

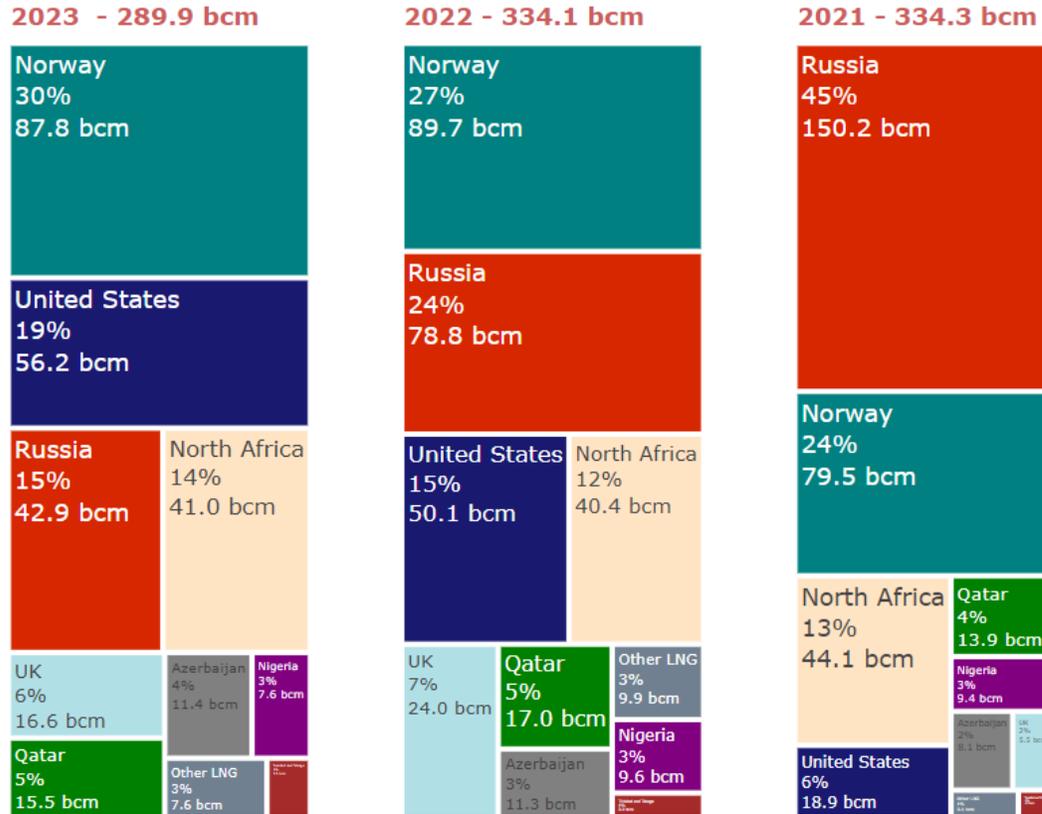
# The role of gases in building a resilient energy system

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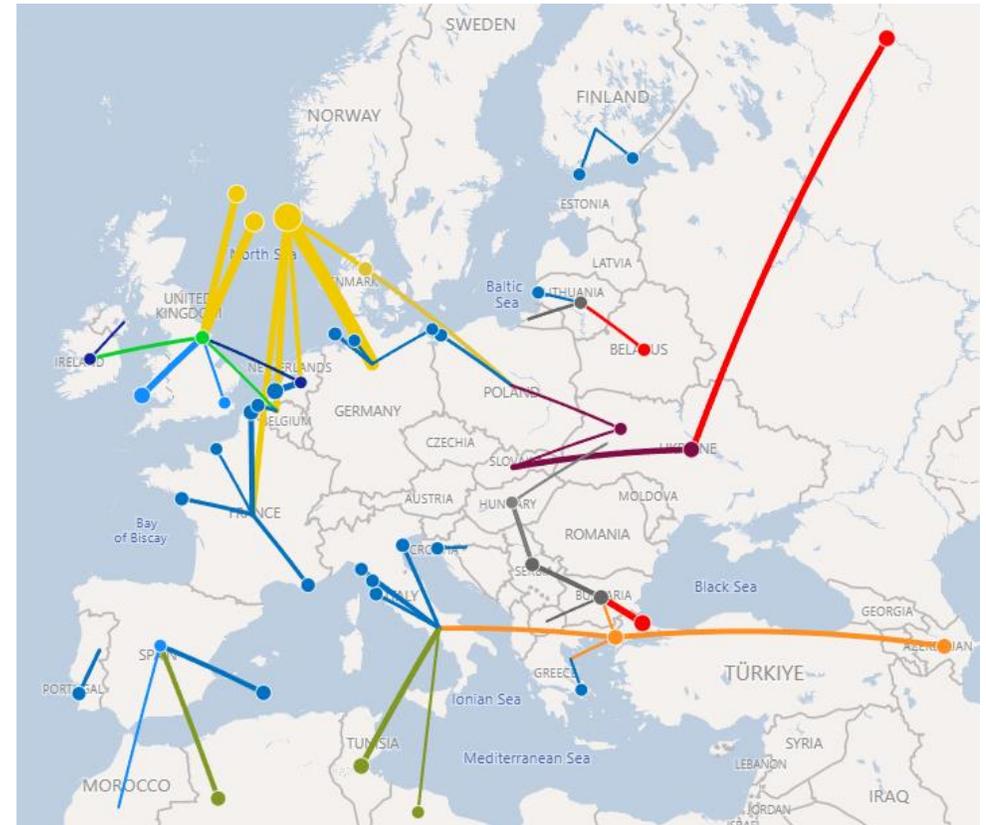
# The EU gas supply today

Figure 1: natural gas (pipeline & LNG) imports in the EU



Source: ENER A4 - LNG Newsletter

Figure 2: gas import IPs



Source: ENTSOG

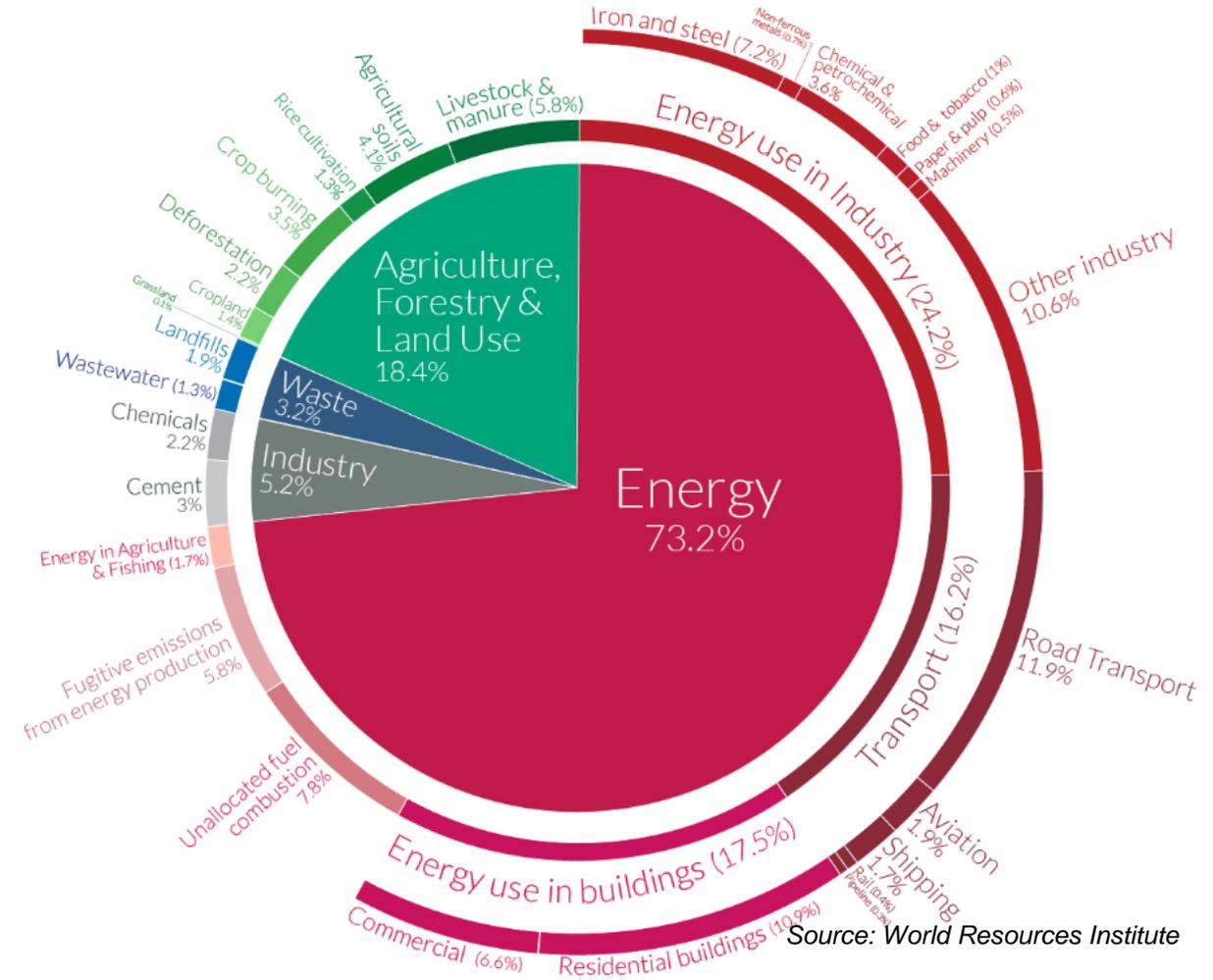
# Two main EU energy policy objectives: decarbonisation

Currently, **more than 73%** of EU greenhouse gas (GHG) emissions are attributable to energy production and use. The transition to clean energy is crucial to achieving climate neutrality by 2050

Above-ground operations are responsible for the majority of GHG emissions from gas operations worldwide  
 >> *irrespective of the transportation technique (pipe vs. LNG)*

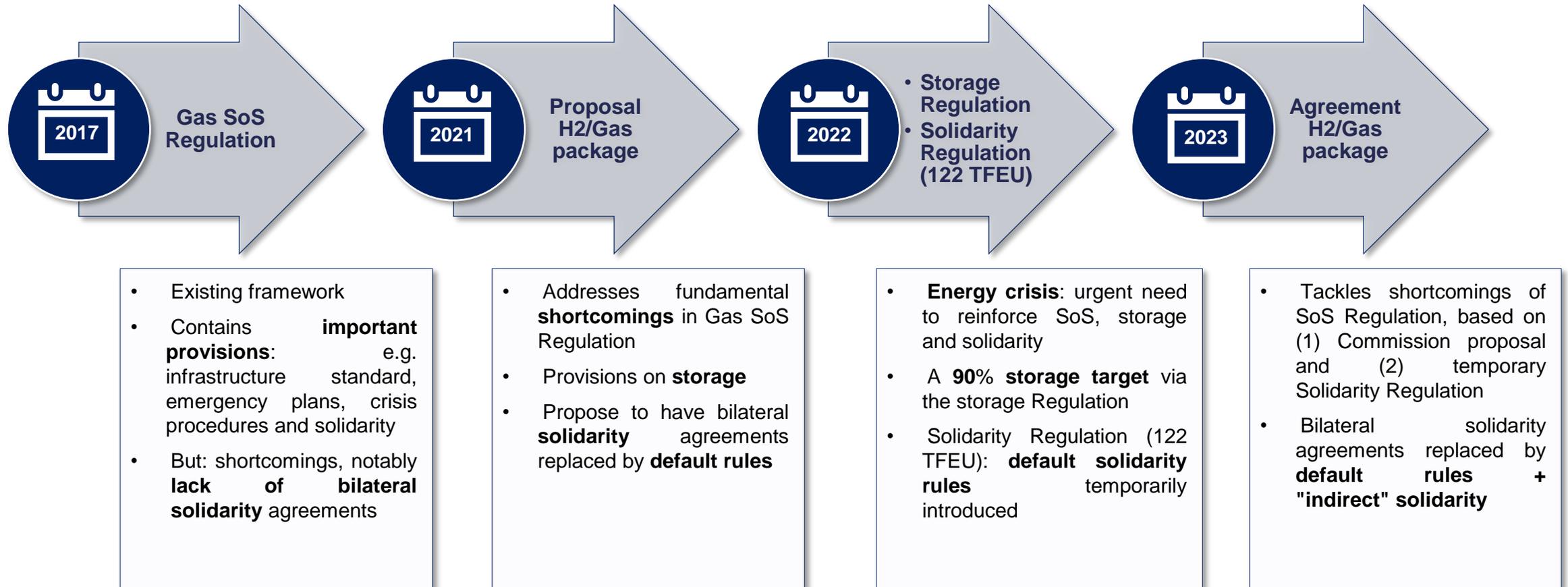
CO2 emissions: mostly related to the energy for extraction  
 Methane emissions: flaring, losses in transportation/distribution

- ### The EU Green Deal Targets
- 55% GHG emissions reduction by 2030
  - Carbon neutrality by 2050
  - 42.5% share of RES
  - 36-39% energy efficiency improvement for final and primary energy consumption wrt BAU



Source: World Resources Institute

# ...and security of supply

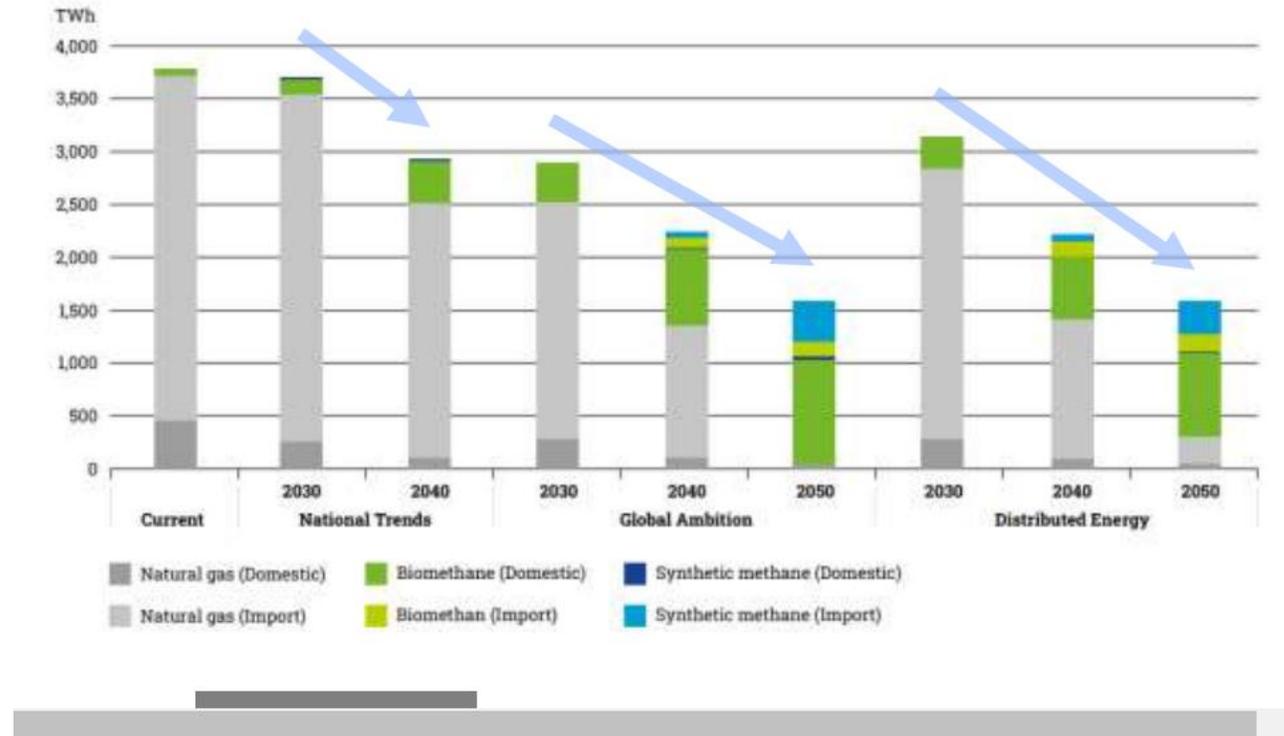


# A different role for gas, and new challenges

- Declining demand → gas volumes shrinking
- Gas as a support to electricity (hard to abate sectors)
- Gradual replacement of NG with ‘clean molecules’ (biogas, biomethane, synthetic gas, hydrogen).



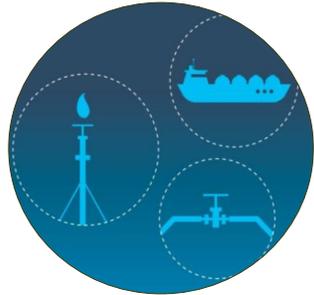
**Impact on existing infrastructure and on planning and, ultimately, on security of supply**



**Methane supply to EU27**

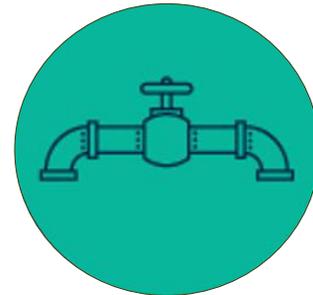
Source: ENTSOE/ENTSO-E TYNDP, 2022 (in ACER 2023)

# The challenges: building a resilient system via renewable and low-carbon gases



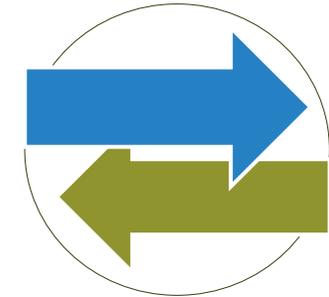
## Access to market

- ✓ Ensuring **full access** to the wholesale market for renewable and low-carbon gases
- ✓ Possibility to **set tariff discount** for the **injection** of renewable and low-carbon gases.



## Access to infrastructure

- ✓ **Connection obligation** for RES&LC gas facilities
  - +
  - Biomethane**
- ✓ Possible priority connection
- ✓ Framework for connection costs and assessment of the connection request
- ✓ More **transparency** and better use of free **capacities** at **LNG** terminals and gas **storages**



## Facilitating cross-border flow

- ✓ Possibility to **remove cross-border tariff** for renewable and low-carbon gases.
- ✓ **Gas quality:** dispute settlement mechanism for disagreements at cross-border points, including on H2 blending

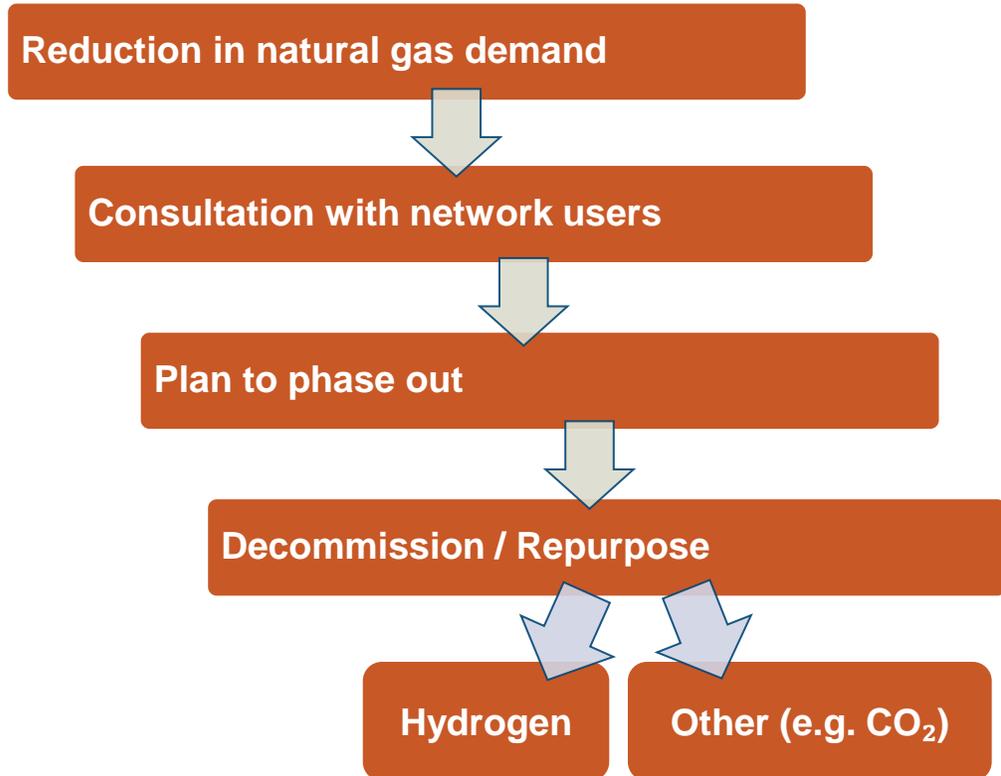
Source: EU Commission

**Ban for long-term contracts for unabated fossil gas by the end of 2049.**

# The challenges: decommissioning and potential repurposing of NG pipelines

- Repurposing existing gas pipeline only costs 10-35% compared to building a new hydrogen pipeline
- Currently, length of H2 network is only 1% of gas network
- The 2050 hydrogen backbone is expected to be, even in an ambitious scenario, be much shorter (max. 40,000km) than the existing gas grid (~200,000 km)

## Planning Process Overview



# Thanks for your attention!

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# BACK-UP SLIDES

# What is the solidarity mechanism?

## Protected customers:



- Households
- Under certain conditions: district heating, essential social services
- Critical GFPPs can be prioritised over protected customers in case of an emergency.

## Emergency:



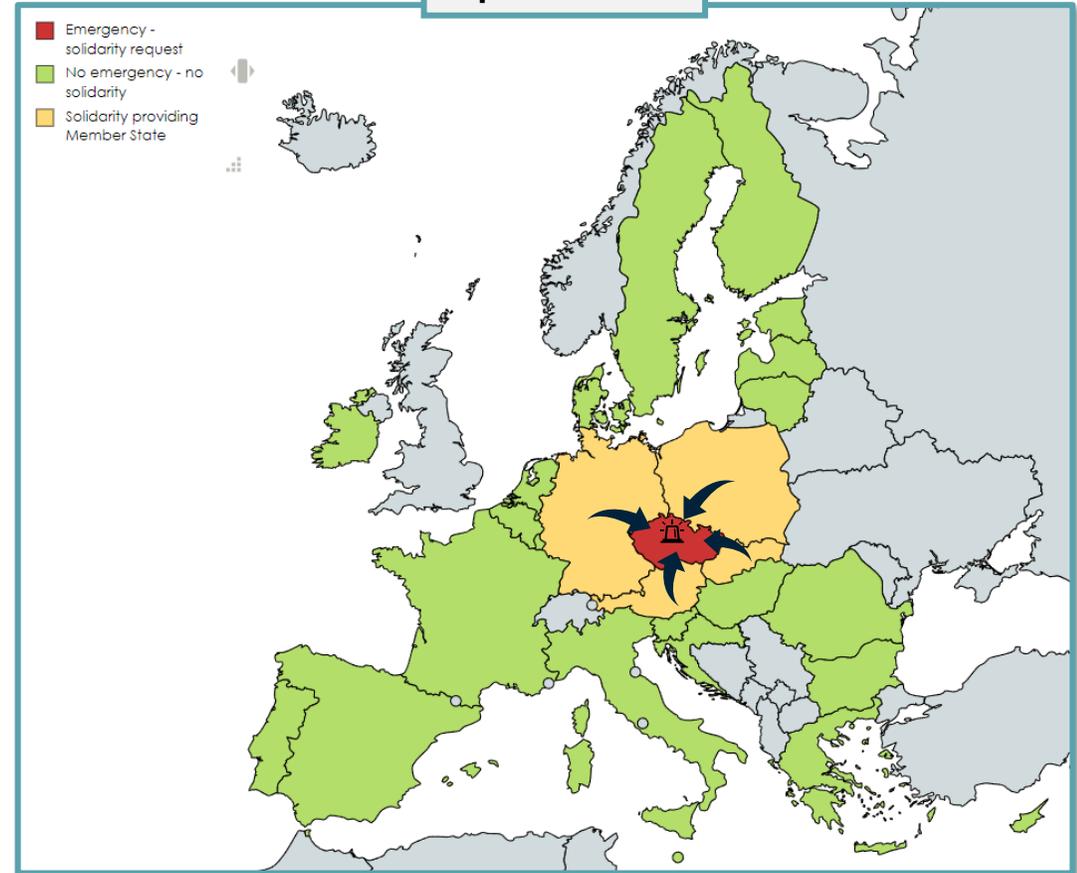
- A MS can no longer supply its protected customers
- All market-based measures are exhausted (e.g. storage withdrawal, increase of domestic production, interruptible contracts).

## Solidarity:



- A neighbouring MS must provide solidarity gas to MSs in emergency
- If market-based measures are insufficient, neighbouring MS needs to apply non-market-based measures (e.g. release of strategic stocks, or curtailing industries)
- The providing MS receives fair compensation
- All MSs had to sign bilateral agreements, agreeing on financial, legal and technical arrangements.

## 2017/1938 provisions



# Why Hydrogen?

## Versatile:

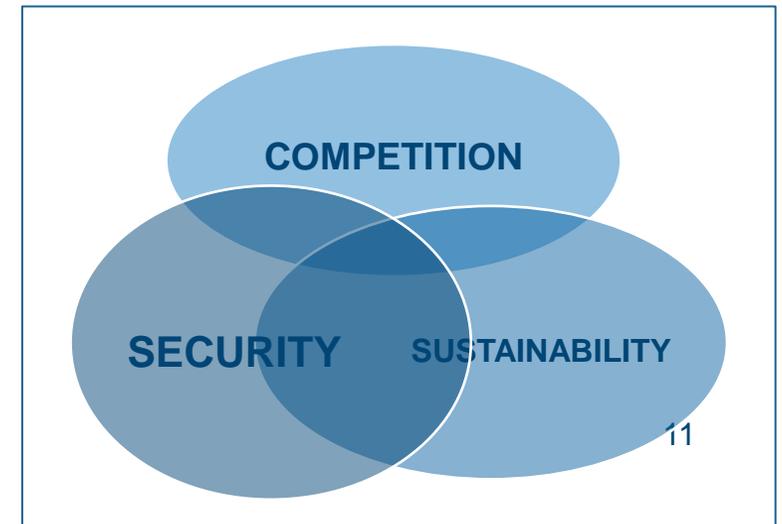
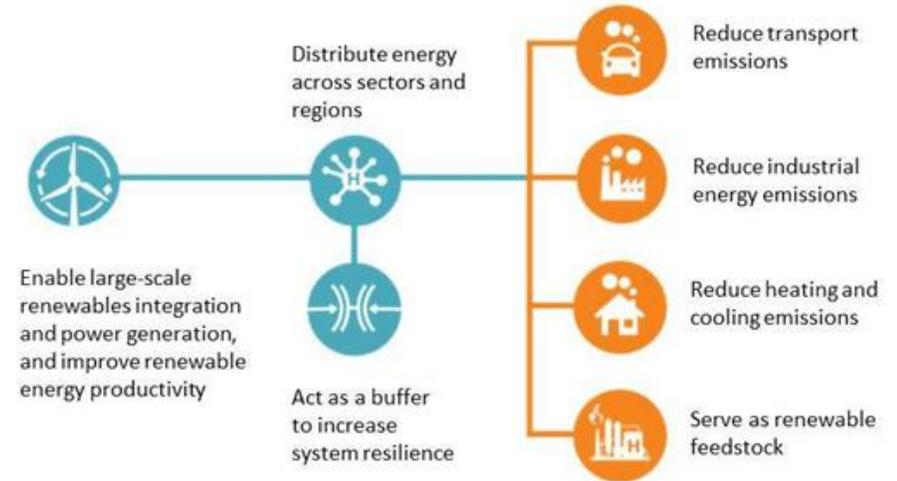
- Relatively easy to produce and store.
- Allows re-purposing of current energy infrastructure.
- Can be transformed (ammonia, methanol etc), transported and used in various sectors.
- Allows utilisation of (curtailed) renewable electricity

## Secure:

- local production, improves resilience from imports

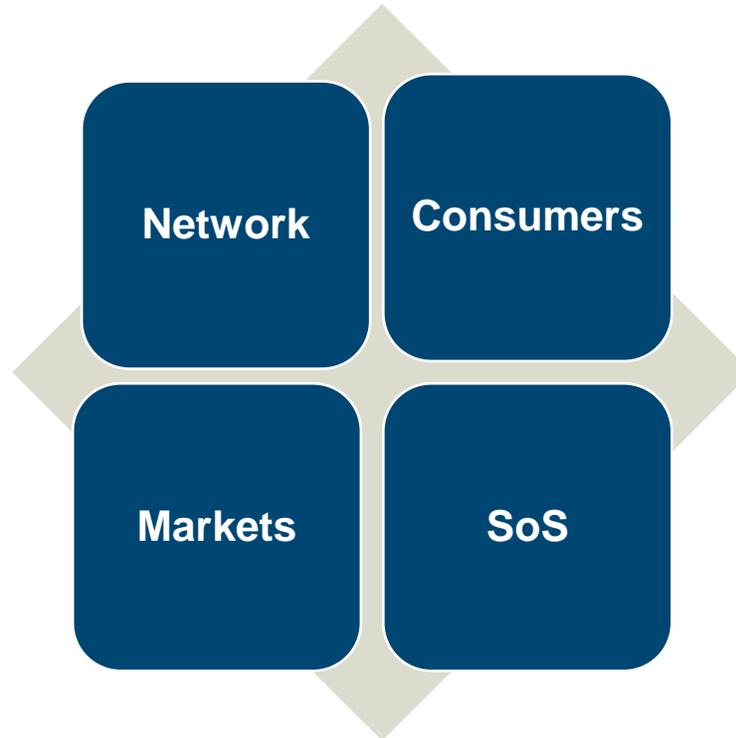
## Sustainable:

- Non-fossil origin; low or zero-carbon
- depending on generation process



# The Hydrogen and Decarbonised Gas Market Package

- Horizontal and vertical **Unbundling**
- Third Party Access (**TPA**)
- Introduction of EDSO and **ENNOH**
- **Blending**
  
- **Definitions**
- **Tariff** discounts



**Alignment** with electricity consumers provisions, esp. re consumer empowerment: switching, frequency of energy bills, smart meters, comparison tools, active customers

- **Scope extended** to renewable and low-carbon gases, + cybersecurity
- **LTCs sunset clause**
- **Solidarity**