

Workshop: **Nuclear Energy and Sustainable Development: Role of nuclear in a decarbonized energy mix**

Organizers: World Nuclear Association (WNA), International Atomic Energy Agency (IAEA), United Nations Economic Commission for Europe (UNECE), Ukraine

Target group: Open to all participants

Background: Nuclear energy currently supplies about a third of the world's low carbon electricity production and is used by 60% of the world's population. The fact that this comes from only 450 generating units in 30 countries shows that there is significant scope for its expansion. The IEA Energy Technology Perspectives report 2017, 2°C Scenario (2DS), anticipates that power generation will be mostly decarbonized by 2050, relying on renewables and nuclear power with some Carbon Capture and Storage (CCS). To deliver this 2D Scenario IEA estimates that 948 GWe of nuclear capacity will be required.

The IPCC 2014 Mitigation of Climate Change Fifth Assessment Report states that nuclear energy is a mature low-GHG emission source of baseload generation. Nuclear energy could make an increasing contribution to global development based on a low carbon energy supply, but a variety of challenges exist.

In the meantime, fossil fuels still remain the main fuel for energy supply. For electricity fossil fuels represent 65% of the global generation. Coal has the largest share with 38%. Even though both coal and gas generation continue to increase in 2017, the availability of large-scale commercial CCS capacity by 2030 remains uncertain.

The world is not on track to meet the Paris Agreement, to limit global warming to 'well below' 2°C, even with the recent significant growth of renewable energy. Nuclear power needs to take a larger role to address the urgent clean energy challenge. Nuclear energy as a source of 24/7 dependable supply provides other important benefits such as energy security and resilience.

The nuclear industry has developed the Harmony goal to provide 25% of the global electricity supplied by nuclear energy in 2050, resulting in a tripling of nuclear generation from its present level. This would require the construction of around 1000 GW of new nuclear capacity. To meet this target, the global nuclear sector needs a level playing field, harmonized regulatory processes and an effective safety paradigm.

In this context, an effective dialogue between policy makers and wider stakeholders regarding the choice and implementation of clean energy sources like renewables and nuclear, including small and medium nuclear power plants, is essential for the successful achievement of Sustainable Development Goals. Concomitantly, the availability of uranium fuel and aspects of a sustainable nuclear fuel cycle has to be considered.

The objectives of the workshop are to facilitate dialogue on: (i) assessing current the current role of nuclear energy within the context of clean energy and sustainable development, (ii) addressing the needs to support nuclear energy to play its full part within SDGs; and (iii) defining actions to ensure nuclear energy is incorporated into energy SDGs framework.

The workshop will unite representatives from international organizations, energy utilities, academia and industry involved in the research, development, and implementation of nuclear energy programmes and policies. During the panel sessions, participants will be invited to discuss the opportunities and challenges of nuclear energy's contribution to sustainable development. The focus will be given on energy and climate policy, market liberalization, long-term investment framework, innovative advanced reactors, and public perceptions. Case studies for a number of nuclear development will be presented and its contribution to a clean energy system.

Nuclear Energy and Sustainable Development: Role in decarbonized energy mix		
11.00 -11.15	Opening Remarks Climate Change and Energy Transition Pathways: Need for realism	Ms. Yuliya Pidkomorna, Deputy Minister for Energy and Coal Industry, Ukraine
Session 1: National perspectives on Nuclear Energy for Sustainable Development		
11.15-12.30	Panel session: Nuclear Energy Development and newcomer countries. Energy policy Moderator: Ms. Agneta Rising, World Nuclear Association <ul style="list-style-type: none"> • Ukraine perspective: Mr. Taras Tkach, Energoatom • UK perspective: Mr. Tim Yeo, The New Nuclear Watch Institute • Canada perspective: Mr. Ramesh Sadhankar, Canadian Nuclear Laboratories 	3 presentations – 15 mins each 20 mins panel discussion
12:30 - 14:20	Lunch break	
Session 2: Nuclear Energy’s Role in Low-Carbon Stabilization Pathways		
14:00 – 15:30	Panel session: Nuclear Energy for Sustainable Development. Moderator: Mr. David Shropshire, Head of the Planning and Economic Studies Section, IAEA <ul style="list-style-type: none"> • Harmony - the future of electricity and nuclear delivering its potential: Mr. King Lee, World Nuclear Association • Nuclear and renewables in low-carbon electricity systems: Mr. Marco Cometto OECD/NEA • Nuclear energy capabilities related to Ukraine’s INDC: Mr. Oleksandr Nemtsov, Energoatom 	3 presentations – 15 mins each 20 mins panel discussion 20 mins audience Q&A
15:30 - 16:00	Coffee break	

Session 3: Nuclear Energy by 2050

16:00 – 17:20	Panel discussion: Nuclear energy: Beyond electricity - innovation, advanced reactors Moderator: Mr. Hari Tulsidas, UNECE <ul style="list-style-type: none">• Risks of the nuclear energy development: Mr. Mykola Vlasenko, Energoatom• Challenges and opportunities for nuclear to fulfil the climate promise: Mr. David Shropshire, IAEA• Role of advanced reactors in clean energy future: Mr. Rauli Partanen, Freelance Writer and Energy Analyst	3 presentations – 15 mins each 20 mins panel discussion 20 mins audience Q&A
17:20 – 17:30	Closing/ Concluding Remarks	Ms. Agneta Rising, Director General, World Nuclear Association