

Natural Gas: Contributing to Europe's sustainable energy objective

Natural Gas can make an important contribution to Europe's energy goals

Europe needs to develop an energy policy that will enable it to meet its related targets of reducing greenhouse gas emissions, increasing the share of renewable energy sources in energy consumption and improving energy efficiency.



This policy must at the same time meet Europe's wider objectives of sustainability, competitiveness and supply security.

This means that the policy framework has to provide for a diversified mix of fuels in a competitive market. The use of natural gas contributes to this policy, helping to ensure a competitive, secure and sustainable energy supply.

Natural gas will continue to be an important part of Europe's sustainable energy mix

Natural gas reserves are abundant worldwide and are estimated to be able to meet global needs for at least another 60 years. Today, natural gas accounts for almost 25% of Europe's primary energy consumption and under any realistic supply scenario, natural gas will continue to play a significant role in the energy mix. At a time of growing global competition for gas, Europe's consumers will continue to enjoy the benefits offered by this versatile fuel, assuming that the right policy and regulatory framework are in place to maintain Europe as a well functioning, competitive and attractive market.



Moreover, conventional natural gas resources could be significantly complemented by unconventional resources within Europe, as is already happening in other parts of the world.

Natural Gas will be a fuel of choice for electricity generation as well as a back-up for renewables

Natural gas will remain a fuel of choice in power generation. Final European electricity demand is expected to increase in the coming years, requiring additional generation capacity. Gas can contribute to a reliable, flexible and diversified generation mix.

As natural gas has a lower carbon content than other fossil fuels and therefore emits fewer CO₂ emissions per unit of energy produced, replacement of conventional coal generation by gas-fired plant will significantly reduce emissions of greenhouse gases and air pollutants. This advantage is maintained even if the methane losses from the natural gas chain are taken into account. Using natural gas to produce electricity today offers a cost-effective way of reducing CO₂ emissions. Replacing a 30-40% efficiency coal plant with a 50-60% efficiency Combined Cycle Gas Turbine plant (CCGT) decreases energy consumption significantly and cuts CO₂ emissions by half or more. Use of gas in CCGTs will remain an economically and environmentally attractive option for base and medium load power generation.

Once Carbon Capture and Storage (CCS) technology has been developed, piloted and proven, there is the potential to retrofit it to CCGT plant too. While recognising that introduction of this technology will change the competitive environment for coal and gas plant, the use of CCS in gas-fired generation would enable CO₂ emissions to be reduced to very low levels, ensuring maximum carbon neutrality.

Moreover, in addition to being a fuel of choice for power generation natural gas will also increasingly be used as a back-up to electricity generation from renewable energy sources, especially wind and solar energy. Since it is still unclear how far wind will be able to contribute to power generation,

the impact on gas use is uncertain, but as much of the achievement of the 20% renewable target is likely to depend on wind, gas will have an important role as back-up in the delivery of this objective.



Low in pollutants

As the cleanest fossil fuel (free of sulphur and generally emitting very low amounts of nitrogen oxides (NOx) when burned), natural gas continues to play its part in making the air cleaner and healthier to breathe and our surroundings pleasanter.

Gas used in Combined Heat and Power Technology offers significant advantages

A gas-fired CHP plant typically utilises 90+% of the primary energy content of the fuel, with gas CCGT having significantly higher heat-to-power ratios (electricity/heating) than other fuels. Gas can be used in this way in electricity generating plant, district heating schemes, industrial and commercial applications.

Small-scale CHP appliances, commonly known as micro-cogeneration, have also widespread potential.

Natural gas is greatly appreciated by industrial customers

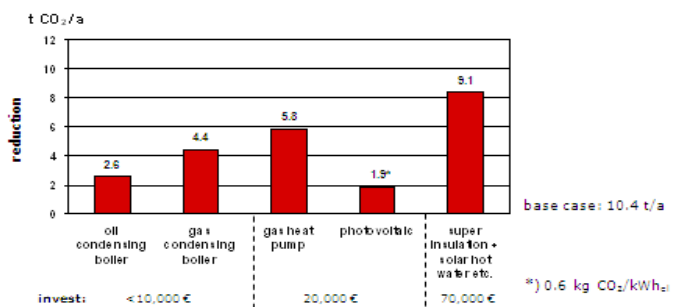
Direct use of gas is also a high performing solution in a range of industrial applications. Innovative technological developments, including the development of new burner types, offer process advantages and low emissions. Gas used in combination with smart technology facilitates the production of high grade goods in an efficient, cost-effective and environmentally friendly manner.

Gas has a valuable contribution to make to the houses and other buildings of the future



Highly efficient gas space heating will continue to be available for European homes and other buildings, and there are available other gas-fired technological options to produce electricity and heat for the low-emission buildings, for example gas-fired heat pumps or micro-cogeneration. Surplus electricity can be sold back, so contributing to decentralized electricity generation.

CO₂ emissions-reduction per year



Source: GERG

There is also potential for the use of natural gas in hybrid applications, in conjunction with renewables such as solar. In such uses, natural gas complements the environmental attractiveness of domestic renewable schemes, while ensuring continuity of energy supply.

Drive your vehicle on natural gas

Natural gas is already used in several cities around the world in fleet operations, and given the right infrastructure, it is also be used in individual private vehicles.



A natural gas vehicle produces fewer emissions than a conventional petrol or diesel driven vehicle.

Gas can also be "bio"

Biogas (i.e. methane from biomass) offers similar advantages to natural gas, but in addition it enjoys the advantage of being a renewable energy source, produced from waste matter or crops.

Biogas is an excellent solution for stand-alone energy projects, but providing technical and practical requirements are met, it can also flow through the existing gas grids, mixed with natural gas.

