



GROUP OF EXPERTS ON  
**CLEANER  
ELECTRICITY SYSTEMS**

NINETEENTH SESSION | 3-4 OCTOBER 2023

**DAY 1**




PALAIS DES NATIONS, ROOM III | 10h00-13h00 / 15h00-18h00 CEST




# Activities and priorities of the Committee on Sustainable Energy and matters for consideration by the Group of Experts

Iva Brkic, Secretary, Committee on Sustainable Energy  
Sustainable Energy Division

A stylized graphic illustration representing sustainable energy systems. It features a central globe surrounded by icons for wind turbines, solar panels, a factory, a bar chart with an upward-trending line graph, and a target symbol. The background is a light blue gradient.

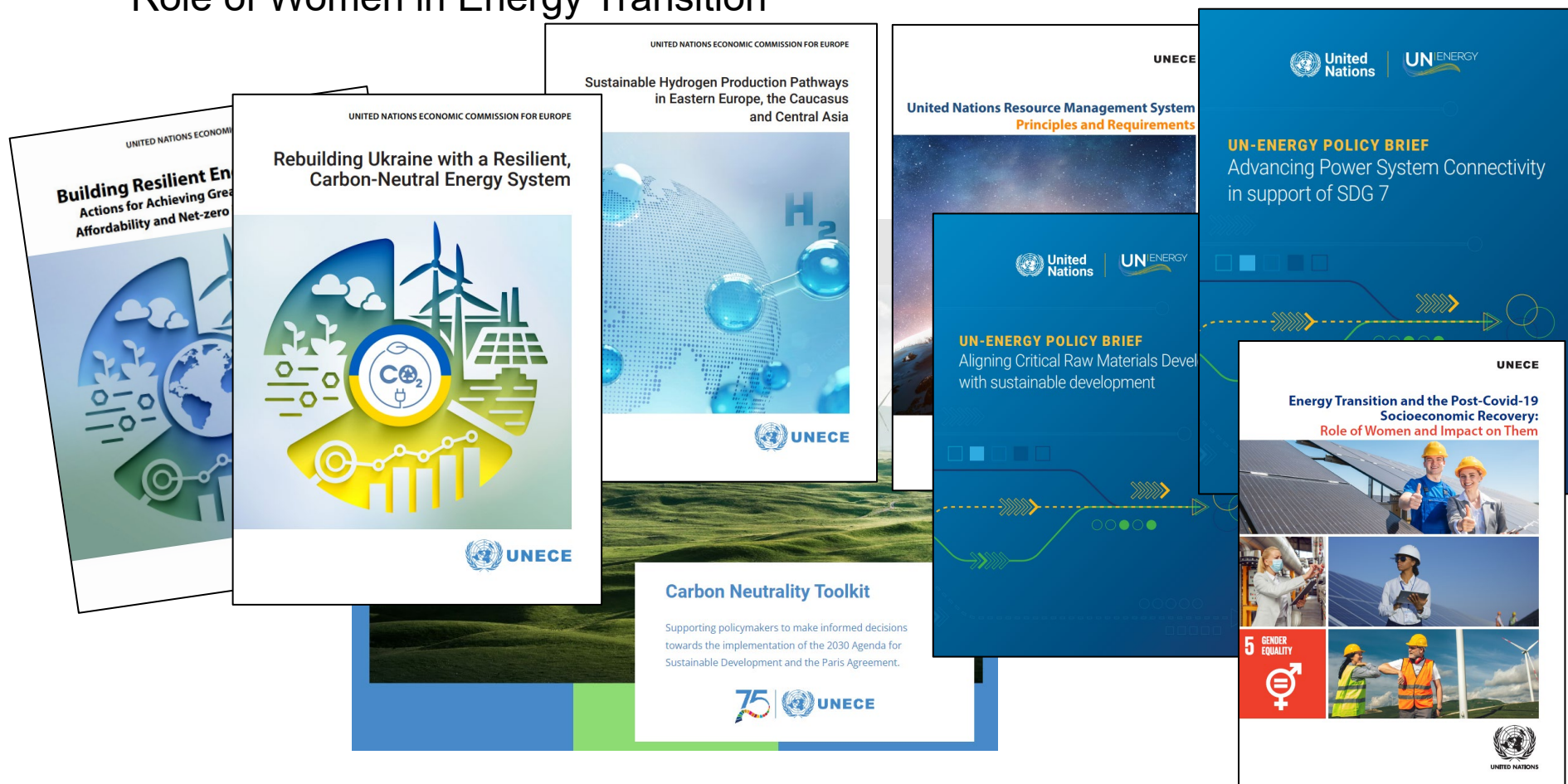
**CLEANER  
ELECTRICITY SYSTEMS**

**BUILDING RESILIENT ENERGY SYSTEMS**

The logo of the United Nations Economic Commission for Europe (UNECE), featuring a globe icon and the acronym "UNECE" in blue capital letters.

# Key achievements 2022-2023

- **Developed cross-thematic knowledge to produce joint papers and events on key, complex topics:** Building Resilient Energy Systems, Sustainable Hydrogen Production Pathways, Sustainable Resource Management (UNRMS/UNFC), Critical Raw Materials, Energy Connectivity, Role of Women in Energy Transition



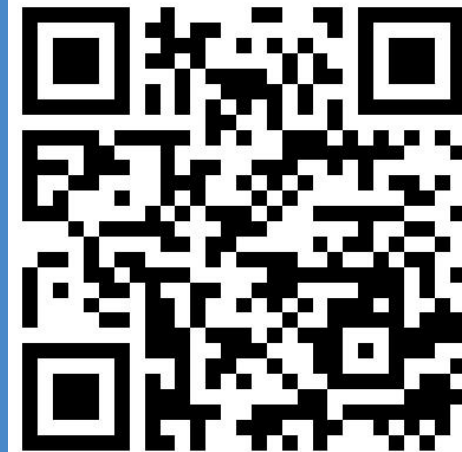
# UNECE Carbon Neutrality Toolkit

## Building Resilient Energy Systems

A photograph of several wind turbines on rolling green hills under a cloudy sky. The image is framed by a blue border with green accents at the top and bottom.

**Carbon Neutrality Toolkit**

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

The logo features the number "75" in a stylized, multi-colored font, followed by the UNECE globe icon and the text "UNECE" in blue.



# UNECE Carbon Neutrality Toolkit

## Building Resilient Energy Systems



**TECHNOLOGY BRIEF**  
**CARBON CAPTURE, USE AND STORAGE (CCUS)**



**UNECE**



**TECHNOLOGY BRIEF**  
**CARBON NEUTRAL ENERGY INTENSIVE INDUSTRIES**

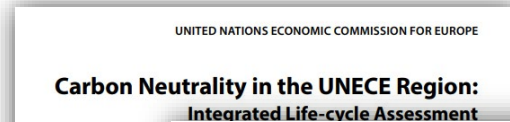


**TECHNOLOGY BRIEF**  
**HYDROGEN**



**UNECE**

**TECHNOLOGY BRIEF**  
**NUCLEAR POWER**



UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

**Carbon Neutrality in the UNECE Region:  
Integrated Life-cycle Assessment**

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

**Carbon Neutrality in the UNECE Region  
Technology Interplay under the  
Carbon Neutrality Concept**

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

**Rebuilding Ukraine with a Resilient,  
Carbon-Neutral Energy System**

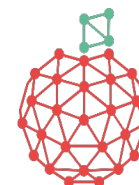


**UNECE**



# Key achievements 2022-2023 (continued)

- Organized special events and high-level dialogues on the topics of **building resilient energy systems, critical raw materials, climate finance, energy connectivity and digitalization of energy systems.**
- Launched a strategic partnership of UN Agencies** (UNECE, UNESCAP and UNDP) at the 2nd Almaty Energy Forum and **formed a Task Force for Energy Transition in Central Asia** to design and build resilient energy systems in Central Asia.
- Set up**, in cooperation with EMBER, an **online bi-monthly series *Methane Mondays*** providing a **platform for a multistakeholder dialogue on matters related to MRV and mitigation of methane emissions along the coal value chain**

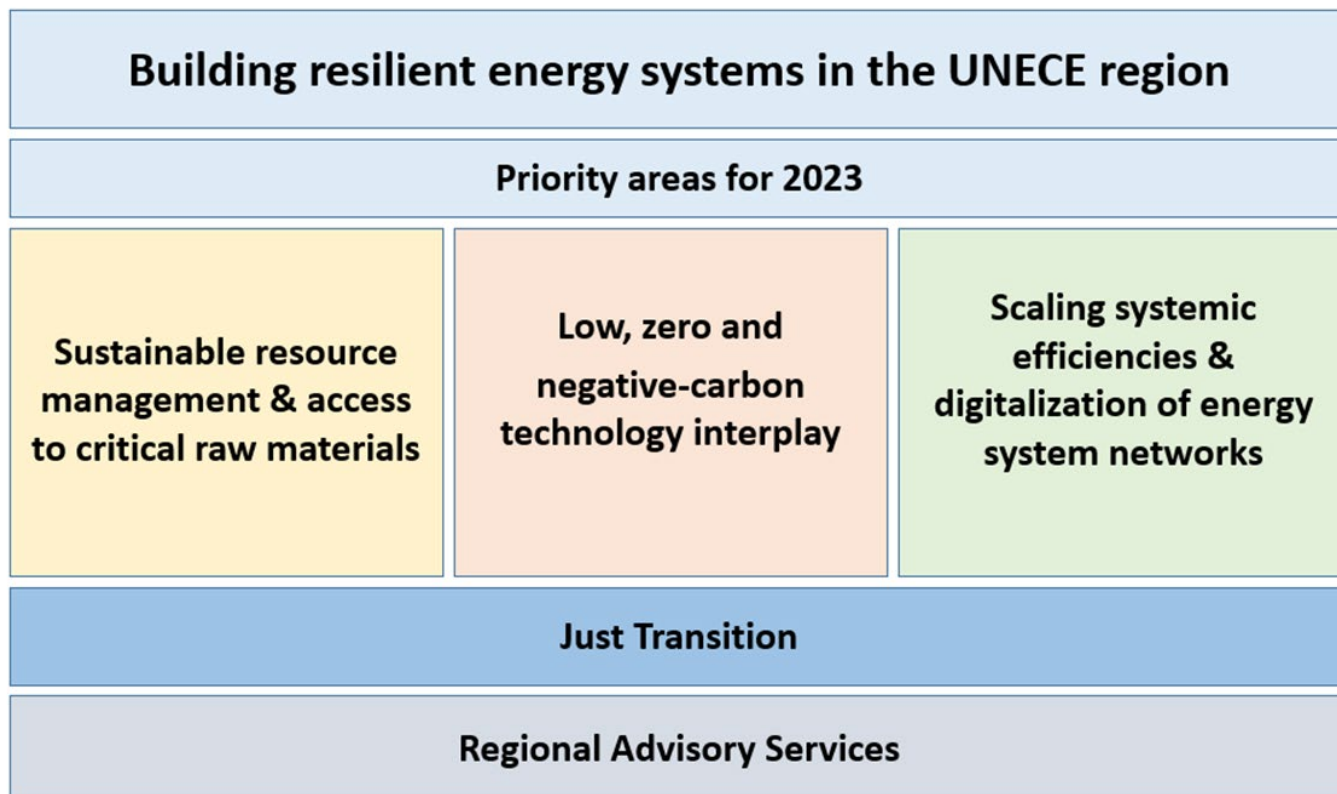


2<sup>nd</sup> Almaty Energy Forum



METHANE MONDAYS

# Key Areas of Work

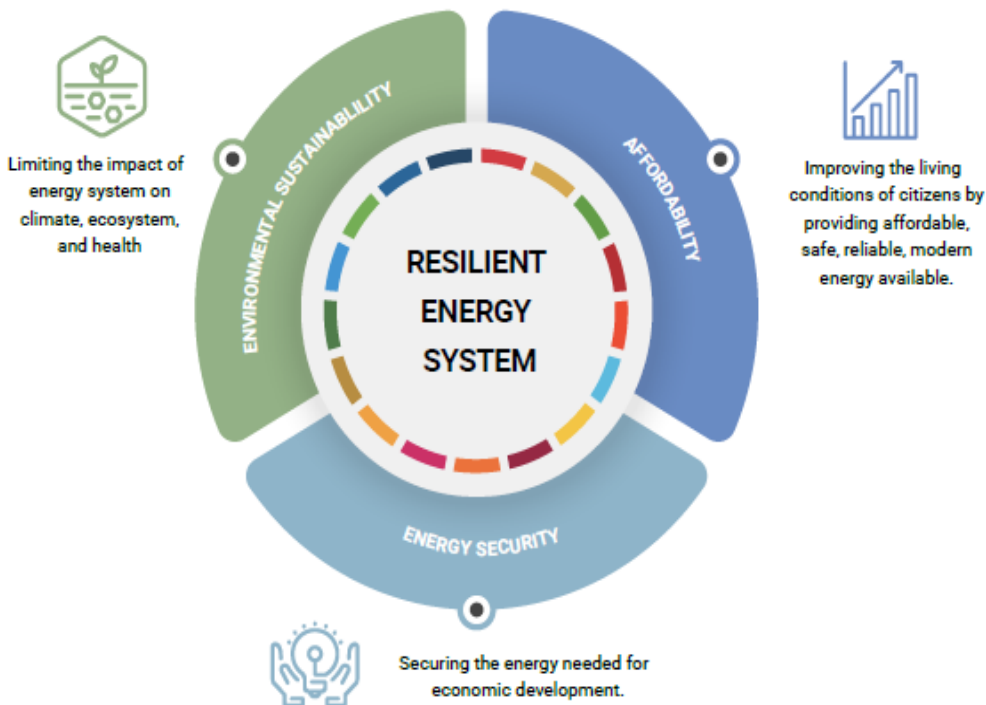


# 2023: building resilient Energy Systems

## Technical Considerations and Actions for Achieving Energy Security, Affordability, and Sustainability Net-Zero for Europe, North American and Central Asia

### What is a resilient energy system?

- A **resilient energy system** ensures that energy makes an optimal contribution to a country's **social, economic, and environmental** development.
- **Energy security** strengthens energy independence through interconnectivity and trade.
- **Affordability** reduces costs of electricity, heating, cooling, and transport.
- **Environmental sustainability** lowers the carbon footprint and enhances efficiency across the energy supply chain.





# Energy System Resilience: UNECE contribution

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

## Building Resilient Energy Systems: Actions for Achieving Greater Energy Security, Affordability and Net-zero in the UNECE Region



### Recommendations for Policymakers

The Expert Groups have aligned on five important recommendations to build a resilient energy system and achieve balance among affordability, energy security, and environmental sustainability:

1. **Prioritize and maximize the implementation of energy efficiency solutions** to drive down primary energy consumed while meeting economic and societal needs.
2. **Digitalize the energy system** and take advantage of increasing consumer digital literacy capturing the enormous optimization opportunity in the value chain.
3. **Accelerate fuel switching** to optimize the carbon footprint of end use energy and replace carbon intensive fuels where practical with low- and zero-carbon options.
4. **Manage resources effectively, sustainably, and with circular economy considerations**, using the UN framework Classification (UNFC) and UN Resource Management System (UMRMS).
5. **Accelerate the deployment of low- and zero-carbon technologies** by scaling renewable energy, nuclear power and advanced fossil fuels with carbon capture, use and storage.



### Key Considerations for Policymakers

As policymakers look across the options included and assess what will be best for their circumstances, it is important to bear in mind the following key considerations:

1. **Recognize that there is not a one-size-fits-all approach.**
2. **Consider long term goals as they design policies today.**
3. **Address behavioural barriers to unlock innovation and digitalization potential.**
4. **Build a workforce to deliver on a just energy transition and address the skills shortage.**
5. **Integrate resiliency concerns into existing and related planning efforts.**
6. **Consider climate change impacts on supply and demand.**

# Platform on Resilient Energy Systems

## 1. AI-powered real-time interactive tool

Artificial intelligence and machine learning for facilitating data-driven policy making.



## 2. Forum for inclusive multi-stakeholder dialogue

Unique forum for information exchange, which hosts demand-driven policy dialogues on topical issues, supported by data collection, classification, and policy analysis.

# Demo EnergyChat in partnership with University of Zurich and International Organizations



## Ask from trusted resources

(UNECE, WMO, IPCC, IEA, IAEA, OSCE)

Could we reach net zero targets without nuclear energy?



gpt-3.5-turbo  gpt-4

Responses:

▾ WMO

▾ IPCC

▾ UNECE

▾ OSCE

▾ IEA

▾ IAEA

▾ Summary



# Looking ahead: 2023-2024

## Top Priority Activities (continued)

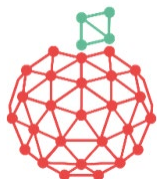


### Building resilient energy systems in Central Asia

UNECE launched strategic partnership  
with UNDP and ESCAP

Key areas of work to include:

- **Low- and zero-carbon technology interplay** in Central Asia
- **Access to critical raw materials** in Central Asia
- **Water and energy nexus** in Central Asia
- **Energy connectivity** in Central Asia
- **Fostering next generation of energy experts** to deliver on energy transition in Central Asia



**3<sup>rd</sup> Almaty  
Energy Forum**







**UNECE**



# Looking ahead: 2023-2024

## Top Priority Activities (continued)



### **Support the development of a Hydrogen Ecosystem**

- Operationalize Task Force on Hydrogen to coordinate efforts and develop:
  - a comprehensive classification for hydrogen
  - Specifications for UNFC/UNRMS application to hydrogen projects and production technologies, if/where appropriate

### **Accelerate activities on Sustainable Resource Management**

- Support UNECE member States in priority **deployment of UNFC**
- Continue **development of UNRMS** with a focus on the extraction, sustainability and procurement of **Critical Raw Materials and Resource Efficiency**, i.a. with focus on Central Asia

# Looking ahead: 2023-2024

## Top Priority Activities (continued)

### Methane management

- Reducing coal mine methane emission from active and abandoned coal mines
- Measure and manage methane emissions across the natural and gas value chains
- *Saved the Date: Global Methane Forum 2024*

