

The logo for SEPS (Slovenská elektrizačná prenosová sústava) is displayed in white. It features the letters 'SEPS' in a bold, sans-serif font. The 'S' is stylized with a small arrow pointing upwards and to the right. The background of the slide is a dark green gradient with faint silhouettes of high-voltage power lines and pylons.

Slovenská
elektrizačná
prenosová
sústava

Innovation goals of ENTSO-E and SEPS as an active member to build the power system for a Carbon-Neutral Europe

Autumn ITAPA 2024, 26. November 2024 | Hotel
Crowne Plaza, Bratislava

Innovations in energy

Rastislav Nemec, SEPS |
Slovenská elektrizačná prenosová sústava

Energia na
správnom mieste

























Who we're:



SEPS / Slovenská elektrizačná prenosová sústava, a. s. is the Transmission System Operator in Slovakia

ENTSO-E is the European Network of Transmission System Operators (TSOs) for Electricity

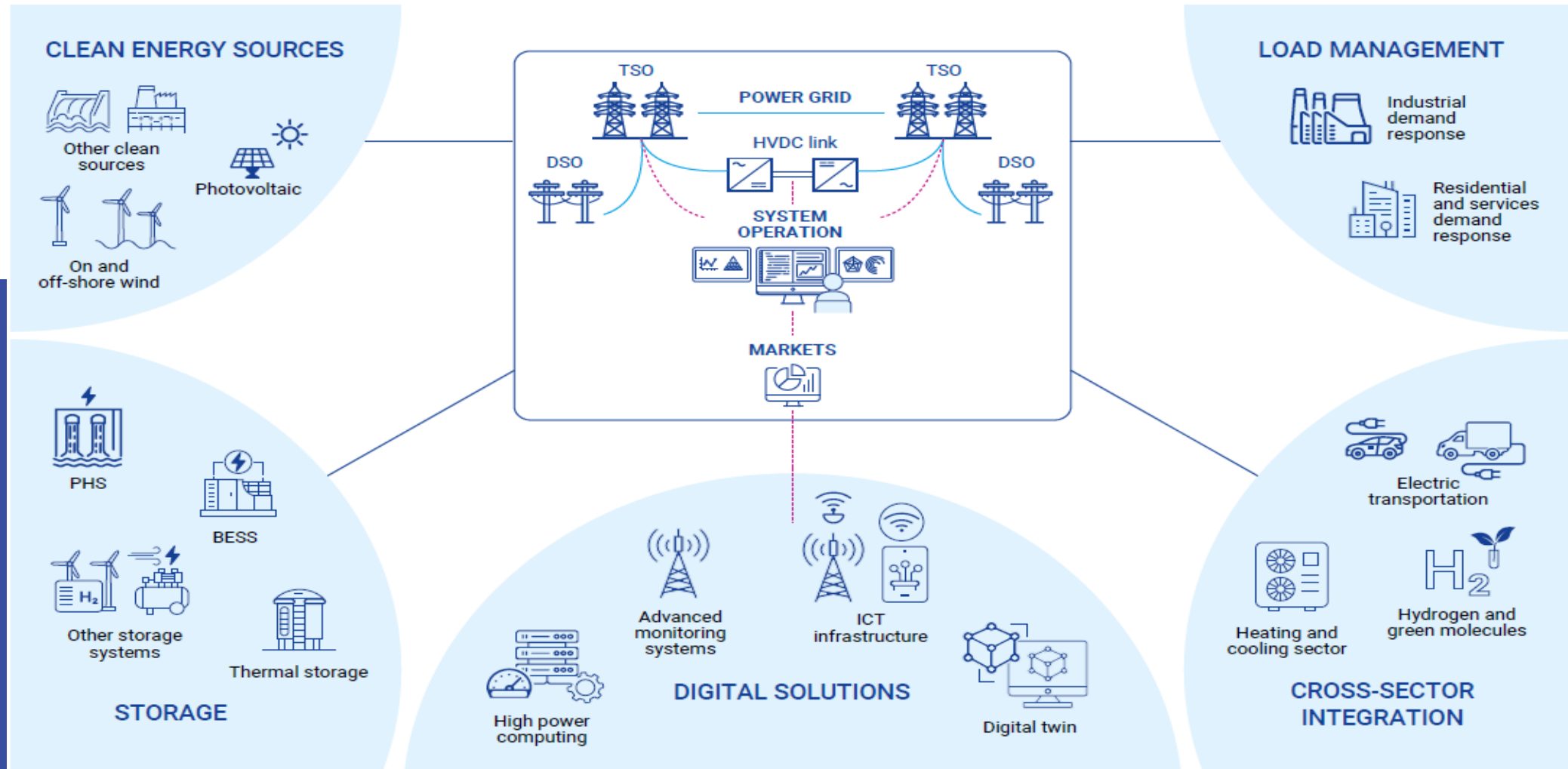
- SEPS operates as the operator of the transmission system in the Slovak Republic including the Slovak Load Dispatching Office (SED).
- SEPS provides for electricity transmission on the territory of Slovakia and synchronous interconnection of the Slovak electricity system and electricity systems of the states in Continental Europe.
- SEPS is an active member of the international group of the European Network of the Transmission System Operators for Electricity / ENTSO-E.
- SEPS contributes to energy transformation of our country towards emission-free and energy-independent and efficient company.
- In the field of ICT systems development and deployment, SEPS continues in focusing on innovations, i.e. digitalization, automation, AI, Big data etc.
- ENTSO-E brings together the unique expertise of the European transmission system operators (TSOs) for the benefit of European citizens – The success of the transformation of Europe's energy system requires a massive ramp up of research, development and innovation efforts
- ENTSO-E is committed to working with the highest technical rigour as well as developing sustainable and innovative responses to prepare for the future and overcoming the challenges of keeping the power system secure in a climate-neutral Europe.

The main top-down and bottom-up innovation drivers of a power system for a carbon-neutral Europe

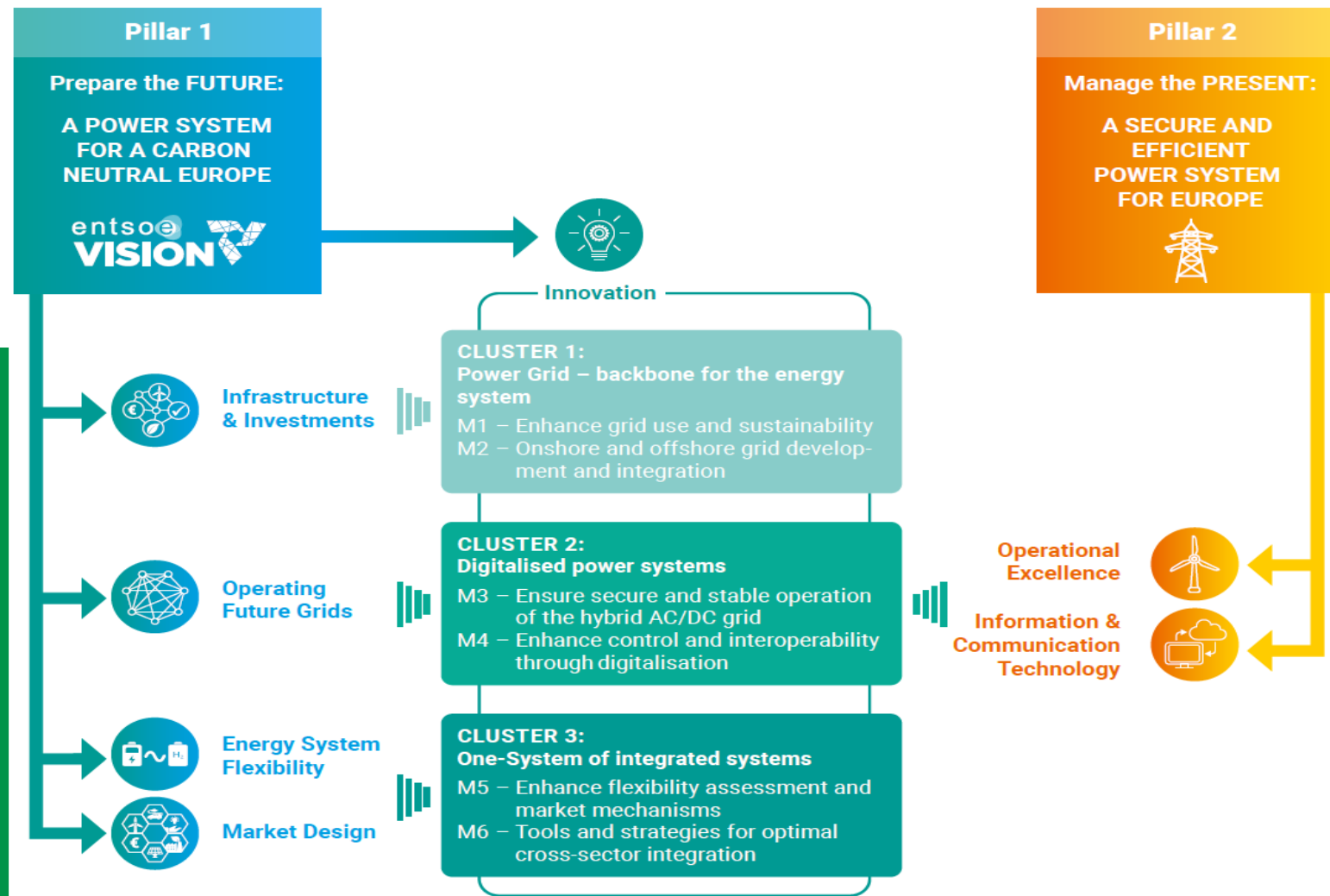
Cluster 1 Power Grid – backbone for the energy system	CLUSTER 2 Digitalised power systems	CLUSTER 3 One-System of integrated systems
 Grid investments	 System digitalisation	 Power system flexibility
 Power system resilience	 PEID and Grid Forming	 Deep electrification and EVs
 Offshore AC and DC grids	 Digital twin	 Hydrogen
 HVDC interconnections	 Cybersecurity	 RES/VRE integration
 Energy storage	 AI-based technologies	 Innovative market design
 Optimal assets management	 RES and load forecasting	 Integrated energy system
 Sustainable materials	 Monitoring and data management	 End-users engagement
	 IoT devices and meters	 TSO – DSO coordination
	 Smarter grids innovative tools	

 Top-down drivers  Bottom-up drivers

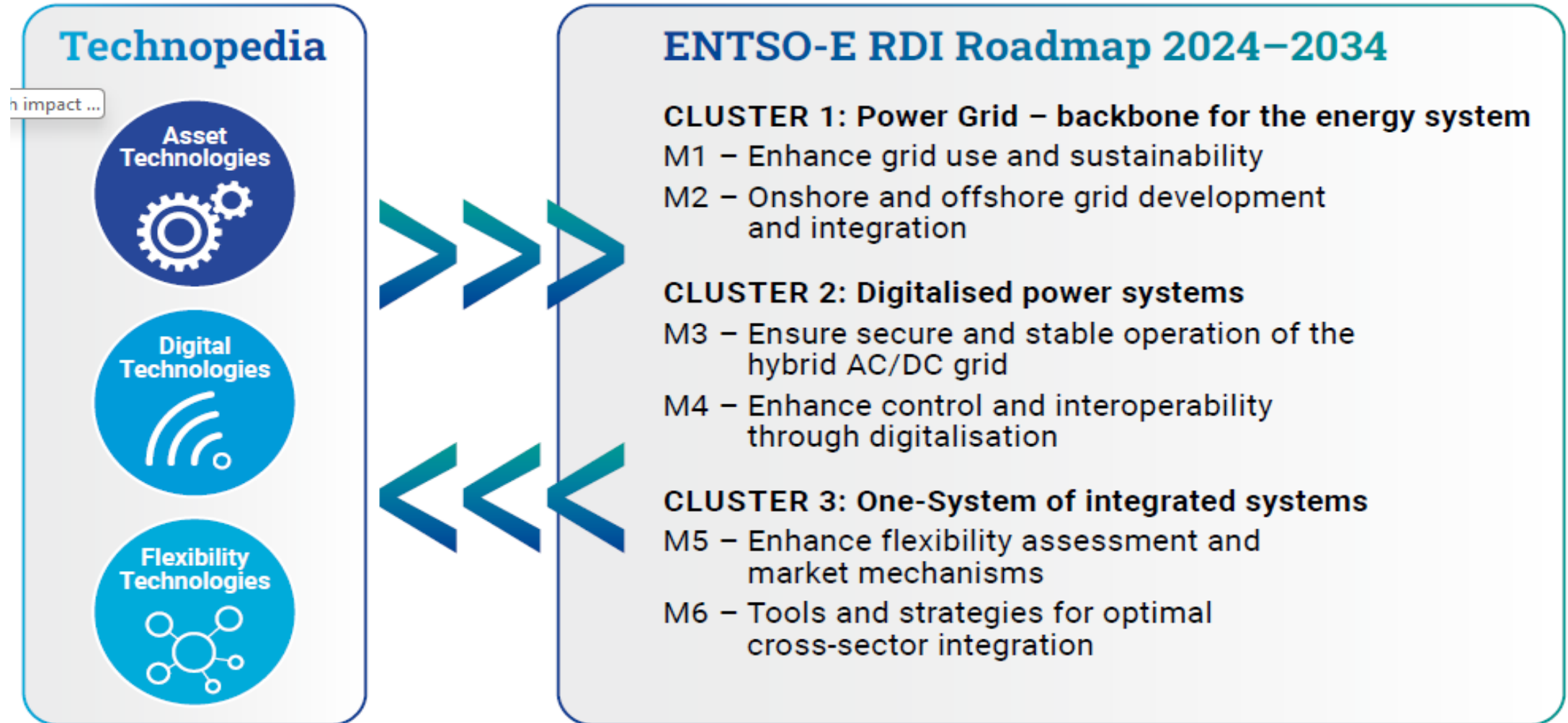
Innovation priorities for the next decade – The future power system is sustainable, flexible, digitalized and at the core of the European energy system of systems



Innovation priorities for the next decade – ENTSO-E RDI Roadmap 2024 – 2034 in the framework of the ENTSO-E Strategic Roadmap

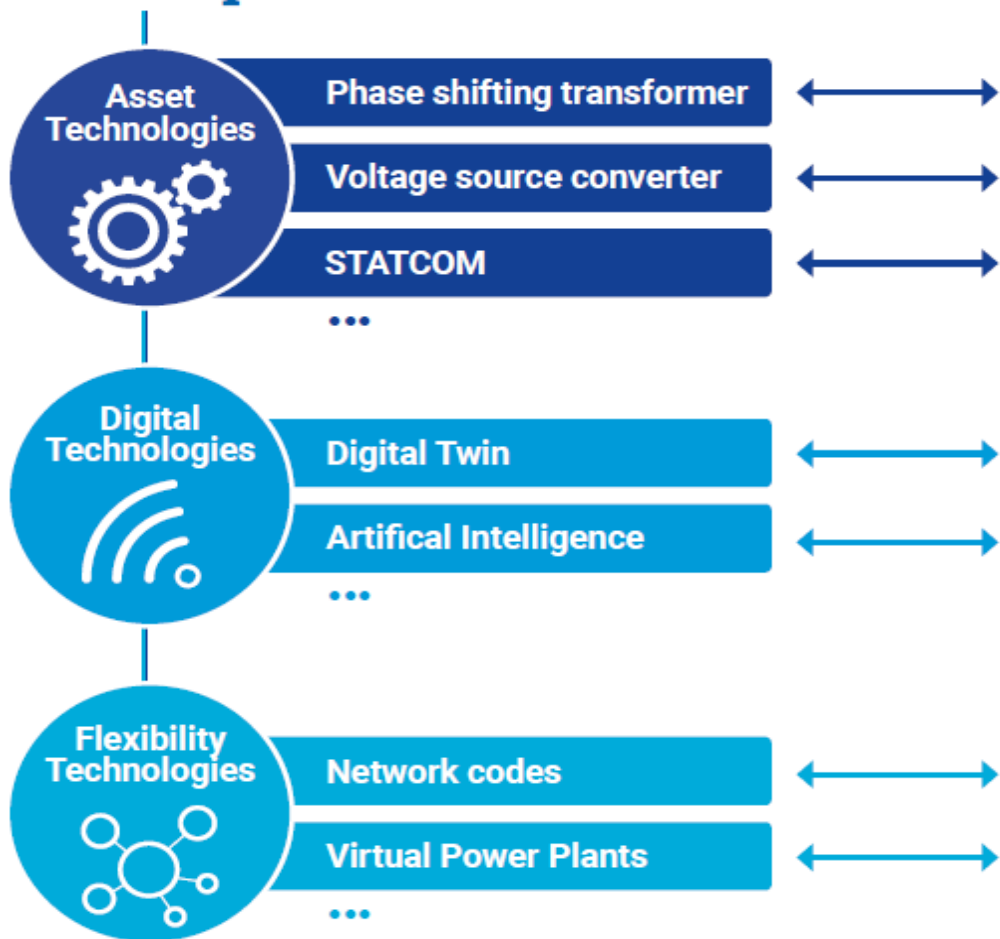


Pathways towards high impact on the European energy system – Interaction between ENTSO-E Technopedia and the RDI Roadmap 2024 – 2034

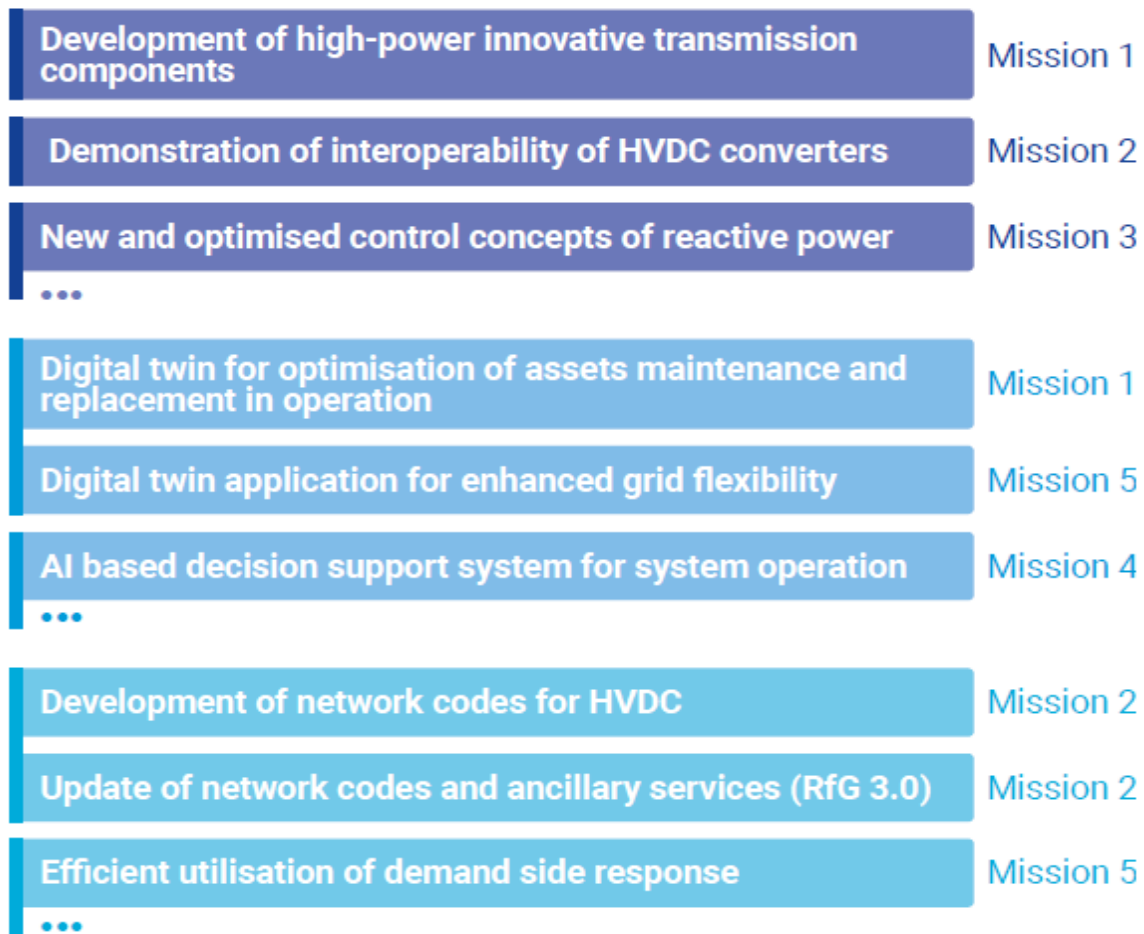


Pathways towards high impact on the European energy system – Example of specific interactions between the Technopedia technologies and the RDI Roadmap milestones

Technopedia



RDI milestones 2024–2034





šeps

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elektrizačná
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Energia na
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