

Blended Training Course

Energy Regulation Academy | Power System Stability

5 March - 2 April 2027

Academy Directors:

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Introduction

As power systems increasingly integrate inverter-based resources such as wind, solar and batteries, System Operators (SO) can no longer rely on dispatchable synchronous generation for a safe and reliable grid. The inherently reliable behaviours of synchronous generation can no longer be taken for granted. Ministries, Regulators and SOs now have to consider the most efficient options to ensure a safe operation through requirements, market-based mechanisms or regulated investments.

This course looks at what this new context means for system stability and how regulators and ministries can respond. It draws lessons from recent incidents, including the April 2025 blackout in the Iberian Peninsula; covers how the current instruments available manage frequency and voltage deviations as well as possible improvements for a decarbonised system; and examines how inertia and system strength can be procured through new mechanisms such as requirements, regulated investments or market-based mechanisms. Through case studies and exchanges with experts and peers, participants will learn to identify stability risks and to assess regulatory and market options for managing them.

For this training, there will be two cohorts of participants. While both cohorts will complete the identical curriculum across the three days, the sequence of modules will be staggered by group.

This course is delivered within the framework of the Energy Regulation Academy (EnRA)

<https://fsr.eui.eu/energy-regulation-academy/>

Programme

5 March **Online module | Introduction**

10:00 - 11:00 Introduction to the course (overview and practicalities)

Leonardo Meeus | Florence School of Regulation, RSCAS, EUI

Elena Bondesan | Florence School of Regulation, RSCAS, EUI

5-10 March *Explore the materials on the course platform and complete the activities.*

10 March **Online module | Live sessions**

10:30 - 11:15 Setting the scene: towards a decarbonised, interconnected EU power system

TBC | TBC

11:15 - 12:00 Why is system operation becoming more challenging?

TBC | TBC

12:00 - 14:00 *Lunch break*

14:00 - 14:45 EU Framework and cooperation in power system operation

TBC | TBC

14:45 - 15:30 Future challenges and opportunities in power system operation

TBC | TBC

16 March **Residential module | Day 1: Frequency management and Inertia procurement**

9:00 - 9:30 Introduction to the course

Tomás Reilly | Florence School of Regulation, RSCAS, EUI

Aliénor Cameron | Florence School of Regulation, RSCAS, EUI

9:30 - 11:00 Improving frequency management to deal with lower inertia (Part I)

Tomás Reilly | Florence School of Regulation, RSCAS, EUI

TBC | TBC

11:00 - 11:30 *Coffee break*

11:30 - 13:00 Improving frequency management to deal with lower inertia (Part II)

Tomás Reilly | Florence School of Regulation, RSCAS, EUI

TBC | TBC

13:00 - 14:00 *Lunch break*

14:00 - 15:30 Increasing inertia procurement to limit frequency deviations (part I)

Tomás Reilly | Florence School of Regulation, RSCAS, EUI

TBC | TBC

15:30 - 16:00 *Coffee break*

16:00 - 17:30 Increasing inertia procurement to limit frequency deviations (part II)

Tomás Reilly | Florence School of Regulation, RSCAS, EUI
TBC | TBC

18:30 *Welcome cocktail*

17 March **Residential module | Day 2: Voltage control and System Strength procurement**

9:00 - 10:30 Improving voltage control to deal with weaker systems (part I)

Emma Menegatti | Florence School of Regulation, RSCAS, EUI
Pierluigi Mancarella | University of Melbourne, University of Manchester

10:30 - 11:00 *Coffee break*

11:00 - 12:30 Improving voltage control to deal with weaker systems (part II)

Emma Menegatti | Florence School of Regulation, RSCAS, EUI
Pierluigi Mancarella | University of Melbourne, University of Manchester

12:30 - 13:30 *Lunch break*

13:30 - 15:00 Increasing system strength to limit voltage deviations (part I)

Emma Menegatti | Florence School of Regulation, RSCAS, EUI
Pierluigi Mancarella | University of Melbourne, University of Manchester

15:00 - 15:30 *Coffee break*

15:30 - 17:00 Increasing system strength to limit voltage deviations (part II)

Emma Menegatti | Florence School of Regulation, RSCAS, EUI
Pierluigi Mancarella | University of Melbourne, University of Manchester

18 March **Residential module | Day 3: Peer-to-peer sessions**

9:00 - 9:30 Introduction to collaborative workshop.

Aliénor Cameron | Florence School of Regulation, RSCAS, EUI
Elena Bondesan | Florence School of Regulation, RSCAS, EUI

9:30 - 11:00 Collaborative workshop on frequency management and inertia procurement: conversation with instructors and national experts.

11:00 - 11:30 *Coffee break*

11:30 - 13:00 Collaborative workshop on voltage control and system strength procurement: conversation with instructors and national experts.

13:00 - 14:00 *Lunch break*

14:00 - 15:00 Collaborative workshop to consolidate knowledge.

15:00 - 15:30 Closing remarks and next steps.

Leonardo Meeus | Florence School of Regulation, RSCAS, EUI

2 April **Online module | Closing session**

10:00 - 10:30 Collaborative workshop follow-up session.

Aliénor Cameron | Florence School of Regulation, RSCAS, EUI

Tomás Reilly | Florence School of Regulation, RSCAS, EUI

Emma Menegatti | Florence School of Regulation, RSCAS, EUI

10:30 - 11:50 Panel discussion

TBC | TBC

11:50 - 12:00 Closing remarks and wrap-up.

Leonardo Meeus | Florence School of Regulation, RSCAS, EUI

Aliénor Cameron | Florence School of Regulation, RSCAS, EUI