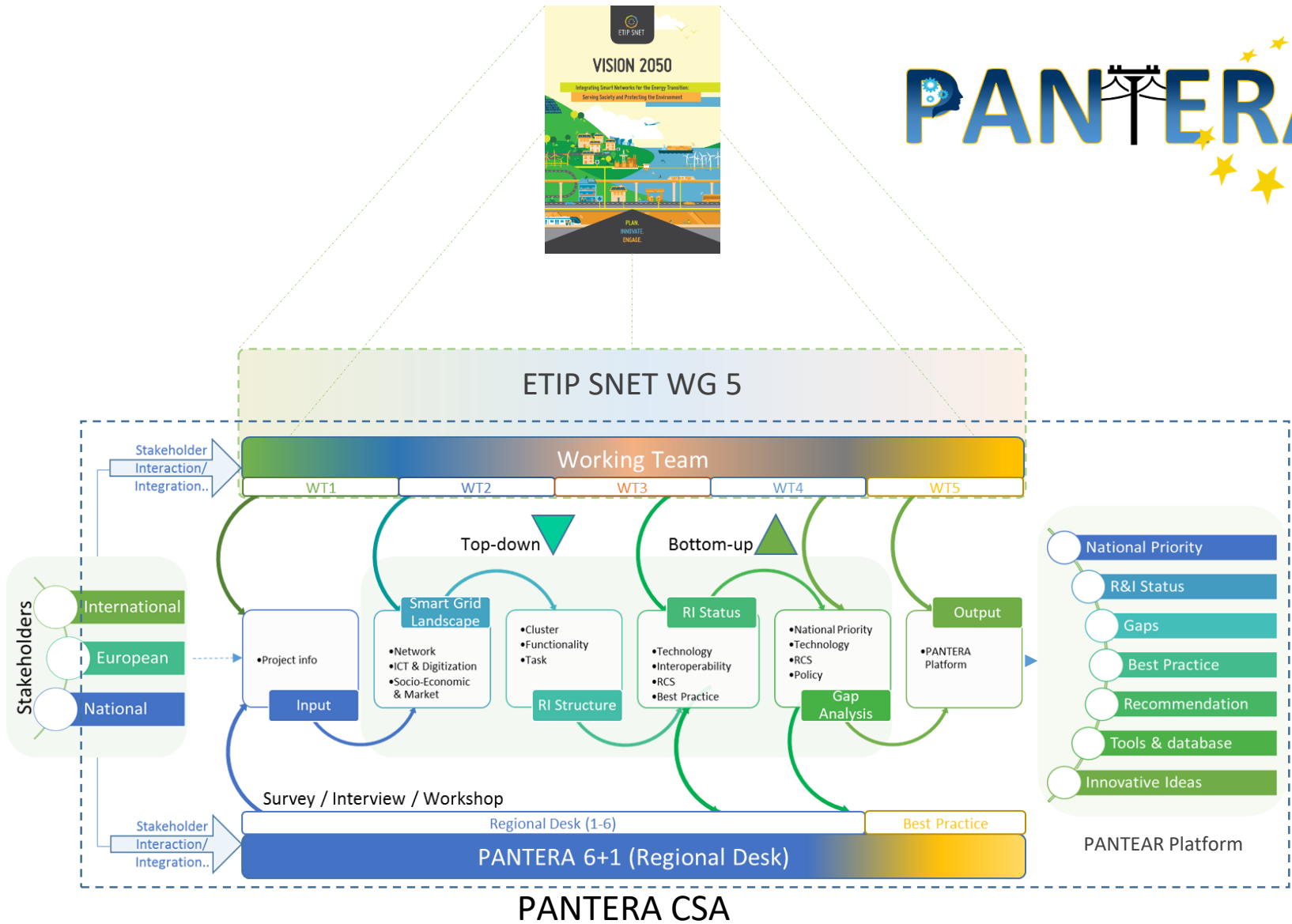
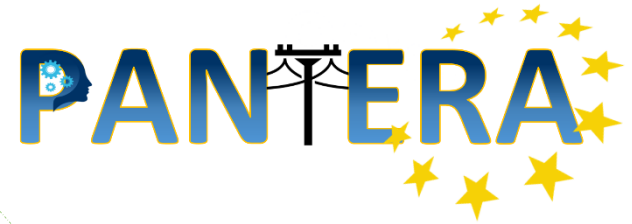
**All contributing entities get benefit through the enhanced connectivity to beneficiaries and users**



# Connecting Project Repositories

## Emphasis on the first phase on knowledge sharing through the compilation of living documents

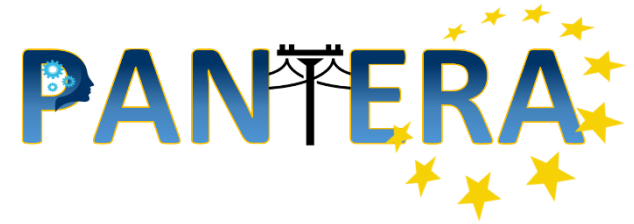




**PANTERA CSA**



# PANTERA 6+1 Regional Desks



## PANTERA 6 + 1

### DESK 1

Responsible partner – IPE

Latvia  
Estonia  
Lithuania

### DESK 2

Responsible partner – TUS

Bulgaria  
Romania  
Greece

### DESK 3

Responsible partner – FOSS, S5

Cyprus  
Malta

### DESK 4

Responsible partner – DERlab

Poland  
Slovakia  
Czech Republic

### DESK 5

Responsible partner – RSE

Hungary  
Croatia  
Italy

### DESK 6

Responsible partner – UCC-IERC,  
NUID-UCD

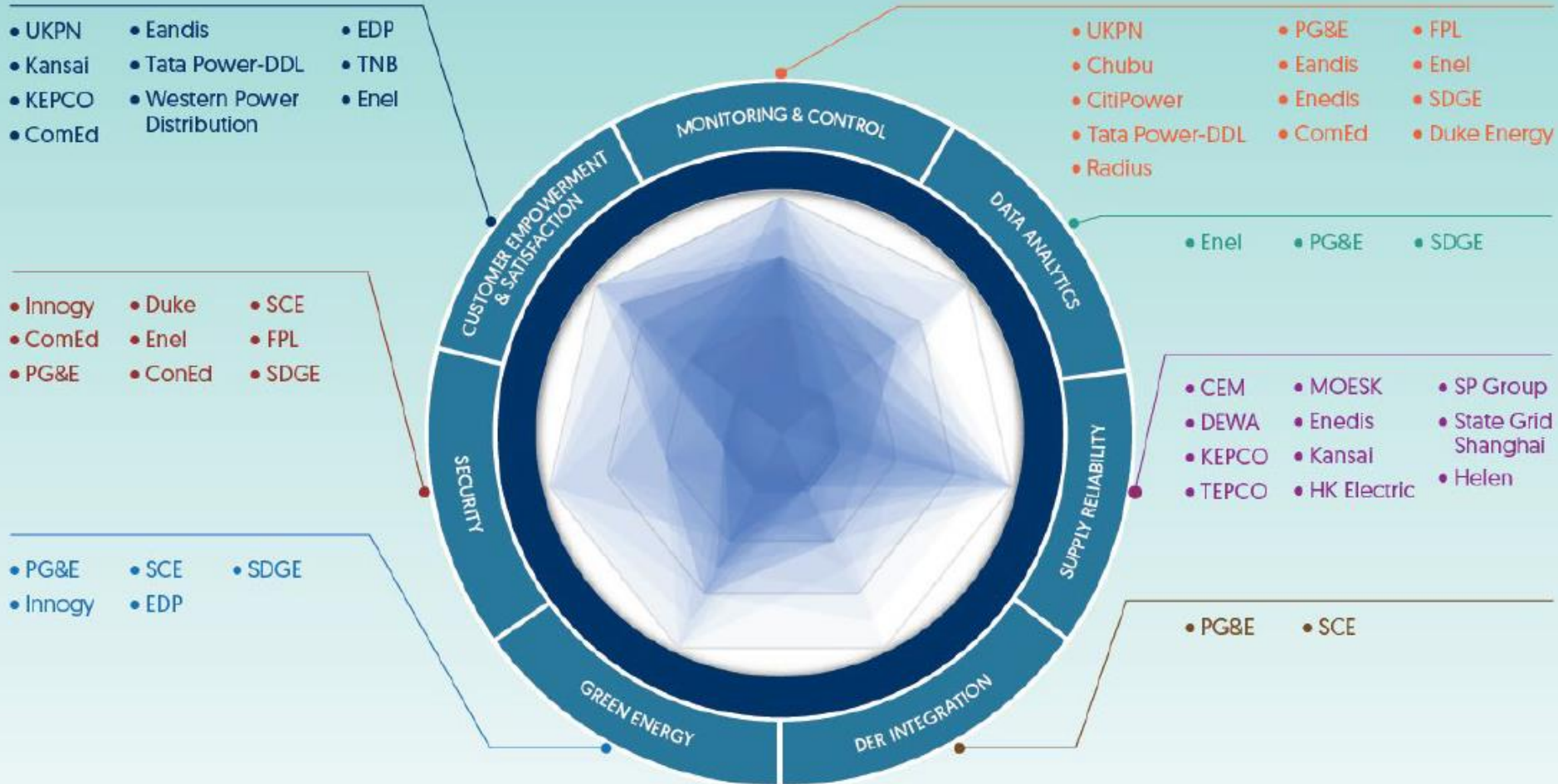
Ireland

### BEST PRACTICE DESK

Responsible partner – SINTEF

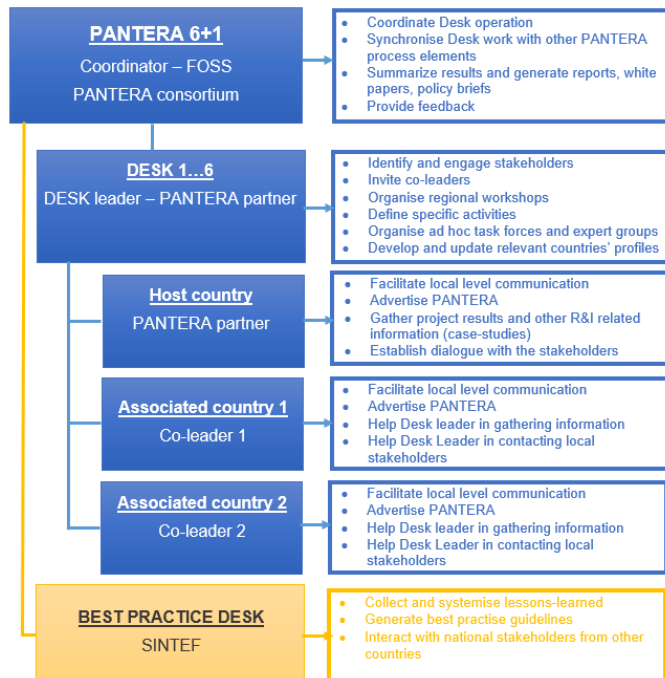


# Smart Grid Maturity Index





# 6+1 Approach Development



- Regional = the way the work is organised
- Desks 1..6 = a PANTERA contact point
- Best practice Desk = an information hub
- Desk leader = project partner
- Desk co-leader = representative from associated country
- Desks are dynamic structures that may evolve within continuous improvement process based on project/stakeholder needs