



GAS:

AT THE HEART OF MODERN ENERGY

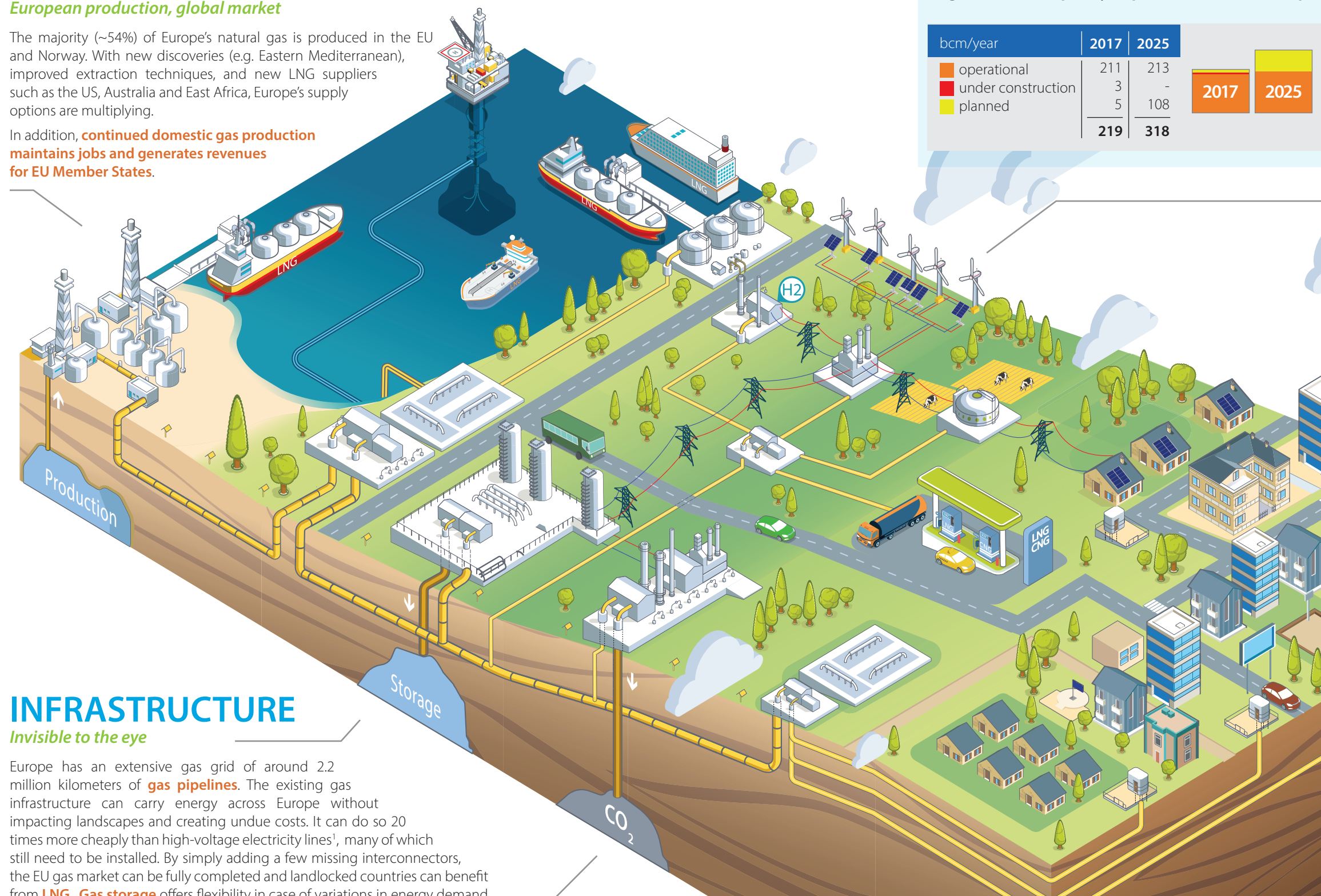
gas
naturally
making a clean future real

SUPPLY

European production, global market

The majority (~54%) of Europe's natural gas is produced in the EU and Norway. With new discoveries (e.g. Eastern Mediterranean), improved extraction techniques, and new LNG suppliers such as the US, Australia and East Africa, Europe's supply options are multiplying.

In addition, **continued domestic gas production maintains jobs and generates revenues for EU Member States.**



INFRASTRUCTURE

Invisible to the eye

Europe has an extensive gas grid of around 2.2 million kilometers of **gas pipelines**. The existing gas infrastructure can carry energy across Europe without impacting landscapes and creating undue costs. It can do so 20 times more cheaply than high-voltage electricity lines¹, many of which still need to be installed. By simply adding a few missing interconnectors, the EU gas market can be fully completed and landlocked countries can benefit from **LNG**. **Gas storage** offers flexibility in case of variations in energy demand.

INNOVATION

Storing excess renewable power and CO₂

Power-to-Gas allows for the storage of most excess renewable power by converting electricity into hydrogen and/or synthetic gas, and then injecting it into the existing gas grid.

According to the International Energy Agency, as of 2030, **Carbon Capture and Storage (CCS) technology** will be crucial for reaching net zero carbon emissions. The CO₂ captured from power generation or industry can either be stored underground or reinjected into the gas system as synthetic methane or as a mix with hydrogen.

Biogas is a renewable energy source that can be produced by recycling waste from various sources. Once upgraded to biomethane, it can be injected into the existing natural gas grid. Biogas also offers a new source of revenue for the agricultural sector.

Regasification capacity expected to rise in Europe²

bcm/year	2017	2025
operational	211	213
under construction	3	-
planned	5	108
	219	318

POWER MARKET

Flexible, cleaner, no subsidies

Natural gas, as a low-carbon fuel, can be used as a baseload energy source and in combination with renewables: only gas power plants are sufficiently able to provide large-scale, cleaner and dispatchable electricity to complement variable renewable energy sources.⁴

By switching from coal to gas in power generation, the EU can reduce its power generation emissions by around 40% (equivalent to around 500 Million tonnes of CO₂) with no need for public subsidies.

TRANSPORT

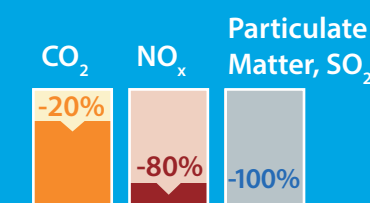
Better air quality

The potential of gas in road and maritime transport should be fully used. Gas can reduce emissions of CO₂ and improve air quality as it lowers emissions of particulate matter, SO_x and NO_x in a cost-effective way.

Also, vehicles running on renewable gas are zero pollutant emissions, with CO₂ savings able to go beyond those of electric vehicles.⁵

For marine transport, compared with traditional heavy fuel oils, LNG represents:

- At least a 20% reduction in carbon dioxide (CO₂) emissions.
- Up to 80% reduction in nitrogen oxide (NO_x) emissions.
- A 100% reduction in sulphur dioxide (SO₂) and particulate matter emissions.



HEATING

Efficient and affordable

Gas is the first choice for home heating for over 120 million European citizens and is one third the cost of electricity (before taxes).⁶ It is one of the most affordable, flexible and energy-efficient solutions for domestic heating.

Technologies such as **gas heat pumps**⁷, **micro-CHP** and **fuel cells in heating & cooling** will make gas use even more efficient in the future.

Micro-CHP and fuel cells can generate not only heating, but also electricity, in particular at times of peak power demand or capacity shortages. These technologies can empower consumers by enabling them to generate electricity, save money and participate in the increasingly complex energy market.

GasNaturally Policy Recommendations

for an effective & affordable EU climate & energy policy

Allowing gas to play its full role in the energy mix will help Europe to reach its 2030 climate & energy objectives and its commitment under the Paris Agreement.

To do so, the following points should be taken into account by policymakers:

- 1 The agreed 2030 GHG target will give Member States the flexibility to choose the most cost-efficient and well-suited options to reduce their emissions.** Nationally binding targets for renewable energy and energy efficiency would create the same problems as the 2020 package, i.e. forcing Member States to adopt expensive policy measures which will impose unnecessary costs on European consumers, deliver limited results in terms of GHG emission reductions, while not using the cheapest CO₂ abatement solutions first.
- 2 The Governance Regulation should not be used as a backdoor to introduce nationally binding energy efficiency and renewable targets.** Instead, it should ensure that Member States are on track to achieve their commitments while avoiding policy overlaps with the EU ETS, exploiting synergies and facilitating the achievement of the internal energy market.
- 3 Subsidies for mature technologies such as coal, onshore wind, and solar panels already on the market should end.** Support should be directed to research, development and innovation of all promising energy technologies that have the potential to reduce GHG emissions on the basis of technology neutrality. These include CCS, CCUS and renewable gas. These areas provide an opportunity to develop technology and create jobs in the EU.
- 4 Partial removal of priority dispatch is a good first step, but it would be advisable to go even further and end priority dispatch entirely, as well as curtailment rules for wind power.** As emphasised in the Commission's Impact Assessment, removal of priority dispatch and curtailment rules would help to integrate variable renewable generation and would reduce costs significantly. Removing these market distortions would also offer market players access to all resources on equal terms.

Sources

- ¹ Britned v BBL <http://www.britned.com/> and <https://www.bblcompany.com/news/new-pipeline-to-supply-gas-from-the-netherlands-to-the-uk>
- ² LNG Investment Database, <http://www.gie.eu/index.php/maps-data/lng-investment-database>
- ³ "Concept for a LNG Gas Handling System for a Dual Fuel Engine", International Journal of Marine Engineering Innovation and Research, Vol. 1(4), Sept. 2017. 272-283 (source [here](#))
- ⁴ "Study on the impact assessment for a new Directive mainstreaming deployment of renewable energy and ensuring that the EU meets its 2030 renewable energy target", Oeko-Institut, July 2017. <http://bit.ly/2uoA4C1>
- ⁵ http://iet.jrc.ec.europa.eu/about-jec/sites/iet.jrc.ec.europa.eu/about-jec/files/documents/wtw_app_1_v4a_march_2014_final.pdf
- ⁶ Report 'Energy prices and costs in Europe', European Commission, COM(2016) 769 final. Figure 3 in this report shows that the energy component of average EU household retail electricity prices equals around 75€/MWh, and for industry – slightly over 50€/MWh (Figure 6). Figure 10 shows that the energy component of average EU household retail gas prices accounts for around 35€/MWh, and for industry – slightly over 25€/MWh (Figure 12).
- ⁷ The gas-fired heat pump combines high efficiency gas-fired condensing technology with environmental heat. In this way, renewable energy can be used relatively easily for heat supply to new and existing buildings. The gas-fired heat pump systems are classified into compression, absorption and adsorption systems according to their ways of working. Read more here: <http://www.ehi.eu/article/gas-heat-pumps>
- ⁸ European Commission, SWD, Impact Assessment to Power Market Design proposal (SWD(2016) 410 final <https://ec.europa.eu/transparency/regdoc/rep/10102/2016/EN/SWD-2016-410-F1-EN-MAIN-PART-3.PDF>

