

# Net Zero Transition: Future of electricity markets

## Learning and development objectives:

- How the physical electricity system may evolve to enable greater electrification of the economy and meet net zero targets
- Explanation of the potential new electricity market arrangements that may be introduced following the UK government's Review of Electricity Market Arrangements (REMA)
- The pros and cons of current market design and an introduction to Locational Marginal Pricing, central dispatch and proposed market mechanisms to encourage investment in low-carbon generation outcomes
- An overview of some of the key novel technologies that may play a role in the future electricity market, including Carbon Capture Usage and Storage, modular nuclear generation, and negative emission technologies

## Session 1 – Policy, future scenarios and novel technology

### Introduction & welcome

- 10 am
- Tech check!
  - Aim and objectives

### What is net-zero and what is the latest policy view?

- Climate Change Act
  - Net-zero legal target and Carbon Budgets

### Module 1 *Poll: Which sector of the UK economy has seen the largest emissions reduction?*

- National Grid's Future Energy Scenarios – what could a future electricity system look like?
- Update on latest UK government policy to promote a decarbonised electricity sector by 2030

### Break

### Overview of novel technological solutions

### *Poll: Which of the following technologies do you think is the most critical to deliver a decarbonised electricity sector?*

- Module 2
- How could the following new technologies play a role in the future and why?
    - Carbon Capture Usage and Storage (CCUS)
    - Bioenergy CCS (BECCS)
    - Electricity storage
    - 'Small' nuclear
    - 'Smarter' consumers

### 11.45 Q&A

12.00 What we will cover off in future sessions and close

## Session 2 – Current market design challenges and REMA

### Introduction & welcome

- 10 am • Tech check!
- Aim and objectives

### Current market design and the net zero paradox

- Module 3 • Challenges with current electricity market design
  - From an ‘energy only’ market..
  - ...to a subsidised market with capacity payments
- Marginal pricing
  - What is it...
  - ...is it fit for purpose?

*Discussion: How do you think the current market design has performed?*

### Break

### Introducing REMA

- Module 4 • What is REMA?
  - Scope
  - Range of options considered
  - Self-dispatch vs. central-dispatch
  - Focus on Locational Marginal Pricing

*Simple worked example of LMP*

11.45 Q&A

12.00 What we will cover off in future sessions and close

## Session 3 – Future market design

### Introduction & welcome

- 10 am • Tech check!
- Aim and objectives

### REMA – Low Carbon Support proposals

- Module 5 • Support for low carbon generation investment
  - Market splitting
  - Contract for Difference variants

*Poll: Which option do you think has most merit?*

### Break

### REMA – Capacity adequacy

- Module 6 • Supporting capacity Adequacy
  - Reliability options
  - Strategic reserve
  - Optimised Capacity Market
- Network infrastructure and the National Energy System Operator (NESO)
- Retail market – what next?

*Poll: Will the electricity system be decarbonised by 2035?*

11.45 Q&A

12.00 Next steps and close

