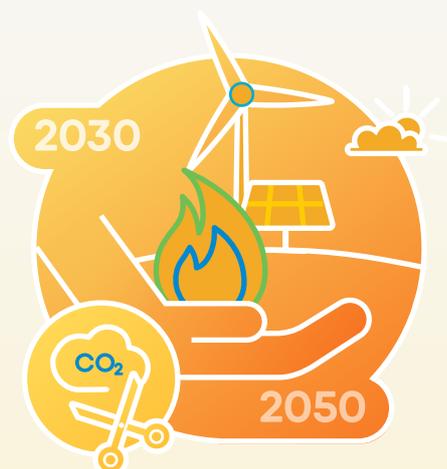


Eurogas Scenario Study with PRIMES:

Overachieving climate targets with gas at a lower cost

This study, based on the PRIMES model, envisions a future in which the EU's agreed climate targets are met. It demonstrates that considerable progress can be made early by tapping the vast potential that natural gas offers by replacing coal, achieving even more ambitious emissions reductions by 2030.

The versatile role of gas (natural and renewable) enables a socially acceptable pathway to 2050, supporting higher shares of renewable energy, while limiting the cost increase for consumers.



Outcomes of the modelling



	<p>Fuel switch from coal and oil to gas would exceed the EU's 2030 GHG reduction target by 5%. This will provide time for developing new cost-efficient options for 2050.</p>
	<p>Innovative gas solutions enable higher shares of renewable energy, providing optionality to meet 2050 targets.</p>
	<p>Renewable gas technologies like power-to-gas should be developed. This helps renewable electricity, within a comparable cost range.</p>
	<p>Gas demand (natural and renewable) levels in the EU would still be important in 2050. Gas demand can be up to 460bcm in 2050, 70% of which will be renewable gas.</p>

Key findings – Sectors

Gas has a versatile role in reducing emissions from sectors that are difficult to decarbonise: residential, industry and transport.

	<p>Residential Electrification of residential sector limited by high investment burden for consumers. 80% of current houses will still stand in 2050, resulting in stable gas demand.</p>
	<p>Industry Short-term energy demand rise in industry could occur. Some shift towards service-based economy possible. Efficiency is key, wherein gas plays a strong role.</p>
	<p>Transport Gas demand increases 9-fold in the innovative gas scenario by 2050, contributing to decarbonising the transport sector and to clean air while maintaining travel distance and load.</p>



Key findings – Costs

A strong push for electrification would result in system limitations and high overall costs. A mix of decarbonisation options is a better approach. The Innovative Gas scenario allows to save €335bn in infrastructure investments between 2015 and 2050.

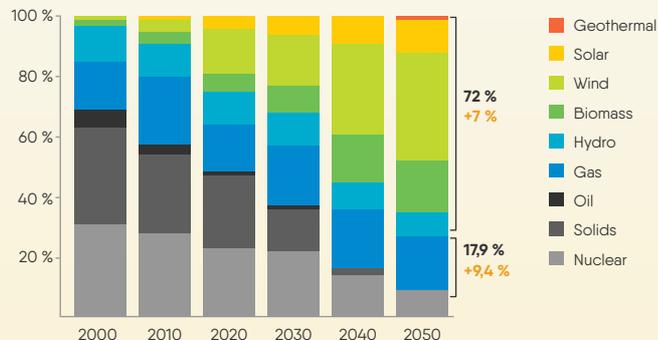
Total cost for decarbonisation (% of GDP)



Key findings – Energy mix

Innovative gas technologies, like power-to-gas, enable more renewables, within a comparable cost range.

Innovative Gas



Scenario approach: PRIMES model

- The PRIMES model is a model that explores 'what-if' questions. It is a modelling system that simulates a market equilibrium solution for each form of energy supply and demand.
- The market equilibrium is achieved for each 5-year interval and is dynamic over time. Market equilibrium solution means a scenario where demand and supply are equalised, taking into account consumer choice. Prices produced from this cocktail are linked with behaviour by feedback loops.
- Variability is modelled by 120 typical days of high/low wind and/or sunlight, affecting the operation of the power plants in the model for which fast ramp rates for flexible operation are included. Curtailment of renewable energy production is captured in the model.

Arguable assumptions by PRIMES model:

- In view of Eurogas, the model underestimates the potential of natural gas to achieve 2030 climate targets.
- The economic forecast of the European Commission foresees a services-based economy, more unemployment and more elderly people. These, however, do not consider the potential benefit of industry to the wider economy.
- Very high CO2 prices seem unrealistic and are the result of technology choices that are required to meet the climate targets, resulting in very high shares of renewables.

Policy Recommendations

10 steps for policy makers to make the energy transition happen.



- Build the future energy system with gas, wind and sun in partnership and fair competition
- Create a reliable and positive framework for the European gas market
- Give carbon a price that makes a real difference before considering other measures
- Coordinate electricity and gas policies for a coherent energy market design
- Ensure fair competition for gas and electricity in heating
- Give renewable gas equitable treatment with renewable electricity
- Allow gas to use its strengths in the decarbonisation of all transport sectors
- Drive innovation with gas through the EU's R&D budgets
- Encourage diversification of gas sources and routes
- Complete the internal market in all member states

Visit www.gaswindandsun.eu to see how gas helps make energy transition happen!