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BRIEFING PAPER MARCH 2024

## CHARTING THE COURSE FOR EU GAS SECTOR TRANSFORMATION

### ASSESSING NATIONAL ENERGY AND CLIMATE PLANS

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EU member states' National Energy and Climate Plans (NECPs) are vital roadmaps for achieving the ambitious goal of reducing greenhouse gas emissions by 55% by 2030 and 90% by 2040 compared to 1990 levels. Assessing the draft NECPs of four major gas-consuming EU countries against six benchmarks, shows clearly that challenges remain. Addressing them will both ensure alignment with the European Green Deal and enhance European energy security.

Analysis of the member states' plans for fossil gas usage has revealed:

- > A significant downward trajectory in fossil gas use by 2030. Four EU member states (France, Germany, Hungary, Italy) collectively represented 55% of Europe's gas consumption in 2021. Their draft NECPs project **an average reduction of gas use by 30% by 2030 compared to 2019**. This is a significantly steeper projection in gas demand reduction than was made in the last round of NECPs from 2019.
- > This trajectory aligns with the EU's expected impact of implementing the Fit for 55 package. However, it falls short of the expected trajectory of halving gas use by 2030, as outlined in the REPowerEU initiative.<sup>1</sup> A similar level of reduction as that halving, 48%, would be required to put the EU on track towards climate neutrality by 2050.<sup>2</sup>

<sup>1</sup> European Commission: **Fit for 55: Delivering on the proposals**, accessed February 2024; E3G: **Repowering towards EU gas demand reduction**, October 2022

<sup>2</sup> Agora Energiewende: **Breaking free from fossil gas. A new path to a climate-neutral Europe**, May 2023



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- > The phase-down of fossil gas will occur sooner and faster than previously anticipated. This transition will challenge the energy system overall, particularly affecting gas infrastructure and workers. It will also have broader economic impacts. Failure to manage this transition could lead to higher consumer prices, reduced investor certainty and potential waste of public funds.

Based on this analysis, we make the following recommendations to the European Commission and member states:

- > Member states must consider the implications of this misalignment and explore additional measures to bridge the gap. Their NECPs should detail structural measures to reduce gas consumption across industry, buildings, and power generation to meet the REPowerEU objectives and enhance their own energy security.
- > Policymakers must establish a policy framework to manage the transition. The European Commission should develop policies to support the downsizing of gas infrastructure and ensure a just transition for the affected workforce. Doing so would set a clear pathway to facilitate a smoother transition across member states.
- > The revision of the Governance regulation should ask for clearer reporting requirements, especially in the field of fossil fuel subsidies, gas infrastructure, and renewable gases projections. It should consider the reduction of gas demand as a key lever to improve energy security.
- > The 2040 target communication and accompanying impact assessment should clarify the speed at which fossil gas is anticipated to phase out in different sectors after 2030 and the pathway for ramping up biomethane production.



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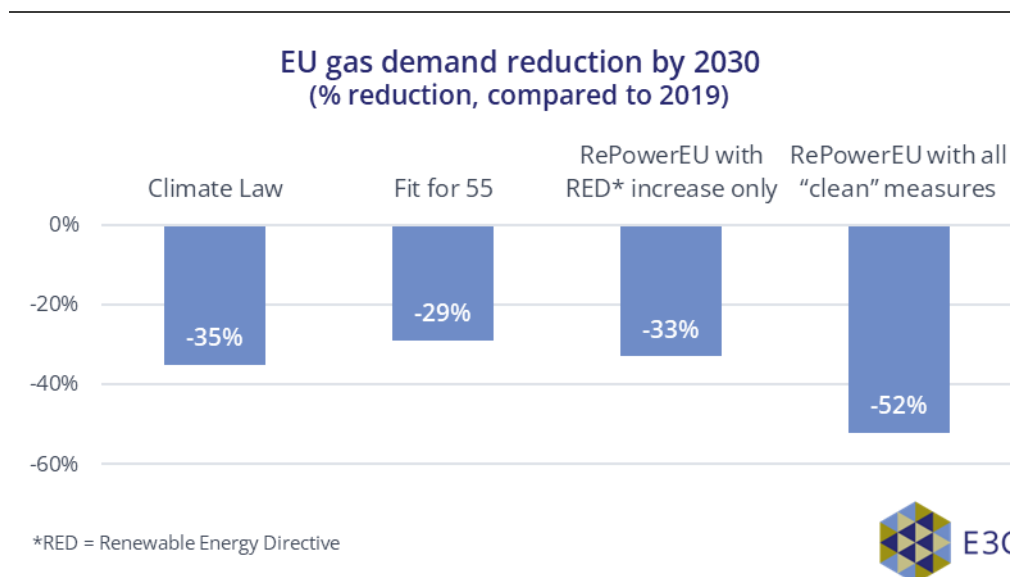


Figure 1: Reduction of EU gas demand as projected in the European Climate Law, Fit for 55 package and REPowerEU action plan. Implementing the legislation agreed within the Fit for 55 package would already ensure a decrease in fossil gas use of 29%, while clean measures from REPowerEU would reduce gas use by 52% by 2030.

## EU climate targets, gas consumption and the role of NECPs

The European Commission projected in 2020 that implementing the Fit for 55 legislative package would lead to a 29% reduction in fossil gas usage by 2030 compared to 2019 levels, with a nearly complete elimination by 2050.<sup>3</sup> In 2022, Russia’s invasion of Ukraine heightened the urgency to reduce gas consumption. The Commission responded by issuing the REPowerEU communication, envisioning an even steeper decline in fossil gas usage by 2030, amounting to a 52% reduction compared to 2019 when accounting for all non-fossil measures (see Figure 1).<sup>4</sup>

NECPs are a vital way of signalling how countries will achieve the necessary reductions signalled above. This E3G briefing assesses the draft NECPs of four

<sup>3</sup> European Commission; Commission staff working document impact assessment accompanying the document – **Stepping up Europe’s 2030 climate ambition**, September 2020

<sup>4</sup> European Commission: **REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition**, May 2022



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member states: France, Germany, Hungary, and Italy,<sup>5</sup> representing 55% of Europe's gas consumption in 2021. It evaluates the extent to which their NECPs facilitate a seamless transition within the gas sector, employing six benchmarks as guiding criteria. Meeting these benchmarks would not only contribute to achieving the EU's emission reduction targets but also enhance its overall energy security.

Furthermore, to ensure a smooth and sustainable transition out of fossil gas it is paramount to align national infrastructure plans with the principles of the European Green Deal.<sup>6</sup> By incorporating these principles into the NECPs, policymakers can lay the groundwork for a greener, more secure energy landscape that aligns with the EU's overarching climate objectives.

The rapid transformation unfolding in the real economy, fuelled by the widespread adoption of renewables and heat pumps, is already influencing gas usage.<sup>7</sup> NECPs have the potential to bridge this gap between planning and implementation and facilitate a smooth transition.

## How member states' NECPs met our benchmarks on reducing gas use

### **Benchmark 1: Aligning national gas consumption with the overall EU trajectory**

As stated in point 1.1 of the European Commission's guidance on NECPs, "States should fully embed the new and revised energy and climate targets included in the Fit for 55 and the REPowerEU proposals even though the legislative process for adoption is not yet concluded".<sup>8</sup> As implementing the Fit for 55 package and REPowerEU should lead to a significant reduction of 29–52% in gas use by 2030 (see Figure 1), member states should reflect this demand decrease in their own policies, measures and planning assumptions.

The four countries analysed plan to reduce their gas consumption on average by 30% by 2030, compared to 2019. While such a decline in gas consumption is

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<sup>5</sup> Draft NECPs available from the European Commission: July 2023, **Italy - Draft Updated NECP 2021-2030**, September 2023, **Hungary - Draft Updated NECP 2021-2030**, November 2023, **France - Draft Updated NECP 2021-2030**, November 2023, **Germany - Draft Updated NECP 2021-2030**

<sup>6</sup> European Commission: **The European Green Deal**, accessed February 2024

<sup>7</sup> BDEW: **Mit neuen Strategien aus der Krise. Zukunftsinvestitionen in eine nachhaltige Energieversorgung. Stadtwerkstudie 2023 von BDEW und EY**, accessed February 2024

<sup>8</sup> European Commission Guidance to Member States for the update of the 2021-2030 national energy and climate plans, **Guidance to MS for updated NECPs 2021-2030 - European Commission (europa.eu)**, 2022

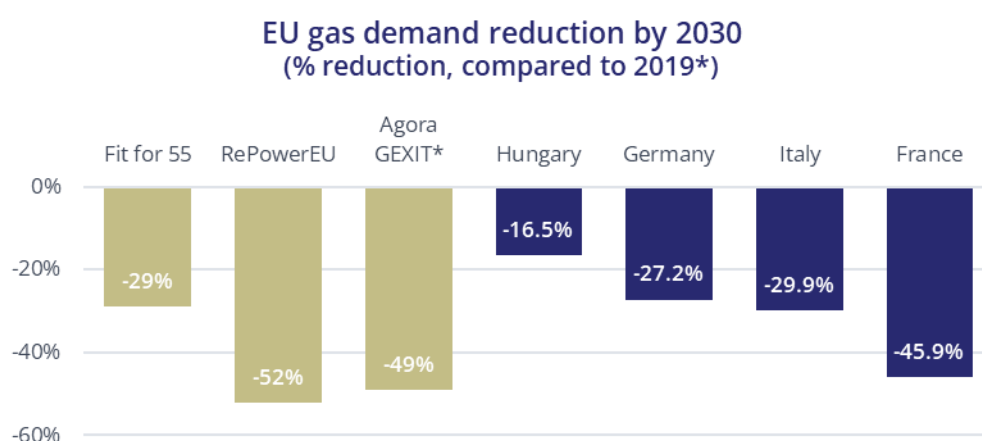


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notable, it falls short of aligning with the most ambitious scenarios, such as the REPowerEU and Agora findings (see Figure 2).<sup>9</sup>

Figure 2 shows that:

- > France stands out with a significant projected drop of 46% in gas consumption by 2030, a notable shift in its energy dynamics.
- > Similarly, Italy aims for a 29.9% reduction by 2030, aligning with the objectives outlined in the Fit for 55 package.
- > Germany's draft NECP targets a 27% decrease in fossil gas consumption by 2030, which is nearly double the projection of its 2019 NECP (Figure 3).
- > Meanwhile, Hungary aims for a more modest 16.5% decrease in gas gross inland consumption (see methodology) by 2030 – in 2019 no data was provided (Figure 3).



\* Baseline for the Agora gas exit study is 2018



Figure 2: Reduction of EU gas demand as projected in EU plans, Agora EU gas exit study,<sup>10</sup> and draft NECPs of four member states.

<sup>9</sup> Agora Energiewende, gas exit study (GEXIT), May 2023, **Breaking free from fossil gas**

<sup>10</sup> Ibid.

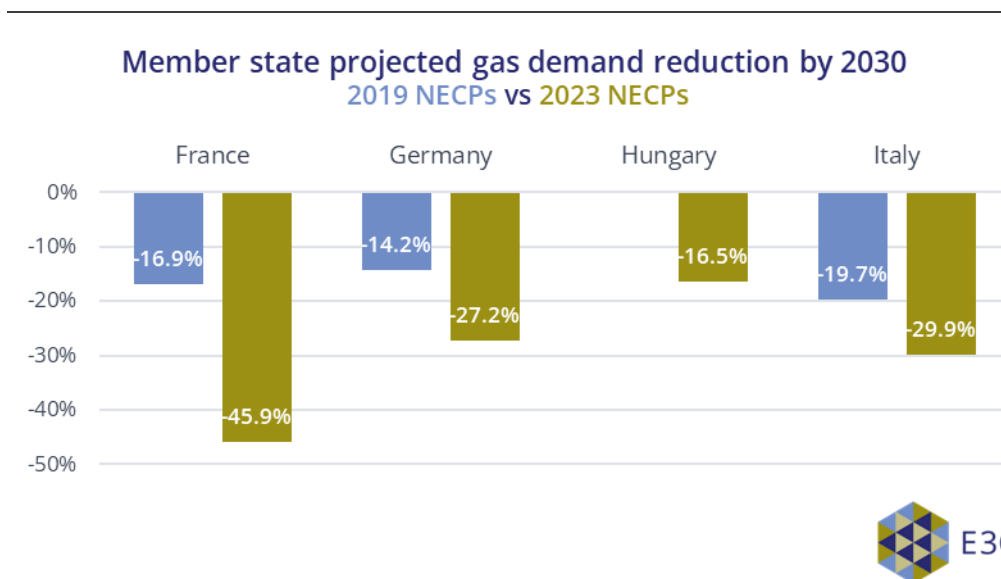


Figure 3: Three out of four member states reviewed have increased their ambition to reduce fossil gas use in their 2023 NECPs compared to 2019.

Despite these positive strides, areas for improvement remain. None of the countries’ trajectories align with what is necessary to achieve a phase-out of Russian gas by 2027, as outlined by REPowerEU, or with climate neutrality pathways. To reach those targets, more substantial reductions are needed.

The projected decline in gas consumption means the transition may occur sooner than anticipated. This underscores the urgency of establishing a framework for a managed transition. Indeed, an analysis of the previous NECPs submitted in 2019 shows a stark increase in the ambition to decrease gas use as evidenced in the 2023 revised drafts (Figure 3).

Notably, every country except Hungary (where data is lacking) projects a significant increase in their ambition levels, with projections ranging from a third in Italy’s case to more than doubling the targets for France and Germany. This heightened ambition signals an acceleration of the transition away from fossil gas and emphasises the need for robust strategies to support it.

**Benchmark 2a & b: Preparing the gas network for a reduction in fossil gas use**

Point 1.2 of the EU guidance for NECPs specifies that “Member States are encouraged to reflect progress and planning on the infrastructure projects that are identified as significant to meet the European Green Deal and the REPowerEU objectives.” This is especially important in the context of an



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expected gas demand reduction, where infrastructure networks will have to adapt and in certain cases downsize to enable an orderly transition.

Understanding the future utilisation of the distribution and transmission gas network and its eventual decommissioning is crucial to plan for the expected decrease in gas use. As residential heating is decarbonised, the future volumes of renewable gas might not be at the same level as current gas consumption, meaning that some parts of those networks may have to be decommissioned. Conducting feasibility studies to evaluate the social, economic, technical, and environmental aspects of decommissioning gas networks is key.

Our analysis of the four countries' draft 2023 NECPs shows marked differences between them in this respect:

- > France has a proactive strategy to adapt energy networks for declining gas demand, by incorporating alternative energy carriers and adjusting pipelines; it sets a commendable example for other member states facing similar challenges. This forward-thinking approach should serve as a model for anticipating and addressing the substantial decrease in gas demand projected by 2030.
- > On the contrary, the German draft NECP neglects to address the specific need to decommission the gas network, despite extensive plans to repurpose natural gas pipelines for hydrogen. A more comprehensive assessment of decommissioning needs is essential to ensure a smoother transition and prevent potential inefficiencies in the network.
- > Hungary's plan lacks a comprehensive strategy for evaluating and addressing the removal of distribution pipelines with low utilisation rates. This raises concerns about a lack of clarity regarding the scale of the issue and the resources needed to mitigate it effectively. Hungary's plans to enhance gas infrastructure highlight the importance of trans-border and regional cooperation to effectively manage declining gas usage across the EU.
- > Italy also faces challenges in avoiding unprofitable infrastructure and stranded assets, particularly at the distribution level; this is due to the relatively low adoption of renewable gases alongside the projected 29.9% reduction in fossil gas consumption. Without clear strategies in place, achieving a seamless transition to sustainable energy sources will be difficult.



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The varying approaches to adapt energy networks underline the necessity for a European policy framework to manage the declining gas demand and shift towards sustainable energy sources.

### **Benchmark 3: Planning the phase-out of fossil gas subsidies**

Addressing fossil gas subsidies and having a plan to phase them out is essential to meeting climate goals. As mentioned in the European Commission's guidance, updated NECPs should reflect decisions to phase out fossil fuel subsidies. The G7 too has committed to phasing out inefficient fossil fuels subsidies by 2025.<sup>11</sup>

**Our analysis reveals that substantial fossil fuel subsidies persist across the four countries, particularly for fossil gas consumption.** None of the countries have comprehensive plans to phase out subsidies in line with international commitments and broader environmental goals. Addressing these discrepancies is vital for accelerating the transition to renewable energy and aligning with sustainability goals:

- > France and Germany have the highest fossil fuel subsidies, each amounting to €13 billion in 2021.
- > France lacks a comprehensive plan to phase out fossil fuel subsidies, despite taking steps to reduce them.
- > Germany focuses on phasing out coal subsidies but lacks plans to reduce fossil gas subsidies.
- > Hungary's energy subsidies lack clarity which complicates potential phase-out efforts.
- > Italy's allocates about 20% (€1 billion) of its fossil subsidies to gas.

Member states vary in their approaches to reporting energy subsidies, complicating comparisons regarding the proportion allocated to fossil gas. Nonetheless, all member states surveyed still have significant subsidies for fossil gas and should plan their phase-out.

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<sup>11</sup> G7 Cornwall, UK: **2021 G7 Leaders' communiqué: Our shared agenda for global action to build back better** - Consilium (europa.eu), 2021





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#### **Benchmark 4: Realistically assessing the potential for renewable gas development**

In point 2.1, the EU guidance states that “in their updated NECPs, Member States are encouraged to integrate a component on sustainable biogas and biomethane production and use, assessing the national potentials and defining trajectories to reach those by 2030 and 2050”. Member states are also expected to report the expected imports and exports of Renewable Fuels of Non-Biological Origin (RFNBO) in their NECPs. This will provide insights into the implications of renewable gas development for existing and planned infrastructure.

The assessments of France, Germany, Hungary, and Italy reveal challenges in their strategies for developing renewable gases:

- > France and Italy have ambitious biogas demand targets for 2030 of 5.1 and 5.7 billion cubic metres (bcm), respectively. Italy’s primary focus is on injecting biomethane into the national gas grid for heating. Germany does not include granular projections of biomass and biogas production. Hungary includes no projections for any renewable gas consumption, despite hydrogen and biomethane/biogas being mentioned throughout the NECPs.
- > France is actively pursuing an ambitious strategy for the development of hydrogen, but lacks details, especially regarding financing mechanisms for hydrogen pipelines.
- > Germany’s ambition to be a leader in hydrogen (see Figure 4) is still surrounded by uncertainty relating to budget availability and hydrogen supply. In its draft NECP, the projected demand for hydrogen produced from renewables is about 0.95 Mt by 2030; however, the balance between renewable and non-renewable hydrogen in the overall hydrogen availability is unclear.
- > Hungary plans to blend hydrogen with fossil gas by 2030, with a minimum 2% yearly volume blending ratio in the short term and increasing volumes in the medium term.
- > This strategy is shared by Italy which expects to use 0.33 Mt of hydrogen for heating in 2030, despite the proven limited benefits of blending hydrogen with fossil gas to decarbonise consumption.<sup>12</sup> Otherwise hydrogen will be primarily used in hard-to-electrify sectors.

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<sup>12</sup> E3G, **Hydrogen: Factsheet Series - E3G**, 2021



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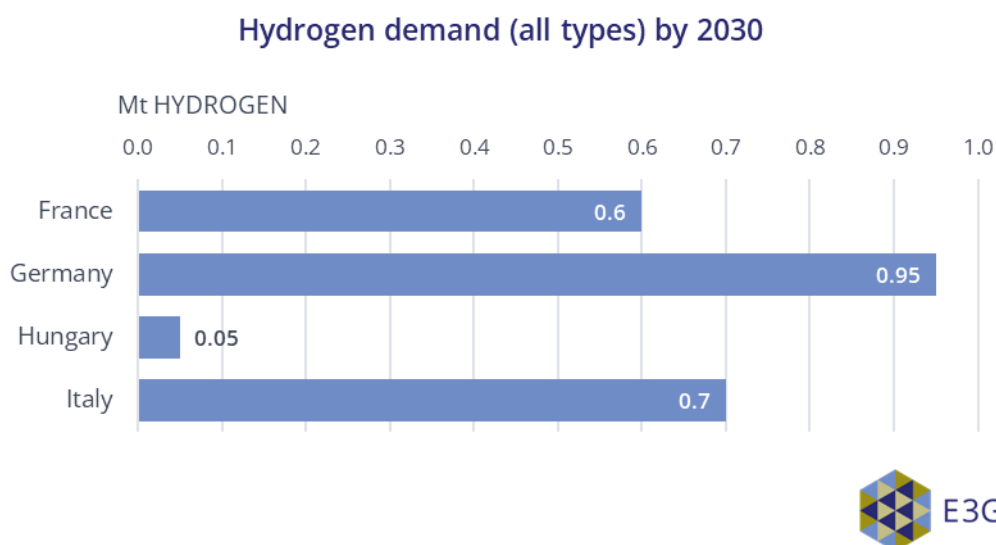


Figure 4: Projected hydrogen demand by 2030. The countries reviewed differ in their levels of ambition on hydrogen. Germany has ambition to be a leader on this area.

### **Benchmark 5: Assessing and addressing the social and economic impact of decreasing gas consumption**

EU member states are supposed to “strengthen planning within the NECPs to ensure a fair and just transition, mitigating social and employment impacts”.<sup>13</sup> Their assessment should include consideration of potential for job transitions, support for economic transformation, and community engagement to ensure a just transition for stakeholders affected by the phasing-down of gas.

Conducting a thorough review of gas sector employment, including roles like gas boiler installers, and investing in skills for alternative careers would help anticipate the impact of reducing gas use on the job market. Italy has set up an information system on skills, employment and professional needs to analyse the future skills requirements in the energy sector.

To effectively plan for the implications of reduced gas consumption, member states should assess the potential impact of declining network utilisation on consumer bills, particularly for individuals who may be unable to transition away from gas usage.

<sup>13</sup> European Commission, **Commission Notice on the Guidance to Member States for the update of the 2021-2030 national energy and climate plans**, Box 1, 2022



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While it is yet to be confirmed whether this assessment will consider the impact of phasing-down gas across the economy, a similar system should be considered by other member states.

Our assessment highlights significant gaps in addressing socio-economic impacts within their draft NECPs. There is a lack of robust measures and clear policies to facilitate the transition in skills and employment. Member states need to integrate socio-economic considerations more comprehensively into their NECPs to ensure fairness and equity throughout the energy transition process.

### **Benchmark 6: Phasing out long-term gas contracts in line with declining fossil gas use and climate targets**

Although not in the Commission's NECP guidelines, a consolidated overview of the long-term contracts held by the main EU gas consumers would enable a comparison of the EU's expected gas volumes and its climate commitments.

Member states do not mention long-term fossil gas contracts in their draft 2023 NCEPs. Italy has current long-term contracts beyond 2049<sup>14</sup>; transparency on this issue is limited for other countries.

Member states should list existing long-term gas contracts:

- > They should list the contracted volumes and the respective end date, to ensure that they are in line with the declining fossil gas use foreseen by the EU climate objectives.
- > They should develop a plan to phase out long-term gas contracts by 2049 as stipulated by the Hydrogen and Decarbonised Gas Market Package.<sup>15</sup>

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<sup>14</sup> **Eni signs long term LNG agreement for deliveries from North Field East expansion project in Qatar**, 2023

<sup>15</sup> European Commission, **Hydrogen and decarbonised gas market package (europa.eu)**, consulted on 5 March 2024



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## Summary of country performance using the six benchmarks

We have analysed the draft 2023 NECPs of each of four major gas-consuming EU member states (France, Germany, Hungary, Italy) against these six benchmarks. Detailed reports on each country are available;<sup>16</sup> Table 1 provides a summary overview.

*Table 1: Countries' draft 2023 NECPs' performance against the six benchmarks (France, Germany, Hungary, Italy)*

Benchmark	France	Germany	Hungary	Italy
1. Aligning national gas consumption with overall EU trajectory.	<b>Data and plan</b>	Data only	Data only	Data only
2a. Assessing the feasibility and scale of gas networks to be decommissioned.	<b>Data and plan</b>	No data	Data only	No data
2b. Preparing the gas network for a reduction in fossil gas use.	Data only	Data only	No data	No data
3. Addressing fossil gas subsidies and having a plan to phase them out.	Data only	No data	No data	Data only
4. Assessing the potential for renewable gas development.	Data only	Data only	No data	Data only
5. Assessing and addressing the social and economic impact of gas consumption decrease.	No data	Data only	No data	Data only
6. Phasing out long-term gas contracts in line with declining fossil gas use and climate targets.	No data	Data only	No data	No data

<sup>16</sup> See E3G, March 2024, [Charting the course for EU gas sector transformation](#)



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## Methodology: Explainer on data used

For Germany and France, gas consumption is only reported as primary energy consumption, whereas Italy and Hungary report both gross inland consumption and final energy consumption. Our analysis uses the gross inland consumption data for Italy and Hungary.

The difference between gross inland consumption and primary energy consumption is that the former also includes final non-energy consumption,<sup>17</sup> for example when fossil gas is used as a feedstock to produce fertilisers.

We tested the comparability of these projections by considering the projected use of gas as a feedstock in France and Germany in the target year of 2030, and how any changes in this use would affect the overall reduction in gas use.

In the base year of 2019, non-energy gas consumption was 4 bcm in Germany and 1.4 bcm in France.<sup>18</sup> The German NECP projects emissions reductions from non-energy consumption of –32% by 2030.<sup>19</sup> To approximate the projection of non-energy fossil gas consumption by 2030 (ignoring that this also accounts for oil products and that there might be efficiency gains), this would translate to a reduction of 27.8% of gas consumption in Germany by 2030, which is only 0.6% points above the decrease stated in primary energy consumption.

In fact, the scope to reduce the consumption of gas as a feedstock is limited, as it would mostly translate to reduced industrial output<sup>20</sup> (though in the longer term some of the fossil gas used for those purposes might be replaced by hydrogen). If we assume that there are no changes in Germany's absolute final non-energy consumption by 2030, its total gas reduction would be 26.4%, 0.8% points below the stated reduction in primary energy consumption reduction.

Given the uncertainties due to a lack of detailed data, we therefore have decided to compare the two energy statistics across member states as the estimated difference is very low.

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<sup>17</sup> According to the Eurostat definition, “final energy consumption excludes energy used by the energy sector, including for deliveries, and transformation”, **Glossary: Final energy consumption - Statistics Explained (europa.eu)**. Primary energy consumption and gross inland consumption are therefore more comparable.

<sup>18</sup> Eurostat, **Supply transformation and consumption of gas**, data retrieved March 2024

<sup>19</sup> German draft NECP 2023, p. 172

<sup>20</sup> IEA: **A 10-Point Plan to Reduce the European Union's Reliance on Russian Natural Gas – Analysis**, March 2022



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## About E3G

E3G is an independent climate change think tank with a global outlook. We work on the frontier of the climate landscape, tackling the barriers and advancing the solutions to a safe climate. Our goal is to translate climate politics, economics and policies into action.

E3G builds broad-based coalitions to deliver a safe climate, working closely with like-minded partners in government, politics, civil society, science, the media, public interest foundations and elsewhere to leverage change.

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