



The role of gases in building a resilient energy system

Mr. Andrea Stegher

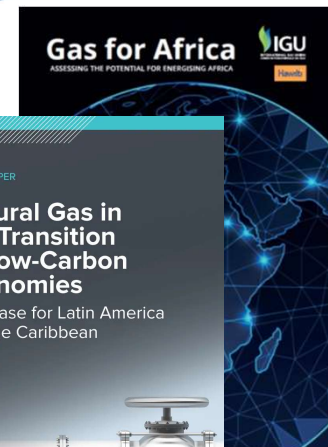
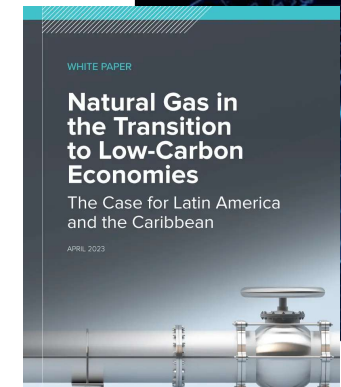
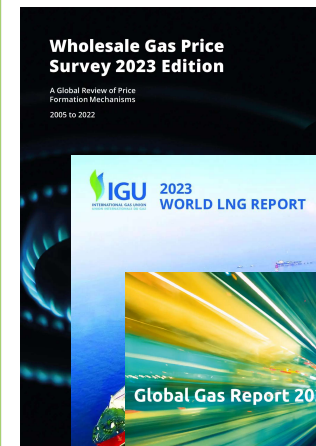
Vice President International Gas Union

UNECE – 11TH SESSION OF THE GROUP OF EXPERTS ON GAS – GENEVA, MARCH, 21ST 2024

The views expressed are my own and do not necessarily reflect those of the United Nations

Global Voice of Gas since 1931

- 150+ members in 80+ countries cover 90% of the global gas market
- Represent the entire gas value chain - from production & use, transport, storage, and delivery of natural gas, hydrogen, renewable and decarbonised gases
- Produces high-quality reports to provide fact-based reference and support improved discussion on energy transition
- Technical committees & task forces & 3 Key International gas conferences
 - International Gas Research Conference (*IGRC2024*) - Canada
 - World Gas Conference (*WGC2025*) - China
 - World LNG series (*LNG2026*) - Qatar



The Energy Trilemma has come into sharp focus in recent years

Energy Security back in focus



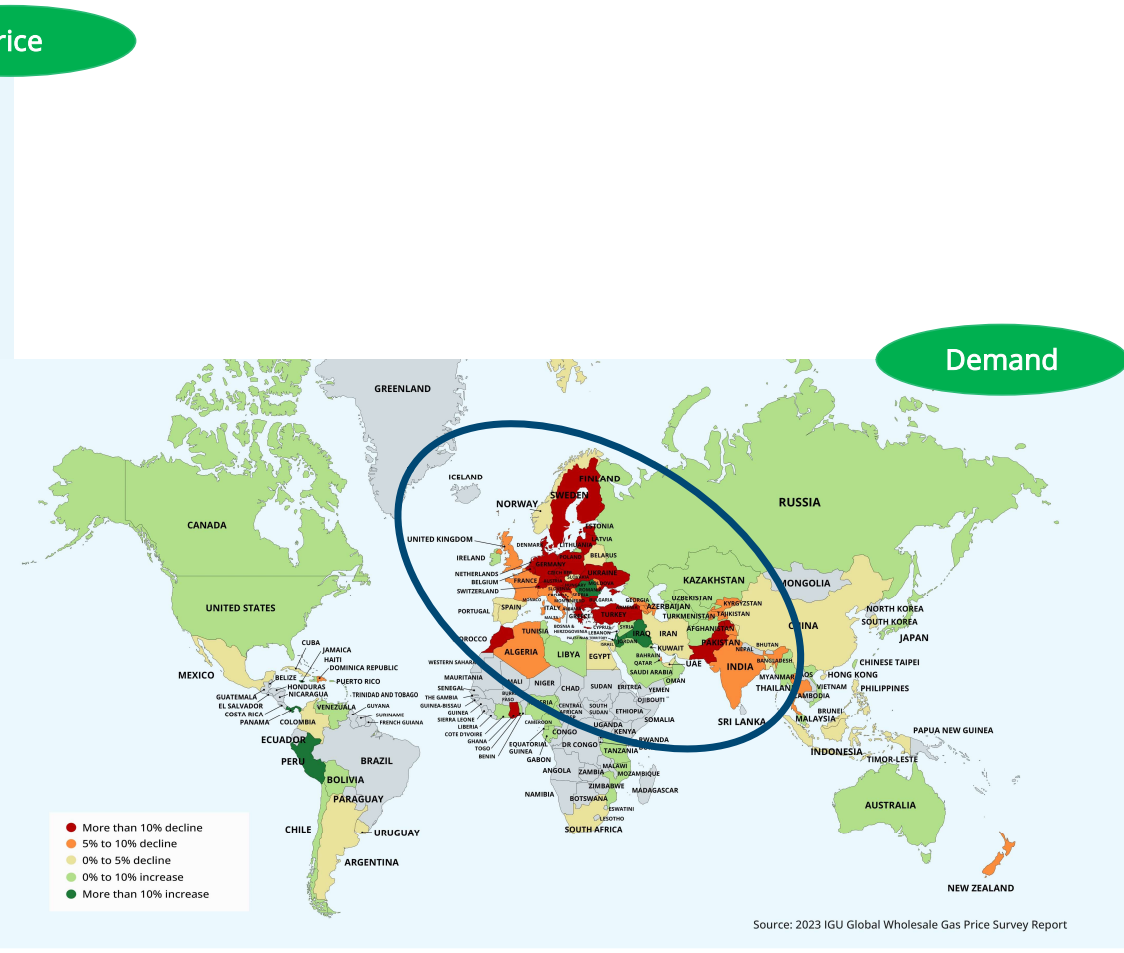
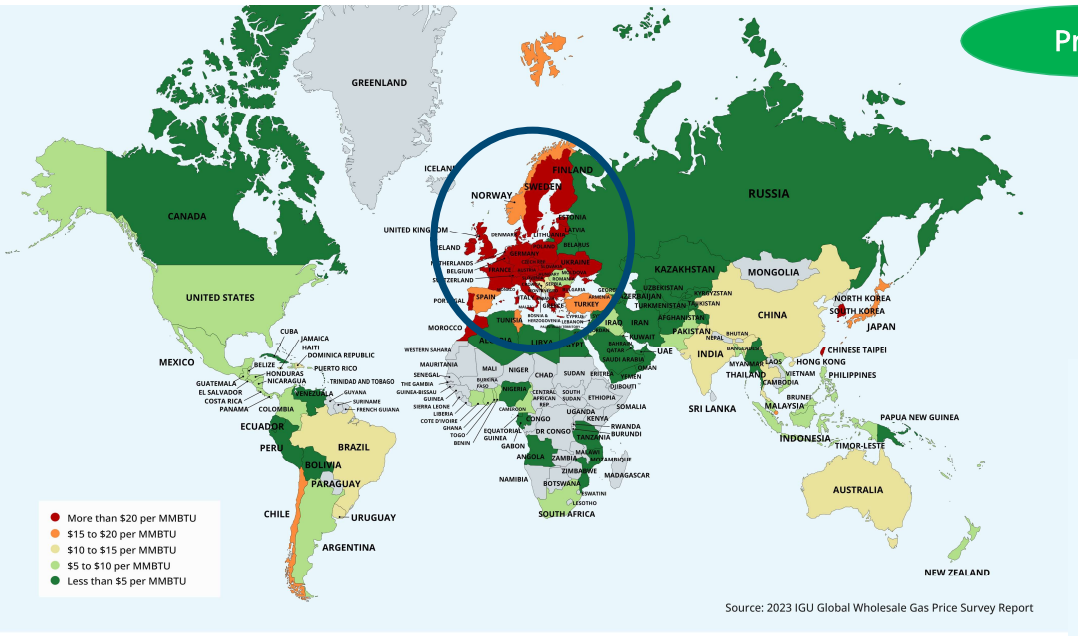
- The energy trilemma refers to the balance between the often-conflicting energy policy priorities: ensuring energy security, affordability, and sustainability.
- The Russia-Ukraine war prompted nations to prioritise security and affordability, demonstrated by substantial growth in coal use.
- Recent volatility underscores the need for dependable and diversified energy sources. This focus has driven nations to establish new energy partnerships and shift away from traditional suppliers.

When security and affordability are compromised, sustainability goals suffer.

Source: IGU 2023 Global Gas Report



2022 Gas Price and Demand Changes by Market



Maximising Gas Benefits

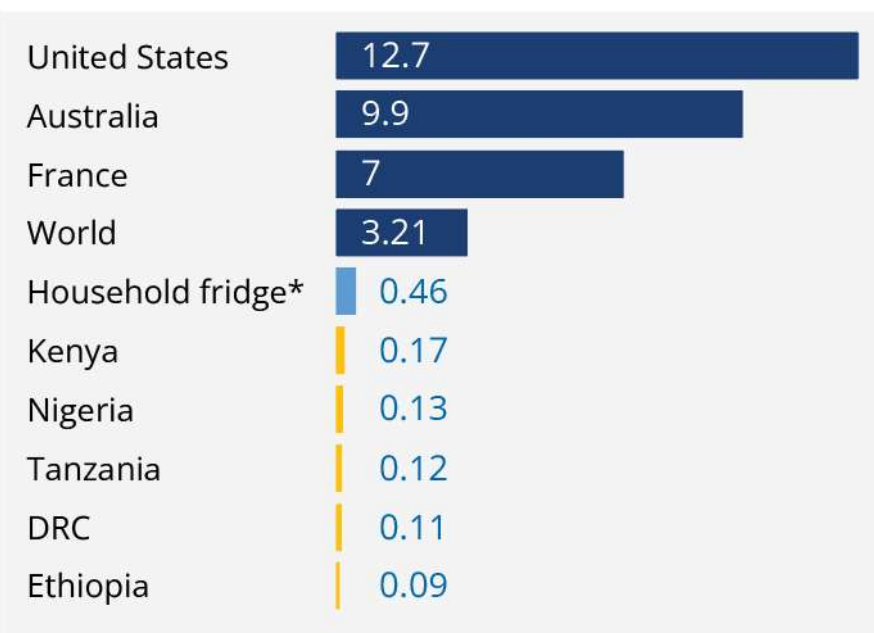


The World Beyond OECD: Growing Populations & Development Needs Require More Energy

Electricity Consumption

MWh/Capita 2020

Source: IGU Gas for Africa Report; IEA; Energy for Growth Hub



*US average

Primary Energy Consumption

GJ/Capita 2021

Source: IGU Gas for Africa Report; bp Statistical Review of World Energy



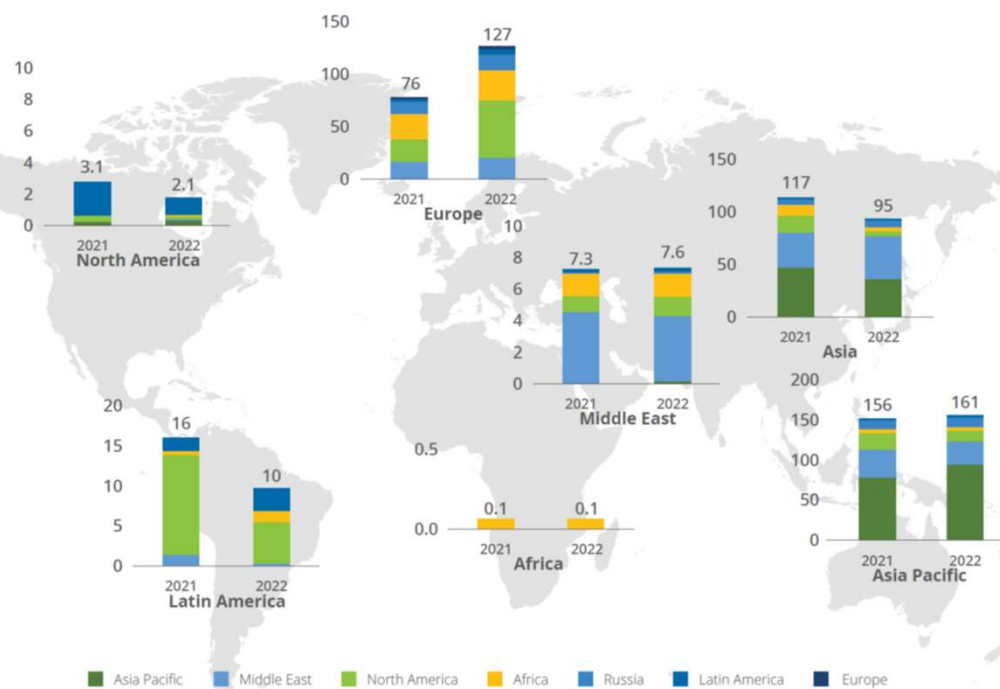
Hierarchy of needs: availability, affordability and security as clear priority

Transition is not a single path for all

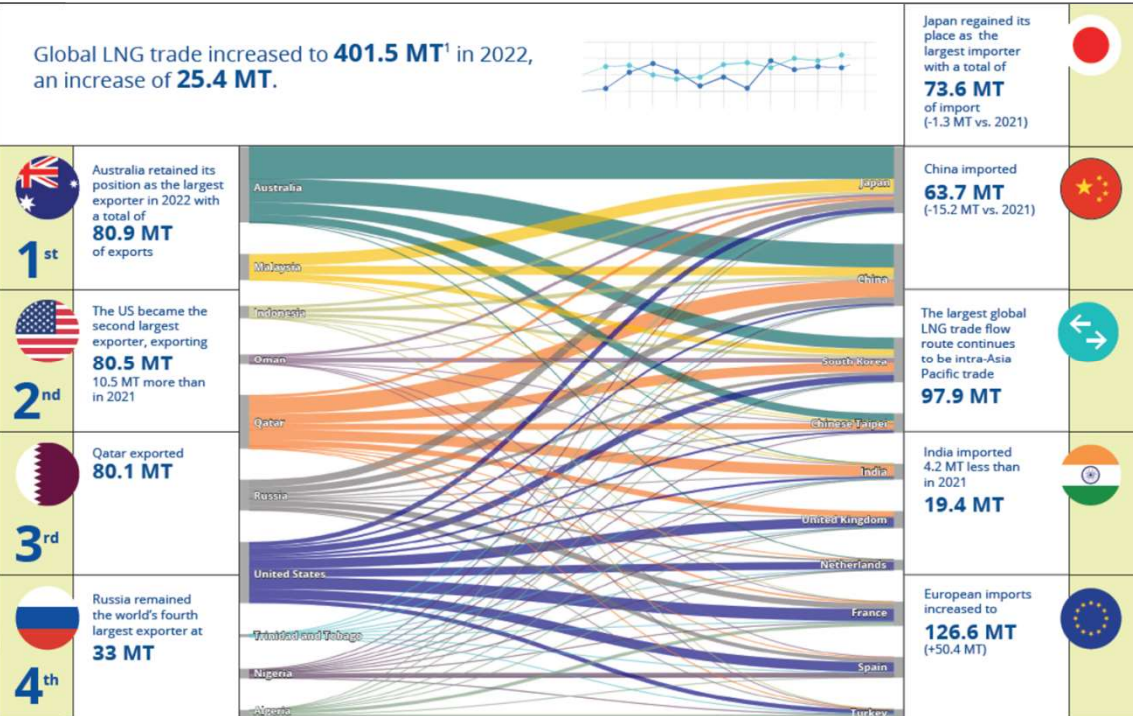


With the global LNG market supporting the most significant flow diversion in history

LNG regional Import by origin (MT)



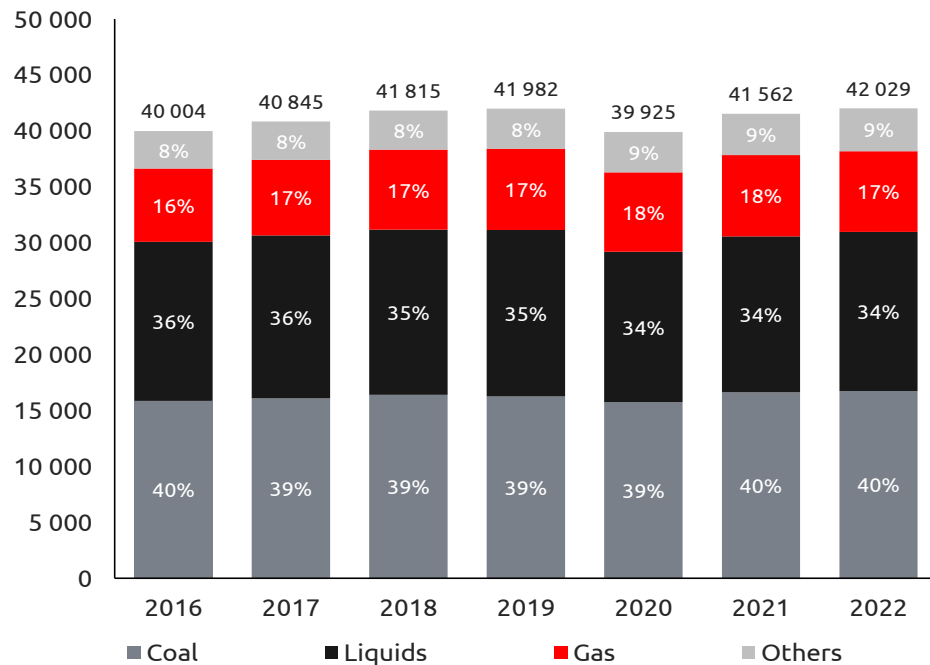
LNG trade 2022



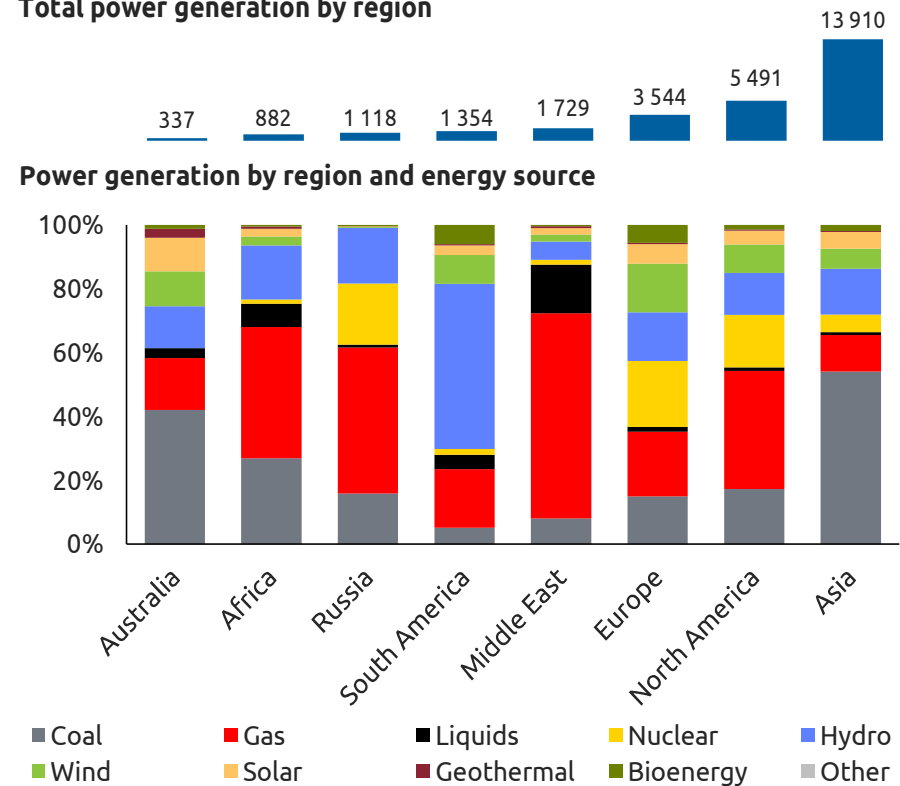
Coal growth contributed to another record in emissions

Total global energy CO2 emissions in 2022 grew by 1.1% yearly growth

Energy Emissions by Fuel
Megatonnes CO2 eq.



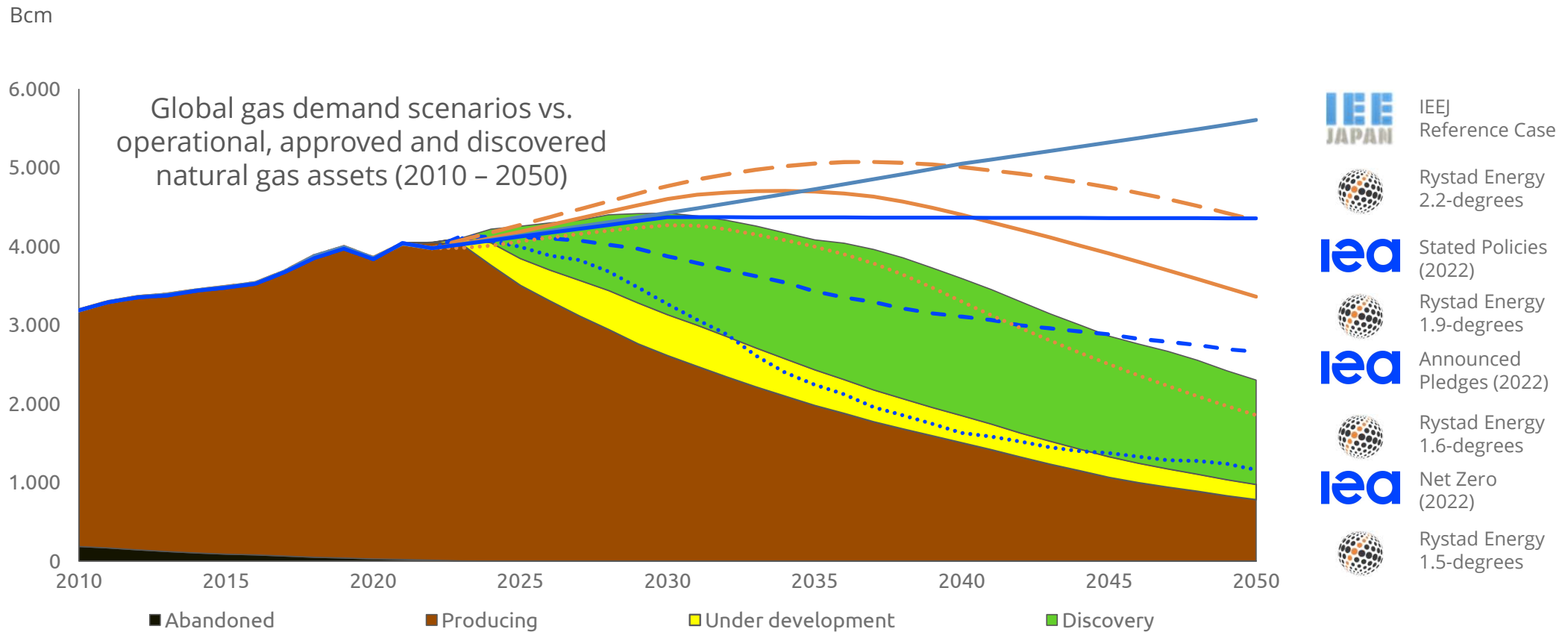
TWh
Total power generation by region



Source: IGU 2023 Global Gas Report



The current level of natural gas investment: insufficient to satisfy likely demand scenarios



Footnote: All historical and forecasted values are scaled to be identical in 2022 to account for different heating and caloric assumptions

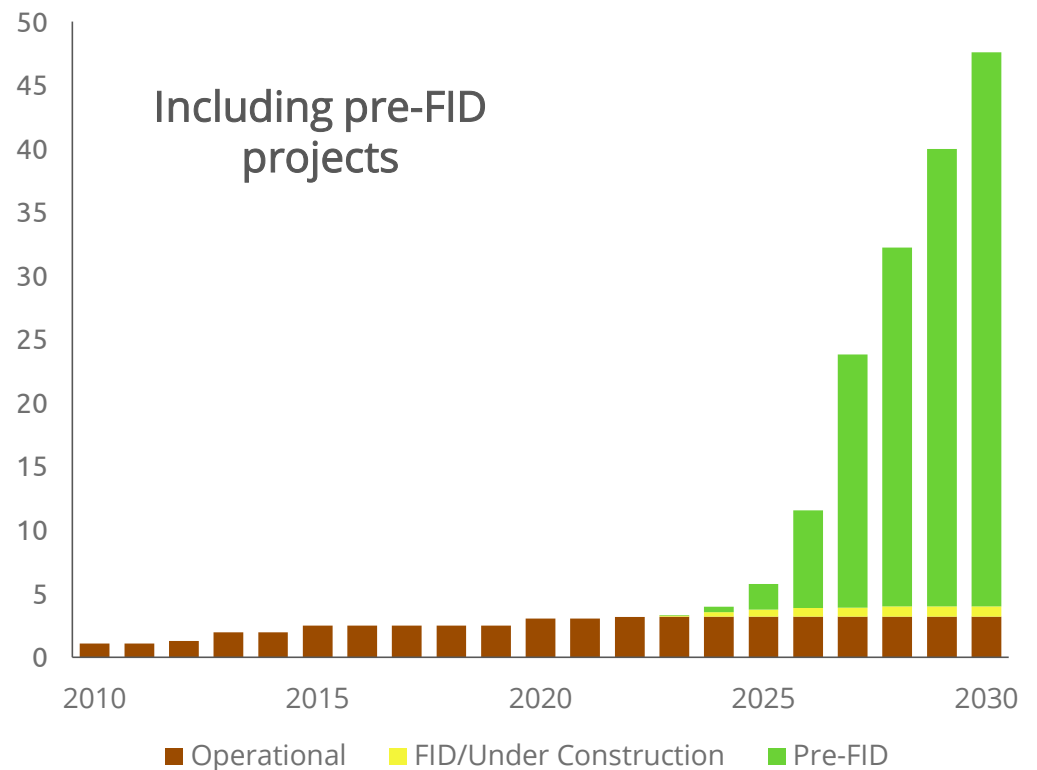
Source: IGU 2023 Global Gas Report



High ambitions for low-carbon hydrogen & biomethane need investment and deployment

- Low-carbon and renewable gases will play a key role in decarbonising the global energy systems, but just as natural gas, the scale of current investment is insufficiently low
- At the end of 2022, the global supply capacity of low carbon hydrogen stood at **3.2 million tonnes** and biomethane stood close to **7 Bcm**

Million tonnes of Blue/Green H2



Source: IGU 2023 Global Gas Report



IGU is strongly convinced Low Carbon Gases and Technology are key for Europe's Energy Transition

Renewable and low carbon gases show promising results in reducing the emissions of natural gas supply in the power, industrial, and buildings.

- **Low Carbon and Green Hydrogen:** Has the potential to supplement or replace natural gas in sectors such as heating. However, infrastructure integration provides a major challenge.
- **Biomethane:** is a renewably produced natural gas across the world, offers a one-to-one direct substitute for natural gas, requiring no modifications to existing natural gas-related infrastructure. However, biomethane too remains at low usage levels in comparison to natural gas usage.
- **Methane Emissions:** in existing natural gas operations must be aggressively reduced for gas to maximise its value as a transition fuel and remain as an efficient and sustainable product for resolving the challenges posed by the energy trilemma.
- **Carbon Capture Usage and Storage (CCUS):** a competitive decarbonising option, especially if policy developments can be made to support the roll out of capture facilities. Retrofitting existing facilities would also greatly reduce emission.

While innovation must scale up with the need of further policy support, there remains a strong need to continue supporting gas usage to effectively accompany any realistic transition.





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