



Cornerstones for a Sustainable Gas Strategy

Key Demands of Environmental Action Germany

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Introduction

Germany should be climate-neutral by 2050 at the latest, according to official targets. This means that the country has to phase out all fossil fuels until then. The coal phase-out has finally begun. Now, the focus needs to shift to natural gas.

Over the next few months, important decisions will be made in Germany and the EU on reorienting the gas industry. The key question is what role gas will play in the coming decades. Given the speed of climate change, the future use of natural gas must be limited to what a national carbon budget in line with the 1.5-degree target still allows. Climate neutrality by 2050 must be the overarching objective.

Unfortunately, the political reality looks different. Not climate protection, but geopolitics and gas lobby interests shape decision-making in Brussels and Berlin. We are currently experiencing a slew of unforeseen investments in new natural gas infrastructure. The Nord Stream 2 pipeline, planned LNG terminals at the German coast, and the EUGAL pipeline are examples of this. These investments serve to maintain fossil-gas-based business models for the next decades, far beyond 2050.

Environmental Action Germany demands that the German government must make the fight against climate change the top priority of its gas strategy. Only a strategy that is in line with the 2050 Paris objectives is truly sustainable. Germany should therefore develop a sustainable gas strategy based on the following cornerstones.

1. Fossil gas is part of the problem, not part of the solution

Natural gas is a fossil energy source and an important contributor to the climate crisis. This must be kept in mind in any discussion of natural gas, which is often portrayed as a “clean” alternative to coal and a “partner” in the energy transition.

In 2017, energy-related CO₂ emissions from gas in Germany amounted to 176 million tons of CO₂.¹ These and all other emissions have to cease completely by 2050 at the latest. To achieve the objectives enshrined in the Paris Agreement, the use of fossil gas must end.

¹ BMWi, 2019, Energiedaten Gesamtausgabe, accessed 30.09.2019, available at: www.bmw.de/Redaktion/DE/Artikel/Energie/energiedaten-gesamtausgabe.html



2. Specify a phase-out date for fossil gas

The German government has to announce a phase-out date for fossil gas immediately. This date must be in line with the 1.5-degree target and the remaining greenhouse gas budget for Germany.

The actual greenhouse gas emissions of natural gas have to form the basis for such a target, including methane leakages that occur along the entire gas value chain. These leakages have to be recorded in an independent and verifiable manner in order to determine how long natural gas may still be burned under a carbon budget approach.

Environmental Action Germany calls for a natural gas phase-out as soon as possible, but well before 2050 and in line with the national greenhouse gas budget.

3. Measure and reduce methane leakages

The actual greenhouse gas balance of natural gas is unclear. Leakages of methane – the main component of natural gas – are not independently recorded and measured in Europe. The available data are based on self-reporting by the gas industry, statistical averages and estimates.

Independent measurements have determined a leakage rate of about 2.3 percent for the US oil and gas industry.² This is 60 percent higher than figures provided by industry. In Germany and

² Alvarez et al., 2018, “Assessment of methane emissions from the U.S. oil and gas supply chain”, Science, accessed 30.09.2019, available at: <https://science.sciencemag.org/content/361/6398/186>

Europe, no such independent assessments exist so far. In Europe as in the US, however, real methane emissions are likely to greatly exceed the leakage rates reported by industry.

Methane emissions have a strong warming effect even at comparatively low levels: Methane has 84 times the climate impact of CO₂ over a 20-year period.³ Almost one quarter of global warming to date can be attributed to methane emissions.⁴

The greenhouse gas balance of natural gas needs to be thoroughly assessed before making it the basis for decisions on our future energy system. For this reason, Environmental Action Germany demands the independent monitoring and measurement of leaks along the entire value chain of the gas industry. This applies to renewable gas as well.

Since the greenhouse gas balance of natural gas differs by source and country of origin, these differences have to be recorded and presented transparently. Only with this differentiation in mind can we decide for or against gas imports from specific countries.

Methane leakages overall have to be reduced as much as possible so that natural gas can be used as efficiently as possible during its remaining time in use. New legislation must address this issue.



3 PCC, 2014, "Anthropogenic and Natural Radiative Forcing", Fifth Assessment Report, Chapter 8, p. 731, accessed 30.09.2019, available at: www.ipcc.ch/report/ar5/wg1/anthropogenicand-natural-radiative-forcing/

4 S. Schwietzke, 2019, "Methanemissionen der Erdgasindustrie – Messungen und Erkenntnisse", presentation held 10.09.2019; based on IPCC, 2014, "Anthropogenic and Natural Radiative Forcing – Supplementary Material", Fifth Assessment Report, Table 8.SM.6

4. Ban fracking worldwide

Extraction methods that are particularly harmful to the environment and climate, such as fracking, should be subject to a global ban. Fracking causes major environmental damage at extraction sites, most notably by polluting soils and groundwater as well as by increasing the risk of earthquakes. As methane emissions from fracking are particularly high, fracking gas offers no climatic advantages over coal.

In Germany, unconventional fracking is forbidden by law. For geopolitical reasons, however, the German government is planning to import substantial amounts of fracking gas produced in the United States.

Environmental Action Germany calls on the German government to cancel plans to import fracking gas and push for a global ban on fracking.

5. Stop planning and construction of new natural gas infrastructure

Building new infrastructure for natural gas today means locking in a fossil energy system for the coming decades. Installations such as pipelines and LNG-terminals often have a technical service life of over 50 years. Consequently, any new natural gas infrastructure fundamentally undermines the 2050 climate targets. On top of that, numerous studies⁵ conclude that gas demand will decline significantly in the future.

To avoid lock-in effects, Environmental Action Germany demands a moratorium on new gas infrastructure, except if it is dedicated exclusively to renewable gases. Ongoing projects such as the Nord Stream 2 pipeline, the LNG-terminals in Brunsbüttel, Stade and Wilhelmshaven, and the EUGAL pipeline should halt planning and construction immediately.

6. Establish a roadmap for renewable gas

Whereas we have to phase out fossil gas, renewable gas can provide great benefits to the energy transition. Advantages of renewable gas are the use of existing infrastructures, as well as the ability to store renewable energy through power-to-X technologies and provide it to sectors that have no technical alternative to gas.

5 See e.g. UBA, 2019, "Roadmap Gas für die Energiewende – Nachhaltiger Klimabeitrag des Gassektors", accessed 30.09.2019, available at: www.umweltbundesamt.de/publikationen/roadmap-gas-fuer-die-energiewende-nachhaltiger



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Environmental Action Germany calls on the government to develop a roadmap for renewable gas. This roadmap must include an expansion of domestic renewable gas capacity through power-to-X installations, increasingly ambitious targets for the share of renewable gas use, an effective CO₂ price, as well as a plan for the reorientation and conversion of existing gas infrastructure.

Environmental Action Germany has developed ideas for such a roadmap in a structured dialogue with stakeholders. Our “Fahrplan für erneuerbares Gas” (roadmap for renewable gas) was published in October 2019.

7. Prioritize energy savings and efficiency

The availability of renewable gas must not distract from the necessity of further energy efficiency measures. On the contrary: Renewable gas will be limited, gas consumption must decline drastically in all sectors, and gas use overall must be as efficient as possible.

This applies in particular to the building sector. The rate and quality of energy-related refurbishments must increase considerably to reduce the energy demand for heating.

Environmental Action Germany demands that the regulatory standard KfW-55 for energy-efficient homes is made mandatory for total refurbishments. For new buildings, the KfW-40 standard should be applied.

8. Prioritize sectors for renewable gas

Renewable gas will be a scarce resource. Since the Paris climate objectives oblige all states to reduce their emissions, different regions and sectors will compete against each other. This means that renewable gas should be used as efficiently as possible. It should be limited to applications where no feasible alternative to gas will be available in the foreseeable future. Using electricity directly is preferable to converting it to gas due to the efficiency losses involved in the process.

High-temperature industrial processes, material use, ship and air transport, as well as road-bound heavy-duty transport currently cannot be powered electrically given the state of technology. When supplied with renewable gas and other renewable fuels, these sectors have to be prioritized.

In the building sector, as well as for motorized private transport and railway transport, electrical alternatives are available. Environmental Action Germany calls on the government to exclude these sectors from using gaseous energy sources in the future and ban the installation of new gas heaters starting in 2025.

Power-to-gas technologies also offer significant advantages in power grid management and long-term renewable energy storage. Due to efficiency losses, however, the direct use of renewable gas is always preferable to its storage or reconversion to electricity.

9. Speed up the expansion of renewable energy

The increasing use of renewable gas can only succeed if sufficient renewable electricity is available. The expansion of renewables must therefore be accelerated urgently and freed from existing regulatory barriers. The expansion of onshore and offshore wind turbines in particular must proceed much faster than it currently does.

Additionally, the government should determine to what extent existing expansion targets need to be raised to guarantee that sufficient renewable power is available for gas production.

10. Promote a sustainable European gas strategy

Germany is the most important gas market in Europe. During the German EU Council Presidency in 2020, important decisions on the future regulation of the gas industry will be made. Which position the government takes will be a deciding factor in the future reorientation of the European gas industry.

Environmental Action Germany calls on the government to base its contribution to the future design of European gas markets on the cornerstones formulated in this paper.





Definitions

Renewable gas is either synthetically produced gas (usually hydrogen), or biogas/biomethane.

Power-to-gas technologies produce hydrogen through electrolysis, which can in additional processes be converted to methane. If renewable electricity is used in this process, the resulting gas is renewable gas.

The term **power-to-liquid** refers to the production of synthetic fuels by way of electrolysis.

Power-to-X is the umbrella term typically used for both above-mentioned processes.

“Blue” hydrogen refers to gas that is produced by splitting off carbon from natural gas, leaving hydrogen. “Blue” hydrogen is climate neutral at best. It is a fossil gas – not a renewable one. Environmental Action Germany opposes the use of “blue” hydrogen.

Overall, we are following the gas definitions of the ICCT.⁶

⁶ ICCT, 2019, „Gas definitions for the European Union“, Briefing, p. 4, accessed 30.09.2019, available at: www.theicct.org/sites/default/files/publications/ICCT_eu_gas_def_20190529.pdf

Summary

Environmental Action Germany demands a fossil gas phase-out as soon as possible. This must be accompanied by the production and use of renewable gas. It must be clear that renewable gas is a scarce resource: Energy savings and efficiency should remain a priority. The expansion of renewables and grids needs to be accelerated. At the EU level, the German government should push for regulation towards a climate-friendly gas industry. A sustainable gas strategy should build on these cornerstones.



efficiency **power-to-gas**

sector coupling

renewable energy

roadmap for renewable gas

Europe

sustainable gas strategy

countries of origin

fracking ban

climate neutrality

carbon budget

gas infrastructure

methane emissions

natural gas phase-out

Independent monitoring

hydrogen

greenhouse gas balance

climate objectives

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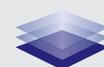
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