

Delivering on Sustainable Energy:

Subprogramme Accomplishments Since the Thirtieth Session of the Committee on Sustainable Energy

ENERGY

Ms. Denise Mulholland

Secretary, Committee on Sustainable Energy

Meetings, Trainings, programme Accomplishments Since the Thirtieth Session of the Committee on Sustainable Energy

5 Expert Group Annual Meetings

73 Bureau meetings

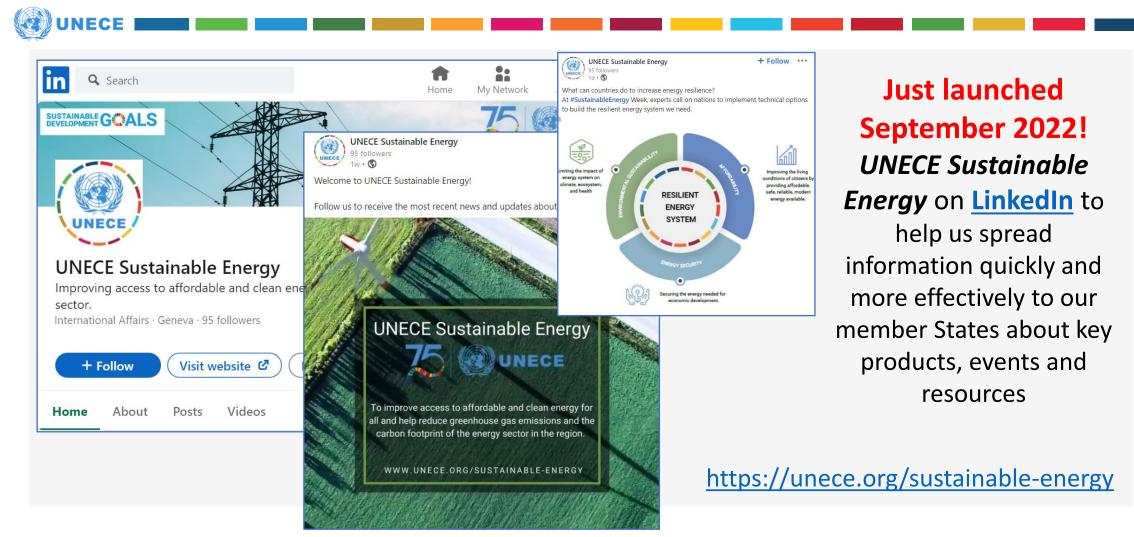
30 Workshops, Training, Webinars

3097 attendees, 971 women





3. Delivering on Sustainable Energy: Enhancing Outreach



3. Delivering on Sustainable Energy: Achieving High Performance Buildings

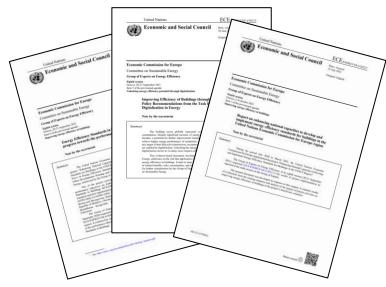
REPORTS

INFC

ECE/ENERGY/GE.6/2022/3 - Report on enhancing national capacities to develop and implement energy efficiency standards for buildings in the United Nations Economic Commission for Europe region

ECE/ENERGY/GE.6/2021/4 - <u>Energy Efficiency Standards in Buildings:</u> analysis of progress towards the performance objectives

ECE/ENERGY/GE.6/2021/5 - Improving Efficiency of Buildings through Digitalization – Policy Recommendations from the Task Force on Digitalization in Energy



Armenia, Yerevan and online | 09 - 11 March 2022 "Unveiling Market Opportunities for Boosting Residential Energy Efficiency and Alleviating Energy Poverty" (Regional Advisory)

EVENTS

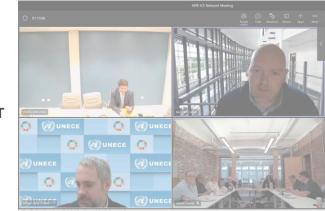
Moldova, Chisinau and online | 20 - 21 January 2022 | PROJECT National training seminar on high-performance energy efficiency standards in buildings in the Republic of Moldova (Regional Advisory)

Kyrgyzstan, Bishkek and online | 29 - 30 November 2021 | PROJECT National training seminar on high-performance energy efficiency standards in buildings in Kyrgyzstan (Regional Advisory)

Armenia, Yerevan and online | 25 - 26 October 2021 | PROJECT National training seminar on high-performance energy efficiency standards in buildings in Armenia (Regional Advisory)

United States, Pittsburgh | 21 - 23 September 2022 Clean Energy, Climate and the Built Environment: Ensuring a Healthy, Just and Sustainable Future for All Towards a Buildings Breakthrough: Raising the Performance of the Built Environment

ICE-HPB COORDINATION MEETINGS





3. Delivering on Sustainable Energy: Modernizing Resource Management

Accelerated development and implementation of UN **Classification for Resources (UNFC) and UN Resource Management System (UNRMS)**, with a focus on countries of the European Union for critical raw materials.

Conducted UNFC training

UNFCF

- Created a Network of Practitioners Europe
- Drafted <u>UNRMS principles and requirements</u>
- Supported resource efficiency and progress towards a more circular economy
- Developed case studies from Bosnia & Herzegovina, Serbia, Ukraine, Kazakhstan, Kyrgyzstan and Tajikistan
- Fostered **adoption** by the African Union
- **Enhanced cooperation** with ESCAP and ESCWA

United Nations Resource Management System: Principles



State rights and

responsibility in the

Value additio











to the Planet

management of resources

Social contract or natural resources

Innovation

Service orientatio





Circularit









Health and Safety

of core competencie

Image Credit: British Geological Survey, UK

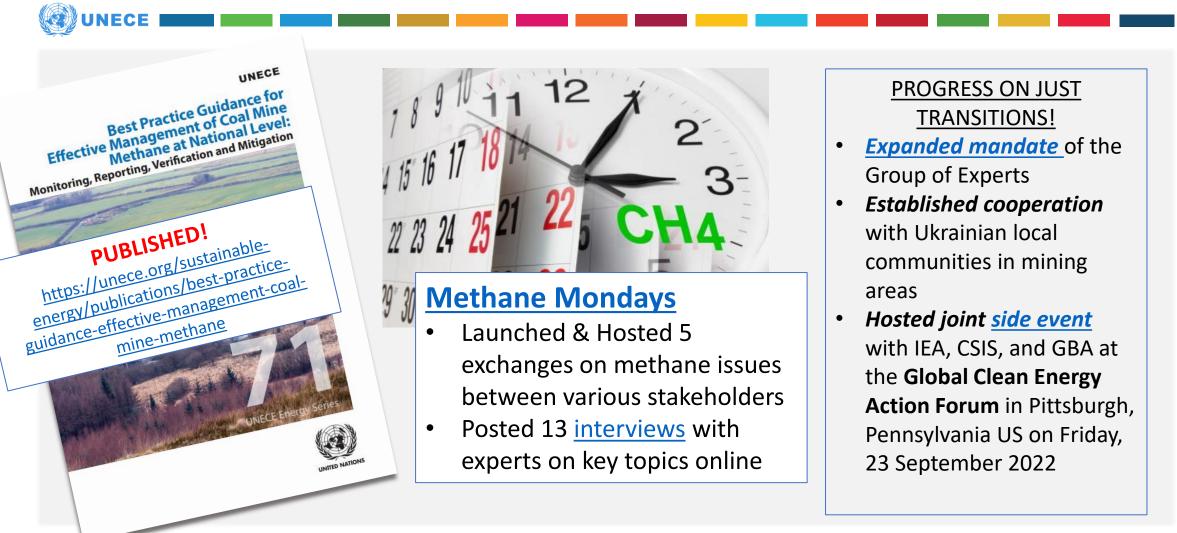
3. Delivering on Sustainable Energy: Enabling a hydrogen ecosystem

- The Group of Experts on Gas concluded in March 2022 that a hydrogen classification based on colours has limited value in international trade.
- GEG recommended to ECE member States to investigate integrated hydrogen production, transport, and consumption in the region and to examine regional potentials for hydrogen production and use at a local scale
- UNECE started to implement the project Sustainable hydrogen production in the UNECE region and its role in the development of a hydrogen ecosystem and export potential, funded by the Russian Federation.
 - Held a webinar in December 2021, Workshop in March 2022
- Drafted document <u>Comprehensive and science-based terminology</u>, <u>classification and taxonomy for hydrogen</u> (ECE/ENERGY/2022/8)





3. Delivering on Sustainable Energy: Addressing Methane Management



3. Delivering on Sustainable Energy: Carbon Neutrality

Outreach and Training

- Conducted 15 capacity building workshops and multi-stakeholder dialogues about the potential of low- and zero-carbon technologies and their interplay to attain carbon neutral energy systems in ECE region
 - More than 150 participants from UNECE subregions (Central Asia, the Caucasus, Western Balkans)
- Promoted Carbon Neutrality findings at *high level international events*, such as the UN High Level Dialogue on Energy in New York, COP26 in Glasgow, Almaty Energy Forum

TOOLKIT LAUNCHED SEPTEMBER 2022! 4 briefs

- 3 technology briefs on <u>CCUS</u>, <u>hydrogen</u> and <u>nuclear power</u> and
- 1 on carbon neutral energy intensive industries
- **3 publications**
- <u>Geologic CO₂ storage in</u> <u>Eastern Europe, Caucasus and</u> <u>Central Asia</u>
- Technology Interplay under the Carbon Neutral Concept
- Life Cycle Assessment of Electricity Generation Options https://carbonneutrality.unece.org/



Carbon Neutrality Toolkit

Supporting policymakers to make informed decisions towards the implementation of the 2030 Agenda for Sustainable Development and the Paris Agreement.



Highlights in Regional Advisory Services

Global Initiative towards post-COVID-19 resurgence of the MSMEs sector

Regional reports, Customized guidelines and Training:

 Guidelines and Best Practices for MSMEs in delivering energy-efficient products and in providing renewable energy equipment:

Georgia and North Macedonia, Albania, Armenia, Kyrgyzstan, and Republic of Moldova

Guidelines and Best practices for MSMEs to assure resiliency and progress toward a circular economy in sustainable resource management and critical raw material supply chain solutions:

Tajikistan, Ukraine, Bosnia and Herzegovina, Kazakhstan, Kyrgyzstan, and Serbia.



TPDATED GUDI

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Highlights in Regional Advisory Services

Enhancing national capacities to develop and implement energy efficiency standards for buildings in the UNECE region

Regional Gap Analysis, in-depth studies for <u>Armenia</u>, <u>Kyrgyzstan</u>, and <u>Republic of Moldova</u>, national training seminars, collaborative environment for experts, regional capacity-building workshops, and impact study.



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Highlights in Regional Advisory Services

Energy Transition and Post-Covid-19 Socioeconomic Recovery: Role of Women and Impact on Them

 Case studies of Albania, Belarus, Ukraine, United Kingdom, and Uzbekistan.

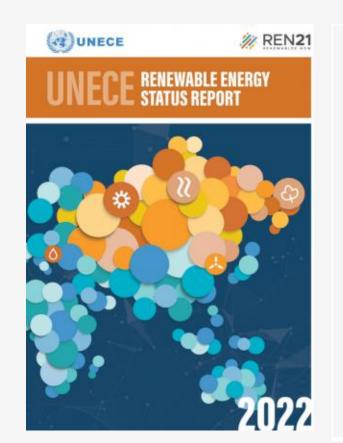


Kankana Dubey UNECE Consultant

Energy Transition and the Post-Covid-19 Socioeconomic Recovery: Role of Women and Impact on Them



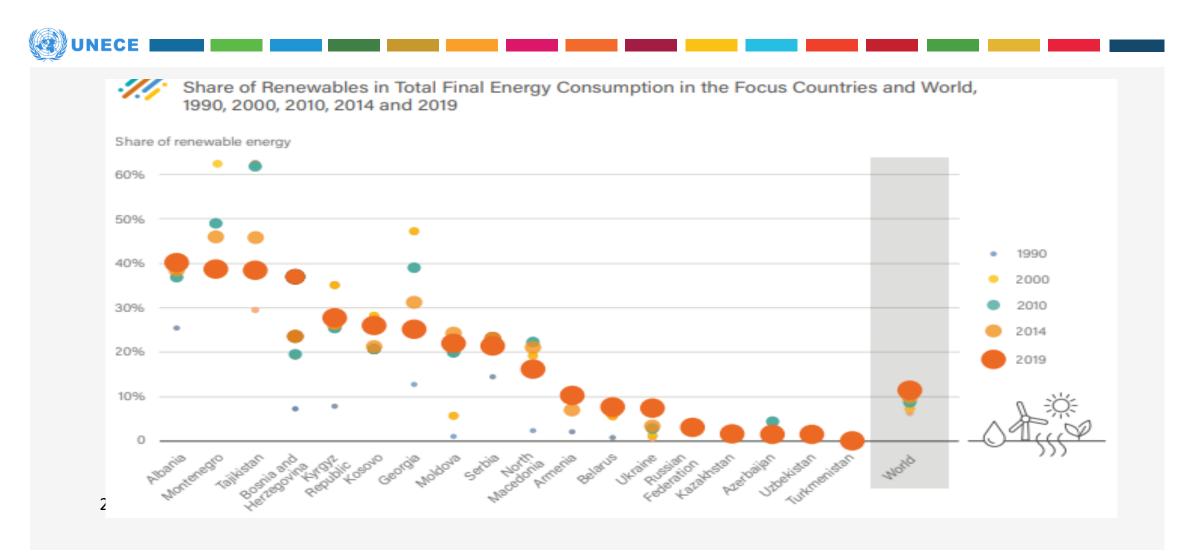
Spotlight: UNECE Renewable Energy Status Report



UNECE

- <u>UNECE Renewable Energy Status Report 2022</u> launched on 14 September 2022;
- Provides a comprehensive overview of the current status of renewable energy and energy efficiency trends
- Prepared jointly by the Renewable Energy Policy Network for the 21st Century (REN21) and UNECE as flagship activity of the Group of Experts on Renewable Energy
- Long-standing cooperation with REN21 started with the first edition in 2015 to fill data and information gap in South-East and Eastern Europe, Central Asia, the Caucasus and the Russian Federation.

Spotlight: UNECE Renewable Energy Status Report

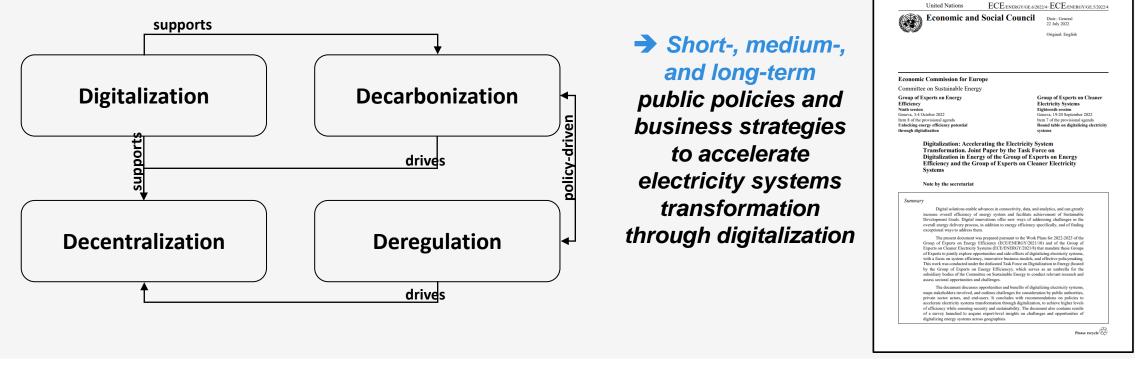


Spotlight: Digitalization Accelerating the Electricity System Transformation

ECE/ENERGY/GE.6/2022/4-ECE/ENERGY/GE.5/2022/4

Joint Paper by the Task Force on Digitalization in Energy of the Group of Experts on Energy Efficiency and the Group of Experts on Cleaner Electricity Systems

[Mapping of stakeholders [Opportunities and benefits of digitalizing electricity systems] Challenges for consideration]



Spotlight: Digitalization Addressing Behavioural Barriers to Energy Digitalization ECE/ENERGY/GE.6/2022/5

57%

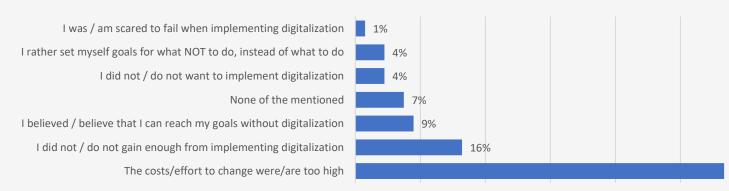
Task Force on Digitalization in Energy of the Group of Experts on Energy Efficiency:

Addressing Behavioural Barriers to Energy Digitalization

[Human psychology [Energy behaviour] Barriers to Achieving the Energy Benefits Enabled by Digitalization]

<u>Missing link</u> in understanding the lagging implementation of digital technologies Actions that affect the way energy is utilized to achieve desired services (1) Experienced cost of change; (2) Fear of failure; (3) Addressing the right need;
(4) Missing intrinsic motivation; (5) Disempowering beliefs;
(6) Maintaining consistency over time; (7) Negatively formulated goals

Main reasons holding back implementation of digitalization in energy



Interlinkages of psychology with digitalization, energy efficiency, and broader energy system transformation

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Spotlight: Digitalization

Challenges of big data and analytics-driven demand-side management

GEEE-972022/INF.3

GEEE-9/2022/INF.3

Policy discussion by the Task Force on Digitalization in Energy of the Group of Experts on Energy Efficiency

Challenges of big data analytics

UNECE

Policy gaps and barriers

Questions for further analysis

→ Key areas for further consideration:

otherwise use data

to ensure that the system and information is accurate Data Curation, Data Integration, Integrity Cybersecurity and Data Translation and correct to ensure that systems, information, and services are Data and Analytics Model Availability, Availability available as appropriate to the operational needs of Advanced Analytics Model R&D Efforts, the utility Cybersecurity, Outreach to ensure that only the correct, authorized users, Data Democratization, Cybersecurity, Grid Confidentiality systems and resources can view, access, change or Resiliency

→ Follow-on activities

- Investigate key questions raised in the document and carry out comprehensive analysis for each
- **Research** <u>funding models</u> for big data technology advancement (natural language processing, digital twin modelling, demand / load forecasting, optimized ML, progression of AI capabilities), grid resilience, infrastructure as relates to data access, storage, management, and real-time analytics
- **Create and maintain** a common <u>dictionary of terms</u> in the area of Digitalization in Energy

Policy discussion – Challenges of big data and analyticsdriven demand-side management Dr. Elizabeth Massey 1 (lead author). Dr. Piyush Verma 2. Mr. Beto Altamirano Mr. Andrei Covatariu 4, Mr. Romanas Savickas Introduction In recent years, the energy sector has experienced a shift towards disruptive trends ch as decarbonization, decentralization and digitalization, creating an energy transition that serates a major impact on the utility industry worldwide. . Technologies that are driving digitalization of the utility sector include Distributed inergy Generation in the form of Distributed Solar PV, Utility-scale storage, Electric hicles (EVs) and EV Charging Infrastructure, and the proliferation of Advanced Metering instructure and smart meters. frastructure and smart i 3. Big data, however, is still a nascent research area in the electric utility industry due to a lack of resources and expertise, whilst in other industries, such as online commerce and lelecommunications, big data research is developing as fast as the technology that supports As a result, new business models, utility canabilities and conspecially on the demand side, will be enabled by these emerging technologies. With proper search funding support, the utility industry can realize international collaboration and fair ompetition in this technology space. 5. Key objectives of this paper are: (a) Review the current challenges of big data analytics within the context of distribution grid / demand-side management. (b) Describe policy gaps or barriers to the progress of advanced analytics in the electric utility sector (c) Identify key questions that deserve further analysis to address the challenge s, and barriers to progressing state-of-the-practice for utility demand-side advanced lytics and advanced demand-side management. Context 6. Beginning in 1985 when the term, 'Business Intelligence' was coined, the term Data Analytics grew out of that work and has been a core part of the last century of evolution in the computing field. Today the term Data Analytics is used in nearly every industrial and ommercial sector (Figure I). Advanced analytics represents canabilities to manage and analyse data, typically f. Advanced analytics represents capatolitics to manage and analyse data, typically going further than those of traditional Business Intelligence (BI). In this context 'big data analytics' is the examination of a set of data using algorithms and other sophisticated modelling and statical analysis techniques to produce actionable insights from this data. A related term 'advanced analytics' is often described as the use of predictive and prescriptive approaches to advance those insights into action. retor, Connected Analytics. Chair of the Group of Experts on Energy Efficiency, Chair of the Task Force on Digitalization in Energy, Harvael Kennedy Schoo

Harrint Kennedy School, Braine Research Associate, Energy Policy Group. Vise-Chair of the Group of Experiments on Energy Efficiency, Senior Advisor, UNEP-CCC, Copenhagen Climate Centre.

3. Delivering on Sustainable Energy: Subprogramme Accomplishments Since the Thirtieth Session of the Committee on Sustainable Energy



Thank you!

We're looking forward to another productive year.

Committee on Sustainable Energy Secretariat