

NEA Workshop, 4 September 2019

ELECTRICITY SYSTEM (R)EVOLUTION:

WHAT ROLE FOR BASELOAD AND DISPATCHABLE TECHNOLOGIES

OECD Boulogne, NEA, 46 quai Alphonse le Gallo, 92100 Boulogne-Billancourt, France

9:00 Welcome

William D. Magwood, IV, Director-General Nuclear Energy Agency (NEA)
Sama Bilbao y Leon, Head of the Division of Nuclear Technology Development and Economics (NTE)

9.15 Objectives of Workshop:

Chair (Mr Aiden Peakman, NNL) and Secretariat of the ARFEMⁱ Expert Group (Mr Henri Paillere, NEA)

9.20 Session 1: Low Carbon Scenarios, Role of Electrification and Hydrogen

Topics: low carbon scenarios, massive electrification, role of electric vehicles, high shares of renewables, digitalisation, ...

Moderator: Ramesh Sadhankar (CNL)

- *The role of electricity in clean energy transitions*, Brent Wanner (IEA)
- *A European strategic long term vision for a prosperous, modern, competitive and climate neutral economy*, A. Zucker (DG ENER)
- *Decarbonisation Pathways*, Gilda Amorosi (EURELECTRIC)
- Q&A

10.45 Coffee break

11.00 Session 2: Future electricity grids, challenges & solutions

Topics: How to address issues such as: grid stability, inertia, reliability, resilience, security of supply, flexibility and large scale storage

Moderator: Aiden Peakman (NNL)

- *Operation and control of power systems with reduced synchronous inertia: challenges and solutions*, Pieter Tielens (TRACTEBEL)
- *R&D for Maintaining Reliable and Resilient Electric Power Systems in the Future*, Andrew Sowder (EPRI)
- Q&A

12.30 Lunch (buffet)

14.00 Session 3: Role of baseload and dispatchable technologies in future electricity systems. *Will we need them?*

Topics: discussion on future generation technologies, system effects, decreasing value of VRES as % increases, role of “baseload”

Moderator: Michel Berthelemy (NEA)

- *Increasing system flexibility and the value of variable renewables on the grid*, Craig Hart (IEA)
- *Nuclear power operation in European scenarios of decarbonization with high shares of RES*, Fabien Roques (Compass Lexecon)
- *The costs of decarbonisation: system costs with high shares of nuclear and renewables*, Jan-Horst Keppler (OECD/NEA)
- Q&A

15.15 Coffee break

15.30 Session 4: Beyond Electricity – how to decarbonise the energy system

Topics: discussion of other sectors (transport, industry), and how they can be decarbonised through electrification, use of hydrogen, and development of low carbon heat (from nuclear or other low carbon technologies).

Moderator: Henri Paillere (NEA)

- *The role of hydrogen in the energy transition*, Paul Lucchese (CEA and IEA H2 TCP Chair)
- *Decarbonised transport*, Pierpaolo Cazzola (International Transport Forum, ITF)
- *Potential of Advanced Reactors/SMRs for Decarbonization – beyond Electricity in Canadian Context*, Ramesh Sadhankar (CNL)
- Q&A

17:15 Wrap up & Conclusions

17:30 Cocktail for participants

ⁱ ARFEM: Advanced Reactor Systems and Future Energy Market Needs, NEA project under the Nuclear Development Committee. <http://www.oecd-nea.org/ndd/groups/arfem.html>