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# LONG-TERM OUTLOOK FOR GAS TO 2035

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Eurogas is the association representing the European gas wholesale, retail and distribution sectors. Founded in 1990, its members are some 50 companies and associations from 26 countries.

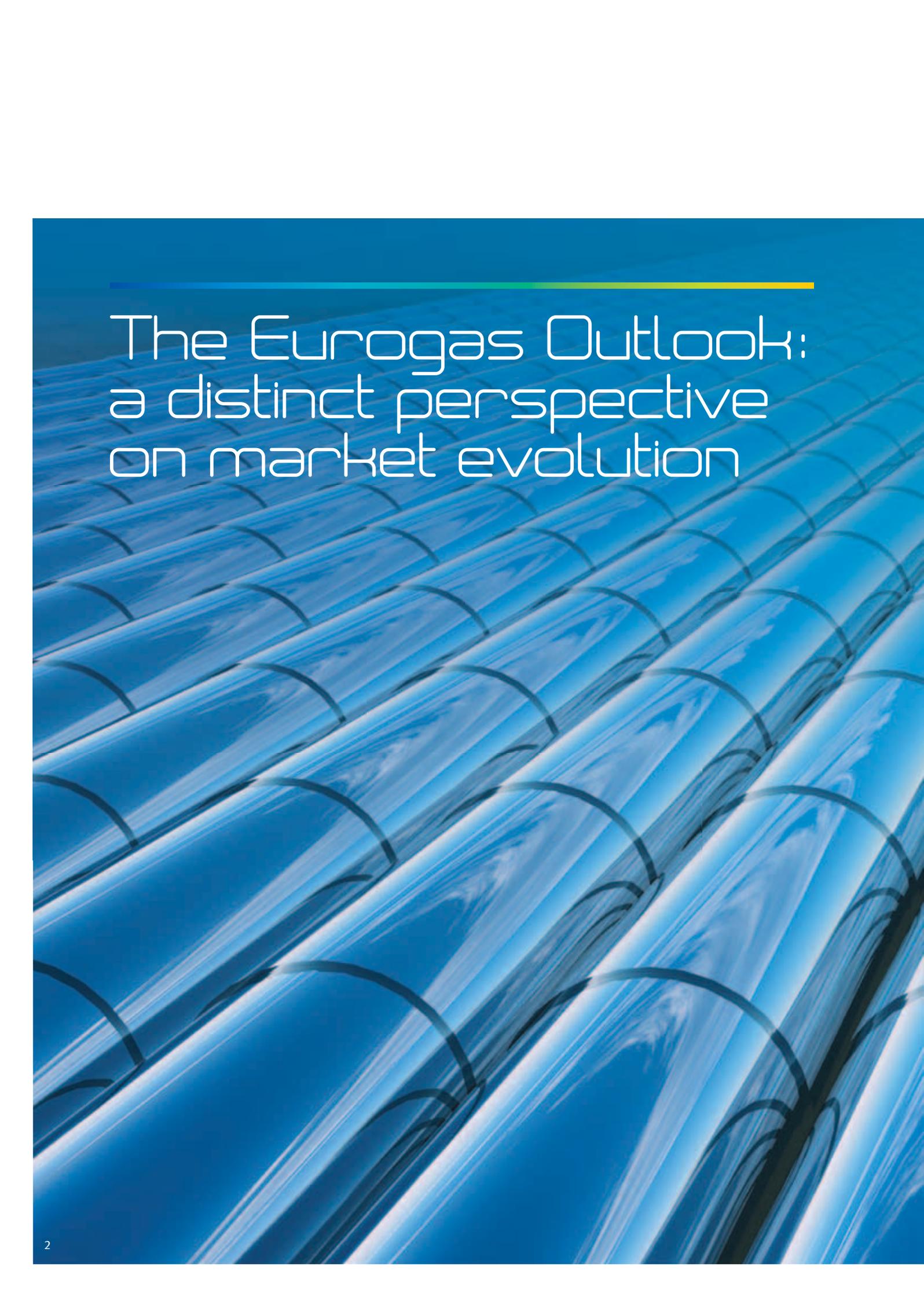
Eurogas represents the sectors towards the EU institutions and, as such, participates in the Madrid Gas Regulatory Forum, the Gas Coordination Group, the Citizens Energy Forum and other stakeholder groups.

Its members work together, analysing the impact of EU political and legislative initiatives on their business and communicating their findings and suggestions to the EU stakeholders.

The association also provides statistics and forecasts on gas consumption, as well as information on energy taxation in Europe. For this, the association can draw on national data supplied by its member companies and associations.

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# The Eurogas Outlook: a distinct perspective on market evolution

“Drawing on our members’ expertise, we gather their best assessments of how the markets are likely to develop.”

The Eurogas Outlook provides a distinct perspective on the future of Europe’s gas markets prepared by our member company and association experts in national and European markets. Drawing on their individual and collective wisdom and expertise, it gathers their best assessments of how the EU-27 gas market is likely to develop under three “cases” that reflect diverse, yet plausible, conditions:

- The Base Case derives from current national energy policies, which show little or no investment in the gas sector in most parts of Europe in the next five to ten years.
- The Environmental Case anticipates a rebalancing of the energy mix towards more renewable and slightly less nuclear electricity, together with restored economic growth and a high rate of innovation in energy-efficient equipment (notably in the rapid deployment of efficient gas appliances in home and office heating).
- The Slow Developments Case projects gas becoming less competitive in Europe as a result of global developments, a policy environment that remains hostile to gas, weaker industrial performance in Europe and slow progress in energy efficiency.

For each of these three cases, the Eurogas Outlook projects an expected level of gas demand in each sector of consumption: power generation, residential and commercial, industry and transport. Sectoral and overall demand for gas varies in these cases for reasons explained in the following pages. Figure 1 shows the forecasts for 2015, 2025 and 2035, by reference to the year 2010.

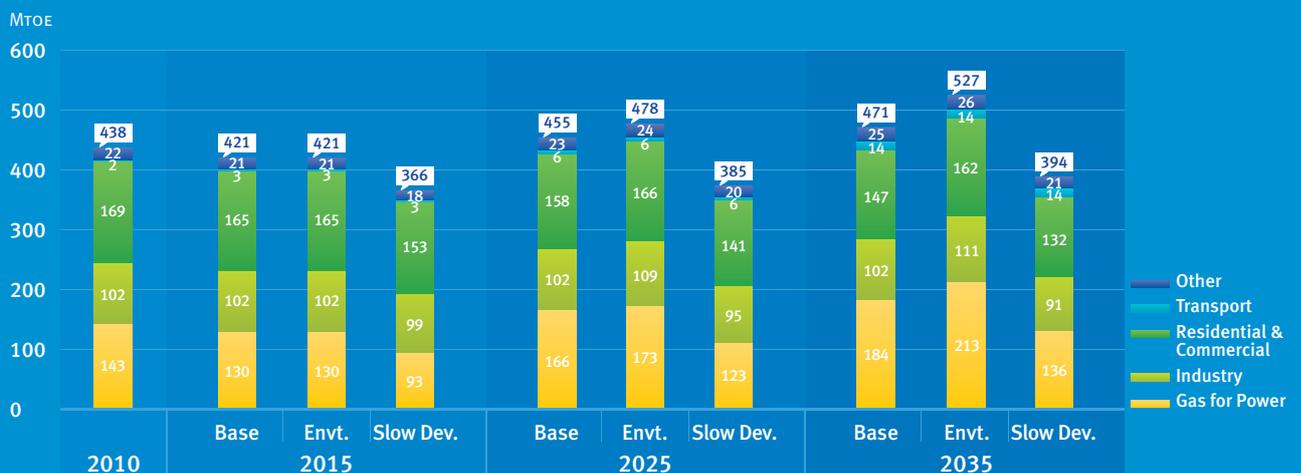
Over the 25-year period, the decrease of gas demand in the Slow Developments Case is 44 Mtoe below the 2010 level and thus of the same order of magnitude as the decrease experienced within the short period between 2010 and 2012.

This reflects the fact that in any realistic scenario, the qualities of gas will still lead customers in all sectors to want to keep using it. The cleanliness, controllability, low carbon dioxide (CO<sub>2</sub>) content and flexibility in use of gas – coupled with its adaptability to high-efficiency equipment and innovative technologies – will continue to create demand in both difficult and favourable market and policy conditions.

- In 2010, gas accounted for 25% of Europe’s primary energy use.
- By 2035, the gas share could increase to as much as 30% (the Environmental Case), or may decline to 24% (the Slow Developments Case).
- If current difficult market and unfavourable policy conditions continue over the next two years, then a low point of 22% could be touched in 2015.

Uncertainty in the volume of gas sales to power generation is the main factor behind differences in the overall level of gas demand in each forecast case.

FIGURE 1: EU-27 GAS DEMAND, 2010-2035



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# Prospects of gas demand in each consumption sector

**Power generation**



**If current trends continue...  
there is a risk of re-carbonisation  
in Europe.**

## Gas offers considerable potential for reducing CO<sub>2</sub> emissions in the power sector.

But there is much uncertainty around whether this potential will be realised in Europe over the medium and long term. Recent experience makes the short-term prospects very poor. A weak price signal in the carbon market, combined with growing imports of competitively priced coal, and high subsidies and feed-in-tariffs for selected preferred low-carbon technologies, have driven gas out of the merit order for power station dispatch. If these trends continue, gas will be further pushed out of the merit order, with the result *at best* that a high-cost (rather than low-cost) decarbonisation track will be followed, and that *at worst* coal-for-gas substitution will more than outweigh any gains from the growth of other low-carbon technologies, leading to re-carbonisation in Europe.

The **Eurogas Outlook** projects how these conditions would change in different ways across the three cases (Figure 2). In all three cases, the change in conditions results in lower CO<sub>2</sub> emissions. In the Base Case, gas consumption in power generation rises from 143 Mtoe in 2010 to 184 Mtoe in 2035. In the Environmental Case, gas consumption increases to 213 Mtoe as a result of more fuel switching, with the result that CO<sub>2</sub> emissions decline further. Support of gas for flexible renewable sources and cover for a declining relative share of nuclear power are the main drivers here. The Slow Developments Case, by contrast, reflects a smaller decrease in nuclear, a remaining competitive advantage for coal plants and a larger increase of renewables used for base-load generation. As a consequence, gas demand in power generation drops to 136 Mtoe in 2035, and the EU remains further away from its climate goals.

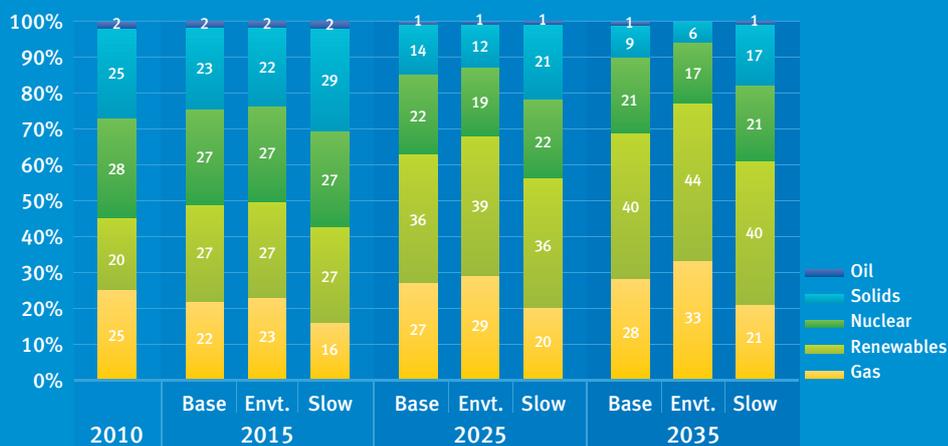


The eventual make-up of the energy mix in power generation will result from a complex interplay of global and European market forces, and of European and national energy policies and market designs. The potential contribution of gas in attaining positive outcomes for both competitiveness and the environmental objectives is illustrated in the mix of energy sources projected in the Base and Environmental Cases (Figure 3). Gas and renewables will grow together, with the share of renewables overtaking that of gas in 2015 and rising steeply thereafter while gas grows only slightly. Coal will be displaced throughout the whole period and oil is almost completely phased out. In the more environmentally sensitive world, these developments will be faster and stronger.

FIGURE 2: EVOLUTION OF CO<sub>2</sub> FROM EU-27 POWER GENERATION, 2010-2035



FIGURE 3: OUTCOME FOR EU-27 POWER GENERATION MIX, 2010-2035





## Residential and commercial



New gas technologies will reduce emissions thanks to their high efficiency.



### A major contribution to the energy efficiency of the European economy

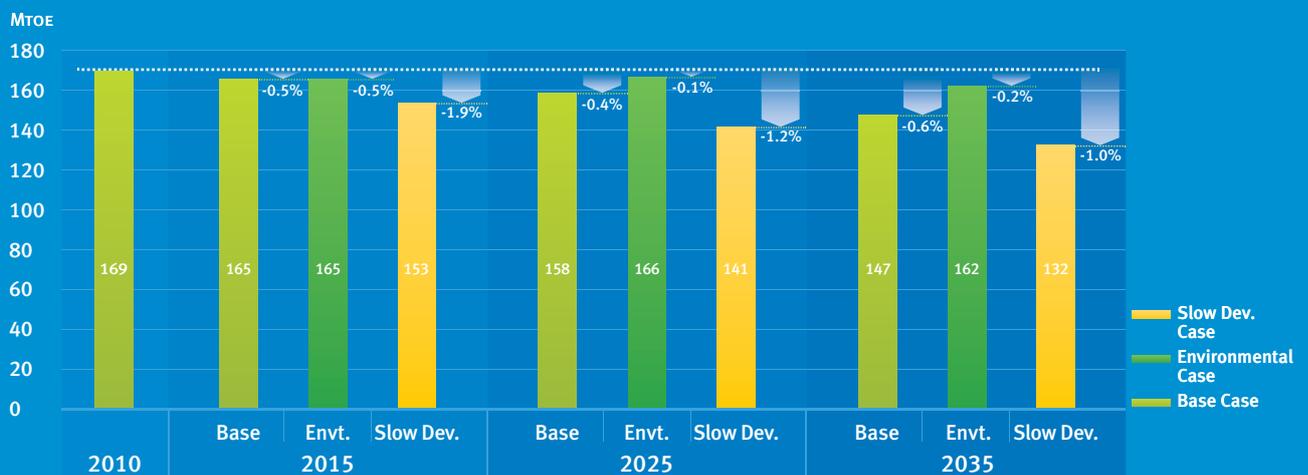
will be the development in the residential and commercial sector over the forecast period. This is linked primarily to the roll-out of high-efficiency gas heating systems. Gas is currently the primary heating source for homes throughout Europe, and has a prominent role in heating schools, hospitals, offices and other commercial sector premises. Thanks to its attractive qualities to customers (cleanliness and convenience), demand for gas in this sector is likely to be relatively stable and to evolve in a steady pattern compared with the more variable forecast in power generation, for example.

Since 1990, gas consumption in the residential and commercial sector has increased steadily, in line with the expansion of infrastructure and the associated rise in the number of gas users. The **Eurogas Outlook** suggests, however, that demand in this sector may now be on a track of secular decline for two main reasons: high market

penetration has already been reached in many major gas-consuming countries, and new gas heating equipment is more efficient than the existing stock that it steadily and gradually replaces. This impact is evident in the Base Case, where volumes decline to 147 Mtoe by 2035 (Figure 4).

The Environmental Case explores the possibility that a number of new gas technologies now available could change this picture. Faster replacement of other forms of heating by environmentally efficient gas heating technologies (such as condensing boilers combined with solar energy, micro-cogeneration, gas heat pumps and ultimately fuel cells) could cause the contribution made by gas to the space heating market to stabilise at around 162 Mtoe during the whole period. In contrast, the Slow Developments Case foresees a drop in gas use to 132 Mtoe by 2035. If regulation drives forward electrification of the heating market without adequately decarbonising electricity generation, carbon-negative effects could result for the European economy.

FIGURE 4: EU-27 GAS DEMAND FOR RESIDENTIAL AND COMMERCIAL SECTOR, 2010-2035



Percentages are compound annual growth rates by reference to 2010



## Industry



Gas continues to provide a premium quality fuel and feedstock to industry.

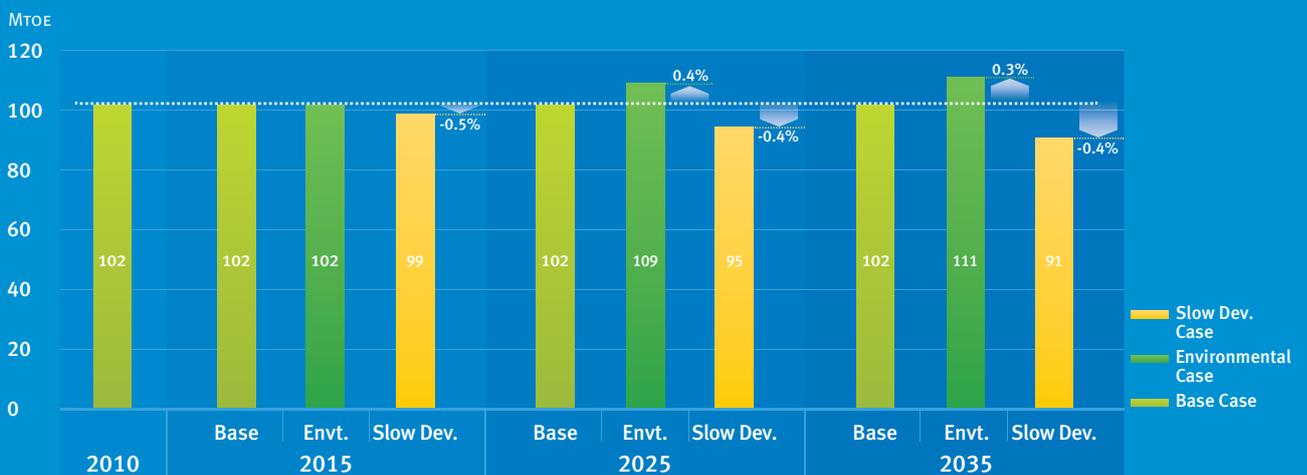


**The overall level of gas demand is likely to remain closely coupled to the rate of economic activity**

in the industrial sector, conventionally measured in economic terms by industrial “value-added”. Gas is used in all part by the European industry, but is particularly important as a feedstock for fertilisers for the farming community, and in areas like food processing where cleanliness is very important.

The Eurogas Outlook forecasts for industrial gas demand are thus driven by the overall economic expectations in the different cases, and on the condition that gas can be priced competitively against higher carbon fuels in order to retain its attractiveness (Figure 5). With recovery in industrial activity and substitution of more polluting fuels in the Environmental Case, gas demand in the industry sector could increase slightly in the long term to about 111 Mtoe by 2035. It is unlikely to decline significantly.

FIGURE 5: EU-27 GAS DEMAND FOR THE INDUSTRIAL SECTOR, 2010-2035



Percentages are compound annual growth rates by reference to 2010



## Transport

Gas use in transport has the potential to reach a sevenfold increase if the right political environment and coordinated support of all stakeholders are in place.





**Widening opportunities for gas offer new scope for growth in demand in the transport sector.**

The potential now extends from fleet and passenger vehicle use of compressed natural gas (CNG) to rapidly expanding possibilities for liquefied natural gas (LNG) in

trucks and maritime transport. In all the Eurogas Outlook cases, gas demand for transport is likely to increase substantially – from 2 Mtoe in 2010 to around 14 Mtoe by 2035 (Figure 6). In the Environmental Case, gas demand for transport is just slightly above the Base Case and Slow Developments Case in 2035.

FIGURE 6: EU-27 GAS DEMAND FOR THE TRANSPORT SECTOR, 2010-2035



# Supply



On the supply side of gas, procurement for the European Union cannot be considered in isolation from global developments. The International Energy Agency estimates a global growth in gas demand from 2 740 Mtoe in 2010 to around 4 100 Mtoe in 2035<sup>1</sup>. Increasing demand for gas in the longer term will intensify competition for global gas reserves on international markets. The biggest uncertainties relate to the EU's market attractiveness, especially for LNG supply in the context of a worldwide market.

To guarantee future security of supply, the European Union should:

- take measures to maximise gas production and recovery from indigenous sources;
- support development of new technologies for exploration and exploitation;
- create stable and competitive fiscal and regulatory regimes;
- improve infrastructure, including new supply routes to Europe and LNG terminals;
- develop measures to facilitate planning and permitting processes for major projects, whether pipelines or other infrastructure; and
- encourage research and development into biogas production, distribution and final use.

Even if overall the future of gas supply to the European Union is rather positive and there are no big concerns about the availability of future sources, the European gas industry recognises the importance of fostering long-term relationships with major suppliers, transit countries and key EU partners. Individual companies remain responsible for conducting commercial relations with producing and transit countries while institutional dialogue is essential to building a framework for increased co-operation on the diverse issues to achieve necessary political assurances from the EU as much as from the countries concerned.

A long-term approach is essential to position gas such that it can fulfill its role as the ideal fuel in a future sustainable energy supply.

<sup>1</sup>: International Energy Agency, *World Energy Outlook 2012*.

# Conclusions and recommendations

## Key findings

Gas has a key role to play in a low-carbon energy system:



**In power generation,** gas offers considerable potential for reducing CO<sub>2</sub> emissions at low cost.

**In the residential and commercial sector,** gas can contribute to lowering emissions thanks to efficient application technologies.



**In industry,** gas still offers a potential substitute from more polluting fuels and support for the competitiveness of EU industry.

**In transport,** significant potential can be expected from gas to lower CO<sub>2</sub> emissions and air pollution by substituting oil products.



Nevertheless, EU decision-makers are urged to adapt current policies so as to encourage cost-efficient low-carbon investment, including gas.

