Energy Community Gas Forum

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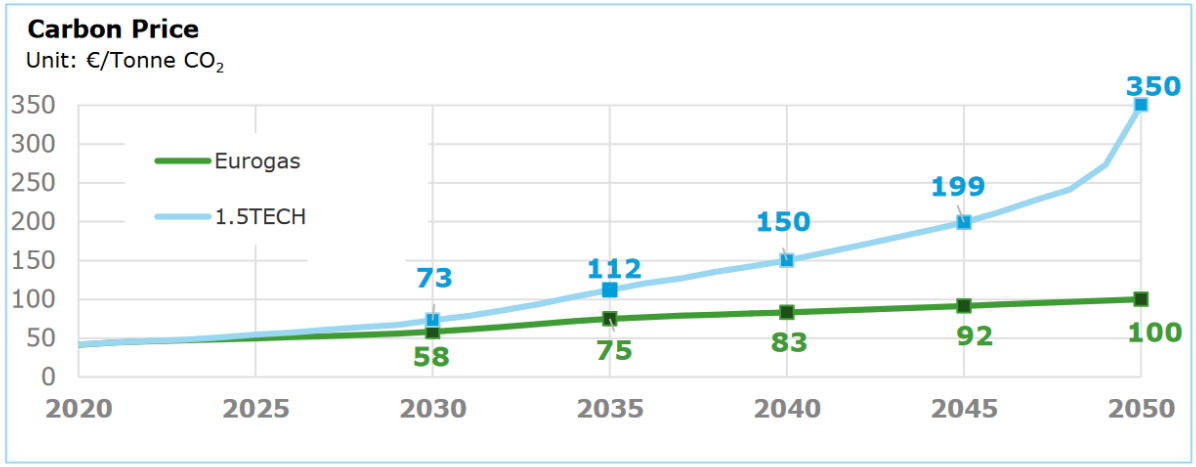
Two net zero decarbonisation scenarios: Eurogas and 1.5TECH

Identical assumptions for both scenarios

- **Geography, population development and economic growth**
- **Technology cost development**
  - Identical cost learning assumptions per supply/transformation/use technology
  - Cost learning: Costs (CAPEX & OPEX) of a particular technology decline as global installed capacity of that technology increases
- **Fuel cost development**
  - Fuel prices based on long-run marginal costs of supply
  - Carbon price development is exogenous for both scenarios



Eurogas scenario

- Carbon price rising to 100€/Tonne in 2050
- Decarbonisation of gas demand strongly supported
- Net zero emissions in 2050

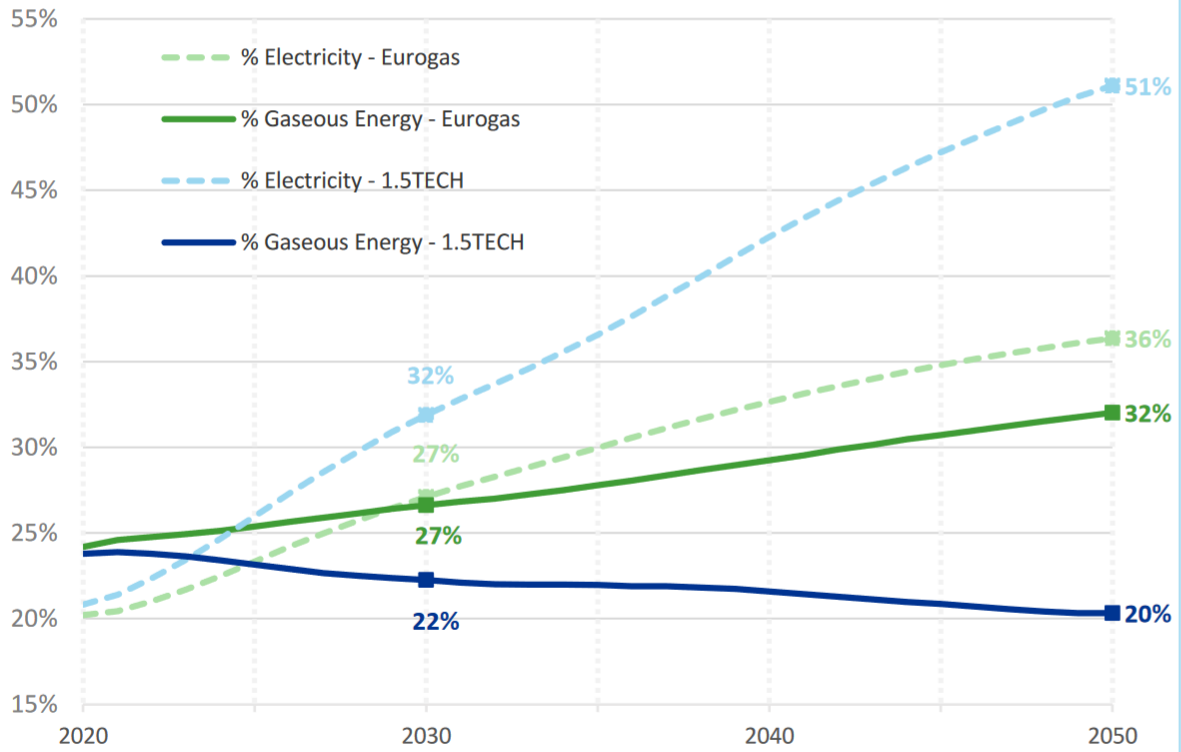
1.5 TECH scenario

- Carbon price rising to 350€/Tonne in 2050
- Electrification of energy demand strongly supported
- Net zero emissions in 2050

Two scenarios follow two distinct pathways towards 2050

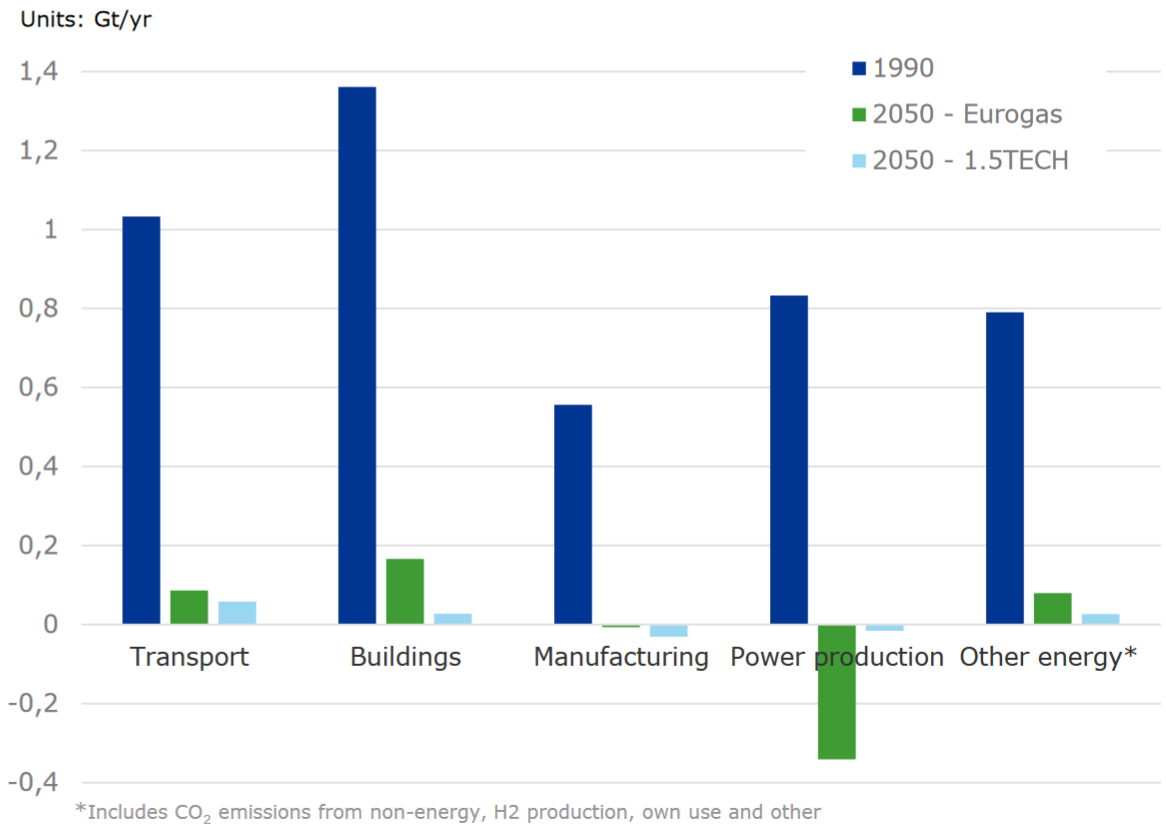
- Both scenarios achieve full decarbonisation of the European energy system in 2050 with net negative emissions in power and manufacturing to offset unabated emissions

Share in final energy demand



Gaseous energy includes the energy delivered as methane, biomethane and hydrogen

CO2 emissions 1990 - 2050

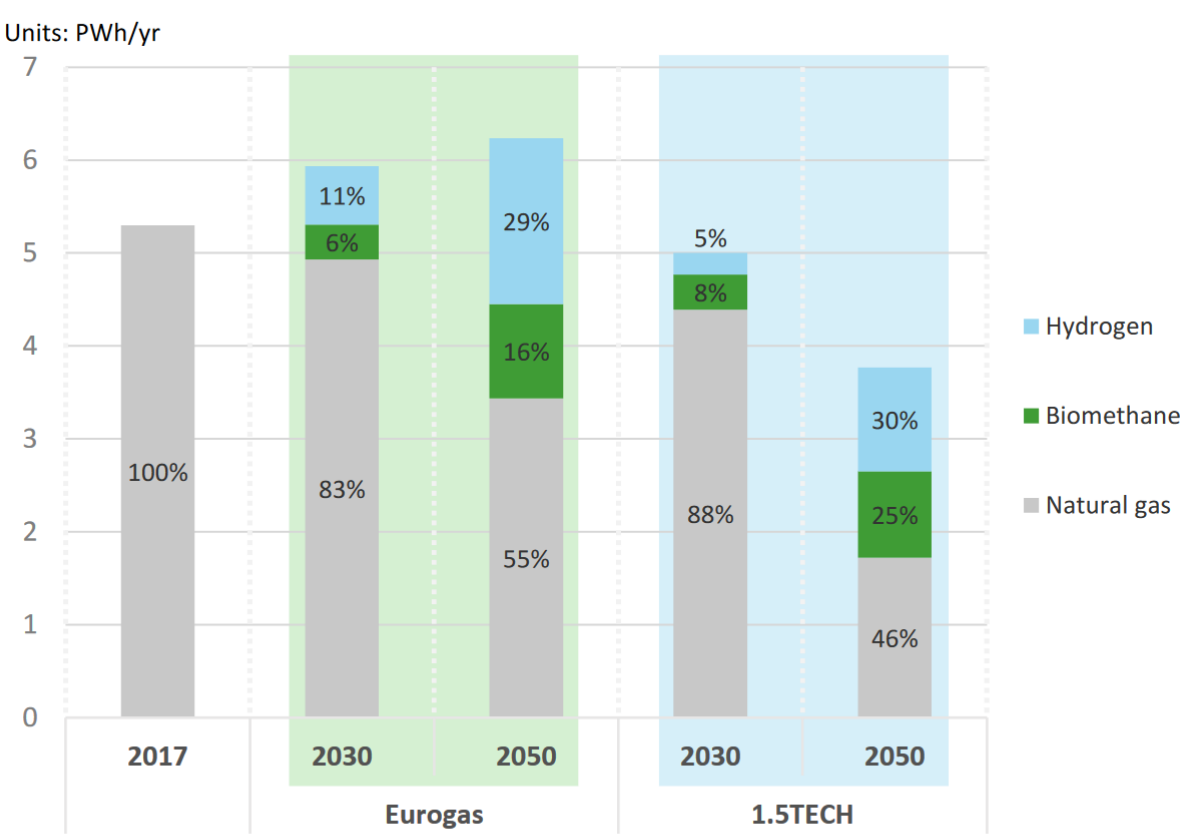


*Includes CO_2 emissions from non-energy, H2 production, own use and other

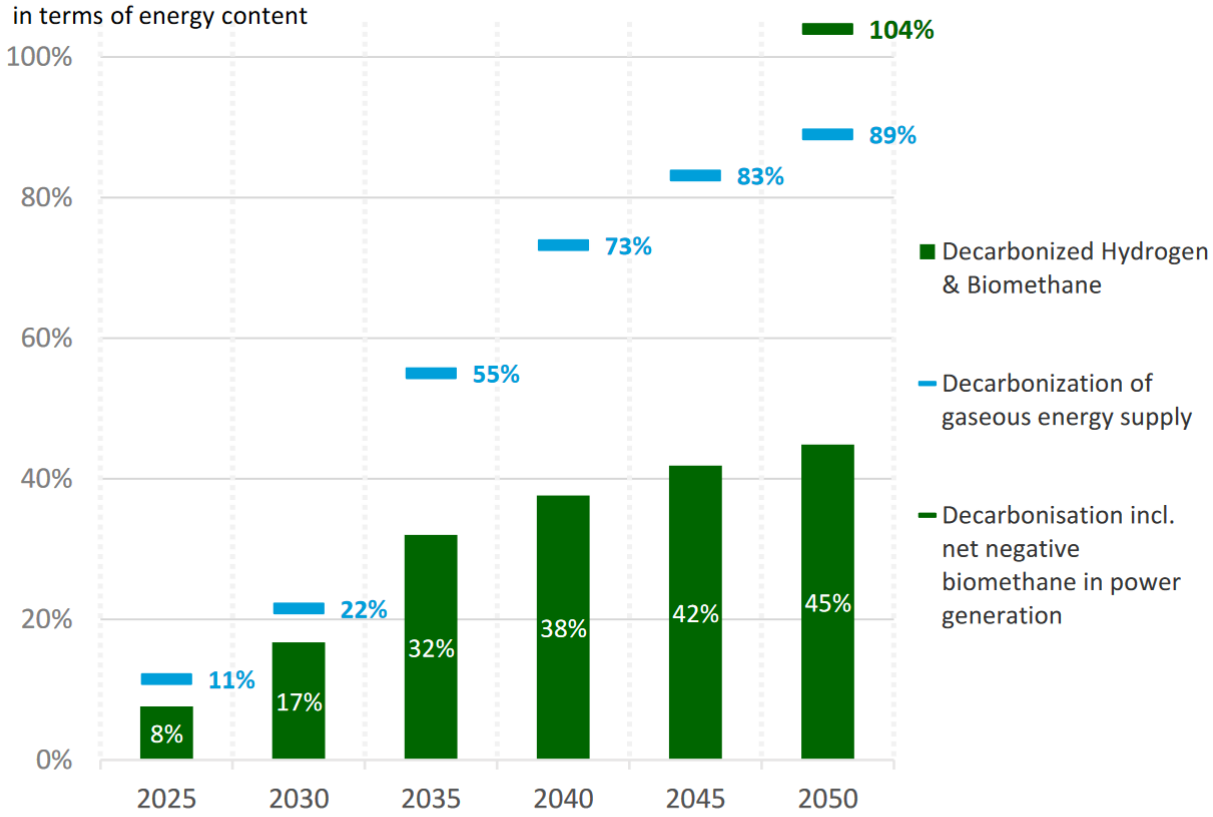
The gaseous energy supply chain can fully decarbonize itself…

- Gaseous energy supply in the Eurogas scenario increases by 18% over 2017 levels (natural gas supply reduces by 35%) and is 89% decarbonized in 2050

Gaseous energy supply

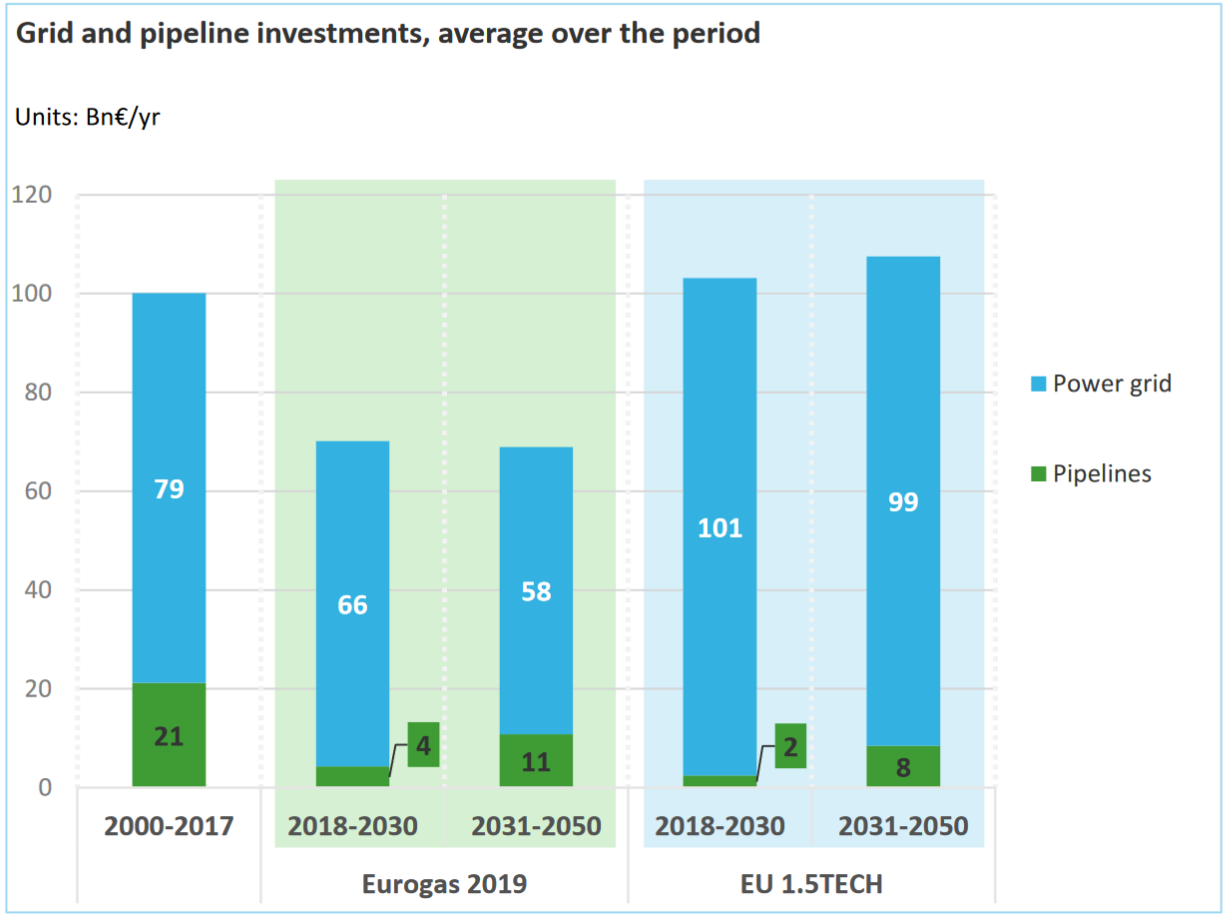


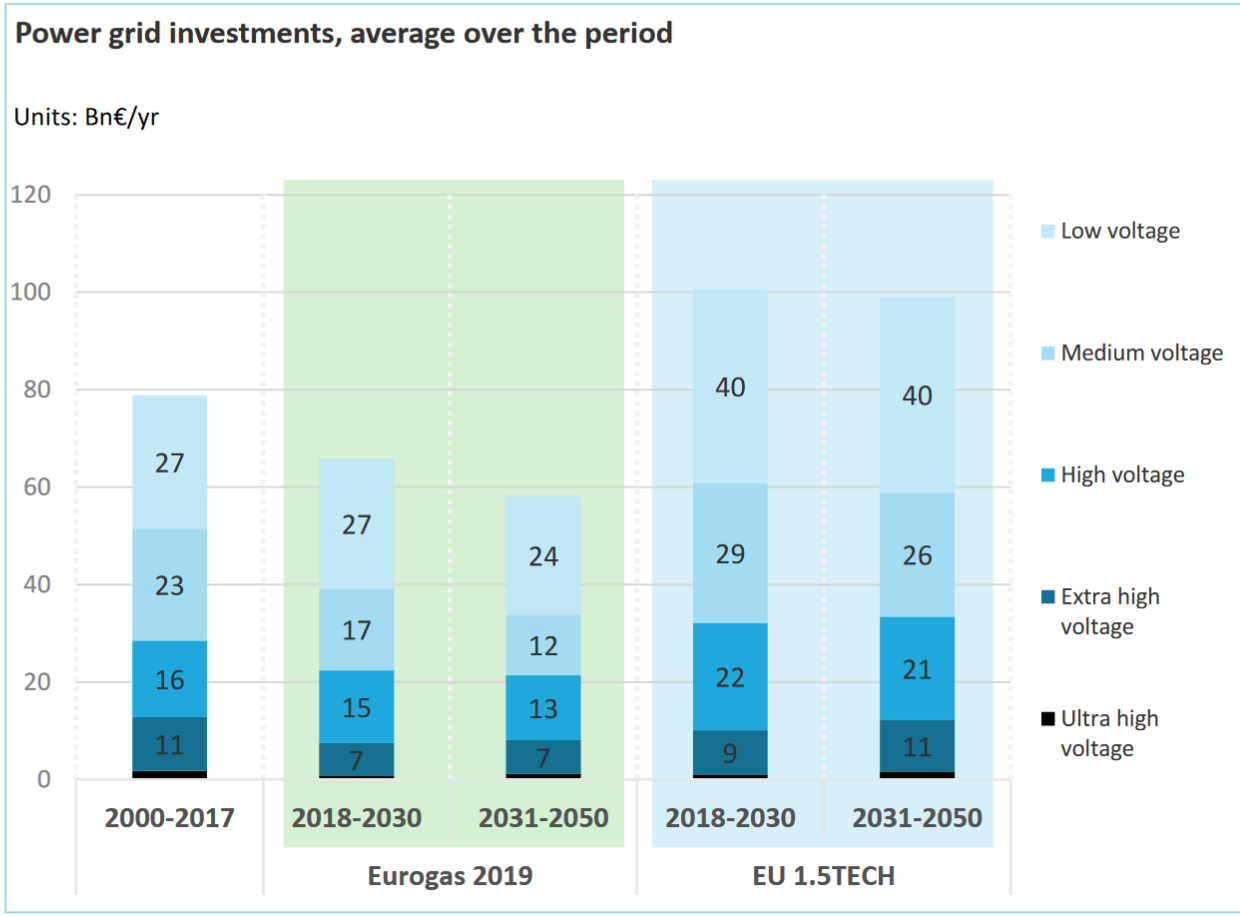
Decarbonized Gaseous Energy Supply - Eurogas scenario



Investment in gas infrastructure is a fraction of investment in power grids…

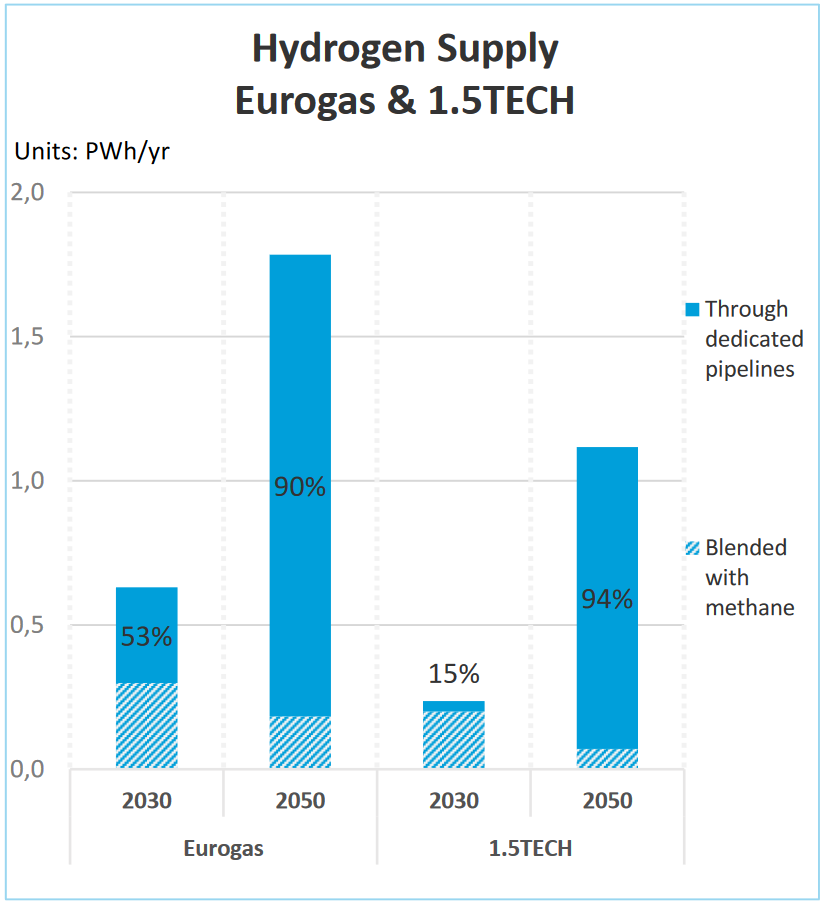
- CAPEX in energy infrastructure in Eurogas scenario is 34% (1.3 trillion euros) lower than 1.5TECH scenario

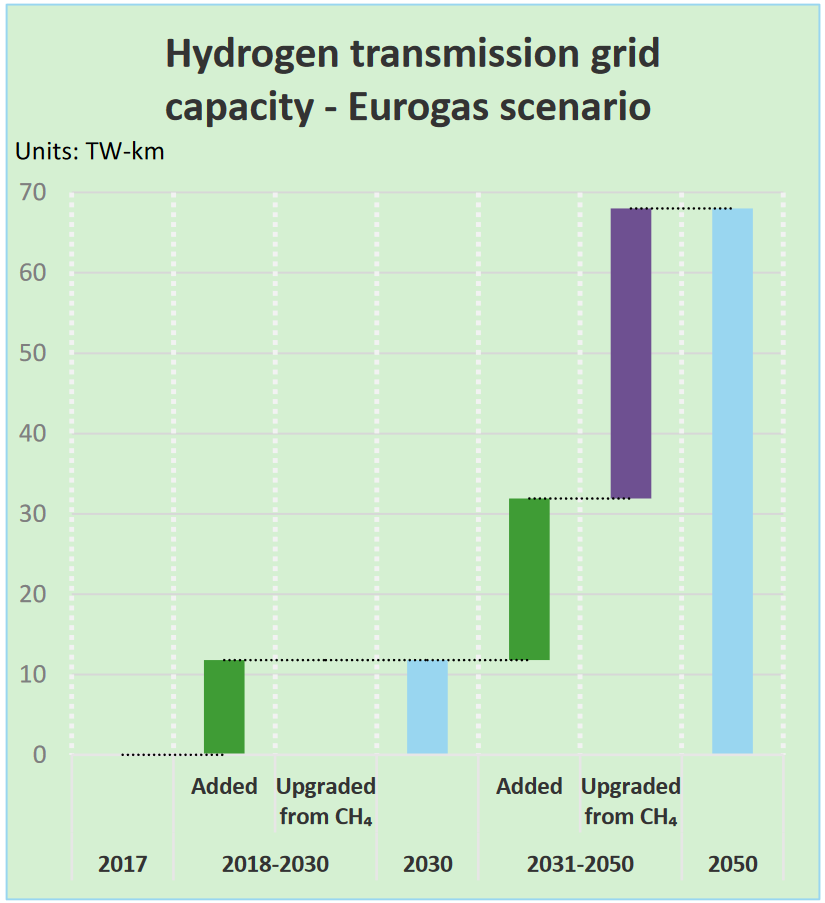


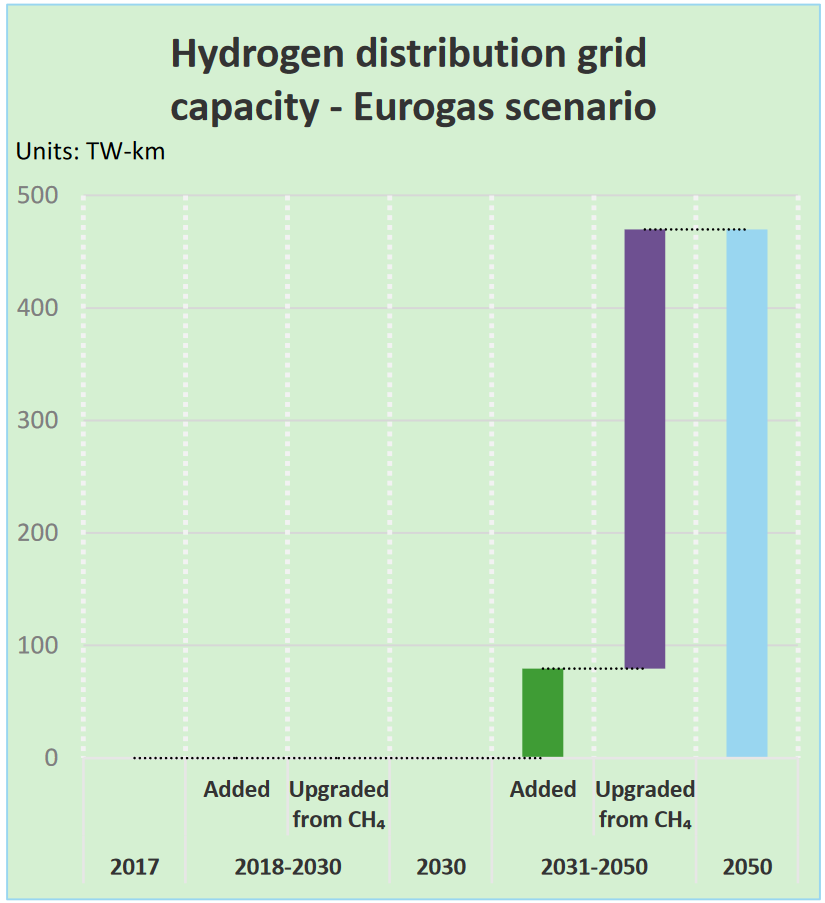


as hydrogen can be delivered through blending and retrofit…

- Blending hydrogen into the existing gas network emerges as a cost effective option to deliver decarbonized energy to customers, particularly for the building sector until 2030





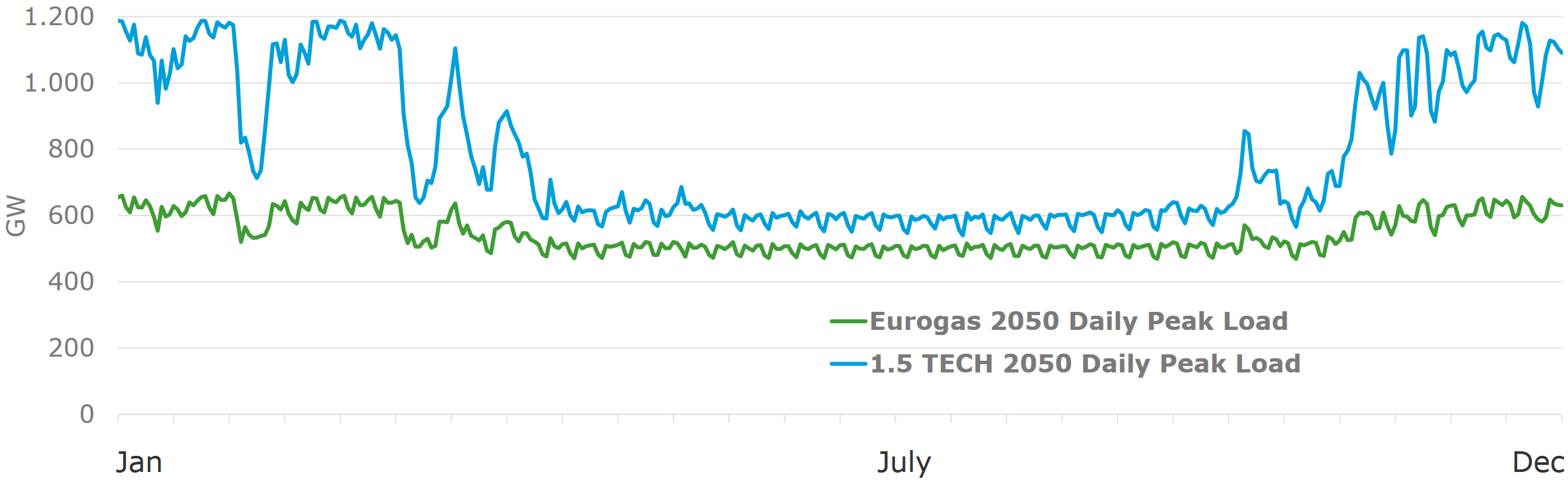


Deep Dive – Decarbonizing the building sector

1.5TECH average electricity load is higher, but also much more 'peaky'

- Average capacity: 15% higher
- Peak capacity: 65% higher

->1.5TECH grid is on average less used -> Higher grid cost per Kwh



Recommendation for targets

1. **EU level greenhouse gas intensity reduction target:** *Eurogas calls for a binding EU target on gas demand for the reduction of the GHG intensity of gas by **at least 20% compared to 2018 levels**, through the use of renewable and decarbonized gases.*

2. **EU level renewable gas target:** *In Eurogas supports the introduction in European legislation (e.g. revision of the Renewable Energy Directive) of a binding 2030 EU target on demand for renewable gases of **at least 11% in terms of energy content of gas consumed**. Renewable gases contributing to the "EU level renewable target" account at the same time also for the "EU level greenhouse gas intensity reduction target" in line with the eligibility criteria set out for "EU level greenhouse gas intensity reduction target"*

3. **Design of the greenhouse gas intensity reduction target and renewable gas target:** *Member States shall be free to define their individual national contributions towards the "EU level greenhouse gas intensity reduction target" and "EU level renewable gas target" no later than June 2024. When setting their national contributions towards the "EU level greenhouse gas intensity reduction target" and "EU level renewable gas target" in their (revised) NECPs, Member States may do so, inter alia, by means of measures targeting volumes, energy content or greenhouse gas emissions as well as being free to establishing differentiated sectorial targets and obligations (e.g. ETS/non ETS).*

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