



# The PANTERA initiative for enriching R&I in support of the energy transition:

content and topics for dissemination and networking activities

PANTERA Workshop

Sofia

2019-07-02

Andrei Morch, SINTEF Energi AS



# Activity: Key topics and content management

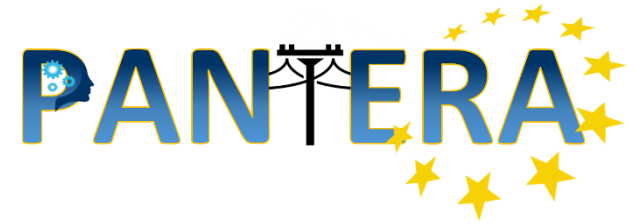


The activity aims to identify the proper content and topics for **dissemination and networking activities** within the project, which is consisting of setting up a forum, events organisation, virtual meetings, establishing collaborative working spaces and social media...

(from PANTERA DoW)

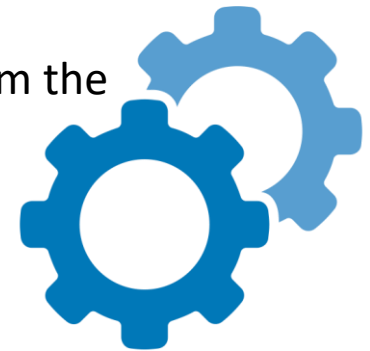


# Activity: Key topics and content management



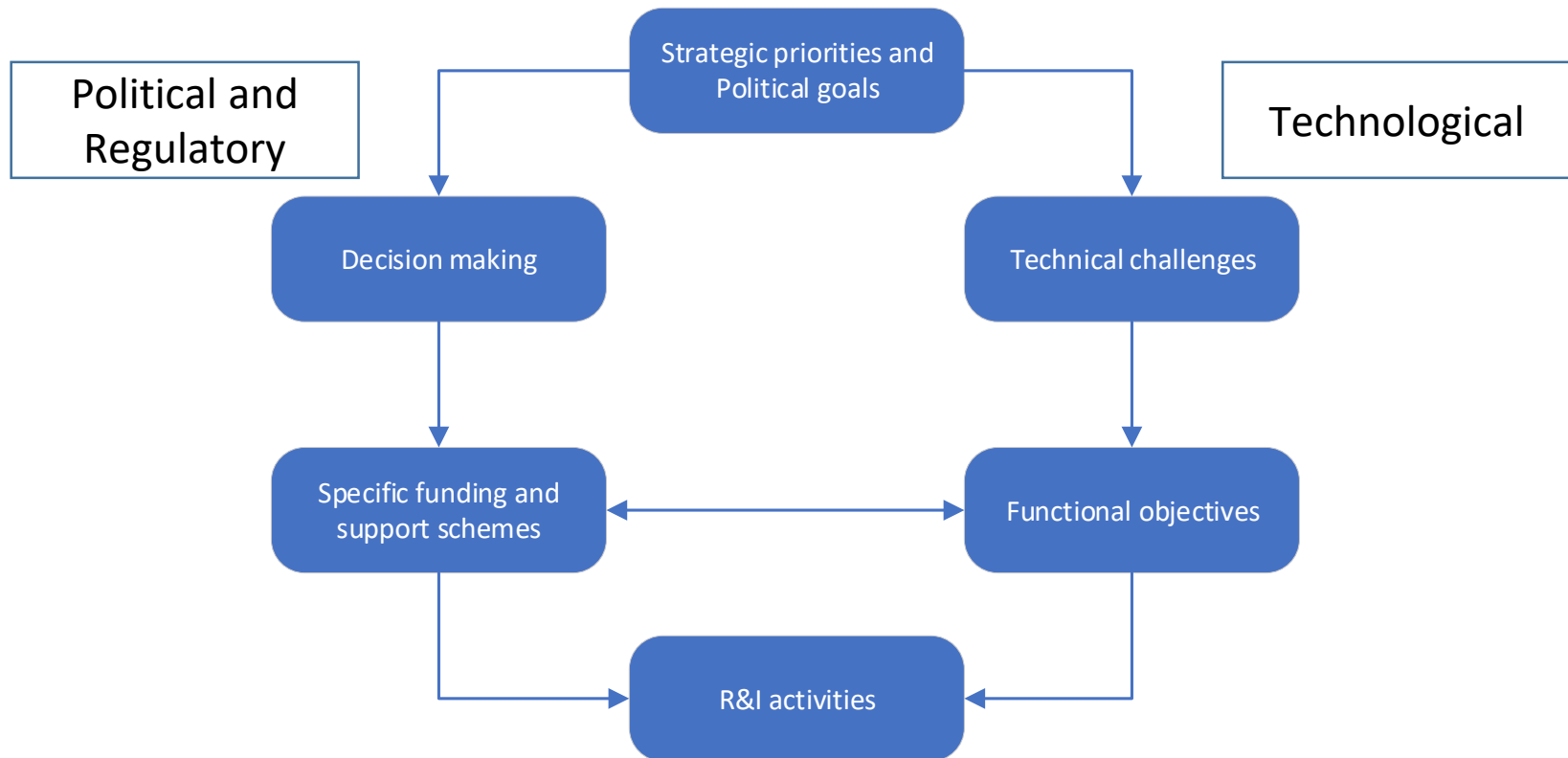
## Background for selection of the topics:

- The initial definition will be done via interactive communication with the previously identified stakeholders
- Input from PANTERA activity "The state of R&I, standardization and regulation"
- In order to make the approach more systematic, the content will be assessed and aligned with **Pan-European roadmaps from ETIP-SNET or similar and overall political goals and priorities.**
- The topics will not be limited to technical nature
- The topics will be further verified and adjusted by using input from the stakeholder via arranging a **Written Consultation**



# Proposal for structuring of the topics and discussion

# The overall structure



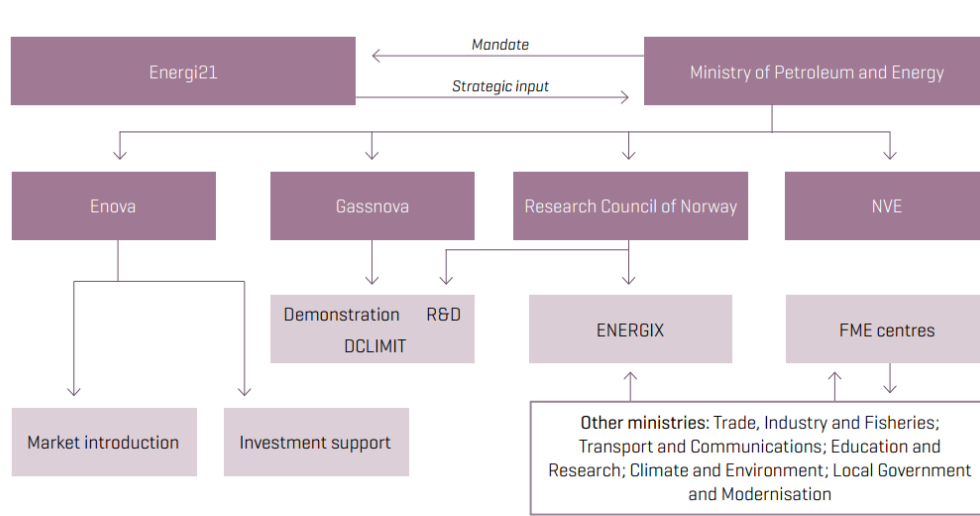
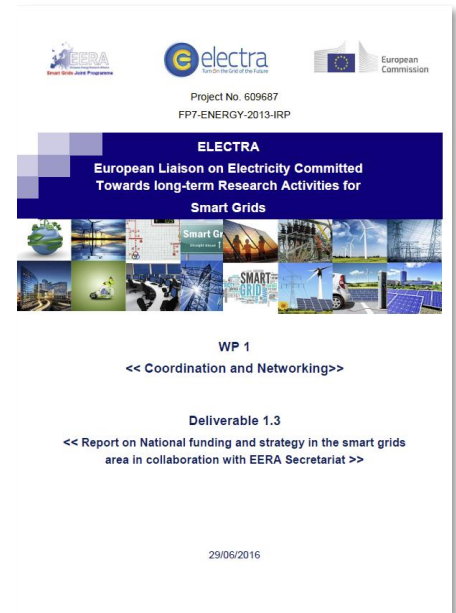
# None-technical topics: background



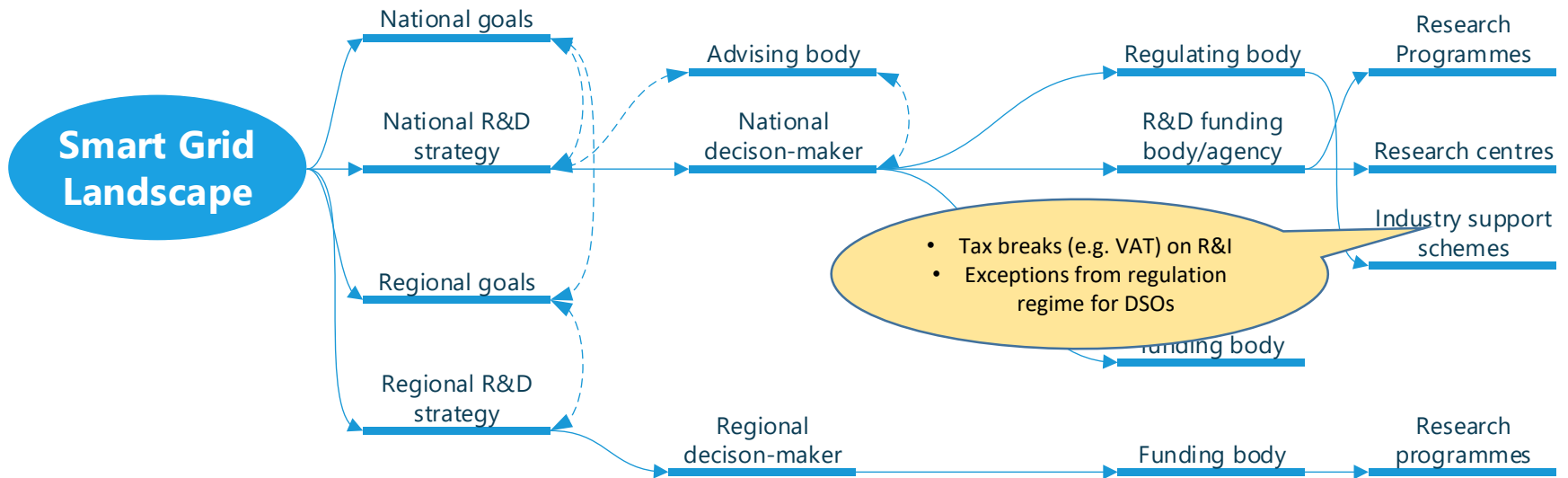
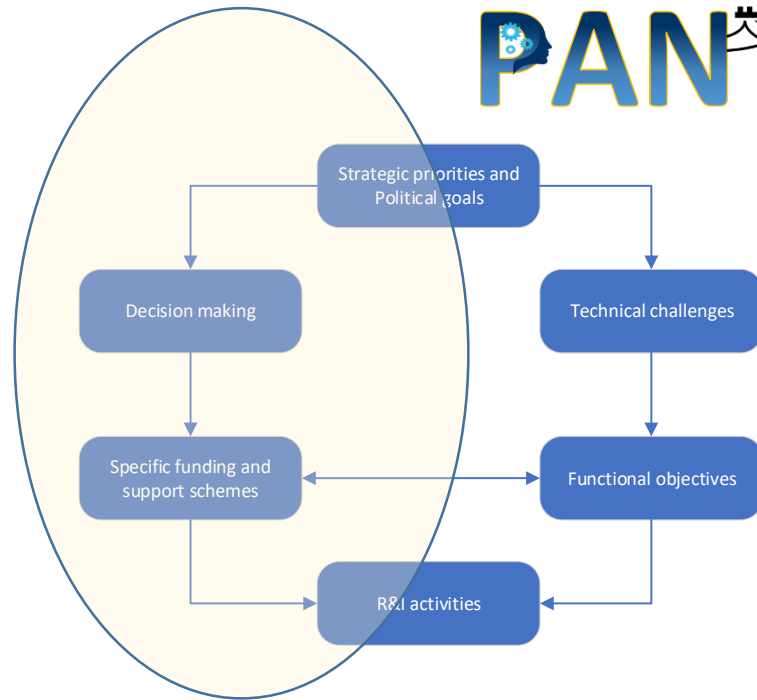
Description of "Smart Grid landscapes" in several European countries was done in ELECTRA IRP D1.3.

Several European countries have:

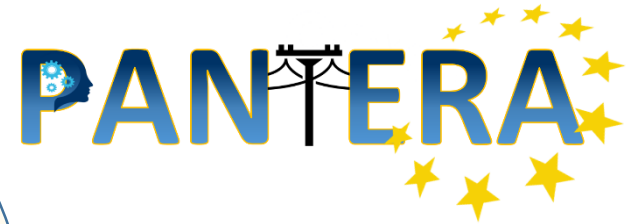
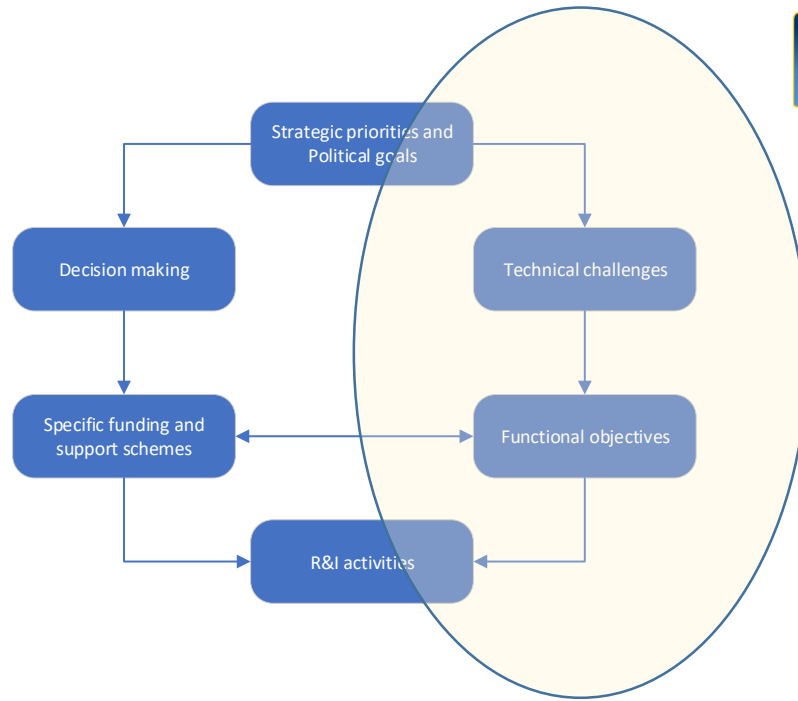
- Very elaborated interdisciplinary decision-making structures for definition of R&I priorities
- Specific funding bodies (national and regional) for R&I
- Dedicated support schemes, encouraging industrial actors to fund specific R&I topics



# Political and regulatory: background

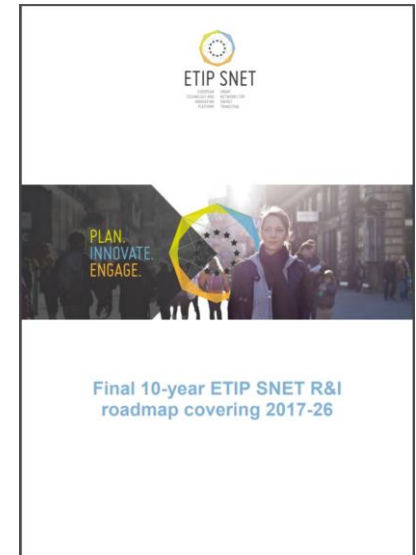


# Technological topics: background



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

Policy drivers / Strategic priorities	Future challenges for system operators	Corresponding functional objectives
Load	Use of demand response for system services with well-defined interactions between with the market players and the network operators (and TSO-DSO exchange of information).	T5 – Grid observability T11 – Demand response
	Efficient forecast of demand (and residual loads) accounting for the new loads and the demand-response activities of new market players.	T11 – Demand response





# Technological: background

Functional objectives for the system operators (Tx and Dx) as first set of technical topics of content

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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

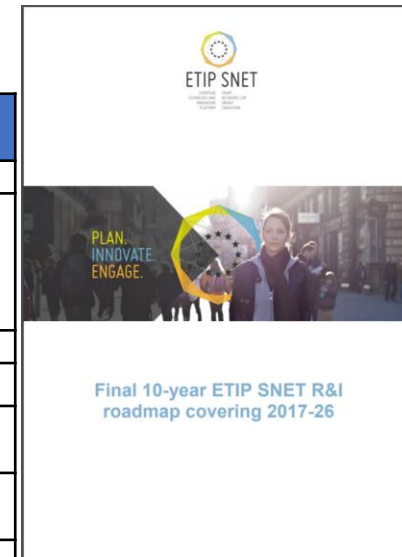
# Technical topics: background



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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 MV network
	D10	Smart metering data processing and other big data applications
	D11	Cyber security (system approach)
	D12	New planning approaches and tools
C4 – Planning and asset management	D13	Asset management





**THANK YOU FOR YOUR ATTENTION!**

Contact information: [andrei.morch@sintef.no](mailto:andrei.morch@sintef.no)

