

Training Course

TRAINING ON REGULATION AND INTEGRATION OF RENEWABLE ENERGY 2020

 @FSR_Energy #FSRResTraining

18 - 21 May 2020

Sala Capitolo - Badia Fiesolana, Via dei Roccettini 9 - San Domenico di Fiesole (Fiesole, Florence)

Course Director:

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

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Introduction

The FSR's training course on Renewable Energy Sources: integration and regulatory issues in marketbased electricity systems provides a comprehensive introduction to the topic with the newest updates from the field.

The general objective of this training course is to carefully examine the role and potential of renewable energy sources as a fundamental element to a sustainable, competitive and secure power industry as well as the regulatory mechanisms needed to achieve their integration into a liberalised electricity system.

Based on praxis-driven lectures and through interactive discussion with renowned specialists and active group work, the course seeks to contrast current and future regulatory actions needed for the steady development and integration of renewable energy and their implications for the electricity markets and networks, underlying the importance of stronger coordination and cooperation between the various actors involved with the final aim of maximising the benefits of renewable energy deployment.

This training course presents the recent developments in the EU but its focus is not limited to the Old Continent: case studies from America, Africa and Asia will be presented too.

Draft Programme

18 May

9.00 - 9.30 Course presentation and personal introductions

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI
Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI

9.30 - 11.00 Introduction to renewable energy sources

- Development of renewable energy policies in Europe, from the first steps to current plans for 2030
- The new Renewable Directive and the Energy Governance Regulation

Guido Bortoni | European Commission

11.00 - 11.30 *Coffee break*

11.30 - 13.00 Introduction to renewable energy sources

- Overview of the challenges posed by the integration of RES in liberalised electricity markets
- How to incentivize renewable energy investments at low costs
- Promotion of further technological development

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

13.00 - 14.00 *Lunch break*

14.00 - 15.30 Supporting the RES uptake - *market-based investment in generation capacity*

- Experience with competitive bidding schemes and auctions in Europe and globally
- Options for auctions design - concepts for different objectives

Jenny Winkler | Fraunhofer Institute for Systems and Innovation Research ISI TBC

15.30 - 16.00 *Coffee break*

16.00 - 17.30 Group work on optimal auction design

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

17.30 - 17.45 Wrap-up session

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI
Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI

17.45 - 18.45 *Welcome cocktail*

19 May

9.00 - 9.30 Group activity

9.30 - 11.00 Integration of RES in liberalised wholesale electricity markets - *market-based dispatch of generation*

- Introduction to electricity markets and market design

- Integration of neighbouring electricity markets

Alberto Pototschnig | Florence School of Regulation/RSCAS/EUI

11.00 - 11.30 *Coffee break*

11.30 - 13.00 Integration of RES in liberalised wholesale electricity markets - *market-based dispatch of generation*

- Impact of RES on electricity markets
- Direct marketing of RES-based electricity (PPAs and contracts for difference)
- Group work on optimal market premium design

Alberto Pototschnig | Florence School of Regulation/RSCAS/EUI

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

13.00 - 14.00 *Lunch break*

14.00 - 15.30 Impact and integration of RES in electricity system operation - *market-based grid services*

- Introduction to electricity system operation
- Minimising curtailment costs - regulated vs. market-based redispatch
- Priority access to the grid - when is it needed?

Alberto Pototschnig | Florence School of Regulation/RSCAS/EUI

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

15.30 - 16.00 *Coffee break*

16.00 - 17.30 Impact and integration of RES in electricity system operation - *market-based grid services*

- The point of view of a European TSO
- Procurement of grid services from distributed resources

Fabio Genoese | Terna

17.30 - 17.45 Wrap-up session

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI

19.30 *Dinner in town*

20 May

9.00 - 9.30 Group activity

9.30 - 11.00 Impact and integration of RES on grid planning - coordination mechanisms between investments in generation and grids

- Introduction to electricity grids and their planning (transmission and distribution)
- Challenges posed by RES deployment to grids planning and access
- Super-grids and smart grids: beyond fit & forget

Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI

11.00 - 11.30 *Coffee break*

- 11.30 - 13.00 Small scale RES and self-consumption – how to avoid the utility death spiral without slowing down RES deployment
- Support mechanisms for small scale RES
 - Impact of self-consumption on system integration with or without distributed storage: implications for efficiency and fairness

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

13.00 - 14.00 *Lunch break*

- 14.00 - 15.30 Small scale RES and self-consumption – how to avoid the utility death spiral without slowing down RES deployment
- Designing future-proofed network charges and levies
 - Collective self-consumption and energy communities: towards a more decentralised energy system?

Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI

15.30 - 16.00 *Coffee break*

16.00 - 17.30 Sector coupling and power-to-X by

- Integrating different energy vectors to provide more flexibility
- Current policy debate and early pilot projects

Andris Piebalgs | Florence School of Regulation/RSCAS/EUI

17.30 - 17.45 Wrap-up session

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI

21 May

9.00 - 10.30 Decarbonising the gas sector: many new renewable gases?

- A fair taxonomy
- Role in the energy mix
- Support measures

Ilaria Conti | Florence School of Regulation/RSCAS/EUI

10.30 - 11.00 *Coffee break*

11.00 - 12.30 Trends in global renewable energy markets

TBC

12.30 - 13.30 *Lunch break*

13.30 - 15.00 Case studies of regulation and market integration in liberalised electricity systems

TBC

15.00 - 15.30 *Coffee break*

15.30 - 17.00 Company strategy and portfolio development of RES in the industry

- Understanding regulatory frameworks, markets and auctions
- The case of a European electric utility

Clemens Cremer | EnBW

17.00 - 17.30 Wrap-up session

Mario Ragwitz | Fraunhofer Institute for Systems and Innovation Research ISI

Nicolò Rossetto | Florence School of Regulation/RSCAS/EUI