

Decarbonisation is not the end of the gas sector, but its evolution from fossil natural gas to a diversified, integrated ecosystem of clean molecules and carbon management.

1. THE REGULATORY FRAMEWORK

"THE RULES OF THE GAME"



- EU 2050 Goal: Reach full climate neutrality across the Union.
- Decarbonisation package (2024): New rules to integrate hydrogen and renewable gases into existing gas markets.
- Methane regulation: Mandatory requirements for monitoring, reporting and LDAR.
- RED III targets: A binding target of 42.5% renewable energy share by 2030.

2. GREEN MOLECULES: TRANSITION PROTAGONISTS



- Biomethane: The most mature renewable gas. REPowerEU target of 35 bcm/year by 2030.
- Renewable hydrogen (RFNBO): Produced via electrolysis from green electricity; targets of 10 Mt domestic + 10 Mt imports by 2030.
- Low-carbon hydrogen: 'Blue' hydrogen (natural gas + CCS) or nuclear-based, essential for mid-term transition.

3. CERTIFICATION: "THE ENERGY PASSPORT"



To guarantee sustainability, molecules must be strictly tracked:

- Guarantee of origin (GO): Proves the gas is of renewable origin for consumer transparency.
- Proof of sustainability (PoS): Verifies compliance with EU criteria and min. 70% GHG savings.
- Union database (UDB): A single EU-wide register to ensure traceability and prevent double counting.

4. INFRASTRUCTURE: EVOLVING INTO "MULTI-MOLECULE HUBS"



- Repurposing: Converting existing natural gas pipelines for hydrogen costs only 10-35% of building new ones.
- LNG Terminals 2.0: Strategic evolution to handle Bio-LNG, Green Ammonia, and liquid CO₂.
- Integrated Planning: Mandatory cooperation between electricity, gas, and hydrogen operators to optimize the system.

5. FOCUS CCS: THE RAVENNA CASE STUDY



Carbon Capture and Storage (CCS) is fundamental for hard-to-abate industries like cement and steel.

- Ravenna CCS hub (Eni-Sham JV): A reference project for Mediterranean industrial decarbonization.
- Technology: CO₂ permanently stored in exhausted offshore gas fields 1500-2500m below sea level.