

AGENDA

Modelling of Risk & Uncertainty in Energy Systems

Workshop 2 of 5 in the SET-Nav WP10 Modelling Forum

Wednesday, **29 March 2017, 08:30 – 18:00**

Venue: ETH Zurich, Leonhardstrasse 21 (Room LEE E101)

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WORKSHOP OBJECTIVES:

IMPORTANCE OF MODELLING RELIABILITY, RISK AND UNCERTAINTY IN ENERGY SYSTEMS
STATE OF THE ART METHODOLOGIES USED IN RELIABILITY, RISK AND UNCERTAINTY MODELLING IN ENERGY SYSTEMS
MODELLING METHODOLOGIES FOR STOCHASTIC PROGRAMING APPLICATIONS IN ENERGY SYSTEMS

08:30 - 09:00	OPENING
08:30 - 08:45	Welcome by Christian Schaffner and Giovanni Sansavini (hosts)
08:45 - 09:00	Introduction by Dawud Ansari (SET-Nav/WP10 coordinator)
09:00 - 12:30	SESSION I: Risk and Uncertainty Modelling I
09:00 - 10:00	Terje Aven (UIS) – Foundational issues of risk assessment
10:00 - 10:30	COFFEE BREAK
10:30 - 11:30	Nicola Pedroni (ECP) – Uncertainty representation and propagation
11:30 - 12:30	Giovanni Sansavini (ETHZ) – Risk modelling for interdependent energy carriers
12:30 - 13:30	LUNCH BREAK – SERVED ON SPOT
13:30 - 16:00	SESSION II: Risk and Uncertainty Modelling II
13:30 - 14:30	Emanuele Borgonovo (Bocconi University) – Link between risk assessment and decision-making in energy systems
14:30 - 15:30	Chris Dent (University of Edinburgh) – Energy systems planning under uncertainty: models versus real energy systems
15:30 - 16:00	COFFEE BREAK
16:00 - 17:30	SESSION III: Stochastic programming
16:00 - 16:30	Martin Densing (PSI) – Stochastic bi-level electricity market modelling
16:30 - 17:00	Christian Skar and Ruud Egging (NTNU) - A multi-horizon stochastic programming model for investments under operational uncertainty
17:00 - 17:30	Han Xuejiao (ETHZ) – Decentralized generation systems under uncertainty
17:30 - 18:00	PANEL SESSION
18:10 -	LIGHT DINNER (APEROCHE)– DOZENTENFOYER (SEE MAP)

Before you arrive to Zurich

Workshop material, hotel and restaurant recommendations, participants list, agenda, etc. can be find at the online folder:

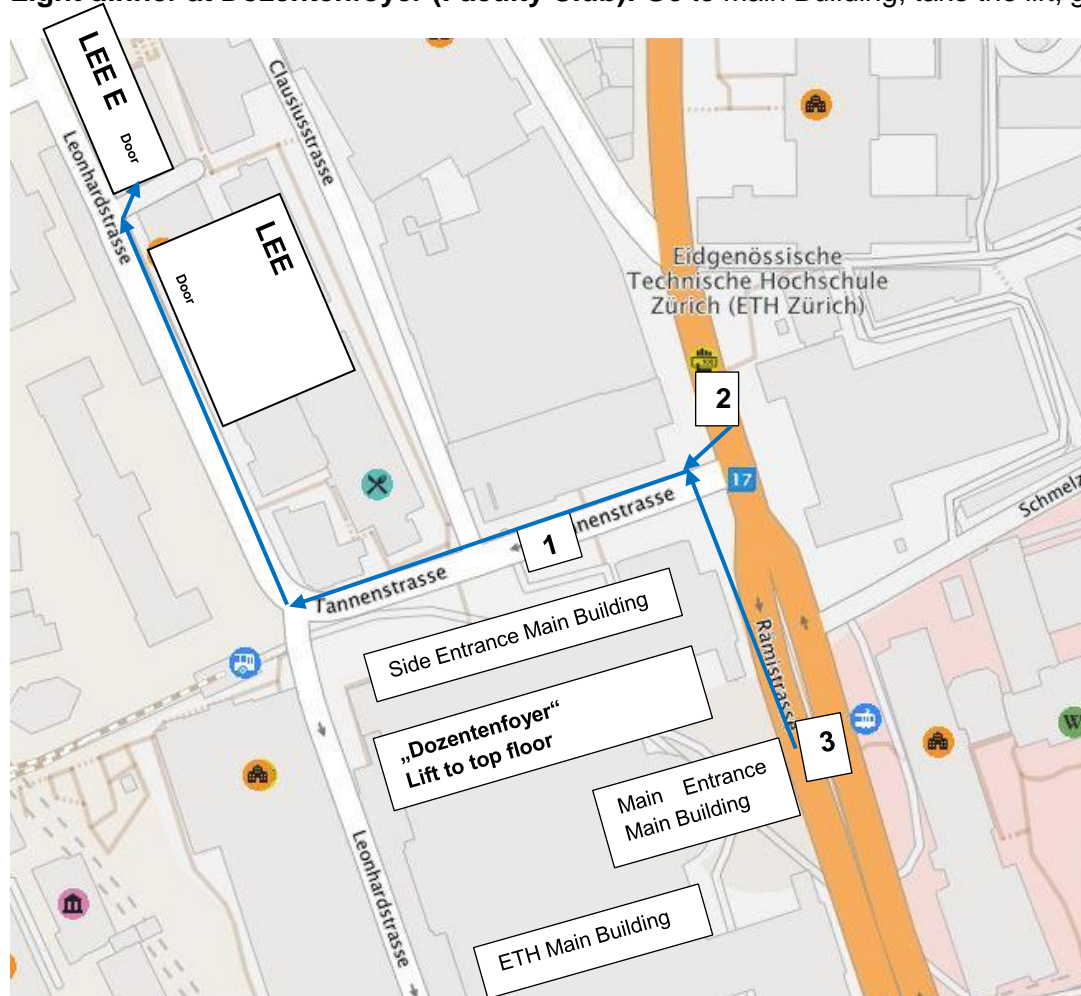
<https://polybox.ethz.ch/index.php/s/4IH0QQ72jGtB6T2>

Workshop location

ETH Zurich Leonhardstrasse 21 (very near ETH main building), Room LEE E 101

Room LEE E 101: enter LEE E, go to the stairways, look for room E 101.

Light dinner at Dozentenfoyer (Faculty Club): Go to Main Building, take the lift, go to the top floor



1 Tram Stop Nr 10 and 6 direction Main Station

2 Tram Stop Nr 9 and 10 direction Zürich Airport and Oerlikon

3 Tram Stop Nr 9 and 6 direction Bellevue and Zoo

Access the internet:

Choose the Wi-Fi network public-5 or public

Browse to enter.ethz.ch using your browser of choice

Use the following login: Set-Nav; password: setnav

List of registered participants:

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SET-Nav at a glance

SET-Nav will support **strategic decision making** in Europe's energy sector, enhancing innovation towards a **clean, secure and efficient energy system**. Our research will enable the EC, national governments and regulators to facilitate the development of optimal technology portfolios by market actors. We will comprehensively address critical uncertainties and derive appropriate policy and market responses. Our findings will support the further development of the SET-Plan and its implementation by continuous stakeholder involvement.

These contributions of the SET-Nav project rest on three pillars:

The wide range of objectives and analytical challenges set out by the call for proposals can only be met by developing a broad and technically-advanced **modelling portfolio**. Advancing this portfolio and enabling knowledge exchange via a modelling forum is our first pillar.

The EU's energy, innovation and climate challenges define the direction of a future EU

energy system, but the specific **technology pathways** are policy sensitive and need careful comparative evaluation. This is our second pillar. Using our strengthened **modelling capabilities** in an integrated modelling hierarchy, we will analyse multiple dimensions of impact of future pathways: **sustainability, reliability and supply security, global competitiveness and efficiency**. This analysis will combine bottom-up 'case studies' linked to the full range of SET-Plan themes with holistic 'transformation pathways'.

Stakeholder dialogue and dissemination is the third pillar of SET-Nav. We have prepared for a lively stakeholder dialogue through a series of events on critical SET-Plan themes. The **active involvement** of stakeholders in a two-way feedback process will provide a reality check on our modelling assumptions and approaches, and ensure high policy relevance. Our aim is to ensure policy and market actors alike can navigate effectively through the diverse options available on energy innovation and system transformation.

SET-Nav partners

No	Participant Name	Country Code
1	Vienna University of Technology, Energy Economics Group (<i>TU Wien</i>)	AT
2	Fraunhofer-Institut für System- und Innovationsforschung (<i>Fraunhofer</i>)	DE
3	Deutsches Institut für Wirtschaftsforschung (<i>DIW Berlin</i>)	DE
4	Norges teknisk-naturvitenskapelige universitet i Trondheim (<i>NTNU</i>)	NO
5	Stiftelsen for industriell og teknisk forskning ved NTH (<i>Sintef</i>)	NO
6	Société Européenne d'ECONomie (<i>Seureco</i>)	FR
7	Universidad Pontificia Comillas (<i>Comillas</i>)	ES
8	National Technical University of Athens (<i>NTUA</i>)	GR
9	Regional Center for Energy Policy Research (<i>REKK</i>)	HU
10	Centre for European Policy Studies (<i>CEPS</i>)	BE
11	University of East Anglia (<i>UEA</i>)	UK
12	Eidgenössische Technische Hochschule Zürich (<i>ETH</i>)	CH
13	Axpo Services AG (<i>Axpo</i>)	CH
14	General Electric (<i>GE</i>)	CH
15	International Institute for Applied Systems Analysis (<i>IIASA</i>)	AT
16	M-Five GmbH Mobility, Futures, Innovation, Economics (<i>M-Five</i>)	DE