
UNECE

# Workshop III

# Role of Nuclear Energy to Attain Carbon Neutrality in the UNECE region

23 November, 13.00 to 14.30 CEST (Geneva time)

**Objective**

The objective of this session is to improve understanding about the nuclear energy technology fundamentals and the role that nuclear energy could play to help attain carbon neutrality. The session identifies the key influential factors that are important in determining future nuclear energy developments. This session is a preparation for the sub-regional workshop on 24 November 2020.

**Context**

The UNECE region needs to cut or capture 90Gt of $CO_2$ emissions by 2050 to attain Paris Agreement 2-degree target. A range of low-, zero- and negative-carbon energy technologies will play a role in decarbonisation of the energy system. Nuclear energy can play a role. 20 ECE member States currently operate nuclear as a clean, dispatchable and cost-effective source of electricity and 15 countries have either new reactors under construction or plans for new nuclear power plants. In particular, 7 ECE member States are considering, planning or starting nuclear power programmes for the first time. Beyond the proven existing nuclear reactor technologies, advanced reactors and small modular reactors (SMRs) provide significant future opportunities for nuclear energy. SMRs could complement large-scale reactors and open new markets and applications for nuclear energy, including district heating, high temperature process heat, hydrogen production, as well as electricity generation for small or distributed grids, or remote locations. Policy actions are required for the development of markets and financing that allow the deployment of large-scale reactors and the development and commercialization of SMRs, thus enabling nuclear energy to contribute to global decarbonisation and sustainable development.

**Topics**

- **Technology aspects**
  - Nuclear technology fundamentals
  - Economics, cost curves, & system costs
  - Technical readiness, societal readiness and commercial readiness
- **Nuclear energy applications** – Heat/ Industry/ Transport/ Hydrogen
- **Policy aspects**
  - Energy Policy and Electricity Markets
  - Financing and investments
  - Waste management
  - Public acceptance

**Schedule & Speakers**

**Welcome & Opening remarks** *(5min)*

Vladimir Budinsky, Acting Chairman Group of Experts on Cleaner Electricity System / Bureau Member of UNECE Committee on Sustainable Energy

**Nuclear energy technology and policy brief –** *(5min)*

King Lee, Director Harmony Programme, World Nuclear Association and Vice Chair Group of Experts on Cleaner Electricity System

**Nuclear technology and applications** *(~ 7 mins – 10 mins Q&A)*

Henri Paillere, Head of Planning and Economic Studies Section, International Atomic Energy Agency (IAEA)

**Economic and cost curves** *(~7 mins – 10 mins Q&A)*

Michel Berthélemy, Nuclear Energy Analyst, OECD Nuclear Energy Agency

**Environmental and health impact of nuclear energy –** *(~7 mins – 10 mins Q&A)*

Thomas Gibon, Research & Technology Associate, Luxembourg Institute of Science and Technology

**National perspective on the future role of nuclear energy**

**Nuclear energy for Net Zero – UK energy system appraisal** *(7 mins)*

James Murphy, Chief Strategy Officer, National Nuclear Laboratory (NNL)

**Poland nuclear energy development plan** *(7 mins)*

Józef Sobolewski, Poland Director at National Center of Nuclear Research and Adviser to the Minister of Climate and Environment in Poland

**Closing Remarks** *(5 mins)*

King Lee, Director Harmony Programme, World Nuclear Association and Vice Chair Group of Experts on Cleaner Electricity System