Twenty-eighth session of the Committee on Sustainable Energy

25-27 September 2019, Geneva, United Nations, Palais des Nations

SESSION STRUCTURE TO THE ANNOTATED PROVISIONAL AGENDA

Pathways to Sustainable Energy

Wednesday, 25 September 2019, 10.00-18.00, Room XXVI

The day will be dedicated to the presentation of the results of the first phase of the project "Pathways to Sustainable Energy", which began in 2017 under the guidance of the Committee. The project's goal is to strengthen the knowledge and capacities of countries to develop, implement and track national sustainable energy policies aligned with their commitments on climate change and sustainable development, and to understand the objectives and actions of other countries. The project aims to contribute concretely to climate change mitigation and energy in sustainable development.

To achieve this goal, the project set forth three milestones:
1. The development of sustainable energy policy and technology options to 2050 supported by modelling and experts' insights;
2. The development of a concept for an early-warning system to monitor and forecast if achievement of sustainable energy objectives is on track; and
3. The facilitation of a high-level political dialogue to exchange views of what works and what does not and why, and to find concrete solutions to accelerate and deepen energy transition towards sustainable energy systems.

Remarks will include policy recommendations for member States, explore global and regional energy challenges, and draw conclusions on where the region is headed.

Flow of the day:

1. **Presentation of approach, models and results of Phase 1**
2. **Reactions by six Expert Groups** on energy efficiency, renewable energy, gas, coal mine methane, resource management and cleaner electricity systems. Experts are invited to react to results and share technology and policy insights on i) *How can countries attain Sustainable Energy given technology development and deployment realities?* and ii) *What role can technologies play in the modernisation of the energy system in the region?*
3. **Introduction of Energy Transition Toolkits and interactive exhibition -** Partnering institutions the Institute for Advanced Sustainability Studies (IASS), Global Climate Forum (GCF) and the World Energy Council (WEC) will present interactive energy transition toolkits developed by their respective organisations. Participants will have the opportunity to experience these tools hands-on during lunch and evening breaks. These toolkits can be transferred across regions and sectors and have many connection points with the project. This session is offered in the context of joint learning and information exchange with partners and stakeholders and will provide additional context for the Committee's deliberations.
4. **High-level segment and policy dialogue with countries –** participants are invited to share views on how UNECE member States can attain sustainable energy based on country's interventions.
5. **Summary and conclusions –** summary of policy recommendations and strategic options, discussion about a possible Phase II and next steps.

Morning session:

10.30-13.00 followed by lunch session on interactive toolkits

10.30 – 11.45 Introductory remarks and presentation of the project results

- Scott Foster, Director, UNECE Division on Sustainable Energy
- Holger Rogner, Senior Analyst, International Institute for Applied System Analysis (IIASA)

11.45 – 12.30 Reactions by the UNECE expert community

Moderator: Lisa Tinschert, Adviser, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

- Margalita Arabidze, Vice-Chair, Group of Experts on Renewable Energy
- Raymond Pilcher, Chair, Group of Experts on Coal Mine Methane
- Aleksandar Dukovski, Chair, Group of Experts on Energy Efficiency
- Barry Worthington, Chair, Group of Experts on Cleaner Electricity Systems
- Francisco Garcia de la Flor, Chair, Group of Experts on Gas
- Gioia Falcone, Vice-Chair, Expert Group on Resources Management

- Sigurd Heiberg, Pathways Project Advisory Board Member, Expert Group on Resources Management

12.30 – 15.00 Introduction to Energy Transition Toolkits and interactive exhibition (lunch session)
Venue: Room XXVI and the exhibition area immediately in front of Room XXVI

- Institute for Advanced Sustainability Studies (IASS)
- Global Climate Forum (GCF)
- World Energy Council (WEC)

I. IASS – Kopernikus Project ENavi - **Energiewende navigation system**
ENavi sees the German Energiewende as a society-wide transformation process and links scientific analyses with politico-social requirements. ENavi is a navigation tool with which the researchers can assess the effects and side-effects of economic or political measures in advance and draw conclusions accordingly.

II. Global Climate Forum – Decision Theatre on sustainable mobility
Decision Theatre methodology supports group decision processes with data and simulations, displayed on large screens surrounding a group. The computer output changes depending on how the discussion of the group progresses. Instead of focusing only on facts and numbers, the "Mobile Solution Theatre" allows to create narratives based on scenarios that can broaden the knowledge space for decision-makers or citizens. Due to constant interactions with the model, stakeholders can in turn contribute to improving scientific results and methods. Beyond the mobility sector, GCF is planning to explore other areas of sustainability transitions, such as the risks of crashes in computerised electricity markets or the challenge of inequality in sustainability transitions.

III. World Energy Council – Transition Toolkit
The transition toolkit consists of 5 products (tools) that include (i) World Energy Issues Monitor: reality check – global, regional, national energy leaders' perspectives on the key challenges; (ii) Energy Policy Trilemma: policy pathfinding to manage security, equity and sustainability through transition; (iii) World Energy Scenarios: a tool for bigger picture thinking, revealing deeper assumptions and reframing choices and options; (iv) Dynamic Resilience: better prepare firms for new shocks and stresses and adapt whole systems to emerging and systemic risks; (v) Innovation Insights: deeper into disruptive dynamics and moving transition innovation from the margins to mainstream. The Energy Transition Toolkit can be used to generate quality dialogues with energy stakeholders across the value chain, encouraging experimentation and futures thinking and empowering sustainable systems transitions.

Afternoon session:
15.00-18.00

15.00 – 16.30 High-level segment – dialogue with countries
This panel will consider the results of the project in the context of UNECE subregional specificities and the role of technologies and innovation in reaching sustainable energy, as there are numerous interpretations of what is "sustainable energy" or what could be a strategic pathway to achieve it.

Proposed discussion points:

- Energy market developments and driving forces of energy transition
- Affordable technologies and innovation in the region
- Voices from the subregional level
- Outlook and consequences for the sustainable energy subprogramme

Moderator: Sir Philip Lowe, Executive Chair, World Energy Council

- Nataliya Boyko, Deputy Minister, Ministry of European Integration, Ukraine
- Zoran Pačandi, Head of Service for Energy Efficiency and Renewable Energy Sources, Ministry of Environment and Energy, Croatia
- Nurzat Abdyrasylova, Founder & CEO, Unison Group, Kyrgyzstan
- Fuad Al-Zayer, Global Coordinator, Energy Data Transparency Initiative, International Energy Forum
- John Roberts, Energy Security Specialist, Methinks, United Kingdom
- David Jermain, Associate Director, Boston University Institute for Sustainable Energy, United States

16.30 – 18.00 Summary and Conclusions

Moderated discussion with the participants
Chair: Jürgen Keinhorst, Chair, Committee on Sustainable Energy

- Reactions and recommendations from the Committee and its stakeholders
- Implications for the work of the sustainable energy subprogramme and ways of working
- Next steps

18.00 Meeting ends.

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Achieving carbon neutrality in the UNECE region

Modernization of energy infrastructure

Thursday, 26 September 2019, 10.00-11.00, Room XXVI, (60 min)

Modernizing energy infrastructure is a challenge that each UNECE member State will confront at a certain point. Many countries are experiencing shifts in their energy economy, but the energy infrastructure has not kept pace. Lagging are often the social and economic dimensions, while environmental and economic concerns have driven the shift in the first place. In many countries, legacy industrial ecosystems centred on abundant sources of energy, which could power heavy industrial output. Since the early stage of development, years of accretionary growth took place and the resulting industrial complexes, which continue to have important roles in the economy, may now be operating with suboptimum efficiency using energy infrastructure that is progressively becoming obsolete.

The panel will provide an overview of a project that addresses the practical aspects of dealing with the social, economic and environmental aspects of replacing the outmoded energy infrastructure that powered industrial growth in the last century. The project will focus in the heavily industrialized area in the Upper Silesia region of Poland. This region continues to produce and use coal to drive industry output, but emissions from power production continue to be a regional problem and methane emissions are significant, amounting to nearly a billion cubic meters annually. The goal of the project is to examine each dimension of the problem by choosing a site for a pilot stage, which will allow for the in-depth study of the issues that must be addressed in order to allow modernization to take place. Members of the panel have hands on experience dealing with the issues that have arisen in the Silesian industrial setting.

Aspects for the discussion:

- How can the energy infrastructure of Poland undergo restructuring without straining the social fabric of a society in which coal has played such an important role for so many decades?
- What have others learned from working on these issues in other regions?
- What roles can universities and UNECE expert groups have to play in this project?
- How can lessons learned from the pilot project be used to develop resilient business models that can be applied more broadly and at other locations?
- How can the pilot project be financed and what are the sources of funding for broader application?

Introductory remarks and moderation:
Raymond C. Pilcher, Chair, Group of Experts on Coal Mine Methane, Vice-Chair, Committee on Sustainable Energy

Panellists:

- Jan Bondaruk, Central Mining Institute (Poland)
- David Jermain, Boston University (United States)
- Hans Rüdiger Lange, Innovationsregion Lausitz GmbH (Germany)
- Stefan Stückrad, The Institute for Advanced Sustainability Studies (IASS) Potsdam (Germany)

Decarbonising electricity

Thursday, 26 September 2019, 11.00-12.00, Room XXVI, followed by discussion (60 min + 60 min)

As countries are shifting efforts towards carbon neutral concepts, coal will continue to play an important role for UNECE member States in the short- and medium term despite the desire to keep global warming to well below two degrees Celsius. Global emissions of methane from the coal sector will also continue to increase as mining accesses deeper resources. Mitigation of carbon emissions is possible with proper financing.

This panel will provide an opportunity for the Committee to enhance its knowledge about the role of coal in the energy mix, the reasons for its persistence in the system, and to discuss with experts what is required to modernize the energy sector swiftly and with a focus on cleaner coal and carbon neutrality. The session will provide an overview of current financing sources and trends and what actions are needed to move faster towards carbon neutrality involving all energy technologies, so that regional desertification can be avoided, and no-one is left behind.

The discussion needs to be seen in the broader context of an economy as a whole, as choices must be economically and socially acceptable for countries and affected regions. Thus, the objective of this session is to provide the opportunity for the Committee to take a position on the role that coal will play in the context of carbon neutrality in the region and provide recommendations to the United Nations Development System on options that allow a swift shift towards carbon neutral concepts. Recommendations from this session will shape the programme of work of the sustainable energy subprogramme.

Aspects for the discussion:
- Energy infrastructure – affordability enabler or decarbonisation constraint
- Coal in the energy mix: update and trends
- How can the electricity sector take the lead towards a carbon neutral future? How can the power sector be decarbonised?
- Financing coal projects – trends - the importance of financing clean coal projects
- Successful financing examples: what works and what does not and why?
- What role for the Committee and its subsidiary bodies?

Introductory remarks and moderation:
Barry Worthington, Chair, Group of Experts on Cleaner Electricity Systems, Vice-Chair, Committee on Sustainable Energy

Panellists:
- Lesley Sloss, Principal Environmental Consultant, IEA Clean Coal Centre
- Marzia Zafar, Director Innovation and Issues Monitor, World Energy Council
- Francisco Laveron, Head of Energy Prospective, Energy Policies and Climate Change, Iberdrola
- Peter Taylor, Professor of Sustainable Energy Systems, University of Leeds, United Kingdom

Fossil fuels and carbon neutrality
Thursday, 26 September 2019, 12.00-13.00, Room XXVI

Moderated discussion with the Committee and the panellists of both morning sessions.

Moderation:
Scott Foster, Director, Sustainable Energy Division, UNECE

Aspects for the discussion:
- Summary of the morning session in the context of ECE/ENERGY/2019/2: Attaining carbon neutrality in the UNECE region by 2050 – a discussion paper about the role of fossil fuels in sustainable energy
- Challenges that need to be overcome to deliver the 2030 Agenda in all its dimensions in an integrated way, and such that it is both pragmatic and rational economically, socially, and environmentally acceptable
- Towards a position paper of the UNECE on carbon-neutrality/coal/fossil fuels (and/or other energy technologies, CCS, nuclear) in the energy mix
- Recommendation and mandates for funding proposals and partners on what it takes to achieve carbon neutrality in the region and what role fossil fuels can play in the context of the 2030 Agenda
- What role for the Committee and its subsidiary bodies? The private sector? Others?
- Desired outcomes from the session: Initiation and process to develop investment guidelines; CCS recommendation implementation; Task Force for *all* technologies – coal tied to decarbonisation.

Sustainable Resource Management

Gas pathways to 2050 and the interplay with renewable energy
Thursday, 26 September 2019, 15.00-16.00, Room XXVI

Global climate challenges and innovations drive the transition of the energy system to a renewable-powered future. Consequently, a deep and genuine transformation of today's energy system could be greatly facilitated by harnessing synergies between the traditional and emerging energy sectors – for example, natural gas and renewable energy. Gaseous fuels — whether conventional natural gas, renewable/decarbonized gases, hydrogen or biomethane — could serve as an important energy vector for the foreseeable future.

Experts from the Groups of Experts on Gas and on Renewable Energy will offer food for thought on how to develop policies to harness system-wide synergies between intermittent renewable energy sources and gas infrastructure and to accelerate development and deployment of renewable/decarbonized gas projects. Such synergies could put UNECE member States on track to achieve the SDG 7 target of the 2030 Agenda. Models that capture interlinkages between electricity and gas and the required policies to harness system-wide synergies will be part of the discussion.

Questions to be addressed:
- How can the existing gas infrastructure enable the transition to a carbon neutral economy?
- How can the linkages between electricity, renewable energy and gas be optimized?
- Which role for decarbonized gases?
- Are standards needed and how can they facilitate the process?

Moderation:
David MacDonald, BP and Chair of Expert Group on Resource Management

Introductory remarks:
- Francisco de la Flor Garcia, Chair, Group of Experts on Gas
- Margalita Arabidze, Vice-Chair, Group of Experts on Renewable Energy

Panellists:
- Harleen Kaur Sindhu, Renewable Energy Lead, Shell, Kazakhstan
- John Williams, Senior Principal, Pöyry Management Consulting, United Kingdom
- Daniela Thrän, Deutsches Biomasseforschungszentrum GmbH and Helmholtz Centre for Environmental Research GmbH (UFZ), Germany
- Konstantin Romanov, Executive Secretary of Gazprom, Coordinating Committee on Environmental Protection and Energy Efficiency, Russian Federation
- Katsiaryna Yafimava, Senior Research Fellow, Oxford Institute for Energy Studies

Managing resources in a carbon constrained world

Thursday, 26 September 2019, 16.00-17.00, Room XXVI

Most low-carbon technologies require vast amounts of critical raw materials. Energy efficiency, renewable energy, battery storage, nuclear energy, and carbon capture and storage all need critical raw materials. It will be essential to understand the geopolitics of current production and supply of critical raw materials and to explore widening the supply base if energy security is to be assured. Consideration of the socio-economic, environmental and technological issues related to the production and supply of critical raw materials needed for sustainable development will also be essential. The United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) are aligned to the 2030 Agenda for Sustainable Development and designed for the sustainable management of critical resources in a carbon constrained world. This session will also consider how these tools can assist the management of resources in the move to carbon neutrality and delivering on the 2030 Agenda and the Paris Climate Accord.

Questions to be addressed:
- How can international collaboration through centres of excellence accelerate the implementation of standards for integrated resource management such as UNFC and UNRMS?
- How can new commodity strategies help to link domestic resources with energy production?
- How can we encourage effective cross-sectoral collaboration in diverse areas such as forestry, food production, transport, water resources and energy?
- Is public-private participation crucial to address policy challenges related to sourcing of raw materials for energy access and storage?

Introductory remarks and moderation:
Mr. David MacDonald, BP and Chair of Expert Group on Resource Management

Panellists:
- Alessandra Hool, Managing Director, ESM Foundation, Switzerland - Facilitating the energy revolution through sustainable access to critical raw materials
- King Lee, World Nuclear Association - Essential resources required for nuclear energy for sustainable development: Entry pathways project
- Roman Michalak, UNECE - The nexus approach to the sustainable use of natural resources in the UNECE region
- Mathy Stanislaus, World Economic Forum - Global Battery Alliance (GBA) – The Global Battery Alliance Roadmap 2030 (via Webex)

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Sustainable resource management

Efficiencies, cities and circular economy

Friday, 27 September 2019, 10.00-11.00, Room XXVI

Cities are comprised of complex infrastructure and activity to assure the welfare of their citizens: buildings, industry, transport, energy and water utilities, commerce, food, waste services, governance, healthcare, education. Today's cities are in the midst of large economic transformation across the globe. Given rapid urban expansion and a drive towards "smart and sustainable", could cities become the centre of catalytic change for circular economy transformation and bring the 2030 Agenda on Sustainable Development on target, thus avoiding chronic resource stresses?

This panel will focus on practical examples that demonstrate the benefits of integrated city planning, the efficiency of urban services for smart, sustainable and resilient cities, and highlight the importance of the "still" low hanging fruit: energy efficiency to meet the quality of life aspirations of citizens. The panel will present ways to measure "smartness" with a variety of possible indicators, metrics and methods, referring to digital technologies like geospatial to radically increase virtualization, dematerialization, transparency on product use and material flows, as well as feedback-driven intelligence. The Canton of Geneva will serve as a case study about how such data is collected, made accessible and used for building management and policy evaluation.

Introductory remarks on how we can improve energy efficiency through and in cities by:

- Aleksandar Dukovski, Chair, Group of Experts on Energy Efficiency

Panellists:

- Jenna Cramer, Executive Director, and Megan Zeigler, VP of Planning and Policy, Green Building Alliance, United States
- Alisa Freyre, Projects Manager, Data and IT Solutions for Sustainable Energy, Services Industriels Genève, Switzerland
- Gulnara Roll, Senior Economic Affairs Officer, Forestry, Housing and Land Management, UNECE
- Nurzat Abdyrasulova, CEO, Unison Group, Kyrgyzstan

Moderated by Scott Foster, Director Sustainable Energy, UNECE

Gender and energy

Case studies from UNECE countries on the role of women in energy

Friday, 27 September 2019, 12.00-13.00, Room XXVI

Women have a lot to offer for the energy sector, especially in times of change. A diversified workforce delivers better results, from increased creativity and innovation to decision-making and profits. This panel will look at how entrepreneurial women are leading transformational systems change in their regions or communities and are overcoming two major challenges towards gender equality: restricted access to productive and financial resources and family stigma.

Perspectives will cover – but will not be limited to – why gender matters and how

- regional initiatives for promoting renewable energy applications and new business models have been translating this untapped potential into a substantially narrower gender gap in energy;
- barriers to women's economic empowerment can be overcome; and
- some of the lessons learned on diversity and women empowerment could provide inspiration for attracting and retaining women professionals in the energy sector.

Introductory remarks and moderation:

David MacDonald, Co-chair of BP Women's Business Resources Group

Panellists:

- Harleen Kaur Sindhu, Renewable Energy Lead, Shell Kazakhstan
- Margalita Arabidze, Deputy Head of Energy Policy Department, Ministry of Economy and Sustainable Development, Georgia and Vice-Chair of the Group of Experts on Renewable Energy
- Nurzat Abdyrasulova, CEO, Unison Group, Kyrgyzstan
- Jenna Cramer, Executive Director, Green Building Alliance, United States
- Leslie Montgomery, Education Senior Director, Global Building Alliance, United States

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