Navigating the Roadmap for Clean, Secure and Efficient Energy Innovation

SET-Nav
Strategic Energy Roadmap

SET-Nav

… the project at a glance …

Regional Workshop
Budapest
26 February 2019

Gustav Resch, TU Wien
(project coordinator)

BACKGROUND

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Strategic Energy Roadmap

SET-Plan

Identification of **strategic energy technologies** and *designed roadmaps* to tackle the individual barriers hindering their effective implementation across Europe.

A process of designing an integrated roadmap that identifies research and innovation challenges and needs of the EU energy system.

"Energy Technologies and Innovation", COM(2013) 253 final

A **technology-oriented view** has to be complemented with **socio-economic research:**

- increase our understanding of the complex energy system
- improve our knowledge base for policy development
- engage civil society in the transition of the energy system.

SET-Nav: The Project at a Glance

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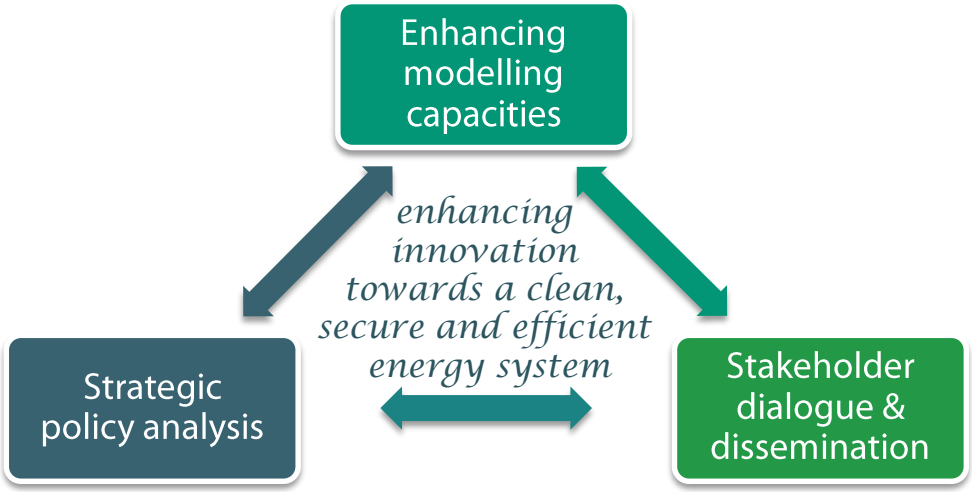
Key Pillars

The overarching goal of SET-Nav is to support strategic decision making in Europe's energy sector, enhancing innovation towards a clean, secure and efficient energy system.



Two-stage process:

Case studies → Pathway analysis

- Enhance **modelling capacities** to increase understanding of interactions and interdependencies between actors, technologies and policy interventions in Europe's energy system.
- Provide **model-based decision support** for enhancing energy innovation towards a clean, secure & efficient energy system - through strategic **policy analyses** tackling relevant technology and policy options, complemented by detailed comparative assessments of **energy transformation pathways**.
- Ensure a proper research orientation and a high impact through a continuous and in-depth **stakeholder involvement** and **dialogue**.

SET-Nav: Concept, stage 1

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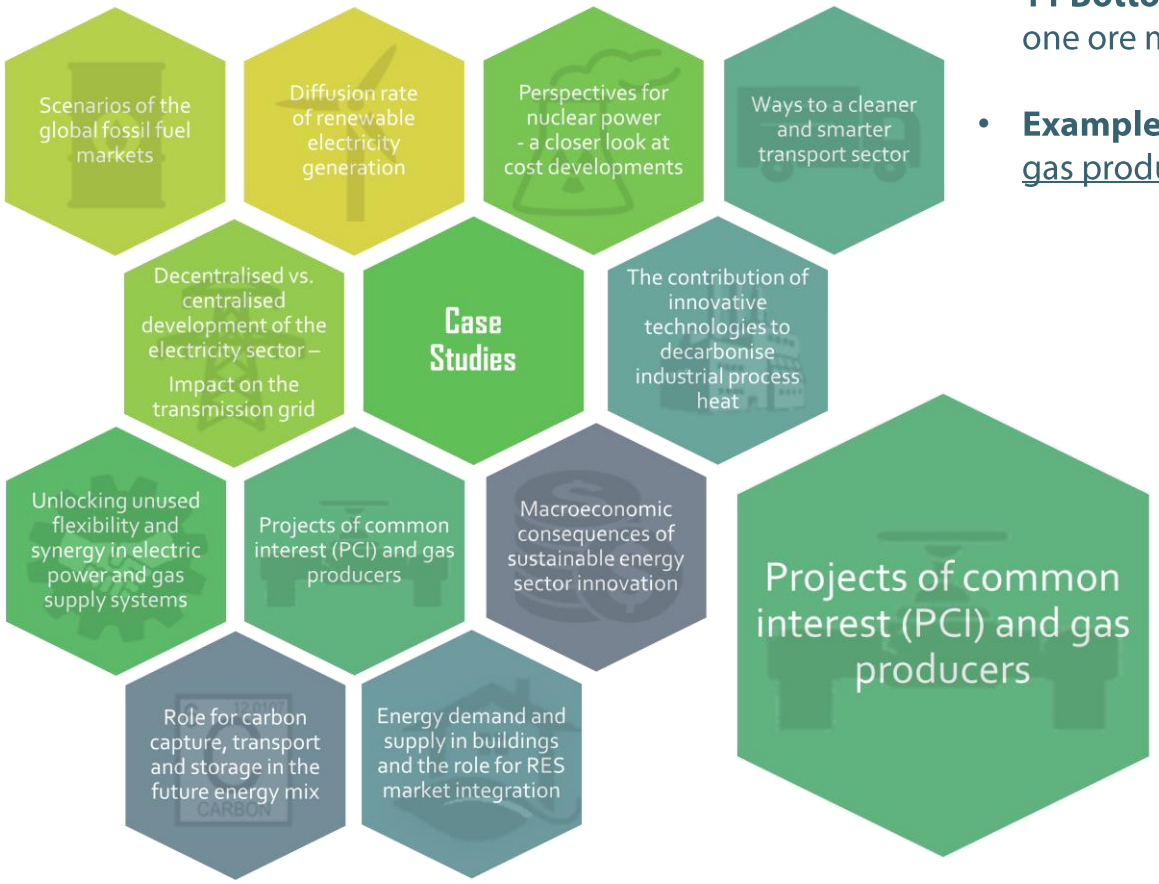
Case Studies



- **11 Bottom-up Case studies:** Each dedicated to tackle one ore more challenges of the SET-Plan
- **Example**: Project of common interest and gas producers

PCI related to SET-Plan challenge 3: System optimization:

- 6) Modernizing the EU electricity grid and establishing synergies between the various energy networks
- 8) Providing the energy system with flexibility, security and cost-effectiveness

PCI related to SET-Plan challenge 3: Secure, cost effective, clean, and competitive supply

- 10) Accelerating the development of renewable electricity and heating/cooling technologies

SET-Nav: … Outcomes / Results

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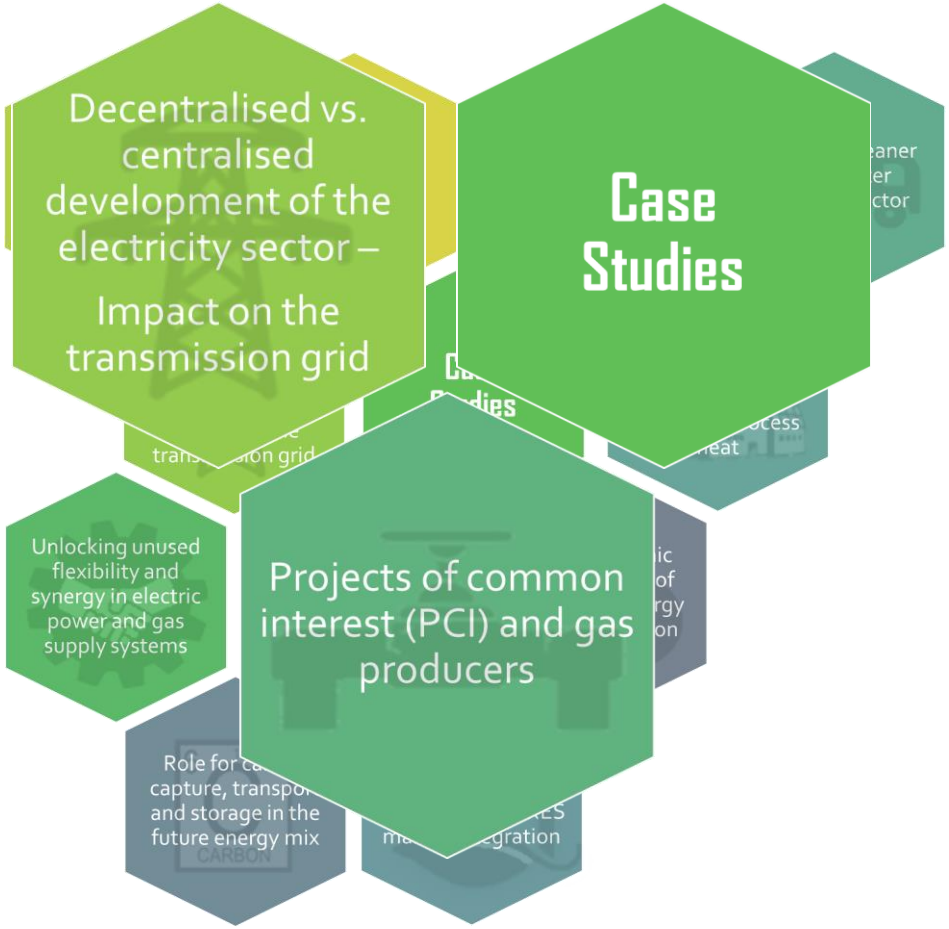
Case study progress



- **Case study conception and elaboration** completed.
- **Case study works provide useful and interesting specific results and insights on the challenges in focus**
- **Challenges encountered in case study elaboration**
  - To align with ongoing policy developments (e.g. recent decisions on 2030 GHG / RES / EE targets) some case studies required an update/refreshment and took consequently longer than planned

SET-NAV: CONCEPT, STAGE 2

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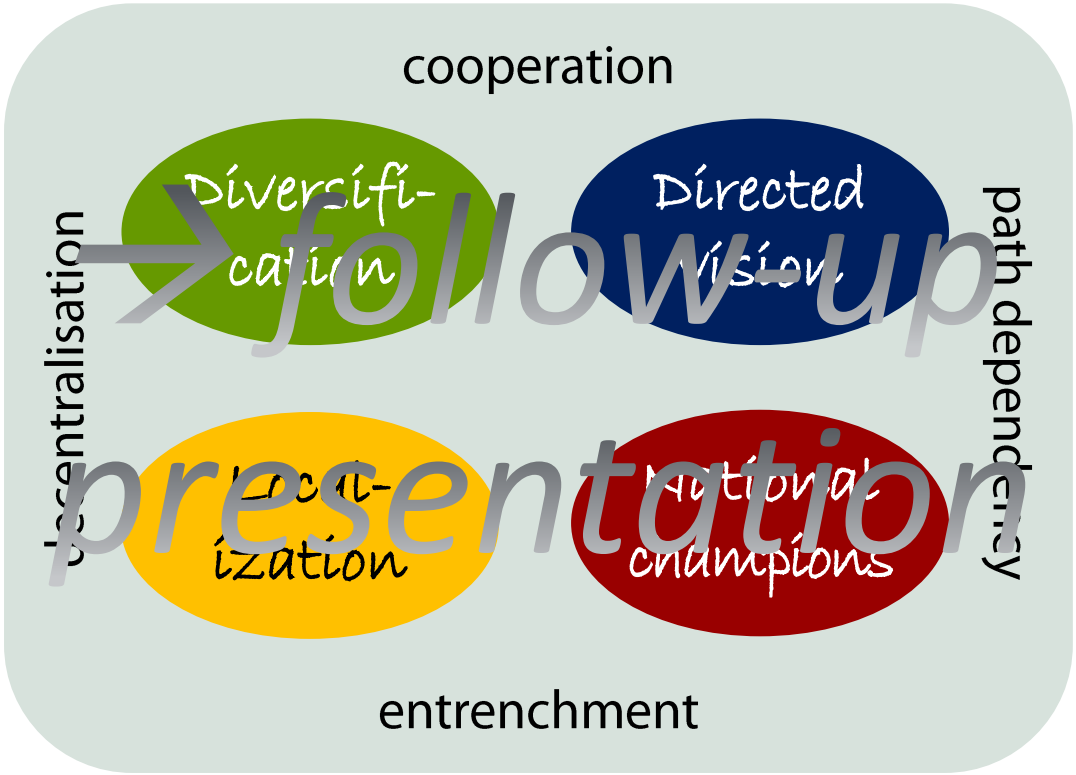
Pathway analysis: **Pathway definition / Storylines**

- heterogeneous actors
- coordination (beyond markets)
- digitalization (open IP)
- regulatory change
- disrupt incumbents



- EU/state-directed
- shared vision
- strong EU policy framework

- local resources
- resistance to big infrastructure
- experimentation & diversity (many niches)
- digital winners-take-all

- utilities & incumbents
- regulatory capture
- low transition costs

follow-up presentation

SET-NAV: … OUTCOMES / RESULTS

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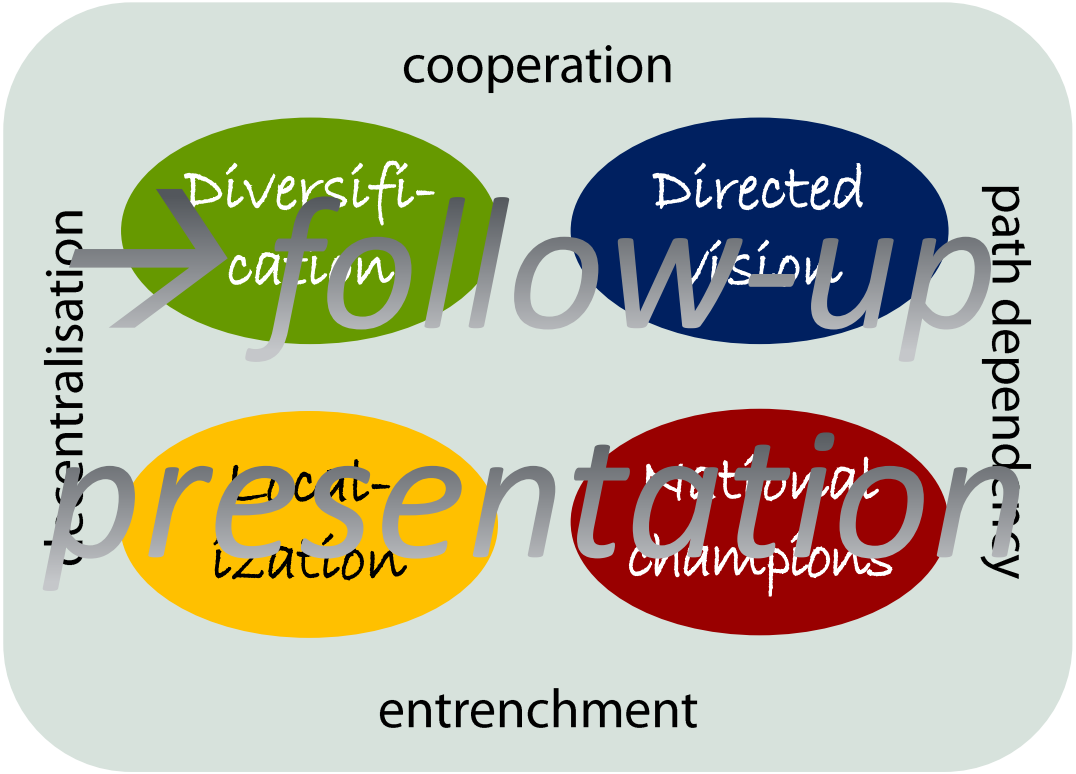
Pathway analysis: **Pathway definition / Storylines**



follow-up
presentation

Status of pathway analysis:
(stage 2)

- Pathway concept and related storylines derived (intensive discussions, incl. stakeholders/AB)
- Parameterisation derived
- Complex model interactions / intensive modelling works undertaken
- Pathway analysis (almost) completed

SET-NAV: … OUTCOMES / RESULTS

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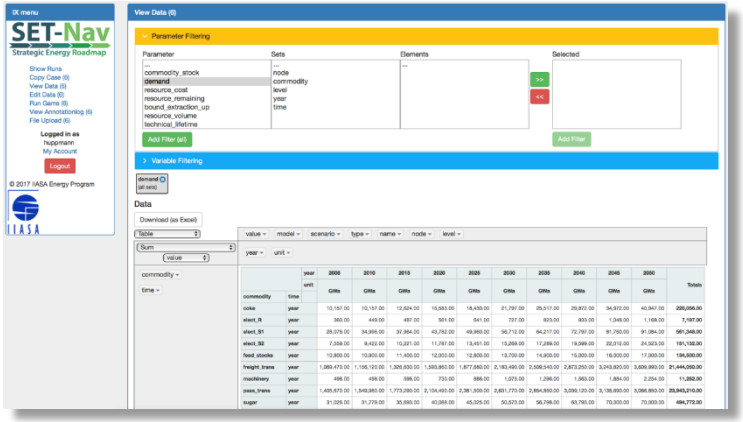
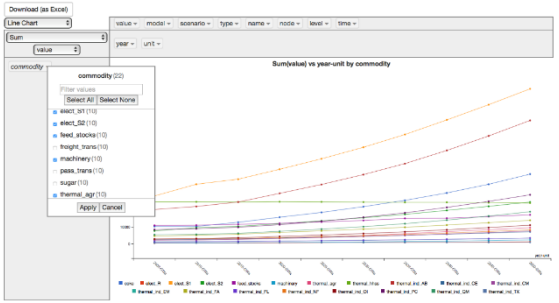
Linking Models … www.set-nav.eu

- **Established the model integration platform**
  - Allows to efficiently compare and exchange results and parameters
  - Allows for standardised and automated data upload/download
  - Allows for data visualisation



- **Effectively links our** three macro-economic, five energy system models, and seven sector **models**.
  - Allows synergistic use of different models for policy analysis
  - Allows for coherent quantitative representation of pathways across models

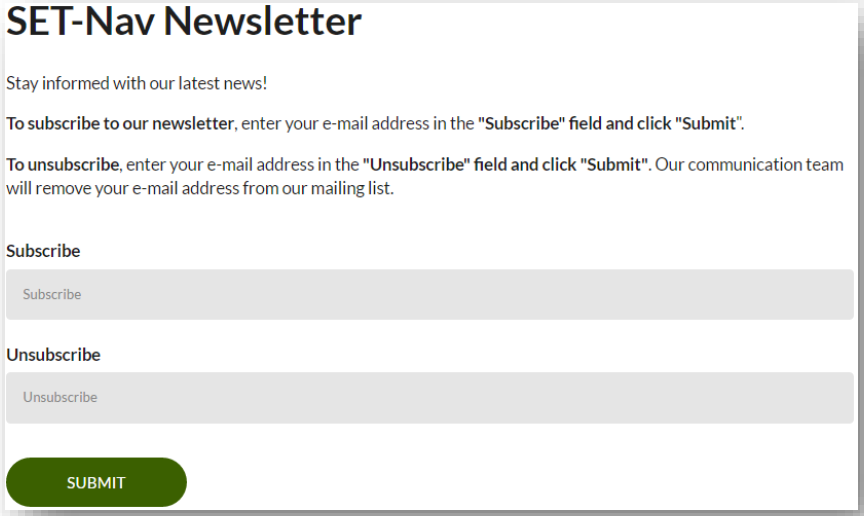


- **Serves as a database for post-project data access (open access / dissemination).** *This part is currently under development and a sound version will be ready when having completed the pathway analysis.*

SET-Nav Informational material (1/2)

Leaflet

Subscription Form



17 Newsletters & Press releases

- More than ***400 leaflets*** distributed
- More than ***3,000 recipients*** of our news

SET-Nav Informational material (2/2)

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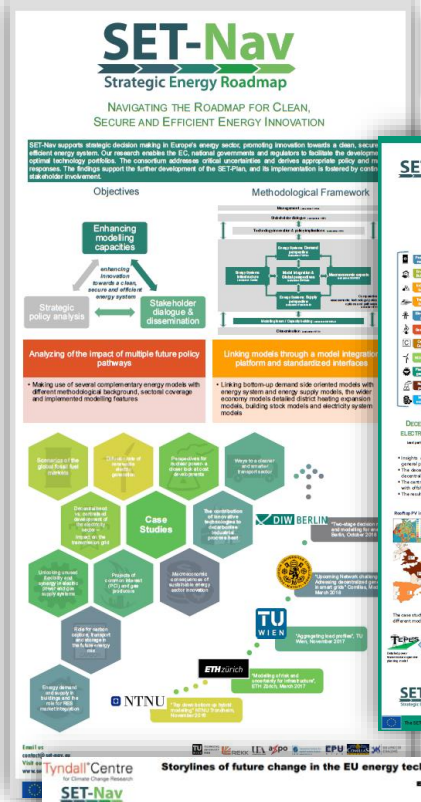
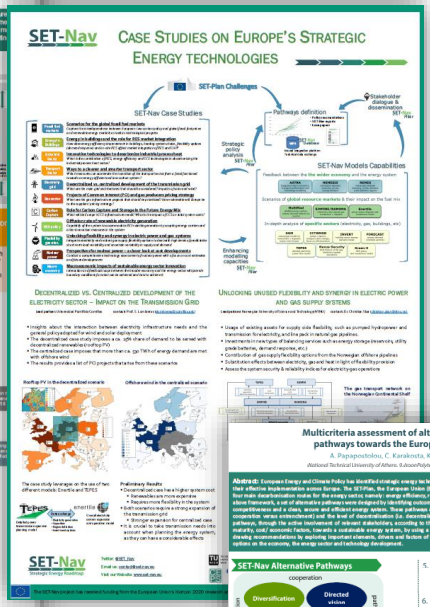
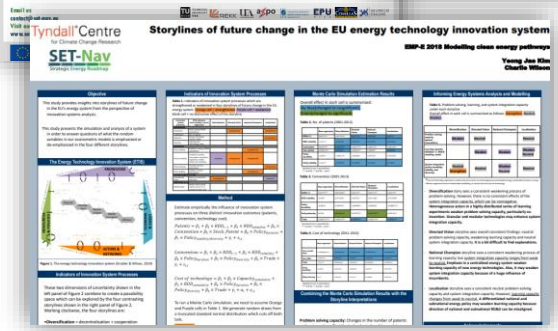
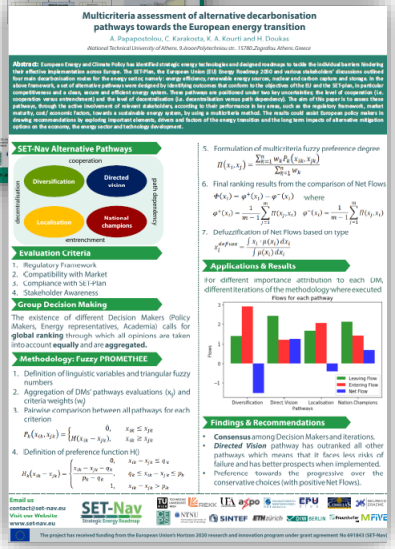
Posters



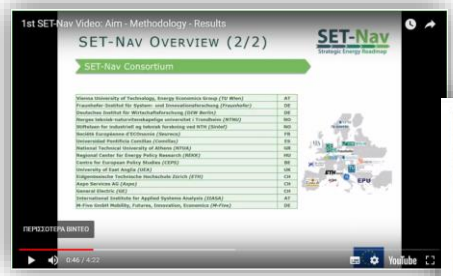






Infographics

Videos in YouTube



SET-NAV PUBLICATIONS & OUTREACH

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Publications

- Issue papers
- Policy Briefs
- Publications in journals and conference proceedings
- **Special Issue** in Utilities Policy

Scientific Exchange – Synergies with other initiatives

REEM REflex Analysis of the European Energy System

TRANSrisk TRANSITION PATHWAYS AND RISK ANALYSIS FOR CLIMATE CHANGE POLICIES

EU-GCC Cleanergy.Net

green econet

MEDEAS MODELING THE RENEWABLE ENERGY TRANSITION IN EUROPE

** Synergies with relevant IEE, FP7, Horizon2020, LCE21 projects*

SET-Nav Events (1/4)

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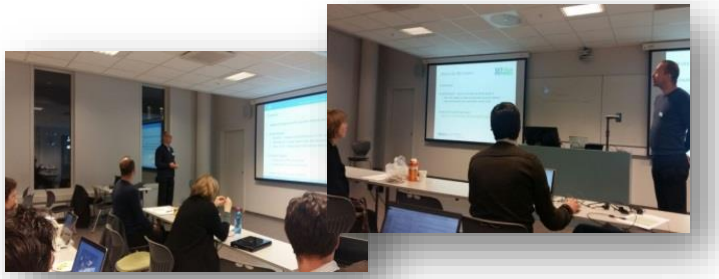
Modelling Workshops

More than **450** participants in all SET-Nav events



Top-Down Bottom-Up Hybrid Modeling
Trondheim (NTNU), Norway, 24 - 25 November 2016

Modelling of risk & uncertainty with regard to infrastru and system stability
Zürich (ETH), Switzerland, 28-29 March 2017

Aggregating load profiles for use in power sector / energy system modelling,
Vienna (TU Wien), Austria, 7 September 2017

Two-stage decision making and modelling for energy markets
Berlin (DIW), Germany, 11 October 2018

SET-Nav Events (2/4)

Stakeholder/ Topical Workshops

Revitalising the SET-Plan: The Role of Innovation in Transforming the Energy System,
Brussels (CEPS), Belgium, 28 September 2016

From 'Known Unknowns' to 'Unknown Unknowns': Uncovering Critica Uncertainties for the World Energy Future,
Berlin (DIW), Germany, 29 November 2016

What will Europe's electricity infrastructure needs be? Decentralised vs. centralised,
Brussels (CEPS), Belgium, 24 March 2017

Europe's gas infrastructure needs towards 2050: Which PCIs should prioritized
Brussels (CEPS), Belgium, 28 September 2017

Accelerating the transition towards sustainable transport
Brussels (CEPS), Belgium, 14 May 2018

SET-NAV EVENTS (3/3)

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Common Events with Horizon2020 Projects

- H2020 Contractors' Workshop on Energy System Modeling,
  30 June 2016, Brussels, Belgium
- **Energy Modelling Platform for start-up (conference)**,
  17-18 May 2017, Brussels, Belgium
- LCE 21 – Energy System Modelling Clustering Event,
  28 November 2017, Brussels, Belgium
- **Energy Modelling Platform for Europe 2018 (conference)**,
  25 - 26 September 2018, Brussels, Belgium

SET-Nav Events (4/4)

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… next on the Agenda (2019)

Regional Workshop in Athens
Athens (NTUA), Greece, 16 November 2018

Regional Workshop in Budapest
Budapest (REKK), Hungary, 26 February 2019

Final Policy Event in Brussels
Brussels (CEPS), Belgium, March 2019

Final Conference in Brussels
Brussels (CEPS), Belgium, March 2019

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Thank you!

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