



NGVA
Europe

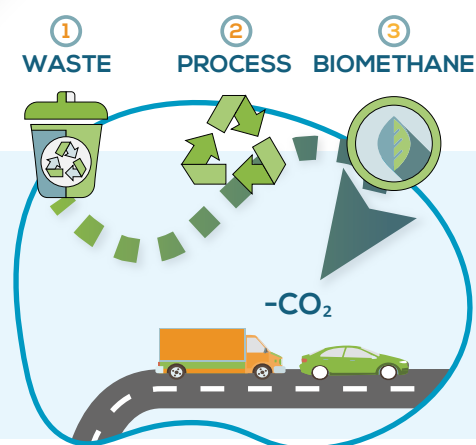
Gas in transport manifesto

Policy recommendations

June 2019

What is gmobility?

gmobility stands for gas as a transport fuel. It enables cleaner mobility, low-emissions transport and the efficient use of gas in passenger cars, trucks, public transportation and ships. It has the vast potential to enable a cleaner future for transport, where the use of natural and renewable gas contributes to decarbonisation and improved air quality. Renewable gas production is already a standard practice, wherein availability and the vehicle fleet are growing fast.



Why gmobility?

gmobility gives our waste value



Producing biomethane offers the opportunity to convert our waste into a clean fuel for vehicles. Methane is a potent greenhouse gas (GHG) and is emitted into the atmosphere from the natural decomposition of organic materials (municipal waste, sewage, or food waste). Producing biomethane also provides the means to capture it, providing economic value to green energy production.

Having the same chemical composition as natural gas, biomethane and synthetic natural gas can be injected into the gas distribution grid, and/or used directly by gas vehicles. The latter originates from wind and solar power which, thanks to the Power-to-Gas technology, transforms excess energy into a sustainable and storable fuel: gas.

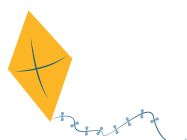
gmobility allows consumers of all budgets to decarbonise the transport sector



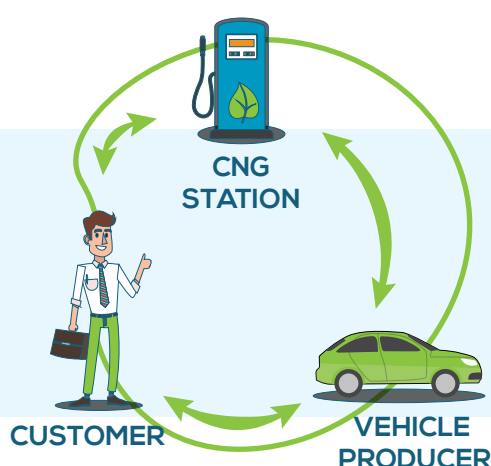
Renewable gas is an advanced biofuel, able to make a major contribution towards our climate objectives. Biomethane and synthetic natural gas are renewable energy sources with very low carbon footprints, and a GHG reduction potential of up to 95%. When produced out of liquid manure, it prevents the release of methane happening in nature, yet even negative emissions are possible. This enables a gas vehicle to operate as carbon neutral.

With minimal costs for consumers and governments, any share of renewable gas can be blended in, which allows low GDP Member States to actively support the energy transition. Moreover, while it provides the same performance as conventional fuels, gas allows for a cost saving of 30% compared with diesel and up to 50% compared with gasoline.

gmobility improves the air quality in urban areas and beyond



Gas in transport supports a wide range of applications — from personal mobility to freight transport — both for the road and maritime sectors. While supporting the decarbonisation process, gas is also able to ensure close-to-zero pollutant emissions and drastically improving the air quality in urban agglomerations and coastal areas. Due to the composition of the fuel and aside from the reduction of NO_x and PM, its benefits are extended to non-regulated emissions that deplete the ozone layer. In addition, it ensures reduced engine noise. This makes LNG trucks perfectly suited for supplying goods outside rush hour, especially in residential areas: in the early morning or late evening. This translates to a cost-effective way to ensure close-to-zero pollutant emissions, for every possible vehicle operating condition.



gmobility vision

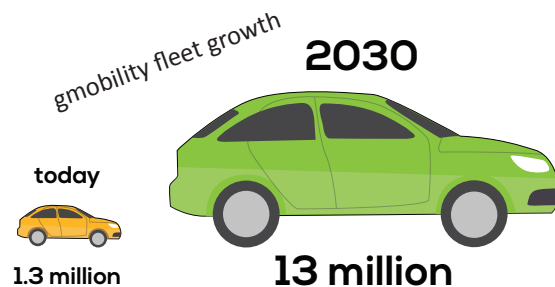
A successful energy transition in the mobility sector has to be based on several, complementary solutions and gas can realistically contribute to a socially acceptable transition.

2030

By 2030, the gmobility market has a growth potential 10 times higher than today, reaching a fleet of 13 million units. One out of three new urban busses and coaches will be fuelled by gas. Freight transport, relying both on compressed natural gas (CNG) and liquefied natural gas (LNG), will reach a quarter of today's market share, offering a realistic alternative to conventional diesel for long-distance missions.

In parallel, the production of renewable gas will increase drastically: for 2030, a conservative estimation demonstrates a production potential of close to 45 bcm, largely overcoming the entire demand for gas fuel of about 30 bcm, which corresponds to a 13-million-unit fleet.

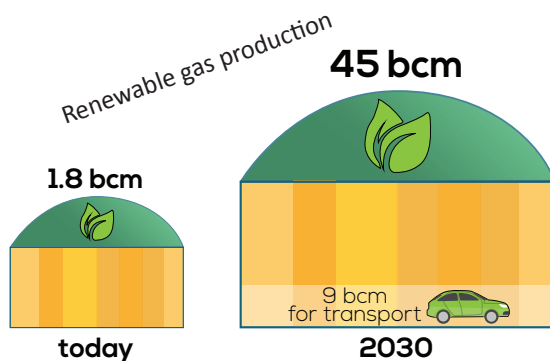
This would significantly contribute to the European decarbonisation path: 30% renewable gas will provide a GHG emissions reduction of more than 45% compared to conventional fuels on a well-to-wheel basis.



2050

Alongside a growing conversion rate of waste and residues into biomethane, large-scale future production of renewable wind and solar power will translate to a greater availability of hydrogen. Hydrogen can be blended with natural gas, which provides additional benefits in the fight against climate change and a reduction of pollutants. Thanks to a more complete combustion process, a quasi-zero emissions level can be reached. Recent experiences have demonstrated that blending a volume of up to 20%-30% hydrogen is technically feasible, which results in a highly cost-effective bridge for the wider use of hydrogen in the long run.

With the flexibility to integrate significant amounts of hydrogen, natural gas mobility is an affordable technology able to contribute to the climate objectives set for 2050 already today.





1. Decarbonisation

Natural gas technology is ready to provide a fast and strong contribution to the challenge of decarbonisation. In 2018, several countries devoted considerable shares of renewable gas to transport, namely Iceland (100%), Sweden (90%), the Netherlands (55%), Finland (50%) and Switzerland (25%), making carbon neutrality in transport already a reality. In terms of bio-LNG production and use, there are already examples of applications in France, the UK, the Netherlands, Sweden and Norway. The renewable gas produced today is fully in line with the strictest sustainability criteria established through European legislation.

In current vehicle regulation, the CO₂ emissions of a vehicle are measured from the tailpipe only. This approach does not appreciate the CO₂ savings associated with the use of renewable gas. For this reason, a new specific methodology, looking at the net carbon emissions that are actually affecting climate change, is necessary to complement this approach.

Current provisions provide support for the production of renewable fuels, but there is no mechanism yet to stimulate its consumption, and eventually eliminating the dependency on public support by creating a demand-based market.

Recommendation

To introduce a methodology that accounts for the CO₂ emission savings from renewable gas to establish an equal footing among technologies when considering their overall climate impact. This would send a clear, positive message to both vehicle manufacturers and renewable gas producers while maintaining the focus on investments.



2. Gas fuelling infrastructure

Gas complements today's electrification process, acting directly on existing technologies. Not only new registered vehicles, but also the current fleet will benefit from a wider use of renewable gas, accelerating the decarbonisation process.

While the number of CNG and LNG stations is growing steadily, Europe's fuelling network has to be drastically expanded. Gas fuelling stations require little additional infrastructure and can be implemented in multi-fuel stations, operating in self-service mode.

Over the last five years, the number of CNG stations grew from 2,600 to more than 3,600 units, while the number of LNG stations has increased by a factor of 6, to reach more than 200 stations today. However, distribution across Europe remains uneven and additional investments need to be made.

To accelerate the progressive switch to renewables gases and reduce CO₂ emissions of future CNG and LNG fleets even further, the strategic and instrumental role of existing infrastructure has to be preserved.

Recommendation

To speed up the implementation of the alternative fuels infrastructure Directive, maintaining a technology neutral approach. Thanks to the progressive uptake of renewable gas, this would ensure affordability and a high-level environmental performance.

To maintain natural and renewable gas (in the form of CNG and LNG) as alternative fuel sources – in line with the EU's decarbonisation goal.



3. Energy taxation

As excise duties and VAT regimes strongly influence the Total Cost of Ownership of the vehicle, they are two of the main drivers that orientate customer choice. Member States should maintain the possibility to apply a lower level of taxation, according to the market penetration of the fuel and its potential to stimulate the decarbonisation process compared to conventional fuels.

Today, natural gas feeds a vehicle fleet smaller than 1% of all European vehicles and should be supported in the market ramp-up phase. Therefore, the level of excise duties cannot be comparable to the one applied to conventional fuels.

While some EU countries have already decreased excise duty levels, or established exemptions for natural gas as a fuel, such excise duty levels differ greatly among them. As long-haul trucks travel across multiple countries, excise duty treatments need to be aligned to help financial planning.

Decarbonisation is our final objective; therefore, a rational structural plan on fuel taxation is necessary. In the long term, thanks to a stable framework, it would not only guide investors, but also facilitate customers' choice without relying on intermittent governmental incentives to purchase new vehicles.

Recommendation

To apply a preferential taxation for gas as transport fuel linked to its contribution towards low emission mobility and market penetration. This will guarantee the promotion of the most environmentally performing fuels.



4. Integrating a growing rate of renewables in the market

The link between renewable gases and the electricity system will enhance the role of the gas infrastructure and pave the way for a stronger, integrated gas and power network.

While managing the necessary integration of intermittent sources of renewable generation, the storage potential of the gas grid is much higher compared to the limited, short-term capacity of batteries. In this sense, power-to-gas will open further opportunities for renewable gas, making this point even more relevant.

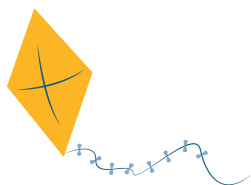
This progressive integration will find further applications in the mobility sector, where combustion engines will

operate on a higher share of renewable gas, combined with green hydrogen-based fuels.

Besides sectorial coupling, renewable gas offers sectorial integration with the waste management and agricultural sectors, thus enabling a clever approach to the treatment of waste materials, which would have otherwise been disposed of, with all consequent emissions. While producing sustainable energy, high quality by-products like bio-fertiliser are generated. This is the perfect example of how to realise the circular economy model, targeting emissions in agriculture and waste.

Recommendation

To recognise the potential of renewable gas in the gas market legislation, by creating the right conditions to underpin future production dedicated to the mobility sector. This is the best way to create sustainable, secure and efficient mobility in favour of European citizens.



5. Emission standards evolution and air quality

An increasing part of Europe's population lives in large urban agglomerations. Together with decarbonisation, air quality in urban areas is an urgent issue that needs concrete and immediate solutions.

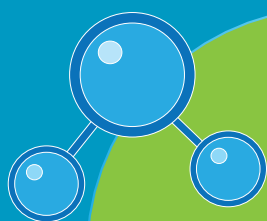
Urban mobility modes will have to progressively facilitate public transportation and new models, such as car sharing and pooling. In this context, clean fuels like natural gas play a fundamental role in contributing to a better air quality.

Natural gas combustion is particulate-free and provides very low NO₂ emissions, responsible for ozone precursors and photochemical smog. Equipped with a simple catalyst technology, natural gas vehicles are a reliable transport solution that offers close-to-zero pollutant emissions. Noise pollution also benefits from natural gas engines as emissions levels are cut in half when compared to diesel. Overnight operations are therefore perfectly compatible with CNG/LNG buses, garbage trucks, and sweepers.

Recommendation

To consider the specificity of natural gas as a clean fuel source when establishing future emissions standards. Natural gas provides the same or better emission performance than diesel engines, but with a much simpler and more cost-effective after-treatment system.

CO₂ from
conventional fuel vehicles



-45% CO₂
using 30% renewable
gas in transport

Carbon neutrality
on Well-to-Wheel basis



With 80% renewable gas, we can
achieve carbon neutrality in transport

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The Natural & bio Gas Vehicle Association (NGVA Europe) promotes the use of natural and renewable gas as a transport fuel.

Founded in 2008, its 127 members from 31 countries include companies and national associations from across the entire gas and vehicle manufacturing chain. It defends their interests to European decision-makers in order to create accurate standards, fair regulations and equal market conditions.

Furthermore, the association relies on active networks among its members to develop studies and roadmaps to support advocacy actions with institutions and stakeholders. It also acts as a reference information hub to provide information about the Natural Gas Vehicle (NGV) market and the development of fuelling infrastructure.



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