

# ETIP SNET

European Technology and Innovation Platform  
Smart Networks for Energy Transition

# WHERE VISION MEETS ACTION

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ETIP SNET 2024 brochure



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# Foreword

As we tackle the complexities of today's energy landscape, the European Technology and Innovation Platform on Smart Networks for Energy Transition (ETIP SNET) remains at the forefront for driving innovation and sustainability.

Launched by the European Commission in 2016 as part of the SET Plan, ETIP SNET was created with the aim of developing a vision for Research and Innovation with a focus on smart energy networks. More specifically, ETIP SNET was designed to bring together different perspectives and expertise to provide input to the SET Plan actions, in particular Action 4 "Increasing the resilience, security and intelligence of the energy system". The focus on energy grids is central for our evolving energy landscape; grids are the backbone of our electricity system, and they are expected to grow in importance as we move towards a net-zero energy system, also due to the increased needs for flexible generation.

Since its creation, ETIP SNET has fostered collaboration between a wide range of stakeholders including TSOs and DSOs, storage providers, academic institutions, industry players, members from the main European energy associations and policymakers, to develop and implement innovative solutions for the integration of renewable energy sources and the modernisation of the electricity grid.

**Together, we aim to drive innovation in smart grids and energy systems, shape policy discussions with cutting-edge strategies for industry and utilities, foster connections and partnerships across Europe.**

This is facilitated by the production of different policy papers produced by the Working Group experts, as well as strategic documents such as the ETIP SNET R&I Roadmap, which outlines a decade-long path towards a decarbonised future, and the ETIP SNET R&I Implementation Plan 2025+, which identifies key research and innovation priorities and initiatives at EU and national levels.

The ongoing discussions within the initiative, following the revision of the SET Plan, are both crucial and

time-sensitive. The recent revision underlines the urgent need for increased cooperation to accelerate the transition to clean energy, benefiting our society at large. The opportunities for efficient networks are immense, and despite the significant progress and milestones achieved by the ETIP SNET initiative, there is still much to be done.

We would like to thank the many experts who are committed to this cause, bringing new ideas and expertise to the initiative and ensuring that the key milestones continue to be achieved. Together, we can accelerate the energy transition and build a smarter, more sustainable grid for future generations to come.



**Dr. Vincent Berrutto**

Head of Unit for "Digitalisation, Competitiveness, Research & Innovation" Directorate-General for Energy, European Commission

## Policy context

**Strategic Energy Technology Plan** to develop a vision for Research and Innovation in the energy field

**European Green Deal** to make Europe climate-neutral by 2050

**RePowerEU** to speed up the deployment of RES and energy efficiency

**'Fit for 55'** to provide the legal means for GHG emissions reduction

**Green Deal Industrial Plan** to strengthen the EU base of clean tech

**Net-Zero Industry Act** to strengthen the manufacturing of net-zero technologies

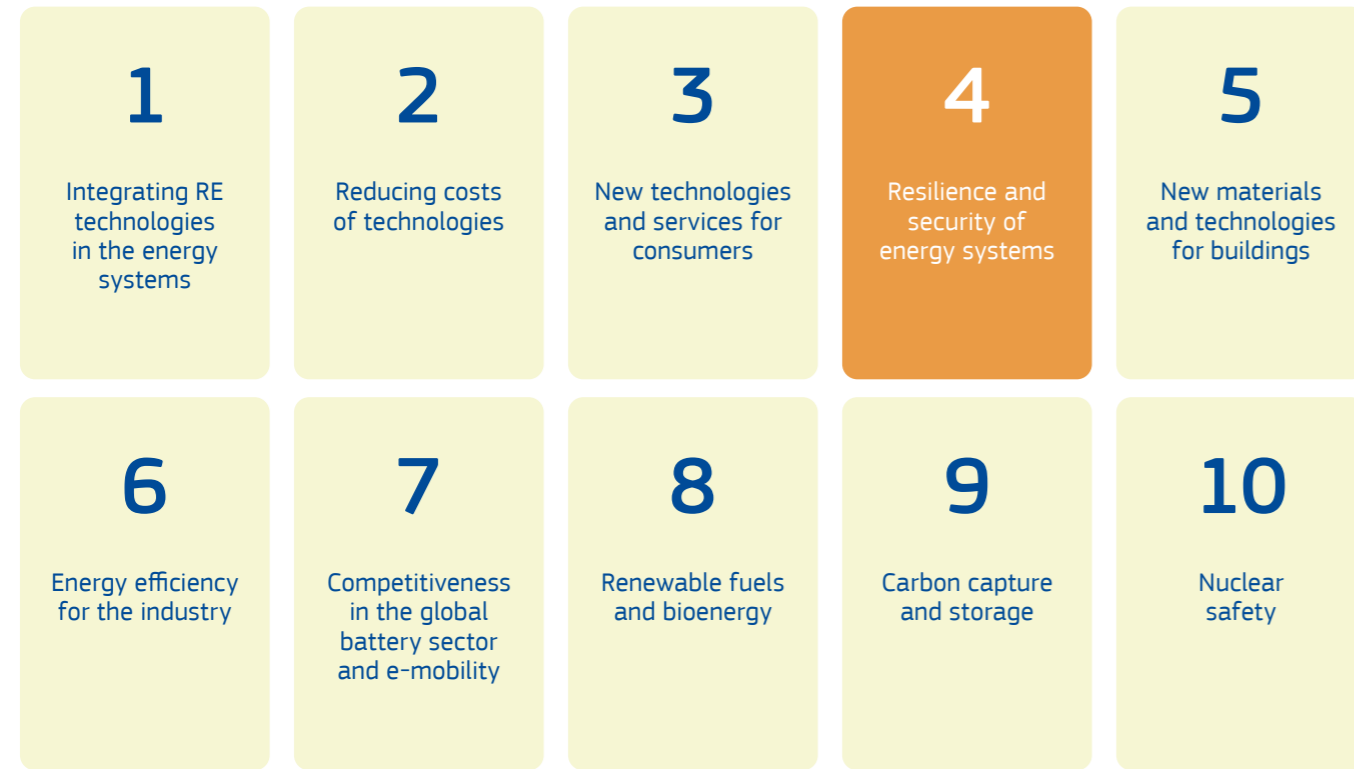
**EU Action Plan on Digitalising the Energy System** to address the needs of smart and integrated energy networks

**EU Action Plan on Grids** to scale up investments and promote innovation

# SET Plan

Launched in 2007, the SET Plan has played a crucial role in advancing clean, efficient and cost-effective energy technologies by promoting coordination and collaboration on clean energy research and innovation between European industry, academia and national governments

The SET Plan is structured around 10 key actions as presented below. ETIP SNET will mainly support Action 4, while also contributing to the overarching objectives across the other actions.



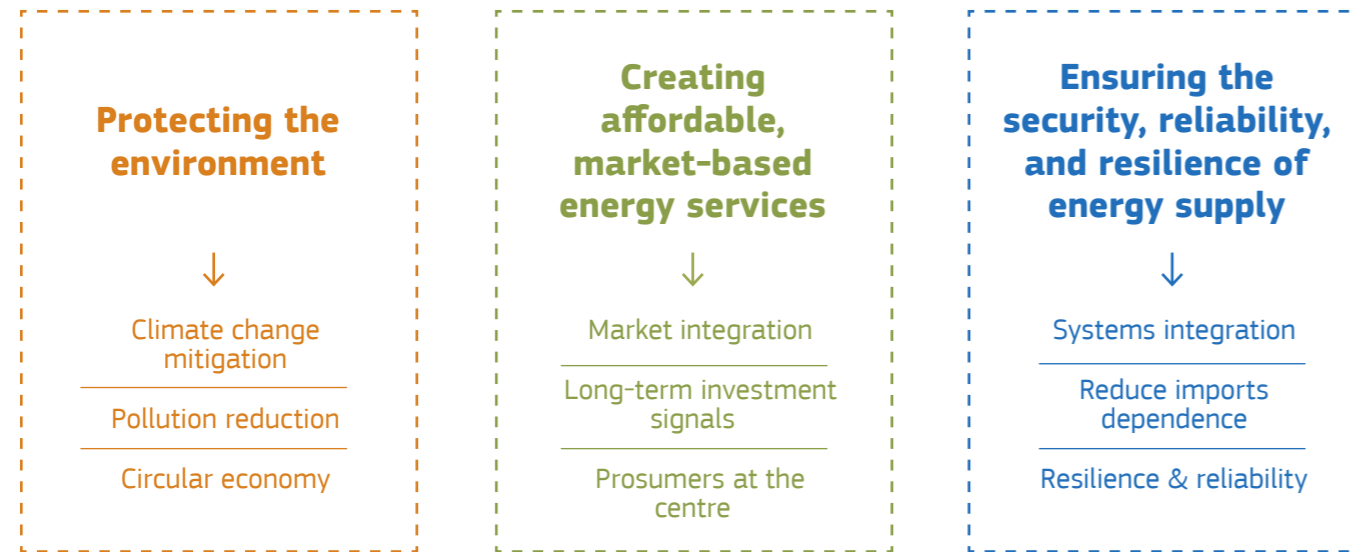
The SET Plan was recently revised (Communication on the revision of the Strategic Energy Technology (SET) Plan adopted on the 20 October 2023), with key changes including:

- Establishing a new dedicated work-stream on hydrogen, implementing the *European Research Area pilot on Green Hydrogen*.
- Introducing new priorities on cross-cutting issues using a task force approach.
- Expanding the current technology scope.
- Enhancing cooperation between ETIPs and European industrial alliances.
- Updating the roadmap for progress.
- Leveraging the Clean Energy Transition Partnership to support the expanded scope.



# Vision for 2050

ETIP SNET aligns closely with EU energy policy, supporting 3 objectives for 2050 Energy Systems:



## WHY FOCUS ON SMART NETWORKS?

Smart electricity grids are essential for the achievement of the net-zero objectives within the energy systems, reducing GHG emissions, enhancing energy efficiency, and enabling the widespread use of renewable energy while empowering consumers with real-time data and demand-response programmes. However, ageing infrastructure and growing populations pose significant challenges, including reliability issues, grid congestion, and integration difficulties with renewable energy sources and decentralised generation. Modernising the grid through technological advancements, research and innovation development is crucial for improving stability, efficiency, and resilience of the energy grids.

# Mission

ETIP SNET positions itself together with the smart electricity grid at the centre of an energy system shifting towards a low carbon neutral energy. Its mission is to **support the delivery of a R&I roadmap** that will enable the EU to deliver on its 2050 and the intermediate 2030 climate & energy targets.

Acting as a **primary interface for industry, academia and sectoral associations to engage with policymakers**, ETIP SNET facilitates feedback on key research priorities and policy recommendations with a focus on electricity networks. It promotes **collaboration and networking** to create synergies among ETIP SNET stakeholders and to foster a collaborative innovation ecosystem.

ETIP SNET's activity relies on **structured Working Groups that enable focused discussions and knowledge sharing** to tackle specific challenges in relation to the reliability and efficiency of smart grid systems, storage technologies, flexible generation, digitalisation, customer participation and innovation implementation.



# Strategic Objectives

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

Within this overarching framework, ETIP SNET publishes 3 documents that consolidate the views of the stakeholders involved (see next section), to guide and identify research and innovation R&I priorities and address the innovation challenges for the energy system:

## ETIP SNET R&I Roadmap

Describes the 10-year path towards a net-zero energy system and is regularly revised. The current roadmap version was published in March 2023, and covers the 2022-2031 time horizon. The next update will be released in December 2025.

## ETIP SNET R&I Implementation Plan

Describes in more detail the most urgent R&I needs for the next 3-4 years and is revised every 2 years. The current Implementation Plan version was published in August 2023 covers the 2025-2028 timespan with a total overall proposed budget of €954m for R&I.

The next update will be released in June 2026.

## Mapping progress in energy systems research and innovation

Evaluates the progress of European Research and Innovation projects in relation to the ETIP SNET R&I Roadmap and the ETIP SNET Implementation Plans. The current report was published in July 2023 as a continuation of the progress monitoring report published in 2021. The next update will be released in August 2025.

# Stakeholders

The ETIP SNET is a stakeholder-driven platform that brings together a wide range of experts committed to working together to contribute to the energy transition.

Over 150 active experts, from 12 different stakeholder groups and more than 100 different organisations, contribute to the discussions within the initiative.

Below is an overview of the ETIP SNET experts per stakeholder category.



# Governance

The ETIP SNET governance structure, as described in the ETIP SNET [Terms of References](#), is designed to have a broad representation of stakeholders and to provide an agile and efficient operation.


















# Working Groups

|   |  |
|---|--|
|  <p><b>WG1</b><br/>Reliable, economic and efficient smart grid system</p>  |  <p><b>WG2</b><br/>Storage technologies and system flexibilities</p>  |
| <p>Addressing grid smartening through medium and long-term business and technology trends that contribute to the overall optimisation of the energy system at affordable investment and operating costs</p>   | <p>Addressing the technological and market developments related to energy storage solutions, intended as one of the main tools to ensure the required flexibility in transmitting and distributing electricity</p> |
|  <p><b>WG3</b><br/>Flexible Generation</p>   |  <p><b>WG4</b><br/>Digitalisation of the electricity system and customer participation</p>  |
| <p>Addressing integrated solutions (generation, storage, transportation, consumption) based on variable and dispatchable renewable energy, focusing on the large-scale integration of RES into the grid in a safe and reliable mode</p>   | <p>Addressing the use and impact of ICT as a pervasive tool along the entire value chain of energy production, transport and use, following the full digitalisation of energy networks</p>                         |
|  <p><b>WG5</b><br/>Innovation implementation in the business environment</p> <p>Addressing barriers related to the market uptake of innovative solutions and technologies as well as creating a platform for their dissemination</p> |  |

# Key Topics

Below is an illustrative list of topics that have been addressed by the 5 working groups of ETIP SNET:

| Reliable, economic and efficient energy system  | Storage technologies and system flexibilities   | Flexible generation   | Digitalisation and customer participation  | Innovation implementation in the business environment  |
|---|---|---|--|--|
|  <p><u>Energy communities' impact on grid</u></p>          |  <p><u>Energy storage systems</u></p>              |  <p><u>Ramp-up and role of hydrogen-based power generation</u></p>               |  <p><u>Energy data spaces</u></p>   |  <p><u>Regulatory sandboxes</u></p>                                   |
|  <p><u>Coordinated energy infrastructure planning</u></p> |  <p><u>District storage</u></p>                   |  <p><u>Coupling of H&amp;C and electricity in cooperation with ETIP RHC</u></p> |  <p><u>Enhance System Supervision and Control through Cyber Security and IOT</u></p> |  <p><u>Innovation implementation to the grid</u></p>                 |
|  <p><u>Hydrogen's impact on grids</u></p>                |  <p><u>Sustainable transport integration</u></p> |  <p><u>Ramp-up of renewable generation</u></p>                                 |  <p><u>Upskilling</u></p>   |  <p><u>Energy communities as catalysts of energy transition</u></p> |



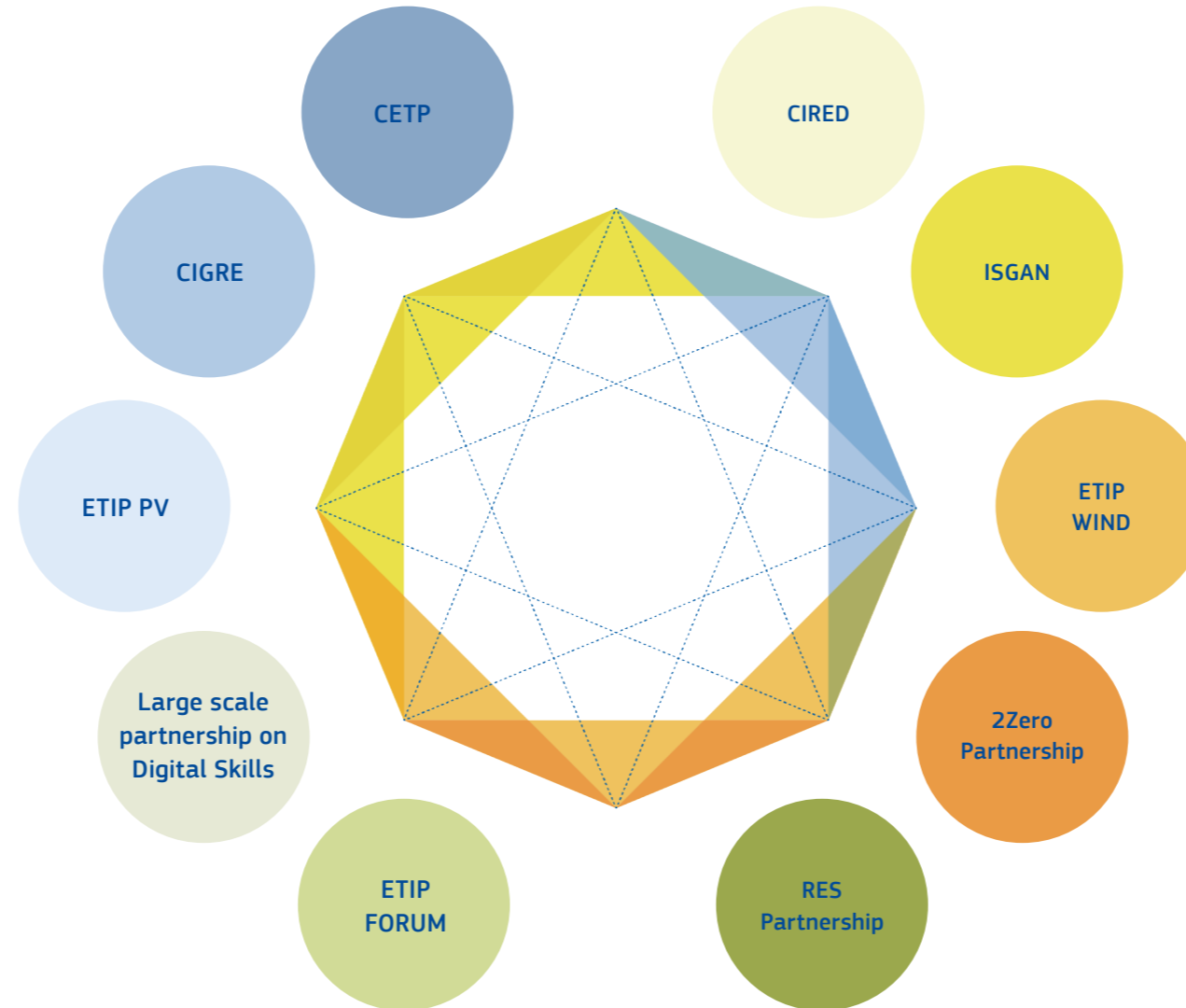
# Partnerships

Co-creation of TRI 1 (Integrated Net-Zero-emissions Energy system) Call Module 2024 on energy data spaces and interoperability

- MoU signed in 2022 to foster collaboration and enhance visibility.
- Participation in the CIGRE 2024 conference with dedicated stand and organisation of side-event on the paper “Energy communities’ impact on the grids”

Participation in the ETIP PV Conference 2024 Digitalised and Responsive PV: The Diver of Grid and Market Evolution

- Registration in the EU Pact for skills
- Participation in the start-up event in Dec 2023
- Creation of a dedicated task force to contribute with technical contents
- Contribution to the recommendations on the revised SET Plan
- Contribution to the recommendations on the NECPs R&I priorities
- Participation in coordination meetings



- MoU signed in 2023 to foster collaboration and enhanced visibility
- Participation in the CIRED 2024 conference

MoU signed in 2023 to promote knowledge exchange and elaboration of joint deliverables (e.g. paper “Energy communities’ impact on the grids”)

Identification of overlaps and synergies between ETIP SNET and ETIP WIND

- Participation in the Partnership Board meetings
- Joint work for the paper “Integration of sustainable transport in the grid”

Contribution on the report New, future, emerging skills and job profiles in the renewable energy sector

In addition to the established partnerships, ETIP SNET cooperates with various initiatives to produce joint outputs and to organise events, including:

Cooperation with ETIP RHC in 2022, which resulted in a joint report on coupling of heating/cooling and electricity sectors in a renewables-driven Europe

Regular engagement of HORIZON's project experts in drafting papers and project analyses, through the BRIDGE initiative

Frequent exchange within review of deliverables with other ETIPs (such as ETIP OCEAN)

## Benefits of joining ETIP SNET



### Networking opportunities

By participating, you will be able to connect with a diverse community, fostering collaborations, partnerships and the exchange of ideas



### Collaboration and Coordination

You will have the chance to collaborate and coordinate efforts and address common challenges with stakeholders in the sector



### Early access to information

The platform will enable you to access valuable insights, including research, best practice and innovative solutions



### Enhanced Visibility

Active participation will provide you with the opportunity to gain increased visibility and recognition within the energy sector



### Contribution to R&I Priorities

You will contribute to the EU's R&I agenda and exchange information with the European Commission on R&I priorities and funding needs



### Contribution to R&I Projects

You may contribute to the definition of the project priority concepts as part of the revised ETIP SNET R&I Roadmap



# How to join the initiative

If you have an insightful understanding of expected developments and R&I priorities that can contribute to the ETIP SNET work, please consider applying to become a GB member or a WG technical expert:

| Join the Governing Board<br>(only for EU level associations) |   | Join the Working Groups |   |
|--|---|-------------------------|---|
| 1  | Send official applications by sharing your CV to <a href="mailto:secretariat@etipsnet.eu">secretariat@etipsnet.eu</a> | 1                       | Identify which of the 5 working groups is most closely aligned with your area of expertise  |
| 2  | The official application/s will be presented to the Governing Board members   | 2                       | Apply to become a member by filling in this form and send the application to <a href="mailto:secretariat@etipsnet.eu">secretariat@etipsnet.eu</a> |
| 3  | Final approval by majority vote or during the next Governing Board meeting or via email                               | 3                       | The application will be evaluated by consensus among the WG chair and co chairs   |

Professionals or associations interested in joining the ETIP SNET community should be actively engaged in promoting the broader objectives of the initiative, as outlined in our brochure.



# Contacts



## Emails

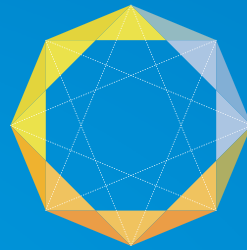
[secretariat@etipsnet.eu](mailto:secretariat@etipsnet.eu)  
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## ETIP SNET Website

<https://smart-networks-energy-transition.ec.europa.eu/>





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