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Group of Experts on Gas

22-25 September 2020

Palais des Nations, Geneva

7th session





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Housekeeping

Mr. Branko Milicevic, Secretary, Group of Experts on Gas

- Simultaneous interpretation in E, F and R; ear pieces
- Session is recorded and open
- Meeting times: 10-13 and 15-18
- Room not locked, open wifi available
- No food or drink, except water, in meeting room
- Presentations will be posted on UNECE gas website ([here](#))
- Item 13 - *tour de table* - tomorrow for all who wish to give short updates
- Reception this evening at 18:10, 8th floor restaurant (sponsor: GECF)



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Item 1: Adoption of Agenda

Mr. Francisco de la Flor García, Chair, Group of Experts on Gas

Documentation: ECE/ENERGY/GE.8/2020/1

“The Group of Experts on Gas noted that the unprecedented circumstances caused by the COVID-19 pandemic had resulted in the seventh session being postponed to 22-25 September and in a different and reduced format in collaboration with the Group of Experts on Renewable Energy. The Expert Group decided to postpone discussions on agenda items 5, 8 and 10 to the eighth session and adopted its agenda (ECE/ENERGY/GE.8/2020/1)”.



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Item 2: Opening remarks

Mr. Francisco de la Flor Garcia, Chair, Group of Experts on Gas



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Item 3: Election of officers

Nominations

(to serve from September 2020 to September 2022)

For Chair: Mr. Francisco de la Flor Garcia (Spain)

For Vice-chairs:

Mr. Florian Marko (Austria)

Mr. Matin Talishly (Azerbaijan)

Mr. Boris Maksijan (Croatia)

Mr. Uwe Wetzel (Germany)

Mr. Torstein Indrebø (Norway)

Mr. Dmitriy Shvedov (Russian Fed)

Ms. Denise Mulholland (United States)

Mr. Luis Bertran (Intl Gas Union)



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Item 4: Activities and priorities of the United Nations Economic Commission for Europe and its Executive Committee

Mr. Scott Foster
Director
Sustainable Energy Division, UNECE





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Group of Experts on Gas

Group of Experts on Renewable Energy

GEG Item 6 and GERE Item 7:

**Workshop: Decarbonization through synergies
between electricity and gas**

23 September 2020 14:00 CET





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GEG7 Item 6 and GERE7 Item 6: Decarbonization...

Moderators:

Mr Francisco de la Flor Garcia, Chair, Group of Experts on Gas

Mr Kostiantyn Gura, Chair, Group of Experts on RE

Documentation (to be published for CSE November 2020 session):

ECE/ENERGY/2020/8:

“Hydrogen – an innovative solution to carbon neutrality”

ECE/ENERGY/2020/9

“Carbon neutrality through synergies between gas and renewable energy”



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GEG7 Item 6 and GERE7 Item 6: Decarbonization...

Keynote speaker:

Ms Yolanda Garcia Mezquita, Deputy Head, Strategy and Policy
Coordination Unit, DG Energy

Panelists:

Mr Abel Enriquez, EU Regulatory Affairs Manager

Mr Constantine Levoyannis, Hydrogen Europe

Mr Florian Marko, Austria, vice-chair of GEG

Mr Bjørn Simonsen, Nel ASA, Norway



Powering a climate-neutral economy

The Energy System Integration and Hydrogen Strategies
in the context of the European Green Deal

UNECE Workshop
Decarbonisation through synergies
between electricity and gas
23 September 2020

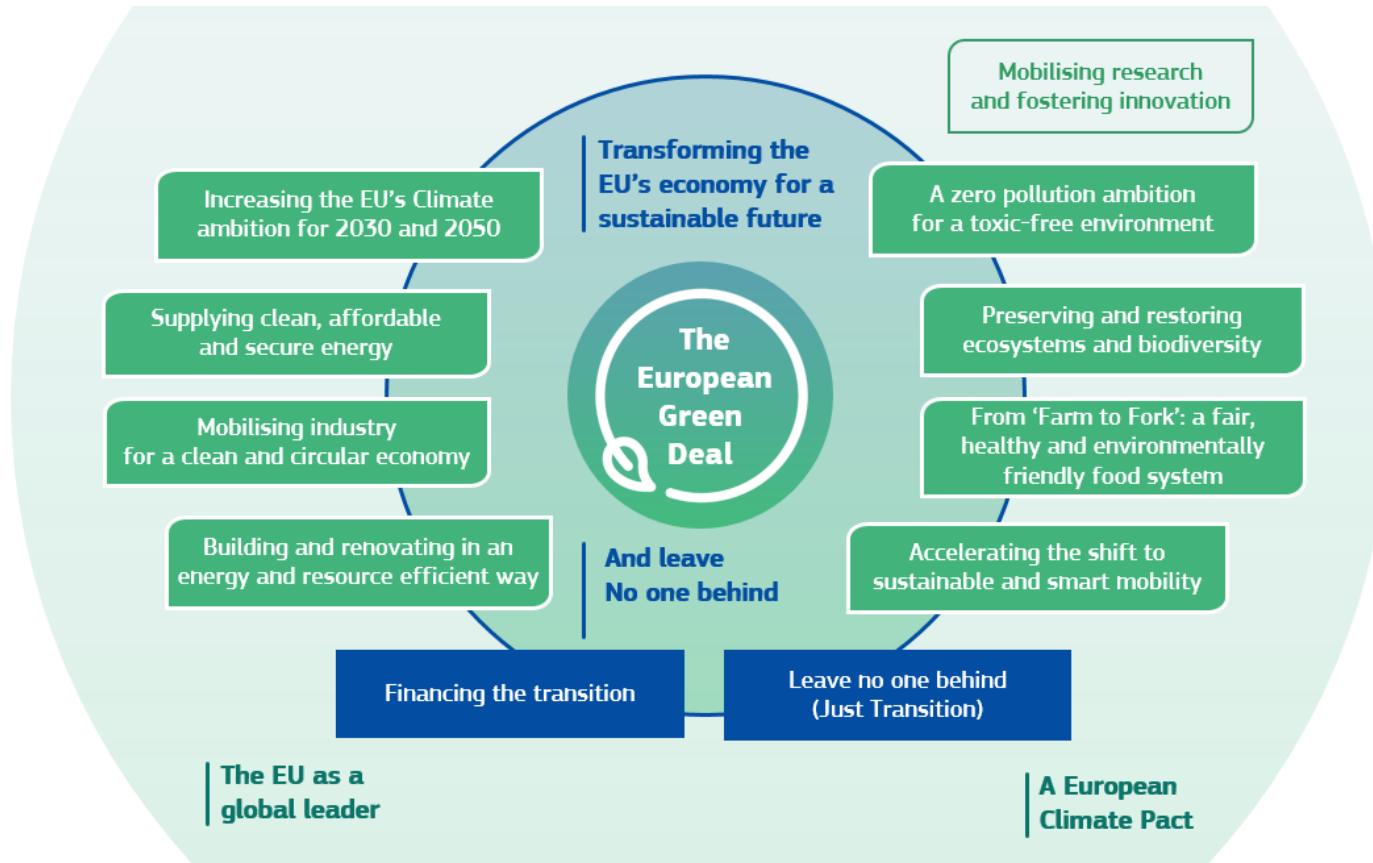
Yolanda Garcia Mezquita
Dep. Head of Unit Strategy and Policy Coordination
Directorate-General for Energy
European Commission



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The European Green Deal





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The 2030 Climate Target Plan

- 1. EU-wide, economy-wide greenhouse gas emissions reduction target of at least 55%, including emissions and removals, by 2030 compared to 1990**
- 2. Actions required across all sectors of the economy and launch of revisions of the key legislative instruments**
- 3. Public debate in autumn 2020 to increase the EU's contribution to the Paris Agreement before the end of the year and set the stage for the Commission to make detailed legislative proposals by June 2021**



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Energy contribution to the Climate Target Plan

- 60% emission reductions by 2030 or more compared to 2015 in buildings and power sector from rapid penetration of renewable energy, use of the energy efficiency first principle, electrification and energy system integration.
- Use of fossil fuels will fall substantially. Coal for instance decreases by more than 70% compared to 2015.
- By 2030, the share of renewable electricity production will double to 65% or more.
- Industry and buildings can subsequently decarbonise, with heating and cooling reaching a 40% renewable share by 2030.
- Projections include increase in transport renewables to 24% by 2030.
- Clean hydrogen crucial for decarbonising heavy-duty transport and, through its derivatives, the aviation and maritime sector.
- Projected increases in bioenergy use by 2030 are limited. Bioenergy production best to come from better use of biomass wastes and residues, sustainable cultivation of energy crops, replacing the production of first generation food-crop-based biofuels.

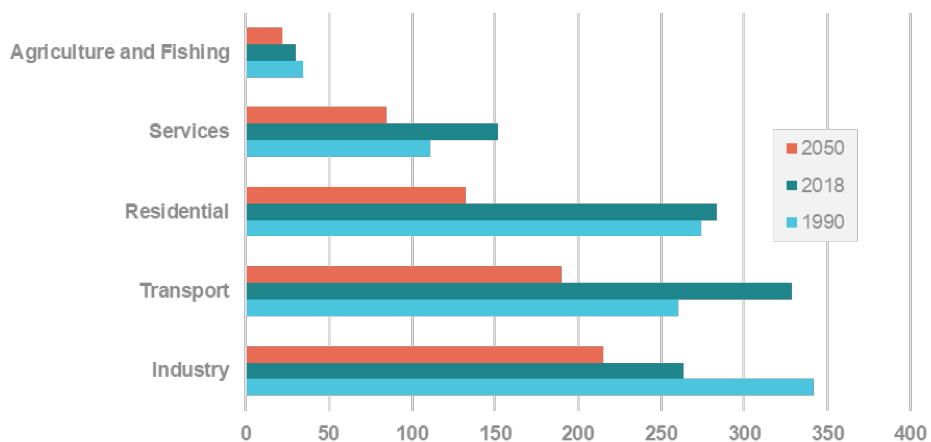


Changing consumption and production patterns towards 2050

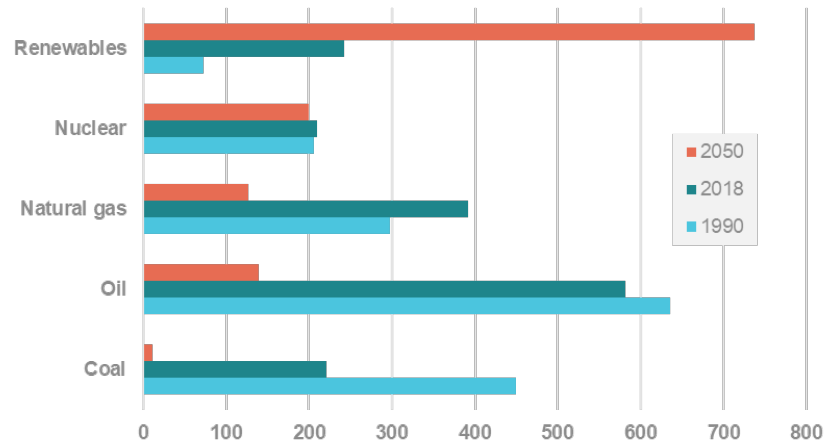
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Final energy demand per sector



Consumption per energy supply source



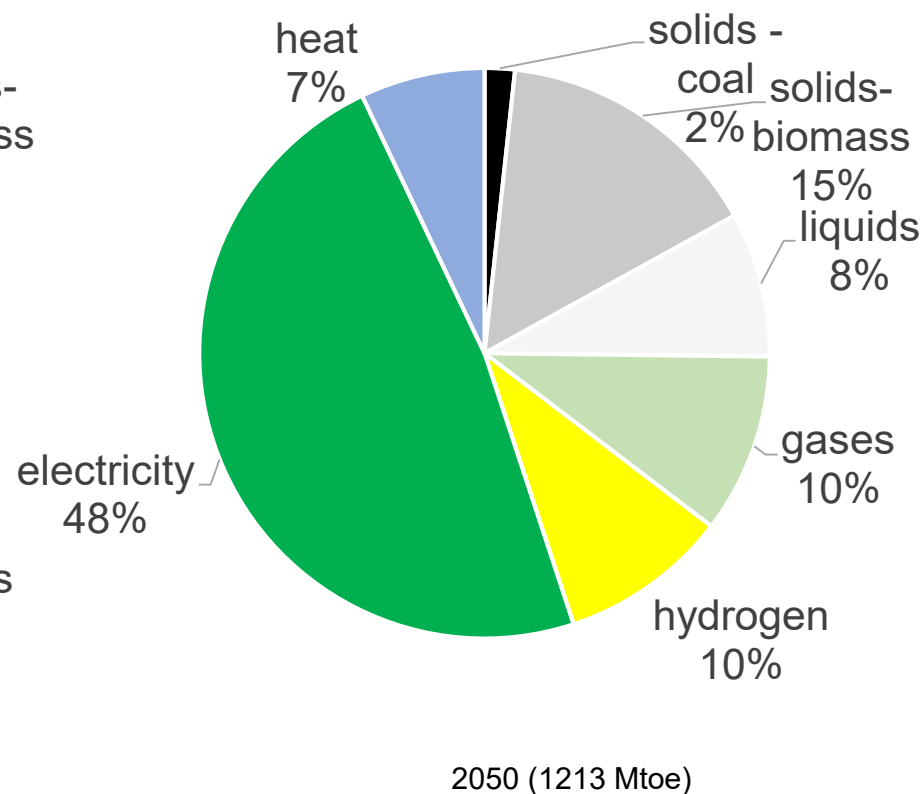
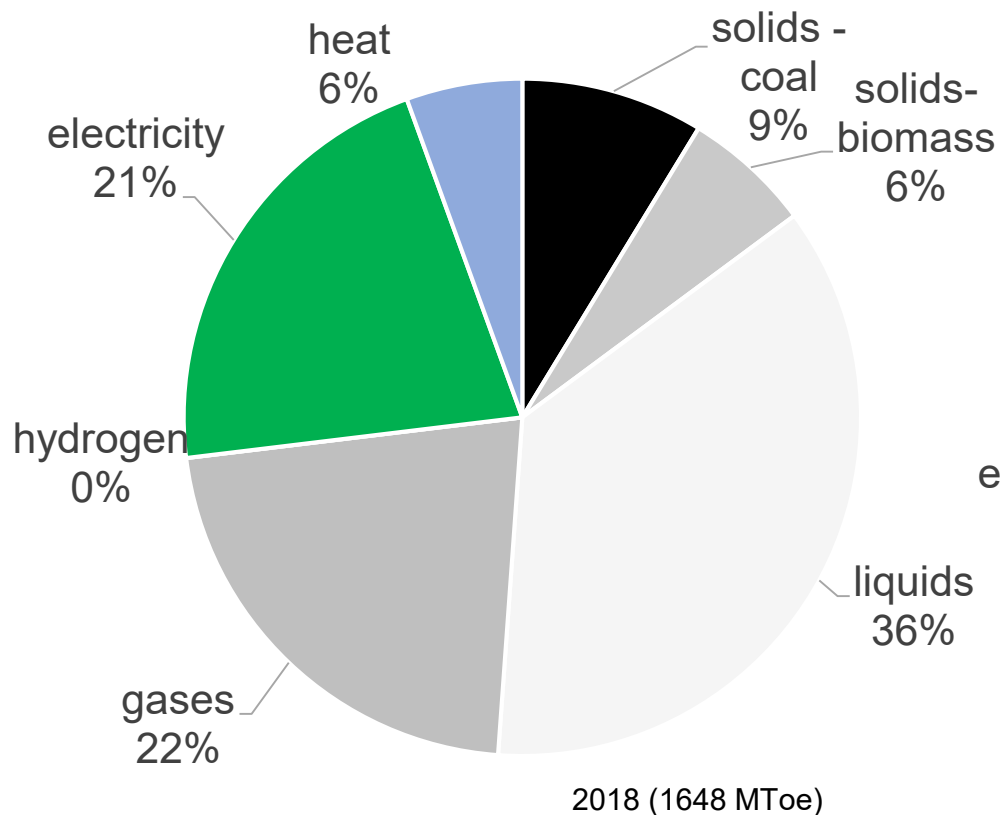
Source: Mtoe, based on EU28 Eurostat/LTS 1.5LIFE/TECH scenarios



Changing energy carriers



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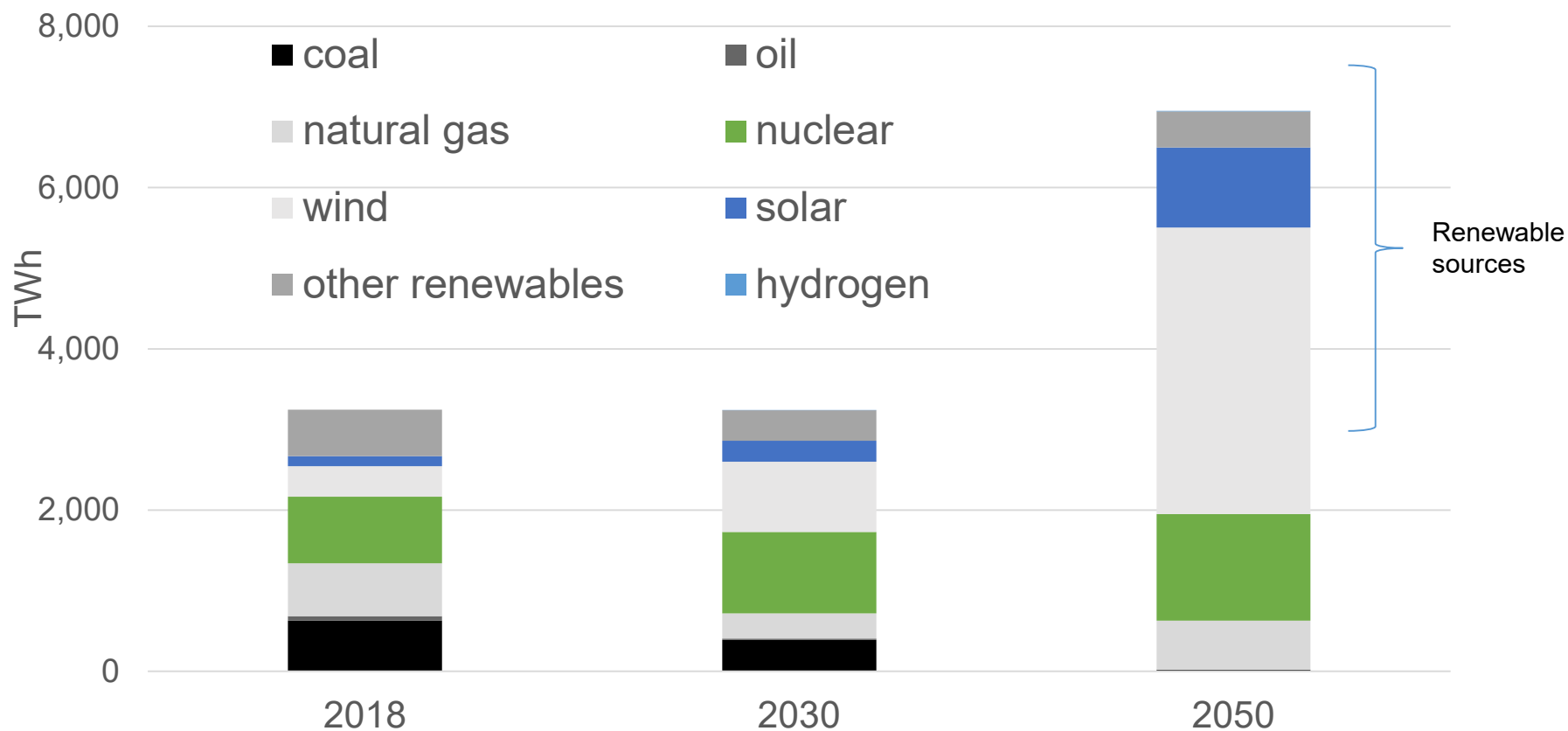
Source: Based on EU28 Eurostat/LTS 1.5LIFE/TECH scenarios



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Power system is most rapid to decarbonise



Source: Based on EU28 Eurostat/LTS 1.5LIFE/TECH scenarios



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Why a Strategy for Energy System Integration? Why now?



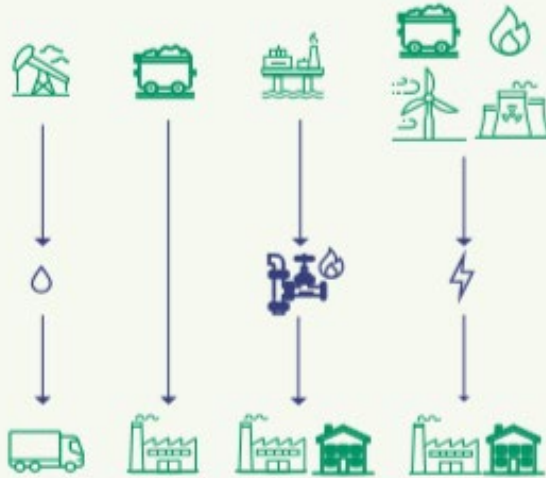


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What is energy system integration?

The energy system today : linear and wasteful flows of energy, in one direction only



Future EU integrated energy system : energy flows between users and producers, reducing wasted resources and money



Energy System Integration (ESI) is the integrated planning and operation of the energy system 'as a whole', across multiple carriers, infrastructures and consumption sectors



Laying the foundation for a climate-neutral energy system

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1

A more **circular and energy efficient** energy system

2

A **deep electrification** of consumption, based on **renewable electricity**

3

The use of **renewable and low carbon fuels** (incl. hydrogen) in hard-to-abate sectors

Hydrogen Strategy

A full value chain approach to upscale hydrogen

+

Clean Hydrogen Alliance



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Hydrogen – What and Why?

Hydrogen

atomic number	1	1.008	atomic weight
symbol	H		acid-base properties of higher-valence oxides
electron configuration	1s ¹		crystal structure
name	hydrogen		physical state at 20 °C (68 °F)

Other nonmetals	Gas
Hexagonal	Equal relative strength

Hydrogen:

- Feedstock, fuel, energy carrier / storage, many applications
- Does not emit CO₂, no air pollution
- Essential to reach our climate ambition (hard-to-abate sectors)
- Europe is highly competitive in clean hydrogen technologies manufacturing

Which hydrogen:

Currently: fossil- based hydrogen

Our vision: **Renewable (clean)**, and in a transitional period **low-carbon hydrogen** (fossil-based hydrogen with carbon capture and electricity based) for:

- Replacing **existing hydrogen** production
- **Industry** (fertilisers and green steel) and **transport**
(Local buses, parts of rail, heavy duty road vehicles; in the longer term: maritime and aviation)

Issues:

- Cost-competitiveness
- Technological maturity (cost-effective electrolyzers)
- Renewable energy & scale



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The Hydrogen Strategy – a roadmap to 2050

2024

- 6 **GW** of renewable hydrogen electrolyzers
- Replace **existing hydrogen production**
- Regulation for liquid hydrogen markets
- Start planning of hydrogen infrastructure

2030

- **40 GW** of renewable hydrogen electrolyzers
- New applications in **steel and transport**
- Hydrogen for electricity balancing purposes
- Creation of “Hydrogen Valleys”
- Cross-border logistical infrastructure

2050

- Scale-up to **all hard-to-decarbonise sectors**
- Expansion of hydrogen-derived **synthetic fuels**
- EU-wide infrastructure network
- An open intl market with € as benchmark



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Financing energy priorities

Key areas:

- Energy renovations in public buildings and social infrastructure, including through engagements of Energy Service Companies (ESCOs)
- Energy renovations of residential buildings
- Energy efficiency in SMEs (buildings)

Key funds: RRF, InvestEU, JTM, Cohesion Funds (plus REACT-EU), Horizon Europe (R&I) Modernisation Fund, LIFE

Renovation Wave

Renewable Energy

Key areas:

- Renewable Power Generation
- Renewable-based heating and cooling
- E-mobility based on renewables

Key funds: RRF, InvestEU, JTM, Cohesion Funds (plus REACT-EU), CEF*, Horizon Europe (innovation), Modernisation Fund, Innovation Fund, LIFE

*for cross border RES projects

Key areas:

- Transmission and distribution infrastructure
- Smart grids
- Storage infrastructure
- District heating and cooling
- Direct electrification in end-use sectors
- Industrial energy efficiency and EE by SMEs
- Infrastructure for CO2 transport

Key Funds: RRF, CEF [T], Cohesion Funds [D] (plus REACT-EU), InvestEU, JTM, Modernisation Fund, Horizon Europe (R&I), LIFE

Energy System Integration

Hydrogen

Key areas:

- Upscaling electrolyser capacity for green hydrogen production
- Infrastructure for the transmission and distribution of hydrogen
- Boosting the use of green or low carbon hydrogen in end-use sectors [transport, industry]

Key funds: RRF, InvestEU, Cohesion Funds (plus REACT-EU), JTM, CEF, Horizon Europe (R&I), Innovation Fund, Modernisation Fund, LIFE

Thank you for your attention!





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GEG7 Item 6 and GERE7 Item 6: Decarbonization...

How can UNECE accelerate the transition to a hydrogen economy?



What is the role of renewable/low-carbon/decarbonized gases in the transition?

How can gas infrastructure help increase the share of variable RE in the energy mix?

The key recommendations to UNECE member States on decarbonization through gas-RE synergies?



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**GEG Item 6 and GERE Item 7:
Workshop: Decarbonization through synergies between
electricity and gas**

Thank you!





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Item 7: Gas value chain: gas for transport and other end-uses

Mr. Francisco de la Flor García, Chair, Group of Experts on Gas



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Item 9: Update on implementation of the work plan for 2020-2021 and the preparation of the work plan for 2022-2023

Mr. Francisco de la Flor García, Chair, Group of Experts on Gas



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Item 12: Any other business

Mr. Francisco de la Flor García, Chair, Group of Experts on Gas



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Item 13: Adoption of conclusions and recommendations

Mr. Francisco de la Flor García, Chair, Group of Experts on Gas



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Item 14: Adoption of the report

Mr. Francisco de la Flor García, Chair, Group of Experts on Gas





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The Group of Experts on Gas

7th session (22-25 September 2020)

