

Turning off the gas: Stronger and coherent EU policy to accelerate the fossil gas phaseout

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Introduction

Rapidly and consequently phasing out fossil gas demand has become a top priority in Europe. Existing European legislation is expected to achieve only moderate reductions by 2030. Proposed laws under negotiation are expected to go further, yet more ambitious targets and a unified policy approach could achieve potential reductions currently left on the table.

Previous analysis has shown that the EU can eliminate Russian gas imports by 2025 through the full implementation of the Fit for 55 plan and additional clean energy measures.² Since then, the European Commission has published its REPowerEU plan, which has been fed into various policy debates. Chiefly, it has influenced negotiations on the Energy Efficiency Directive (EED) and the Renewable Energy Directive (RED).

The REPowerEU plan, however, is not the default path forward for the EU. Its potential for gas demand reduction is vast, yet its recommendations for the EED and the RED still must be adopted. In addition, its targets must also be underpinned with effective measures. For the EED, it is a first step to set a higher energy savings obligation (Article 8), yet achieving this target may depend on additional, practical regulations, policies and other measures.

A good example of this is minimum energy performance standards (MEPS), proposed in the Energy Performance in Buildings Directive (EPBD). Strong mandatory energy performance standards that address both residential and non-residential buildings before 2030 can access the significant energy savings potential in the buildings sector to deliver the Article 8 EED target. Importantly, a strong MEPS can also ensure that

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² Brown, S., Vangenechten, D., Claeys, B., & Lovisolo, M. (2022, March). *EU can stop Russian gas imports by 2025*. Bellona Europa, Ember, Regulatory Assistance Project & E3G. <https://www.raonline.org/knowledge-center/eu-can-stop-russian-gas-imports-by-2025/>

achieving the energy savings target also saves gas.³ Heating buildings is Europe's main gas end-use, so improving thermal efficiency of buildings through a strengthened MEPS is one of the main levers to ensure the energy savings targets in the EED deliver maximum gas savings.

The ongoing energy crisis has provided an opportunity to aim for even more extensive reductions in fossil gas demand. These reductions are possible, as shown through additional modelling released by the European Commission in June 2022.

Our analysis finds that even with full implementation of the REPowerEU plan, by 2030 natural gas demand in Europe will remain at around 150 bcm, roughly equivalent to Russian gas imports in 2021. These reductions can be faster and deeper. A stronger energy efficiency target in the EED and a higher renewable energy target in the RED could reduce gas demand below 100 bcm and eliminate Russian gas imports.

Furthermore, the Hydrogen and Decarbonised Gas Market package does not adequately plan for such a drastic potential decrease in fossil gas demand. It should emphasize integrated planning and targeted applications of alternative gases to ensure its coherence with a fossil gas phaseout.

European legislation and gas use

How much can legislation reduce fossil gas demand?

In 2020, Europe's gross inland consumption of fossil gas was 389 billion cubic metres (bcm).⁴ Imports from Russia accounted for 152 bcm. Since February 2022, these imports have plummeted. During July and August 2022, for instance, the EU imported 8.7 bcm — 68% below the 27.3 bcm delivered during the same period in 2021.⁵

Existing EU legislation targets around 357 bcm of gas demand in 2030, or a 32 bcm reduction between 2020 and 2030.⁶ The Fit for 55 (F55) package was proposed by the European Commission in July 2021. It aims to achieve the European Union's target of reducing greenhouse gas emissions 55% by 2030. If implemented, F55 measures under its least ambitious REG core scenario are expected to reduce gas demand 85 bcm more than existing legislation.⁷ These reductions are considered 'planned gas reductions under existing targets' in our analysis.

That was then. Released in May 2022, the European Commission's REPowerEU communication targets an enormous gas reduction of 124 bcm by 2030 relative to F55.⁸ Two key provisions in REPowerEU are targets to reduce energy demand 13%

³ Sunderland, L., & Santini, M. (2021, June). *Next steps for MEPS: Designing minimum energy performance standards for European buildings*. Regulatory Assistance Project. <https://www.raonline.org/knowledge-center/next-steps-for-meps-designing-minimum-energy-performance-standards-for-european-buildings/>

⁴ Eurostat. (n.d.). *Energy balances* [Data set]. https://ec.europa.eu/eurostat/cache/infographs/energy_balances/enbal.html

⁵ Zachmann, G., Sgaravatti, G. & McWilliams, B. (2022, October). *European natural gas imports*. Bruegel. <https://www.bruegel.org/dataset/european-natural-gas-imports>.

⁶ European Commission. (2020). *EU Reference Scenario 2020*. https://energy.ec.europa.eu/data-and-analysis/energy-modelling/eu-reference-scenario-2020_en. Values for gross inland consumption (GIC) of natural gas were not provided – an 8.2% reduction in natural gas gross available energy (GAE) was applied to the natural gas GIC in 2020 to reach 357 bcm.

⁷ European Commission. (n.d.). *Policy scenarios for delivering the European Green Deal*. https://energy.ec.europa.eu/data-and-analysis/energy-modelling/policy-scenarios-delivering-european-green-deal_en. The REG Scenario 'relies on very strong intensification of energy and transport policies in absence of carbon pricing in road transport and buildings.'

⁸ Claey's, B., Rosenow, J. & Anderson, M. (2022, 27 July). Is REPowerEU the right energy policy recipe to move away from Russian

compared to the reference scenario and to reach an EU-wide renewable energy share of 45% by 2030. These targets have filtered their way into the EED and the RED amendments under discussion at the European Parliament and Council.

Heading into the trilogue negotiations, Parliament has adopted an EED position that aims for a 14.5% energy efficiency target.⁹ This would correspond to an additional 9 bcm of gas demand reduced.¹⁰ Alongside REPowerEU gas demand reductions, this new Parliament target is considered as ‘proposed gas reductions under negotiation’ in our analysis.

Existing and proposed policy is expected to achieve 211 bcm of gas demand reductions by 2030. That would lower the EU’s gas consumption 64% by 2030. Additional analysis, however, has shown that more ambitious targets in the EED and the RED could decrease gas demand even further.

In June 2022, the European Commission circulated two ‘non-papers’ that modelled higher EED and RED targets. Under an energy savings target of 19% in the EED, another 12 bcm could be eliminated by 2030.¹¹ In parallel, a renewable energy target of 56% in the RED (RPE56) would lower gas demand an additional 42 bcm to reach just 97 bcm at the beginning of the next decade.¹² (Figure 1.)

gas? *Euractiv*. <https://www.euractiv.com/section/energy/opinion/is-repowereu-the-right-energy-policy-recipe-to-move-away-from-russian-gas/>

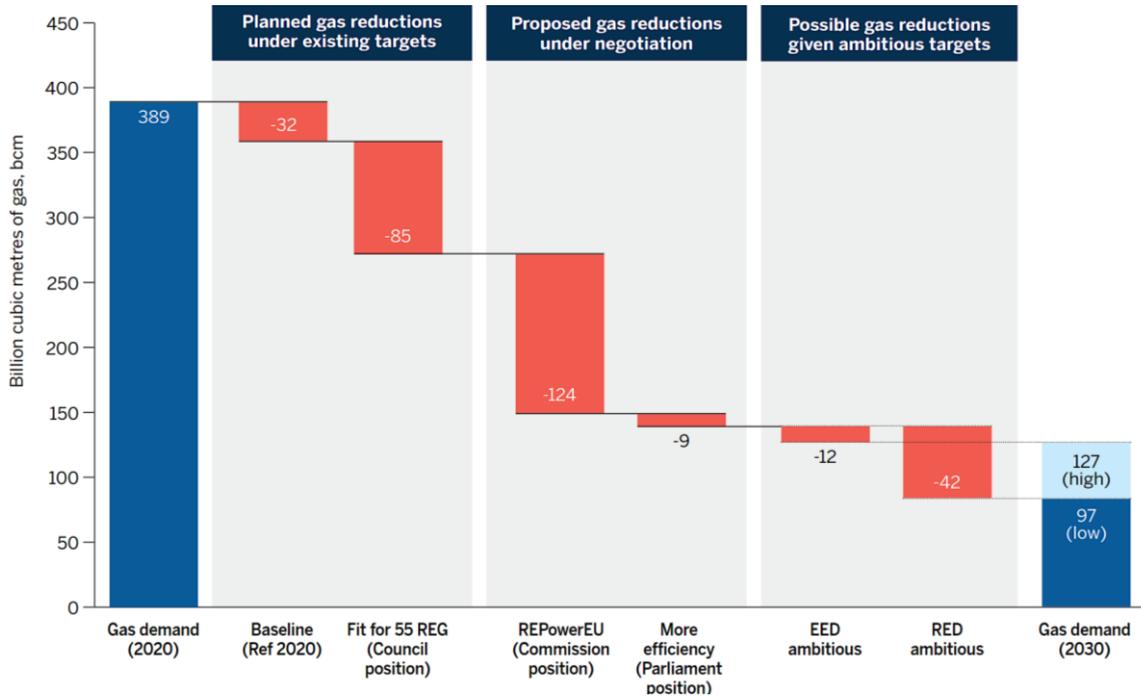
⁹ Simon, F. (2022, 12 July). EU Parliament groups unite behind 14.5% energy savings goal for 2030. *Euractiv*. <https://www.euractiv.com/section/energy/news/eu-parliament-groups-unite-behind-14-5-energy-savings-goal-for-2030/>

¹⁰ European Commission.(2022a, June). *Non paper on complementary economic modelling undertaken by DG ENER analysing the impacts of overall energy efficiency target of 13% to 19% in the context of discussions in the European Parliament on the revision of the Energy Efficiency Directive*. https://energy.ec.europa.eu/system/files/2022-06/2022_06_20%20EED%20non-paper%20additional%20modelling.pdf. Gas demand with a 14.5% energy efficiency target has been interpolated from the scenarios of 13% and 19% energy efficiency targets.

¹¹ European Commission, 2022a.

¹² European Commission.(2022b, June). *Non paper on complementary economic modelling undertaken by DG ENER analysing the impacts of overall renewable energy target of 45% to 56% in the context of discussions in the European Parliament on the revision of the Renewable Energy Directive*. https://energy.ec.europa.eu/system/files/2022-06/2022_06_20%20RED%20non-paper%20additional%20modelling.pdf.

Figure 1. Fossil gas demand reduction by 2030 under existing, proposed and potential European policy scenarios



Note: RAP calculations based on sources provided in this paper. “Ref 2020” is the 2020 Reference Scenario. “REG” is the REG scenario under Fit for 55.

Because energy efficiency and renewable energy deployment (e.g., heat pumps) influence each other mutually, the cumulative effects of a higher EED and RED target cannot be clearly evaluated. For example, in the RPE56 scenario, a 16% energy efficiency improvement was achieved as an unintentional side effect of increasing the renewables target. As such, our analysis shows that, when both targets are considered independently, Europe’s gas demand could be further decreased to 97 bcm. If a 19% EED target and 56% RED target were set simultaneously, the resulting gas demand reductions would likely be even greater.

Can the gas package help?

The Hydrogen and Decarbonised Gas Market package is also a part of the F55 package with a stated goal to ‘facilitate the penetration of renewable and low-carbon gases into the energy system.’ Although alternative gases will be needed for some hard-to-electrify end uses, the gas package would be more useful if it were situated within the context of the broader Fit for 55 decarbonisation targets as well as more recent goals to move away from fossil gas more quickly.

As can be seen from the waterfall chart (Figure 1) above, if the existing, proposed, and potential policies are realised already by 2030, gas demand would fall to a third of the existing demand. Such a dramatic reduction, coupled with the general agreement that alternative gases will be used only for hard-to-electrify end uses, reveals the need to think about the role of gas in a decarbonised system. The changed and more limited role of gaseous fuels necessitates planning to determine where infrastructure will be needed in delivering gaseous fuels to hard-to-electrify end uses, and importantly,

where gas will no longer be needed. It will also require analysis of the overall system to facilitate the more dynamic and flexible system that will be required to meet future end uses, including measures to meet the need of disadvantaged energy users equitably, identification of opportunities for demand reduction, ensuring that electric infrastructure is sufficient to meet demand,¹³ and consideration of the most appropriate structure of operators to meet end uses effectively and efficiently.

This perspective stands in contrast to the gas package's current approach, which limits its analysis to thinking about how to decarbonise gas generally, without consideration of where and in what quantities that gas will be needed. As a result, the gas package misses the opportunity to align future thinking about gas planning and markets with the significant decrease in gas demand and attendant system shift that is upon us.

There are several important ways in which the gas package could provide a framework more consistent with the needed system changes. First, the gas package could increase and emphasize integrated planning and information requirements to facilitate and enable meeting gas targets. As alternative gas is not expected to be used for some end uses currently served by fossil gas (residential and commercial heating, some industrial processes), but will be used by new end uses (heavy industry, shipping, aviation), the infrastructure needed will be significantly different than what exists now. Pipelines to residential areas will need decommissioning while pipelines to industry and aviation will need to be upgraded or constructed to deliver hydrogen. Electric system planning will need to proceed in lockstep with these changes on the gas side. Planning will require integration not just across sectors, but across transmission and distribution operators as well. To enable this integration, and to ensure efficient outcomes, system operators will need to increase the information shared across sectors with regulators and with stakeholders.

Second, the gas package could send clearer signals about where alternative gases will be used to enable an equitable and efficient transition to a decarbonised system. As noted, with decreased and changing demand, very different infrastructure will be needed to serve end uses. As this transition proceeds, however, there is a risk that unneeded gas infrastructure will be built or perpetuated, with the idea that it will be used for alternative gases.

Where those end uses would nevertheless be more efficiently electrified, however, that idea can lead to unnecessary infrastructure and stranded assets. For example, instead of sending signals that increased competition between gas suppliers is needed, the gas package could develop planning and project metrics to ensure that any upgrade or expansion of the gas network is consistent with plans for a decarbonised system. One immediate requirement could be a showing that upgrades or new infrastructure proposals are economical even with shorter depreciation periods aligned with expected gas phaseout dates. The gas package could also develop needed metrics for equity, such as planning requirements that take into consideration how demand would change if disadvantaged energy users were prioritised for electrification.

The recent Save Gas for a Safe Winter emergency measure, which calls for Member States to implement processes to decrease gas demand by 15 percent for the fall and

¹³ Notably, however, replacement will not be needed on a one-to-one basis because of reduced demand due to efficiency measures and the increased efficiencies of electric end uses themselves.

winter,¹⁴ may further accelerate the shift away from gas. Although the measure is in response to the energy crisis caused by Russia's war in Ukraine, it may illuminate areas where gas demand can be decreased and the shifts anticipated in F55 and REPowerEU realised more quickly.

The future of gas is shifting dramatically as gas demand adapts to decarbonisation targets, to volatile and unstable gas supply, and to increasing efficiencies of electrification to meet end uses. Recognizing and addressing these fundamental shifts allows planning to anticipate how to meet demand moving forward equitably, efficiently and effectively.

A joint, coherent policy approach

European legislation can go further towards reducing fossil gas demand in Member States. Increasing the energy savings target in the EED to 19% and the renewable energy target in the RED to 56% could lower gas demand by one-third by 2030, consequently phasing out Russian gas in the European Union.

In parallel, placing the Hydrogen and Decarbonised Gas Market package in the context of the decarbonisation targets would help achieve this phaseout. To do so, the gas package could emphasize an integrated planning approach and send clearer signals about the application of alternative gases.

This joint, coherent policy approach would ensure that fossil gas use is rapidly phased out and the infrastructure is in place to meet the remaining demand equitably and efficiently.

¹⁴ European Commission. (2022, July). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - "Save gas for a safe winter"*. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0360&qid=1658479881117#document2>



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