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Input from GasNaturally to the Talanoa Dialogue

GasNaturally is a partnership of six associations that together represent the whole European gas value chain – gas exploration and production, transmission, distribution, utilisation, wholesale and retail operations, as well as gas in transport: Eurogas, European Gas Research Group (GERG), Gas Infrastructure Europe (GIE), International Association of Oil and Gas Producers (IOGP), Marcogaz and NGVA Europe.

GasNaturally welcomes the opportunity to express its views to UNFCCC Contracting Parties and on State actors through its contribution to the Talanoa Dialogue.

GasNaturally strongly supports the process of the Talanoa Dialogue because it can put a strong focus on the large potential offered by the transition to a low-carbon energy system, initially by a fuel switch from coal to natural gas and, in the longer term, by developing decarbonised and renewable gases. More generally, it should help countries fully understand the role of natural and renewable gas on a low-carbon pathway.

Question 1 – Where are we?

GasNaturally acknowledges the findings of the recent IPCC Special Report on 1.5°C, as well as those of the UNEP Emissions Gap report 2017. With current Nationally Determined Contributions (NDCs) submitted to date, projections show that the “emission gap” would be in the range of 16–19 GtCO₂e in the 1.5°C scenario in 2030 and 11–13,5 GtCO₂e in the 2°C scenario.

Looking at current emissions trends, the path to meeting the long-term mitigation goal of the Paris Agreement requires unprecedented action. Globally, we are far behind the emissions pathway required to reach the Paris Agreement mid-term (peaking) and long-term mitigation goals. The NDCs’ current level of ambition must be significantly scaled up. According to the IPCC, limiting warming to 1.5°C or 2°C without overspending the corresponding carbon budget would require very rapid changes in electricity production, transport, construction, agriculture and industry.



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Therefore, climate mitigation action is required now, and the Talanoa Dialogue is a unique opportunity to inform the preparations for and review of current NDCs, and, in particular, to increase the level of ambition for mitigation action.

Question 2 – Where do we want to go?

The European gas industry would like to offer cost-efficient solutions contributing to the achievement of the long-term goal set out in Art. 4.1 of the Paris Agreement. Carbon dioxide emissions (CO₂) must be significantly reduced in order to achieve net-zero global emissions in the second half of the century, and emissions reaching their peak by 2020 in all regions of the world so that there is a chance to keep global warming well below 2°C as compared with pre-industrial levels, while considering cumulative emissions in the atmosphere.

GasNaturally subscribes to the approach taken by the IEA (World Energy Outlook 2017) with its Sustainable Development Scenario (SDS), which describes a pathway for the global energy sector (through to 2040) that keeps the world on track to meet the long-term mitigation goals of the Paris Agreement (at the level of 1.7°C), while also achieving universal access to modern energy and substantially reducing air pollution. The SDS offers an *“integrated approach to addressing key challenges, recognizing that action against climate change must go hand- in-hand with strategies to achieve other Sustainable Development Goals, including to tackle poverty, build economic growth, promote energy security and address a range of other social and environmental protection needs”* (IEA).

Under this SDS scenario, which responds to the need to increase energy productivity whilst deploying energy efficiency and renewable energy, a fuel switch from coal to natural gas, development of decarbonised and renewable gas, and large-scale deployment of innovative technologies to achieve zero or even negative emissions can deliver multiple benefits for the climate, air quality, energy access and sustainable development in an equitable manner for all.

As the IEA stated in its World Energy Outlook 2017, to keep on this track, the key role of natural gas should be acknowledged. The Sustainable Development Scenario of the IEA World Energy Outlook 2017 expects natural gas to become the largest single fuel in the global energy mix. The national climate policy frameworks, energy and climate plans as well as upcoming NDCs should therefore fully recognise the opportunities that can be brought by the use of gas. Innovative gas technologies such as natural gas-to-hydrogen, power-to-gas, biogas/biomethane and CCS/CCU should be further developed.



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Question 3 - How do we get there?

According to the last IPCC report, all sectors will need to contribute to the reduction of CO₂ emissions. As the gas industry, we would like to propose some solutions:

Any effort to reduce emissions and mitigate climate change will include the energy sector, which should evolve by shifting to gas, and progressively phase-out carbon-intensive fuels, such as coal. To achieve further reductions, carbon capture and storage (CCS) would need to be considered as an important technology contributing to the achievement of the Paris Agreement's objectives, as outlined in the recent IPCC report. CCS is much more attractive when fitted to gas-fired power plants than used with coal-fired power plants. Compared with coal plants, gas plants equipped with CCS require less CO₂ storage capacity and infrastructure for the same quantity of electricity produced: for a given production of electricity, the volume of CO₂ which needs to be captured from coal is twice as much as that from gas. Therefore, costs related to transport and storage will be much higher for coal plants than for gas plants. In addition, natural gas with CCS is a good option in the areas where CO₂ storage capacity is limited. Developing CCS is more than a climate policy, it is an industrial policy: developing large-scale CO₂ transport networks and disposal facilities would allow retaining emitting industries while attracting new sectors.

The gas industry has both the expertise and the experience necessary to develop the required storage capacity necessary to enable CCS on a large scale. For example, the Sleipner storage site in Norway has been running successfully since 1996 and has captured and stored more than 20 million tonnes of CO₂ or the equivalent to annual emissions from 10 million cars. In addition, the gas industry is also a leader in building and operating gas pipeline infrastructure. With some adjustments, part of the existing gas infrastructure could be used for CCS in the future (e.g. for transporting CO₂).

Carbon dioxide can not only be stored safely, it can also be used as or processed to an industrial feedstock. Carbon capture and use (CCU) opens up new dimensions to the management of CO₂.

Both CCS and CCU can also enable the large-scale worldwide production of hydrogen from natural gas through steam reforming without CO₂ emissions, thus helping certain energy-intensive industries, such as the steel sector, to decarbonise.

Global development of wind and solar energy permit countries around the world to avoid curtailment and use excess renewable electricity to produce hydrogen and synthetic gas from carbon-free water. Likewise, the production of biomethane opens up opportunities for



sustainable waste management both in agriculture and municipalities, thus tackling the issue of methane emissions from these sources.

A radical shift towards innovative and affordable gas technologies can make a real difference in achieving global climate goals while improving air quality and enhancing economic development and energy security in a context of growing energy demand (+30% by 2034, IEA, New Policies Scenario, 2017).

The Talanoa Dialogue offers a unique opportunity for all countries to voluntarily review their NDCs before the Paris Agreement becomes effective in 2020, with a view to scaling up their mitigation ambition by reducing the share of coal whilst ensuring a just transition for coal-dependent countries. This can be achieved through an enhanced coordination of decarbonization efforts across all sectors, and support from international climate finance.

If one takes the EU as an example, GasNaturally supports the view that gas is part of the solution to climate change for the following notable reasons:

- Power generation and heating (54%) and transport (24%) are among the largest sources of CO₂ emissions.
- Shifting away from coal to natural gas would allow a 50-60% reduction in CO₂ emissions per unit of power generated. As coal currently accounts for 76% of CO₂ emissions from EU power generation, a complete switch to natural gas would reduce emissions from that sector by around 40%. According to a scenario study commissioned by Eurogas and based on the PRIMES model, such a switch from coal to gas would allow the EU to exceed its 40% GHG emission reduction target by 5% in 2030. In addition, fuel switching from coal to natural gas would have very important social and environmental benefits (natural gas power generation emits 80% less NO_x and 99.9% less particulate matters than coal).
- Beyond fuel switching, natural, decarbonised and renewable gas supports renewable energy deployment and ensures the stability of the electricity grid. Notably, it provides the flexibility needed by the electricity system with an increasing share of variable renewables. During seasonal demand variations, when there is too little wind and sun, modern gas power generation supplies the consumers with the electricity they need. Gas infrastructure not only serves as essential backup for variable renewables but also as a large-scale and affordable renewable energy storage vehicle through technologies such as hydrogen from power-to-gas.
- Steam methane reforming of natural gas combined with CCS is a scalable source of low-carbon hydrogen available all day, all year long. CCS is included in 3 out of the 4 scenarios of the last IPCC 1.5°C report published on 8 October. The hydrogen produced through



both methods (hydrogen from power-to-gas and from natural gas via steam methane reformers) could be used in transport, household heating, energy storage, power generation, but also as a clean feedstock for Europe's energy-intensive industry, giving it a competitive advantage in a carbon-neutral economy.

- Renewable gases can help the EU reach its GHG emissions target in the transport sector even faster, up to 60 % by 2050, while improving air quality, with the deployment of natural gas-fuelled vehicles: LNG (for shipping and freight trucks) and CNG (in light, medium and heavy-duty vehicles).
- The gas industry works hard to improve its own energy efficiency and reduce its GHG intensity. Avoiding vents, energy losses and fugitive methane emissions makes economic sense to our industry and we are committed to doing our part of the effort. GasNaturally members are actively addressing the issue and contribute to transparency via studies and initiatives such as the Methane Guiding Principles to overcome uncertainty about total methane emissions from the entire gas value chain and to work together towards minimising them. As a matter of fact, methane emissions from the gas industry currently represent 0.6% of all EU GHG emissions and there has been a 51% reduction in fugitive methane emissions from natural gas activities between 1990 and 2016.

Bearing in mind that each country's NDC shall reflect its highest possible ambition, and being mindful of the obligation set out by the Paris Agreement that successive NDCs shall represent a progression beyond the current NDC (Article 4.3), the EU and other countries should take all opportunities offered by the following added values of gas for a cost-efficient transition towards low-carbon economies around the world:

- **Natural gas is becoming the low-carbon fuel of choice** in many of the world's largest and growing economies (e.g. India, China, US, etc.) that are seeking to reduce their emissions.
- **Switching from coal to natural gas** will reduce European power generation emissions by around 40%. When combined with Carbon Capture and Storage (CCS) and also with Carbon Capture and Use (CCU) technologies, gas can be virtually zero carbon emissions. In addition to, **gas offers low-cost carbon reduction potential in the transport sector as well as in the building sector**, by replacing old boilers.



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- **In the EU, as gas is up to 4 times cheaper than electricity, it can reduce CO2 emissions at low cost.** Affordable climate policy is necessary to secure public support for the energy transition and to maintain economic competitiveness.
- **Gas is also produced from renewable sources**, i.e. biomethane from waste or biomass, synthetic methane and hydrogen from wind and solar energy (power-to-gas facilities), which can be used in stand-alone equipment or blended into the existing gas infrastructure. Renewable gases, although volumes are still comparatively small, have considerable potential for growth.
- **Gas provides the backbone for a modern, flexible and clean power system**, even more so when combined with renewable gas and, in hybrid applications, renewable electricity. The required technologies and much of the infrastructure is already in place to switch to gas in such sectors as heating and cooling, power generation and transport.

For additional information please check:

Manifesto of the European Gas Industry

<https://www.gasnaturally.eu/uploads/Modules/Publications/gn---manifesto---single-page---web-version.pdf>

Long-Term Vision of the European Gas Industry

<https://www.gasnaturally.eu/uploads/Modules/Publications/long-term-vision-of-the-european-gas-industry.pdf>