



18th Session
Group of Experts on Cleaner Electricity Systems
ENERGY SECURITY, RESILIENCE AND NET ZERO
TANGIBLE ACTIONS TO DELIVER A SUSTAINABLE ENERGY FUTURE
19-20 SEPTEMBER 2022 | PALAIS DES NATIONS | GENEVA

www.unece.org



PLEASE STANDBY
SESSION WILL START AT 10.00 CET



18th Session of the Group of Experts Cleaner Electricity Systems
Energy Security, Resilience and Net Zero
Tangible Actions to Deliver a Sustainable Energy Future

19 September 2022, Geneva





18th Session
Group of Experts on Cleaner Electricity Systems
ENERGY SECURITY, RESILIENCE AND NET ZERO
TANGIBLE ACTIONS TO DELIVER A SUSTAINABLE ENERGY FUTURE
19-20 SEPTEMBER 2022 | PALAIS DES NATIONS | GENEVA



18th Session of the Group of Experts Cleaner Electricity Systems
Energy Security, Resilience and Net Zero
Tangible Actions to Deliver a Sustainable Energy Future

19 September 2022, Geneva

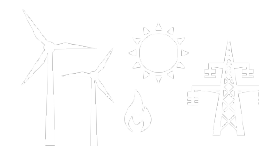




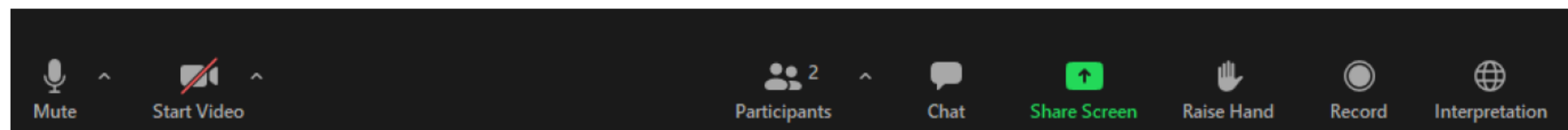
18th Session
Group of Experts on Cleaner Electricity Systems
ENERGY SECURITY, RESILIENCE AND NET ZERO
TANGIBLE ACTIONS TO DELIVER A SUSTAINABLE ENERGY FUTURE
19-20 SEPTEMBER 2022 | PALAIS DES NATIONS | GENEVA



Housekeeping



Use the navigation bar



↓
You can mute or unmute your microphone and video

↓
You can see the list of participants

↓
Text chat

↓
To request the floor

↓
To choose your preferred interpretation language

Opening and approval of the agenda

Mr. Jim Robb, Chair, Group of Experts on Cleaner Electricity Systems



		
 SECURITY	 RESILIENCE	 NET ZERO

18th Session
Group of Experts on Cleaner Electricity Systems
ENERGY SECURITY, RESILIENCE AND NET ZERO
TANGIBLE ACTIONS TO DELIVER A SUSTAINABLE ENERGY FUTURE
19-20 SEPTEMBER 2022 | PALAIS DES NATIONS | GENEVA

www.unece.org

 **UNECE**

Election of officers

Nominations received

Chair:

Mr. Jim Robb, United States

Vice-Chairs:

Mr. Baurzhan Umirzakov, Kazakhstan

Mr. Georgy Popov, Russian Federation

Mr. Andrew Minchener, International Centre for Sustainable Carbon

Mr. King Lee, World Nuclear Association

Mr. Antoine Herzog, Électricité de France

Election of officers

Elected candidates

Chair:

Mr. Jim Robb, United States

Vice-Chairs:

Mr. Baurzhan Umirzakov, Kazakhstan

Mr. Andrew Minchener, International Centre for Sustainable Carbon

Mr. King Lee, World Nuclear Association

Mr. Antoine Herzog, Électricité de France

Election of officers

- As per the [Terms of Reference and Rules of Procedure of the Economic Commission for Europe, Fifth Revised Edition](#)

CHAPTER IX: VOTING

Rule 42: All elections shall be decided by **secret ballot**, unless, in the absence of any objection, the Commission decides to proceed without taking a ballot on an agreed candidate or slate

Instructions:

1. Distribution of ballots to member States (one ballot per delegation present)
2. Member States mark their votes on the provided ballot
3. Secretariat calls member States alphabetically to approach the ballot box to confirm identity and cast their vote
4. Secretariat verifies and counts the ballots
5. Secretariat validates the results

Note: only candidates that receive the required majority (simple majority of the members present and voting) are elected

6. Chair reports the results

Election of officers

- As per the [Rules of Procedure of the Committee on Sustainable Energy](https://unece.org/sustainable-energycommittee-sustainable-energy/rules-procedure) (<https://unece.org/sustainable-energycommittee-sustainable-energy/rules-procedure>):
- Para 15. Candidates for the Bureaux of the subsidiary bodies shall be nominated by ECE member States where possible. The Bureaux of the subsidiary bodies can nominate additional Vice-Chairs from the expert community based on their expertise, professionalism, and support as appropriate.
- Para 16. Elections to Bureaux will take place in accordance with the Guidelines on procedures and practices for ECE bodies adopted by the Economic Commission for Europe

Election of officers

Bureau of the Group of Experts on Cleaner Electricity Systems

Chair:

Mr. Jim Robb, United States

Vice-Chairs:

Mr. Vladimir Budinsky, Czech Republic

Mr. Baurzhan Umirzakov, Kazakhstan

Ms. Djamila Aitmatova, Kyrgyzstan

Mr. Furugzod Usmonov, Tajikistan

Mr. Jonathan Gibbins, United Kingdom

Mr. Antoine Herzog, Électricité de France

Mr. Sylvain Clermont, Hydro-Québec Canada

Mr. Andrew Minchener, International Centre for Sustainable Carbon

Mr. King Lee, World Nuclear Association

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

Denise Mulholland, Secretary, Committee on Sustainable Energy



31st Session
Committee on Sustainable Energy
ENERGY SECURITY, RESILIENCE AND NET ZERO
TANGIBLE ACTIONS TO DELIVER A SUSTAINABLE ENERGY FUTURE
21-23 SEPTEMBER 2022 | PALAIS DES NATIONS | GENEVA

www.unece.org

 **UNECE**

SECURITY RESILIENCE NET ZERO

The Committee on Sustainable Energy and its six Subsidiary Bodies

Reducing the Environmental Footprint of the Energy Sector



Deep Transformation of the Energy System



Sustainable Resource Management



Reducing the Environmental Footprint of the Energy Sector

- Enhancing the interplay between the renewable energy and natural gas
- Improving energy efficiency across buildings and industry sectors
- Scaling renewable energy deployment in Eastern Europe, the Caucasus and Central Asia
- Promoting sustainable hydrogen production pathways in Eastern Europe and Central Asia
- Supporting member States to achieve their methane reduction targets



Deep Transformation of the Energy System

- Pathways to Sustainable Energy
- Attaining Carbon Neutrality in the UNECE region
- Building resilient energy systems in the UNECE region
- Digitalizing energy systems



Sustainable Resource Management

- Building and implementing global standards - UNFC and UNRMS
- Addressing the demand for critical raw materials for energy transition
- Enabling resource efficiency and progressing towards circular economy



Session I - Building a resilient energy system in the ECE region through low- and zero-carbon technology interplay

Introduction and moderation:

Mr. Jim Robb, Chair, Group of Experts on Cleaner Electricity Systems

Carbon Neutrality Project Findings:

Ms. Iva Brkic, Project Lead, UNECE

Mr. Walker Darke, Consultant, UNECE

Mr. Behnam Zakeri, Senior Analyst, IIASA

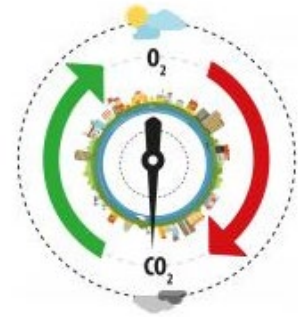
Panel Discussion:



Mr. Vladimir Budinsky, Vice-Chair of the Group of Experts on Cleaner Electricity Systems

Mr. King Lee, Vice-Chair of the Group of Experts on Cleaner Electricity Systems

Mr. Jon Gibbins, Vice-Chair of the Group of Experts on Cleaner Electricity Systems



Mr. Furugzod Usmonov, Vice-Chair of the Group of Experts on Cleaner Electricity Systems





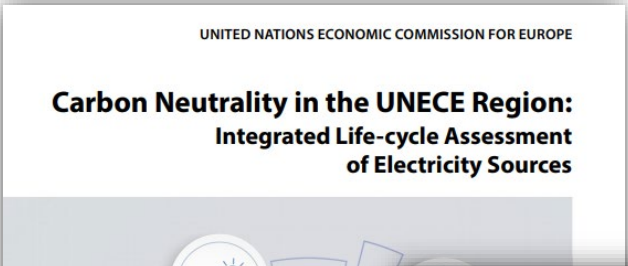
Carbon Neutrality Toolkit

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

  **UNECE**

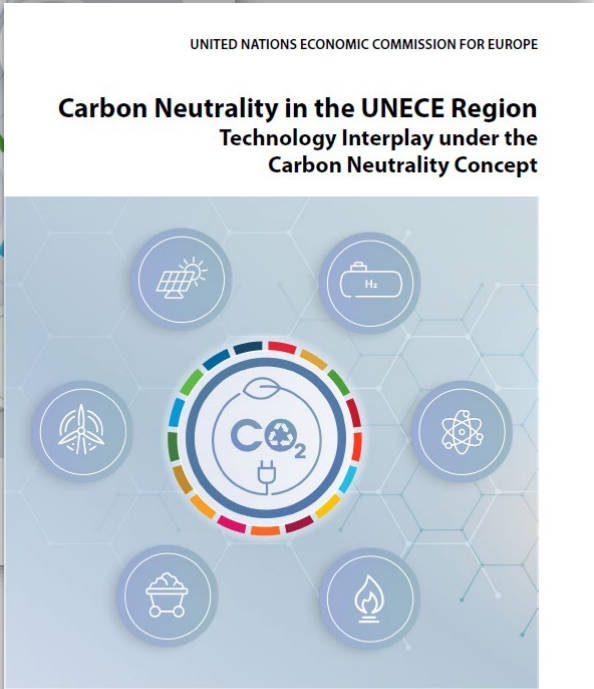


TECHNOLOGY BRIEF
CARBON CAPTURE, USE AND STORAGE (CCUS)



UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Carbon Neutrality in the UNECE Region:
Integrated Life-cycle Assessment
of Electricity Sources



UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

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



TECHNOLOGY BRIEF
HYDROGEN



TECHNOLOGY BRIEF
NUCLEAR POWER



Impacts of the carbon neutrality project



International

30+ Countries actively participating in carbon neutrality project implementation.



Development

15+ capacity building workshops delivered on low- and zero-technologies and carbon neutrality frameworks.



Policies

7+ United Nation's publications on carbon neutrality including technology and policy briefs.



Action

Launch of activities on rebuilding the energy system in Ukraine, and carbon neutrality attainment in Central Asia.



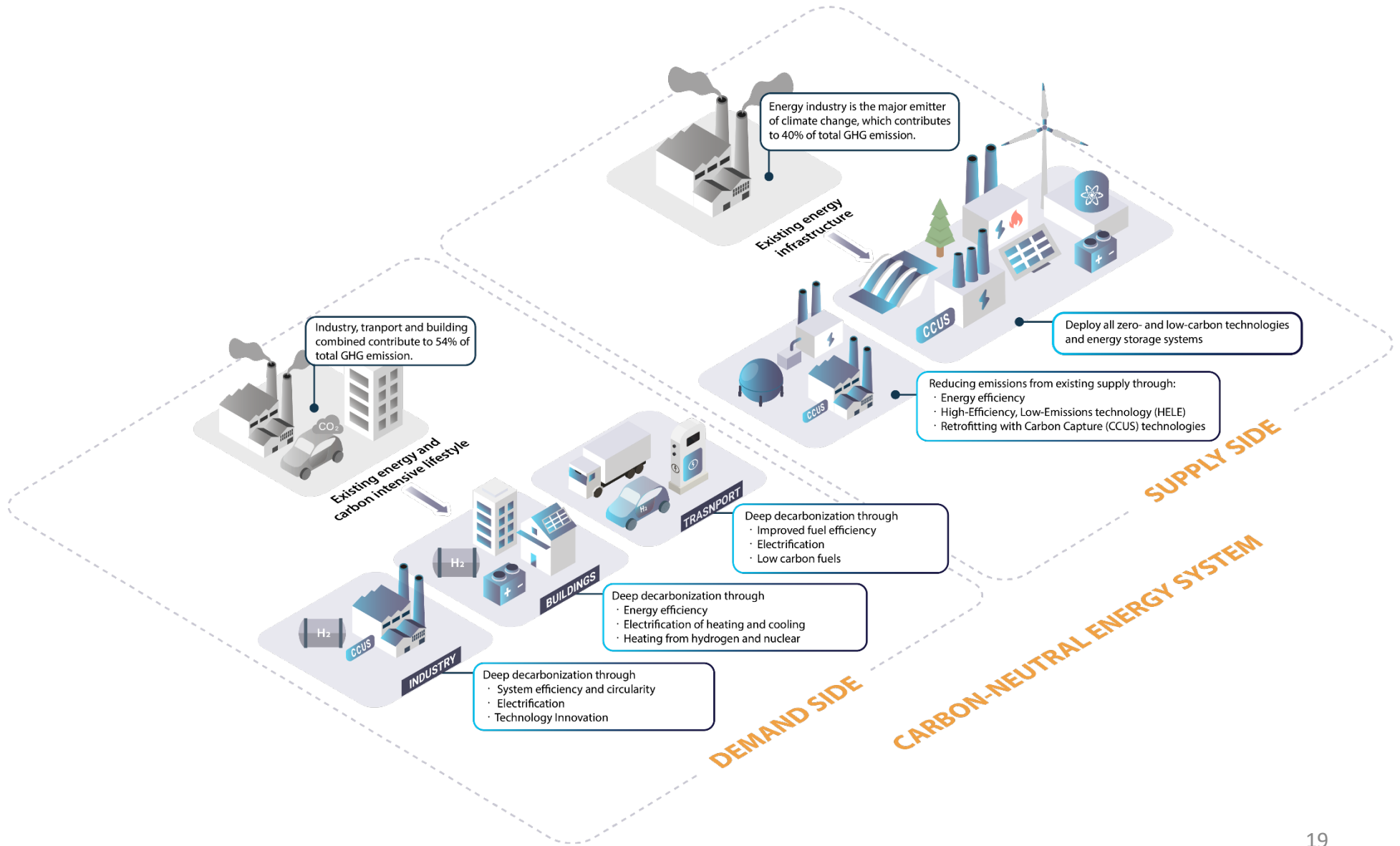
Sharing

Millions of views of the ECE Carbon Neutrality Toolkit at international events, and online.

Carbon Neutral Energy System of the Future



Carbon Neutral Energy System of the Future



Key Takeaways – Carbon Neutrality under Carbon Neutrality System



Actions fall short on carbon neutrality

Carbon dioxide and methane emissions in the UNECE region [MtCO₂eq]

— Reference Scenario — Carbon Neutrality Scenario

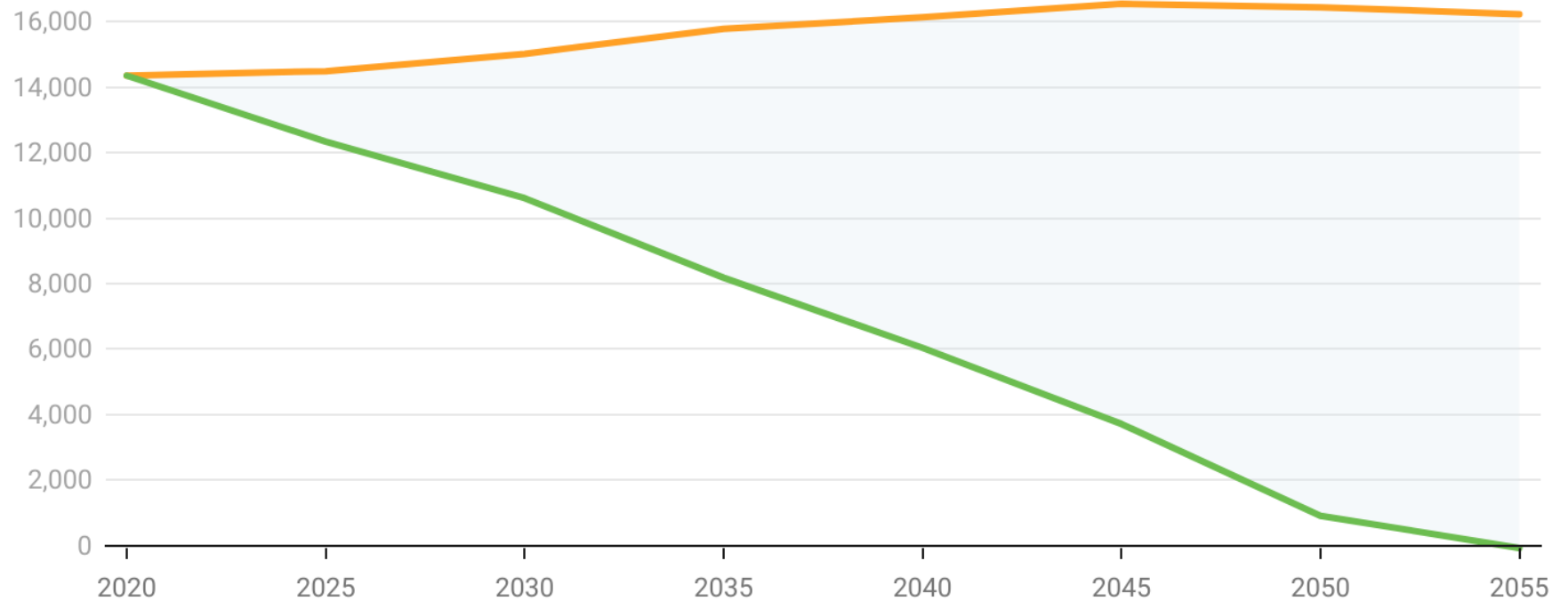


Chart: United Nations • Created with Datawrapper

Key Takeaways – Carbon Neutrality under Carbon Neutrality System



Diversify Energy

Diversify primary and final energy supply



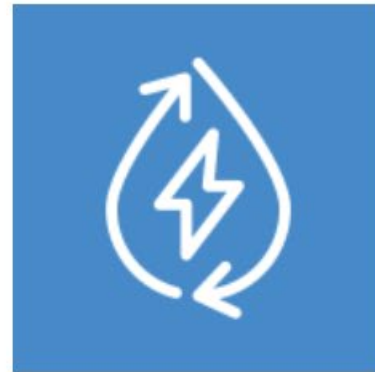
Phase-Out Fossil Fuels

Accelerate phase-out of unabated fossil fuels



Electrification

Electrify all sectors through renewable energy and nuclear power



Innovate

Scale-up innovative low- and zero-carbon technologies

Key Takeaways – Carbon Neutrality under Carbon Neutrality System



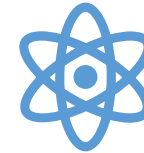
01. RAISE AWARENESS

Raise awareness about the merits of all low- and zero-carbon technologies



02. DEVELOP POLICIES

Develop policy frameworks in support of carbon neutrality



03. LEVEL THE PLAYING FIELD

Create a level-playing field to finance a just transition toward carbon-neutral energy systems

Technology transfer and deployment

- Removing obstacles to knowledge sharing and technological transfer – including intellectual property constraints

Institutional capacity

- to plan and drive ambitious transformation of energy systems

Buy-in and adoption

- from all stakeholders to build secure, affordable, and carbon-neutral energy systems.

UNECE as a platform for International Cooperation

- Coordinated international cooperation will be essential to attain a carbon-neutral energy system.
- Supportive policies, incentives, and regulatory frameworks encourage regional technical cooperation across industry, buildings, and transport for projects of common interest and public-private partnerships.

Session I - Building a resilient energy system in the ECE region through low- and zero-carbon technology interplay

Introduction and moderation:

Mr. Jim Robb, Chair, Group of Experts on Cleaner Electricity Systems

Carbon Neutrality Project Findings:

Ms. Iva Brkic, Project Lead, UNECE

Mr. Walker Darke, Consultant, UNECE

Mr. Behnam Zakeri, Senior Analyst, IIASA

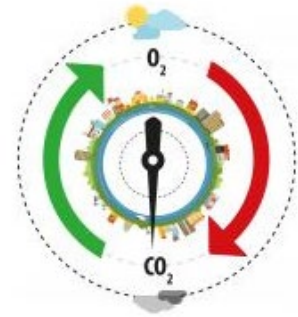
Panel Discussion:

Mr. Vladimir Budinsky, Vice-Chair of the Group of Experts on Cleaner Electricity Systems

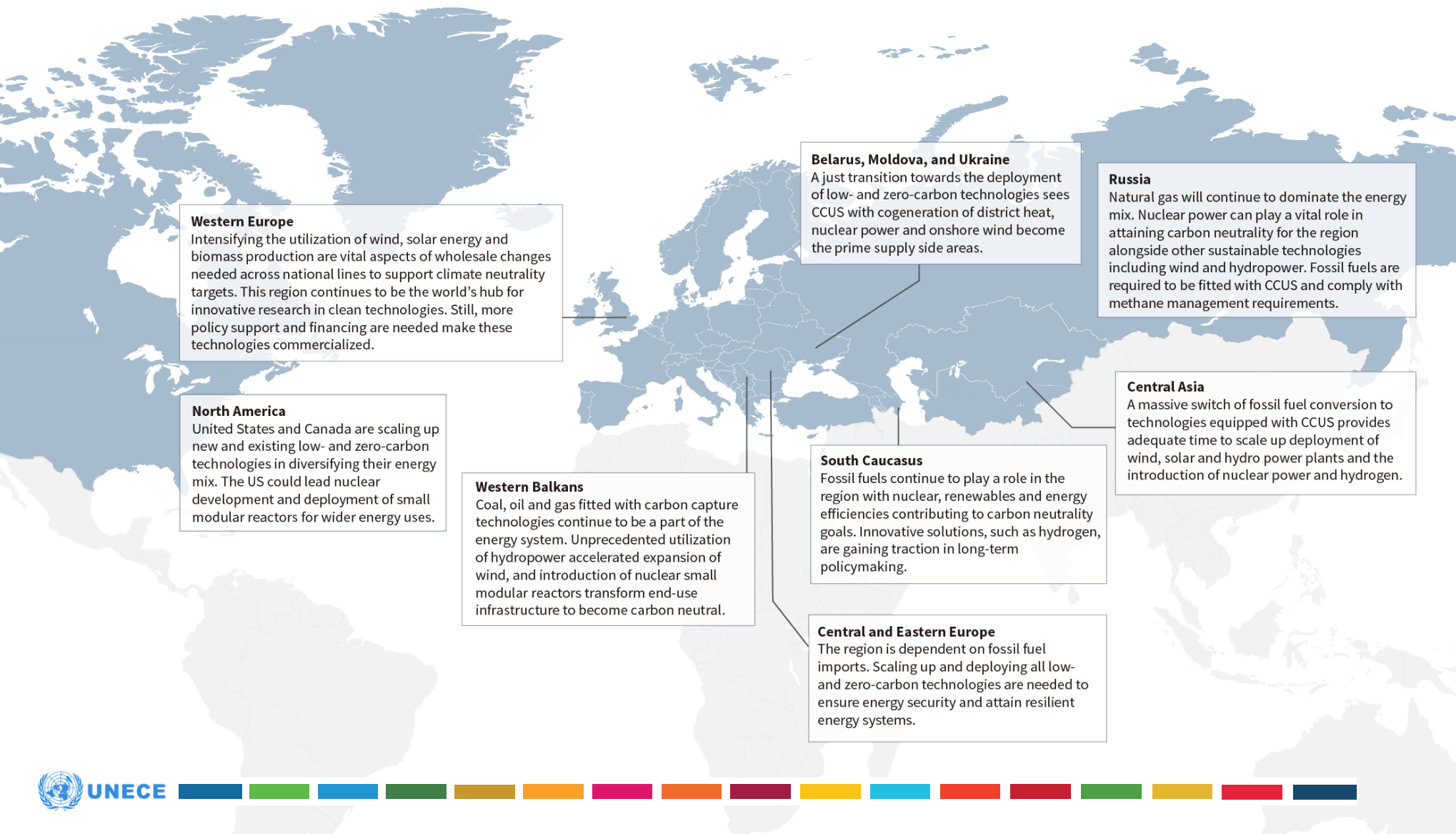
Mr. King Lee, Vice-Chair of the Group of Experts on Cleaner Electricity Systems

Mr. Jon Gibbins, Vice-Chair of the Group of Experts on Cleaner Electricity Systems

Mr. Furugzod Usmonov, Vice-Chair of the Group of Experts on Cleaner Electricity Systems



Attaining carbon neutrality in the UNECE region – Next Steps



Western Europe

Intensifying the utilization of wind, solar energy and biomass production are vital aspects of wholesale changes needed across national lines to support climate neutrality targets. This region continues to be the world's hub for innovative research in clean technologies. Still, more policy support and financing are needed make these technologies commercialized.

North America

United States and Canada are scaling up new and existing low- and zero-carbon technologies in diversifying their energy mix. The US could lead nuclear development and deployment of small modular reactors for wider energy uses.

Western Balkans

Coal, oil and gas fitted with carbon capture technologies continue to be a part of the energy system. Unprecedented utilization of hydropower accelerated expansion of wind, and introduction of nuclear small modular reactors transform end-use infrastructure to become carbon neutral.

Belarus, Moldova, and Ukraine

A just transition towards the deployment of low- and zero-carbon technologies sees CCUS with cogeneration of district heat, nuclear power and onshore wind become the prime supply side areas.

Russia

Natural gas will continue to dominate the energy mix. Nuclear power can play a vital role in attaining carbon neutrality for the region alongside other sustainable technologies including wind and hydropower. Fossil fuels are required to be fitted with CCUS and comply with methane management requirements.

Central Asia

A massive switch of fossil fuel conversion to technologies equipped with CCUS provides adequate time to scale up deployment of wind, solar and hydro power plants and the introduction of nuclear power and hydrogen.

South Caucasus

Fossil fuels continue to play a role in the region with nuclear, renewables and energy efficiencies contributing to carbon neutrality goals. Innovative solutions, such as hydrogen, are gaining traction in long-term policymaking.

Central and Eastern Europe

The region is dependent on fossil fuel imports. Scaling up and deploying all low- and zero-carbon technologies are needed to ensure energy security and attain resilient energy systems.



Attaining carbon neutrality in the UNECE region – Next Steps



2nd
Almaty
Energy Forum

Innovating and Modernizing Energy Infrastructure in Central Asia

Date: 14 – 16 November 2022





LUNCH BREAK 12h00 – 15h00 CET



18th Session of the Group of Experts Cleaner Electricity Systems

Energy Security, Resilience and Net Zero
Tangible Actions to Deliver a Sustainable Energy Future

19 September 2022, Geneva

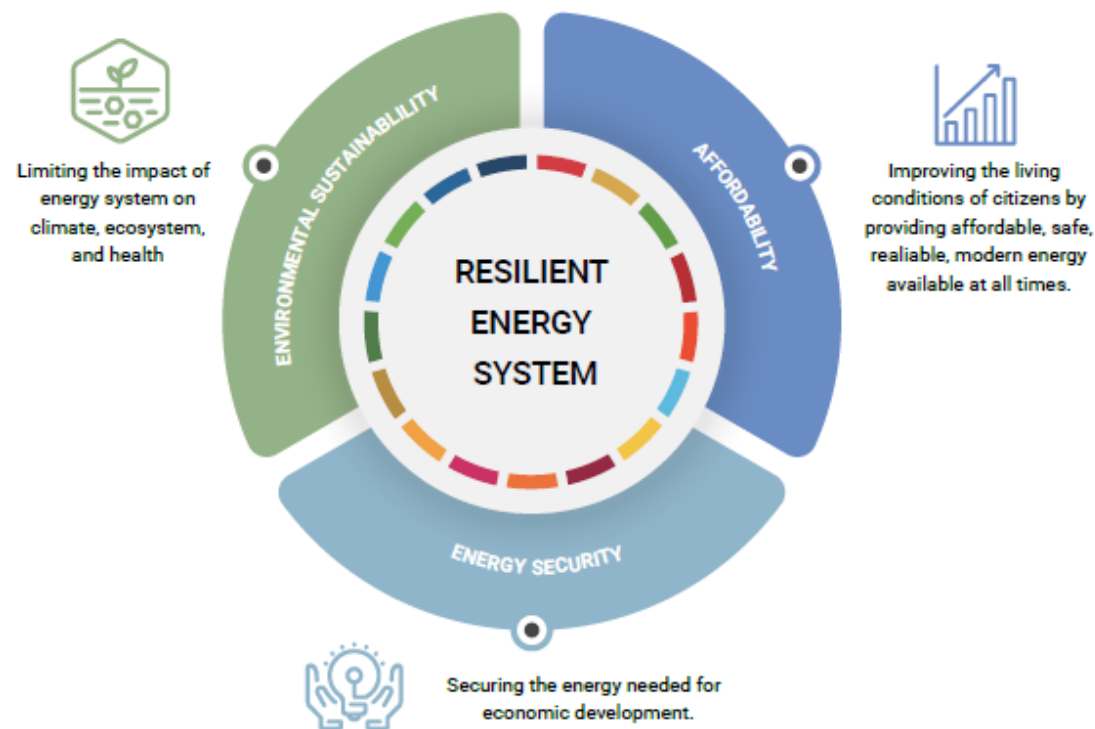


Building Resilient Energy Systems

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.



What are the vulnerabilities of the existing energy system?

CHALLENGES



COVID-19

Economic recovery at the expense of energy transition is a concerning risk



GEOPOLITICAL INSTABILITY

- Disruption of supply
- Impeding energy flows
- Threatening economic growth
- Energy prices increase short and medium-term



SUPPLY CHAIN DISRUPTION FACTORS

- Exponential increase in demand for critical raw materials
- Higher cost for shipping and logistics
- Limited technology standardisation
- Trade restrictions



CLIMATE CHANGE CRISIS

A threat multiplier to all of the above increase in intensity of extreme events will post a threat to international peace and security

IMPACTS



DISRUPTED ENERGY AVAILABILITY

Limited access to resources and disruptions in demand create uncertainties for long term energy investments and security



INADEQUATE ENERGY ACCESSIBILITY

Region-wide energy price increase inhibit economic growth and exacerbate energy poverty across the region



QUESTIONABLE ENERGY SUSTAINABILITY

Maintaining national energy security may resort to the use of power generation by traditional unabated coal-fired plants, increasing CO₂ emissions and delaying net-zero target

10 recommendations from the UNECE Expert Community to design and implement resilient energy systems

1. Implement energy efficiency solutions immediately
2. Digitalize the energy systems
3. Decarbonize energy system and accelerate fuel switching
4. Diversify the energy supply
5. Build a workforce to deliver on just energy transition
6. Implement a resource management framework
7. Integrate circular carbon economy concept into decision-making
8. Recognize that there is not a one-size-fits-all approach
9. Acknowledge that all low- and zero-carbon technologies play a role
10. Address behavioral barriers

What are the immediate actions for policymakers?



RAISE AWARENESS

- Establish common language
- Familiarise with all benefits and risks
- Create environment that gain confidence and reduce fear
- Boost stakeholders' competence



DEVELOP REGULATORY FRAMEWORK

- Nexus approach to managing the natural resource base
- Consistent policies and market frameworks
- Review interconnection infrastructure
- Separate interconnections
- Integrate energy system
- Practical ways to ensure affordability



SECURE FINANCING

- Cooperate with global financial community
- Support development projects with risk-sharing structure
- Science-based climate and sustainable finance classification
- Provide financing to all other low-carbon technologies
- Evaluate carbon pricing and energy subsidies
- Encourage decision-makers and end-users to make investment decisions