PLAN.
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ETIP SNET
EUROPEAN TECHNOLOGY AND INNOVATION PLATFORM
SMART NETWORKS FOR ENERGY TRANSITION

ETIP SNET (European Technology and Innovation Platform for Smart Networks for Energy Transition)

Introduction to R&I activities in the scope of the ETIP SNET; presentation of the R&I roadmap 2016-2025.

Second ETIP SNET regional workshop, Lisbon, 28 September 2017

Eric Peirano, Ph.D., TECHNOFI, COO

Outline

- The ETIP-SNET 2017-2026 R&I roadmap
- The path towards the updated roadmap and next IPs
- The coming 17-19 implementation plan
- Contribution expected from the workshop participants

A new roadmap and associated Implementation Plans

Electricity system
Integration of RES

Electricity system
Integration of storage + other flexibilities
Integration with other energy networks

Integrated energy system

EEGI roadmap 2013-2022

IPs every year

EEGI
EUROPEAN ELECTRICITY GRID INITIATIVE

GRID+

ETIP-SNET roadmap 2017-2026

IP 16-18

IP 17-19

To be published during Utility Week 2017

EEGI
EUROPEAN ELECTRICITY GRID INITIATIVE

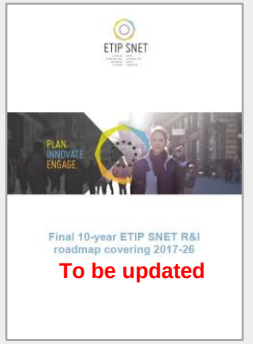
SMARTGRIDS

ETIP SNET

GRID+ STORAGE

ETIP SNET roadmap 2020-2029

IP 19-21



To be updated

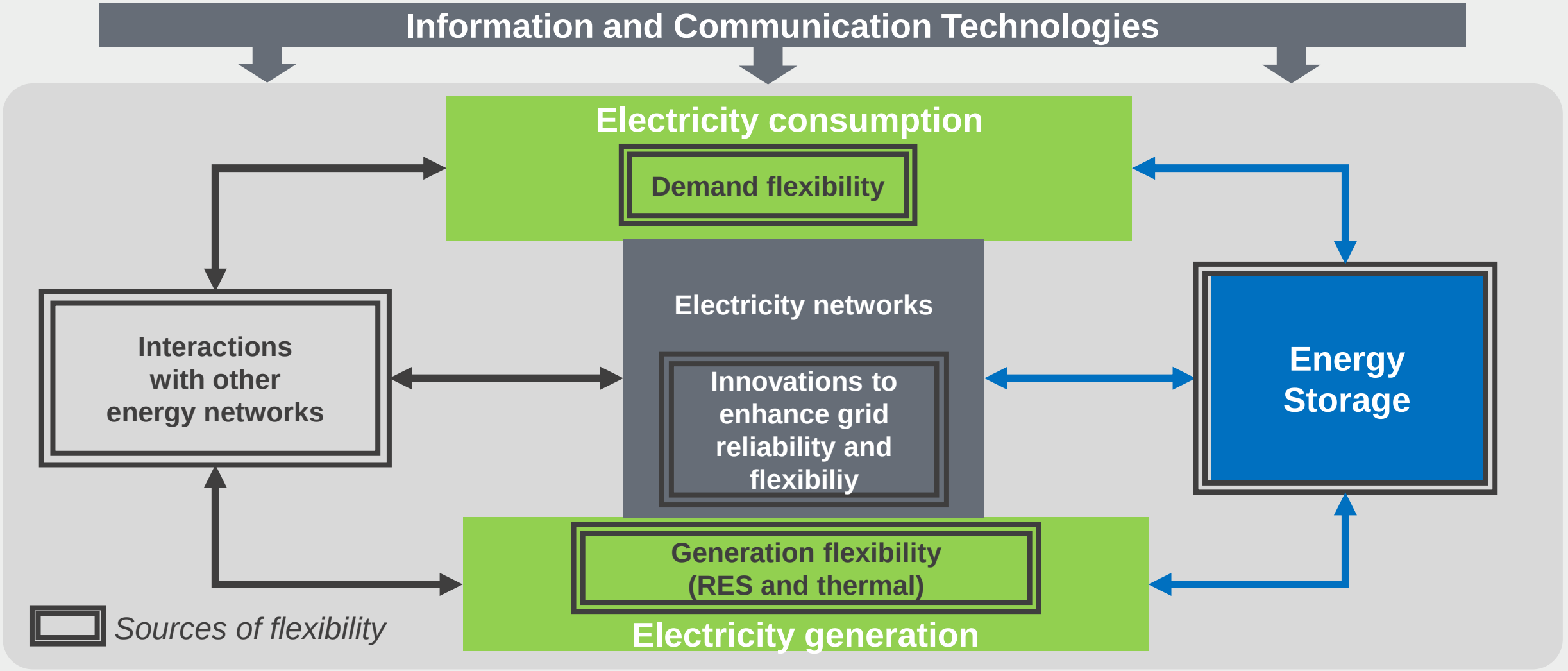
IP 21-23

ETIP SNET

INTENSYS4EU

Electricity grid = backbone of energy system

Offers flexibility solutions and enables the integration of all flexibility means



Flexibility is addressed in several functional objectives

Transmission

C1: Modernization of the Network

C2: Security and System Stability

C3: Power System Flexibility from Generation, Storage, Demand and Network

Flexibility from
- Storage
- Demand response
- RES with forecasting tools
- Interactions with other energy networks
- Thermal power generation

C4: Economic & Efficient Power System

C5: ICT and Digitalization of Power System

Distribution

C1: Integration of Smart Customers

Flexibility from
- Demand response
- Energy efficiency in buildings

C2: Integration of DER and New Uses

Flexibility from
- RES
- Storage
- Transport (Evs)
- Interactions with other energy networks
- Thermal power generation

C3: Network Operations

Flexibility from
- Grid

C4: Network Planning and Asset Management

Flexibility from
- Asset management

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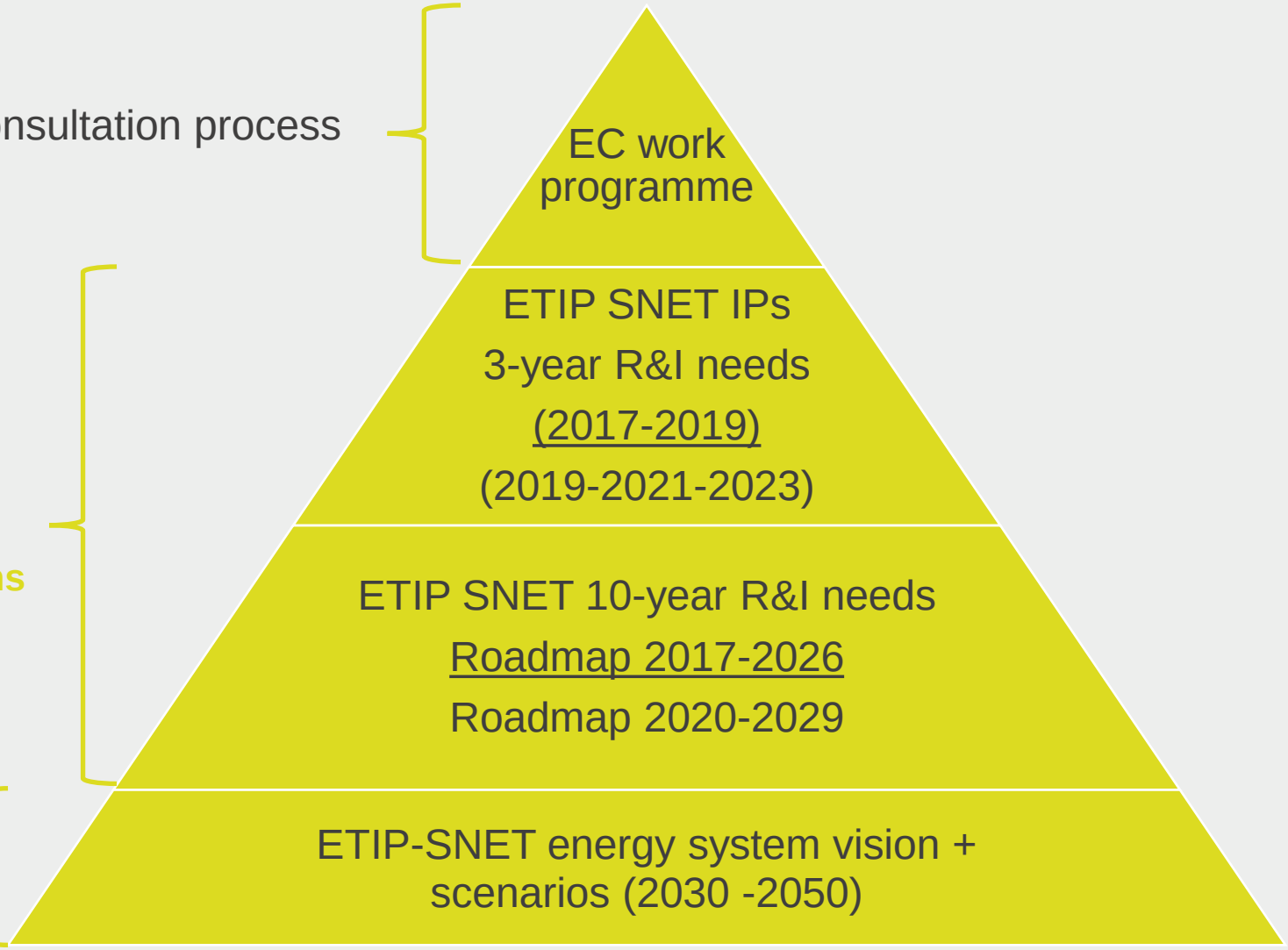
ETIP SNET process hierarchy

EC consultation process

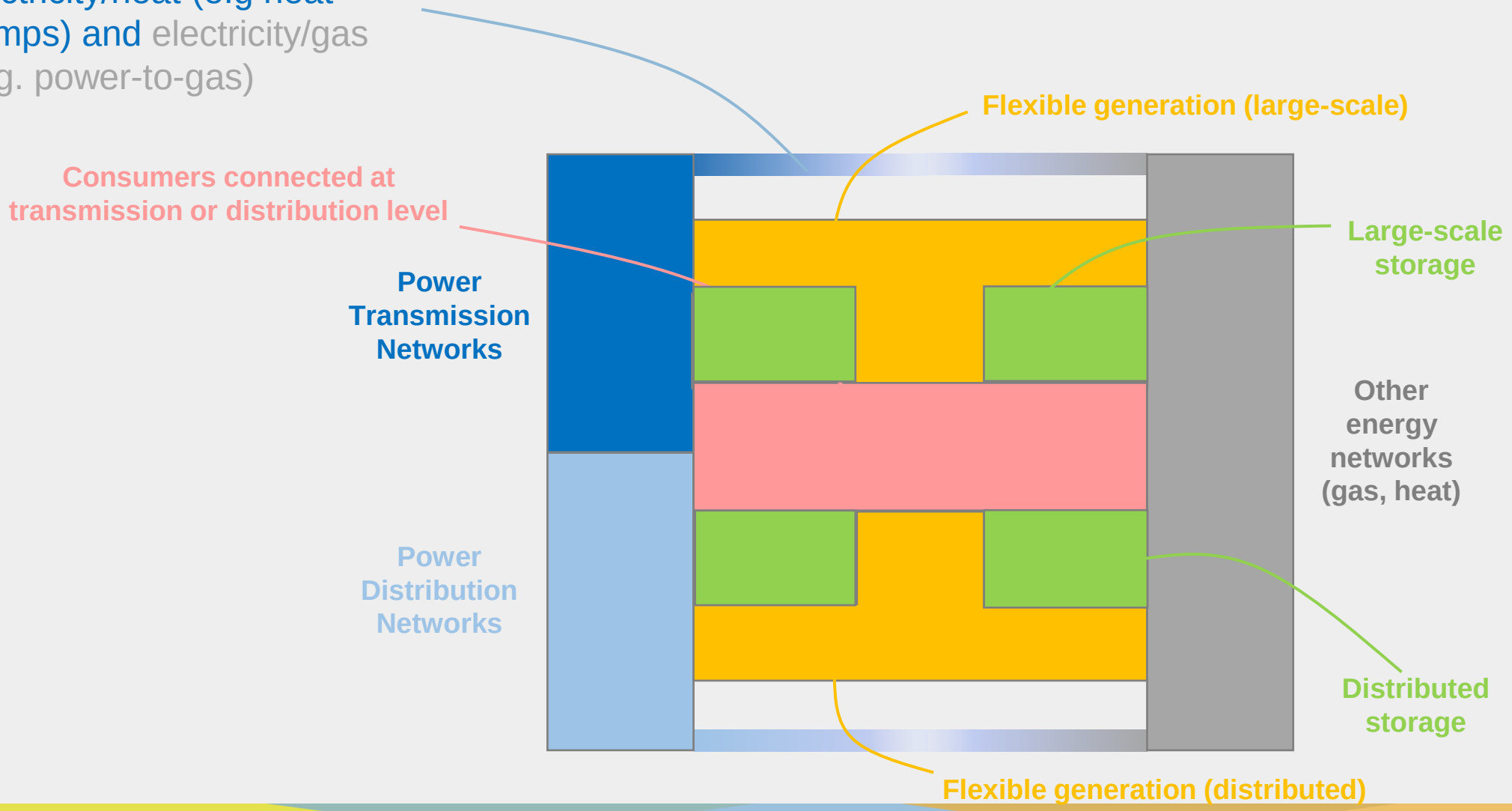
- Member States
- ETIP SNET experts (WGs)
- Public consultation
- **Regional workhops**
  - **Lessons learnt**
  - **Needs for further specific R&I activities**
  - **Implementation plans for the innovations**
  - **Barriers to innovation deployment**
- Monitoring of projects
  - assess the coverage of the R&I activities **by national** and European **projects**

ETIP SNET experts (WGs)

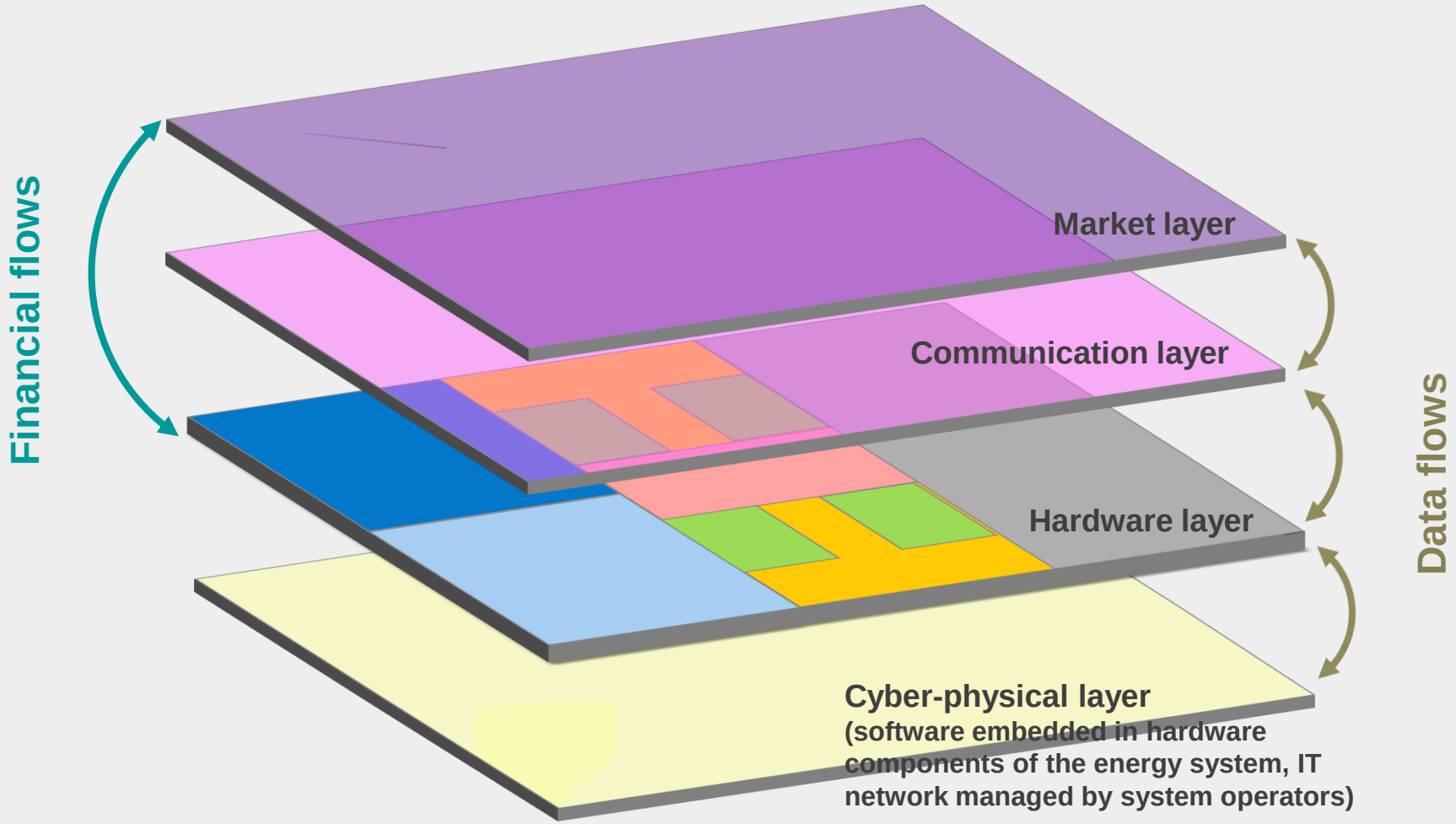


Proposal to structure the next IPs and the next roadmap

electricity/heat (e.g heat pumps) and electricity/gas (e.g. power-to-gas)



Proposal to structure the next IPs and the next roadmap



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Structure of the IP 17-19

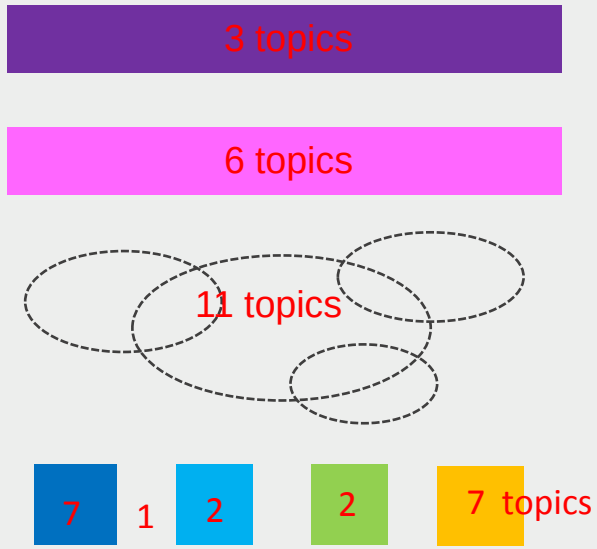
Structure of the initial draft IP

- Transmission
- Distribution
- Storage, sector interfaces
- Flexible generation
- Digitalisation

56 topics

identification of synergies between topics

New structure of the IP: highlight the synergies and interfaces within the energy system



High-RES and empowered end-user energy system: governance and market design

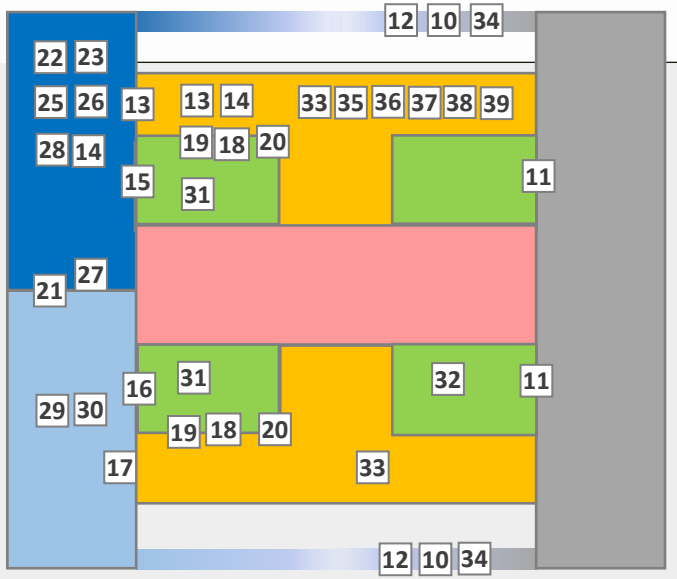
Digitalisation of the energy system

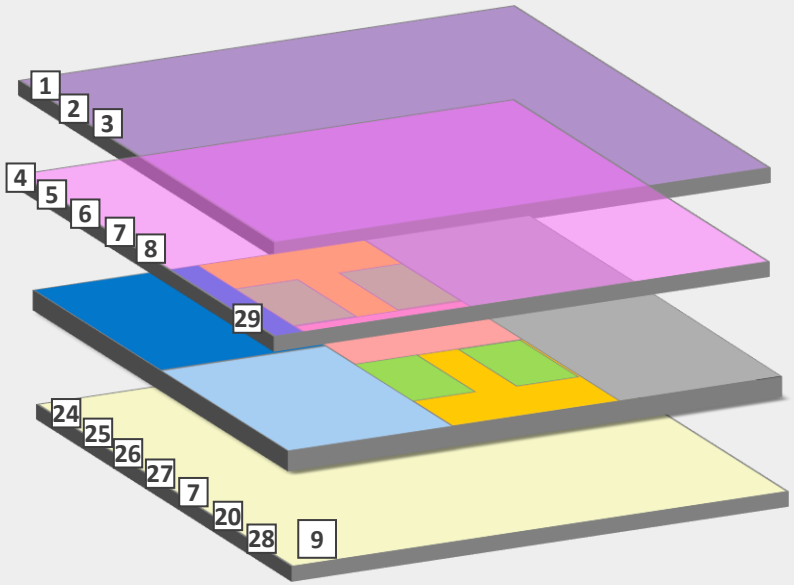
Integrated grid with improved interfaces between energy system components (such as gas and heat)

Improved components of the energy system: electricity networks (transmission & distribution), generation units (thermal, variable renewable, hydro, etc.) and storage

39 topics

The coming IP 17-19





2 **Market design for trading of heterogeneous flexibility products**: *develop a flex market concept that allows the trading of 'heterogeneous' flexibility products (coupling electricity, heat and gas markets, both at the wholesale and retail level), taking into account the specific capabilities of each resource;*

9 **Cybersecurity of critical energy infrastructures**: *assess in depth cybersecurity issues and propose solutions so as to maintain the system robust against possible cyber threats*

7 **Design and demonstration of grid digitalization**: *specify and demonstrate for the future energy system the digital technologies ensuring system reliability.**
** Includes " intelligent demand and response assets appliances"*

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Contribution expected from the workshop participants

- To foster networking and exchange of positive and negative experiences between projects at EU and national/regional levels.
- To help the ETIP SNET detect national projects with strong EU added value and feed the monitoring process to appraise the coverage of the existing knowledge.
- To help the ETIP SNET identify the need for further specific R&I activities to be specified in the updated roadmap and next IPs.
- To help the ETIP SNET identify barriers to innovation deployment.
- To inform the ETIP SNET about good practices gained in pilots and demonstration activities (monitoring process).
- To inform the ETIP SNET about the implementation plans for the innovations so as to support knowledge transfer to all stakeholders.

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Thank you for your attention

More information: epeirano@technofi.eu

etip-snet.eu

info@etip-snet.eu

@etipsnet

linkedin.com/groups/8208338