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**REPORT** OCTOBER 2022

# ARE WE ON TRACK? REPOWERING TOWARDS EU GAS DEMAND REDUCTION

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E3G is an independent European 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.

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Solar panels with a gas power plant in the background. Photo via Adobe Stock.



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## EXECUTIVE SUMMARY

The EU's ability to respond to Russia's invasion of Ukraine is being tested. It is planning to tackle the unfolding energy crisis through a sharp reduction in gas demand – an intent the European Commission stated clearly in its REPowerEU Communication. This requires resetting Europe's economic, social and geopolitical model to no longer rely on once cheap, but now ever more expensive, gas imports.

The EU is picking up speed towards a fair and green transition. This is visible in the emergency response by the EU and selected member states (France, Germany, Hungary, Italy, Netherlands, Poland and Spain) in February–October 2022. Yet, to meet the ambition of REPowerEU, medium term delivery plan gaps must be closed urgently. Member states across the EU need to bring their policy design consistently up to the standard of the best in class.

### Is the EU on track?

The EU is aiming for a sharp downwards trend in gas demand. The commitments under the European Climate Law will require a reduction of fossil gas demand by 35% by 2030 compared to 2019. Implementing the REPowerEU proposal could result in a 52% reduction over the same time horizon.

In terms of delivery, short-term measures prevail. Long-term measures such as the EU Green Deal will be transformational but need to be brought in line with the ambition of REPowerEU. The next two to four years will be crucial for making sure the EU is in line with this trajectory for long term gas demand reduction. A clean energy action plan for the mid-term time horizon is urgently required to put the EU firmly on track.

### Are member states on track?

This report assesses the potential of seven member states' emergency measures to reduce gas demand in the short- and long-term. It also assesses their impact on climate targets and social fairness.

Short-term measures for all countries focus primarily on replacing Russian gas supplies with alternative sources and helping households in the face of high gas prices. Though necessary, these measures will not lead to long-term gas reductions, and carry a risk of gas lock-in.



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Other policies mark a significant shift in EU energy policy and the increasing momentum of the green energy transition. These include: new renewable energy targets (Germany, Netherlands, Poland); phase-outs for fossil fuel boilers (Germany, Netherlands); streamlining administrative procedures for new renewables (France, Italy, Spain); and support schemes for energy efficiency upgrades in households, public and commercial buildings. More mid- to long-term measures in these areas will be needed to ensure member states are on track for gas demand reduction in line with 2030 targets.

## How can the EU get on track? Five recommendations

The EU and member states clearly consider the energy transition away from fossil gas as a key element of Europe's energy policy. But the EU is at a critical crossroads, and work remains to be done.

1. **Think beyond the next winter:** The European Commission and EU member states should pivot plans and institutional capacities towards addressing the 2022–2025 delivery gap. Gas markets are not expected to relax for multiple years. Therefore, Europe needs to pick up speed on clean energy as soon as possible. It must also boost the supply chains, skills development, renovation rates and enabling infrastructure needed to meet long-term goals.
2. **Set clear targets for gas demand reduction and ensure monitoring:** The European Commission should set targets for reduced EU gas use by 2025, 2030 and 2050 and report annual progress to the European Parliament.
3. **Align ambition with REPowerEU:** EU institutions should align legislation currently under negotiation (the Renewable Energy Directive, the Energy Efficiency Directive, the Energy Performance of Buildings Directive, the Social Climate Fund) with the REPowerEU gas consumption reduction targets.
4. **Protect the right to affordable and clean energy:** Member states should target measures towards citizens with the lowest ability to adjust their gas consumption. First, clean energy solutions should be made affordable and available to those most exposed to high gas prices. Second, the Social Climate Fund and national support mechanisms should support vulnerable groups who are already at increased risk of energy and mobility poverty.
5. **Secure “good practice” policies across Europe:** Our analysis suggests that there is significant scope for member states to learn from each other's policy design. This report highlights some good practice policies. The European Commission could provide the necessary guidelines and support infrastructure to ensure learning and monitoring of effectiveness.



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# CHAPTER 1

## EU CLIMATE TARGETS AND GAS DEMAND REDUCTION

### EU climate and energy commitments imply a strong gas demand reduction

The European Climate Law sets a legal objective for the Union to reach climate neutrality by 2050. It must also reduce its net emissions of greenhouse gases by at least 55% by 2030 compared to 1990. This commitment clearly signals the EU's climate ambition, and has profound consequences for fossil gas use and for its place in the European energy mix.

In preparation for the Climate Law, the European Commission modelled what these climate objectives would mean for fossil gas consumption. Fossil gas use would decrease considerably (35% compared to 2019) by 2030 (see Figure 1, next page) and be almost eliminated by 2050.<sup>1</sup> In 2022, Russia's war in Ukraine made the need to decrease gas consumption even more urgent. The Commission published the REPowerEU communication<sup>2</sup> on 18 May 2022, which foresees an even more drastic decrease of fossil gas use by 2030 (52% counting all non-fossil measures compared to 2019) (Figure 1).<sup>3</sup>

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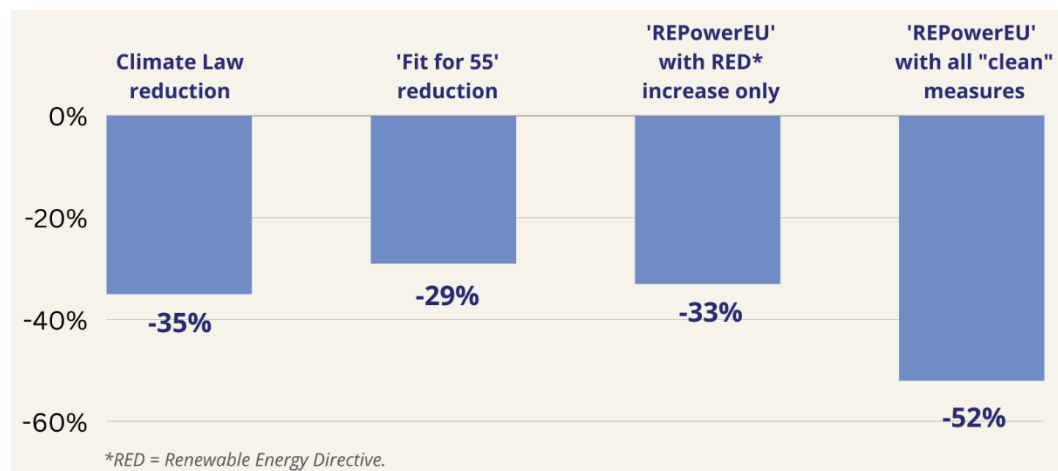
<sup>1</sup> European Commission, 2020, **Impact assessment accompanying the document Stepping up Europe's 2030 climate ambition**

<sup>2</sup> European Commission, **REPowerEU: affordable, secure and sustainable energy for Europe**

<sup>3</sup> This calculation only focuses on clean measures, and does not take into consideration the REPowerEU measures based on reverse fuel switching or continued use of fossil fuels. This results in an overall savings estimate of 210 bcm out of the 310 bcm proposed by REPowerEU.



Figure 1. EU gas demand reduction in 2030 (% , compared to 2019).



## Delivery frameworks need to catch up with the ambition of REPowerEU

In terms of delivery legislation, the EU is broadly on track to reach gas reduction in line with the Climate Law, but not with the EU's crisis response plan, REPowerEU.

To achieve the REPowerEU ambitions, current negotiations between EU institutions must lead to an increase in the targets for the Renewable Energy Directive (RED) and the Energy Efficiency Directive (EED):

- > **RED:** The European Parliament adopted in its position an overall target of 45% of renewable energy in final energy consumption by 2030.<sup>4</sup> The Council, on the other hand, has not considered the REPowerEU suggestion to raise the target and has maintained their lower proposal of only 40%.
- > **EED:** The European Parliament raised the target for additional reduction of energy consumption to be achieved through energy efficiency to 14.5%. This is higher than the proposed increase in the REPowerEU plan (13%). However, the Council kept the overall target at 9%.

Most other measures discussed at the EU level – such as the proposal to decarbonise gas markets or 'emergency' measures like “Save Gas for a Safe Winter” – do not meaningfully contribute to either medium- or long-term gas demand reduction.

<sup>4</sup> E3G, Ember, October 2022, [More renewables, less inflation in the EU](#)



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The European Commission is so far very much focused on delivery in the short term. Several platforms and task forces dealing with security of gas supply and LNG purchases were created in the aftermath of the Russian invasion to best address the European energy crisis. The platform for LNG purchases later evolved into the current EU Energy (Purchase) Platform, which deals with common purchases of gas and hydrogen.

While these taskforces were crucial for short-term political contingencies, the EU now needs to shift attention to securing the necessary demand reductions in the next two to five years. Modelling suggests that two thirds of Russian gas demand could be replaced with clean alternatives by 2025.<sup>5</sup> A plan is needed to develop institutional capabilities that can track member states' progress towards gas demand reductions, as well as anticipate and tackle supply chain challenges and other bottlenecks. Some measures have been presented, such as plans to address the wind farm permitting bottleneck or an EU photovoltaic supply chain initiative. However, these are patchwork and do not establish the capacity to assess whether we are on track and anticipate bottlenecks systematically.

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<sup>5</sup> Bellona, E3G, Ember, RAP, March 2022, [EU can stop Russian gas imports by 2025](#)



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## CHAPTER 2

# MEMBER STATES: AN ASSESSMENT OF AMBITION

Since February 2022, member states have passed both planned and emergency measures in response to the energy crisis. These include new or expanded retrofit programmes, bans or phase-outs for the installation of new gas boilers, the expansion of renewable energy technologies, and even measures to directly incentivise curbing consumer demand. But will these measures do enough to cut gas demand towards a successful energy transition?

This section looks at the measures taken in seven member states – France, Germany, Hungary, Italy, Netherlands, Poland, Spain – since February 2022 in response to the energy crisis. These countries were selected as case studies based on the following criteria

- > largest gas volumes (Germany, Netherlands, France, Italy)
- > largest gas share in overall energy mix (Italy, Hungary, Germany)
- > largest per capita gas use (Netherlands, Italy, Germany, Hungary)
- > geographic relevance (Poland, Spain).

This report assesses measures taken after the intensification of the energy crisis following Russia's attack on Ukraine, until the start of October 2022. It is important to note that this assessment does not evaluate measures before February 2022, and so is not an assessment of a country's overall delivery of green policies.

The national response was assessed based on four criteria:

1. Do demand reduction measures exist for sectors of highest gas use?
2. Will measures result in immediate short-term or longer-term gas reductions?
3. What is the impact of measures on overall emissions or the environment?
4. Do measures consider social impacts, such as measures to tackle energy poverty?



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## Key findings

Countries are tackling the crisis head-on to transition away from Russian gas. However, more ambition and better policy design is necessary and possible if buy-in to the transition is to be sustained.

Table 1 summarises findings from the analysis of energy-related measures taken since February 2022 in the seven selected member states. It gives an overall red–amber–green rating for each country’s measures for their impact on the four key assessment criteria.

Table 1. At-a-glance rating of energy-related measures since March 2022

Member state	Measures addressing sector(s) with highest gas consumption	Gas demand reduction in long term	Climate impact	Social fairness
France	Medium	Medium	Neutral	Medium
Germany	Medium	High	Neutral	Medium
Hungary	Medium	Low	Negative	Medium
Italy	Low	Medium	Neutral	High
Netherlands	Medium	High	Neutral	High
Poland	Medium	Medium	Neutral	Medium
Spain	Medium	Low	Neutral	Medium

Nearly all the member states have taken measures to **reduce gas consumption in the most gas-heavy sectors**. However, even where these measures are ambitious, such as in the Netherlands, they are tempered by investments in new fossil gas supply.

The picture for **long-term gas reduction** is better in some member states. In Germany and Netherlands, some investments in fossil infrastructure are limited to the short- to medium-term. Spain’s crisis response has focused on short-term measures with limited potential for long-term gas reduction – although previous renewables targets may mitigate this.



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All the member states other than Hungary have taken measures that will have a positive **climate impact**, such as funds for retrofitting buildings or developing renewables supply. However, reverse fuel-switching and investments in fossil fuel infrastructure create a risk of backsliding resulting in some countries being downgraded to an amber rating.

All the member states have invested heavily in protecting consumers from the energy crisis, but they have often failed to target help to the **most vulnerable households**. Only the Netherlands and Italy receive a green social rating. The Netherlands has a policy prioritising low-income households for energy renovation, which will help to reduce energy poverty in the long term. Italy's Superbonus Scheme remains one of the only incentive programmes covering the full cost of renovation, although the targeting should be improved.

#### **From short-term protection to long-term reduction**

Overall, positive progress is evident. Examples include growing momentum for renewable energy (Poland's reconsideration of a de facto ban on onshore wind), streamlining administrative procedures for renewables permitting (Spain, Italy) and dates for banning new fossil fuel boilers (Germany, Netherlands). Announcements to support the renovation of households and public buildings, and new landmark targets for renewable energy expansion also indicate a shift towards an energy transition. The impact of these measures may take some time to materialise though.

Countries have spent billions on measures to increase the affordability of energy prices through gas price caps, VAT reductions or direct support. These are unlikely to be long-term solutions and have not always been targeted effectively, but are vital to protect citizens over this winter and next. Additionally, policies to reverse fuel-switching to coal or wood are a step backward for climate policy. In most cases these have been billed as short-term measures to meet demand and generally do not appear to change existing coal phase-out dates.

Most of the countries assessed are diversifying gas sources to cover demand in the short term. In some cases, these are paired with phase-out dates. For example, Germany's hydrogen-ready LNG terminals have an LNG phase-out date. It is questionable how feasible hydrogen-ready terminals actually are, however,



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especially in terms of cost.<sup>6</sup> Care should be taken to prevent new lock-in to gas, as is detailed further below.

Member states must now focus on turning short-term gas savings into real demand reduction. Policies must better target worst-performing buildings and households on the brink of energy poverty, and ensure there is labour, materials and funding available for scaling renewable energy and demand-side management of grids. Only with increased effort can the EU maximise its potential to transition away from gas and towards greater social benefit, positive climate impact and a resilient, affordable future energy system.

### **Industry and demand reduction**

It is important to note that industry has seen a decrease in gas demand since 2021, despite there being fewer measures that directly target the sector. Bruegel estimates<sup>7</sup> that overall EU demand for 2022 (January – September) was down by 7% compared to the 2019-2021 average, while demand in August decreased by 23% compared to the average over the previous three years, driven primarily by industry. This contrasts with household demand, which generally saw smaller reductions that could be attributed to low summer usage.

It is expected that this is a result of the industrial sector's increased sensitivity to high gas prices. Industry is best placed to respond to price signals, and so the exorbitant costs of gas have resulted in lower demand. However, it is more difficult to assess whether this is a short-term reaction (reducing production or even shutting down) or the result of more targeted, long-term improvements to energy efficiency and industrial processes. In some cases, the reduction in gas demand may also be a result of reverse fuel switching, back to dirtier fuels, rather than energy savings.

Member states should consider a twofold approach in response. Firstly, allowing the pressure of price signals to reach industry, setting an incentive to reduce gas demand. Secondly, implementing measures to incentivise a switch towards long-term, structural energy efficiency and process improvements (such as the electrification of heat). Member states should begin to shift towards measures which support industry decarbonisation, in particular incentives to increase energy and material efficiency. They can simultaneously strengthen the competitiveness of the industry.

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<sup>6</sup> Acatech, August 2022, [Optionen für den Import grünen Wasserstoffs nach Deutschland bis zum Jahr 2030. Transportwege – Länderbewertungen – Realisierungserfordernisse](#)

<sup>7</sup> Bruegel, October 2022, [European natural gas demand tracker](#)



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### **Diversification of gas supply**

As stated above, all countries assessed are diversifying gas as part of their response. However, this cannot be considered a meaningful mid- to long-term strategy for the EU to reduce gas demand. It risks lock-in to fossil gas, investment in an overcapacity of gas not aligned with Fit for 55 and REPowerEU targets, and diverts government spending from more sustainable projects.

In line with EU energy and climate goals, member states must replace gas – Russian or otherwise – with new sources of renewable energy. Investment in building new gas import infrastructure, such as LNG terminals or gas pipelines, that will be used for more than the next five years, brings significant risk of stranded assets as the demand for gas decreases.<sup>8</sup> Current gas diversification policies would put the EU at significant risk of overcapacity by 2030 in light of its REPowerEU ambitions to reduce gas demand.<sup>9</sup> Government funding spent on these projects risks being wasted, while simultaneously locking countries and consumers into high costs for years to come, and missing a key opportunity to invest in clean, affordable renewable energy sources instead.<sup>10</sup>

Diversification may also have immediate negative impacts on Europe's neighbours, particularly those in the Global South. Some, such as Bangladesh or Pakistan, are already being priced out of the market – further driving inequality and increasing energy poverty. Meanwhile, it does little to ensure Europe's energy security, as many gas supplying countries, such as Azerbaijan, are similarly volatile and undemocratic. Finally, risking locking Europe into continued reliance on gas is not in line with the EU's global or climate commitments.

Bruegel assess recent natural-gas deals and political commitments, as well as new gas infrastructure investment to estimate expected new capacity of gas supplies over the next years. For more on investments in new gas, LNG and related infrastructure, see Bruegel's report.<sup>11</sup>

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<sup>8</sup> E3G, April 2022, [Future of EU gas demand](#)

<sup>9</sup> Bruegel, September 2022, [A grand bargain to steer through the European Union's energy crisis](#)

<sup>10</sup> E3G, October 2022, [Bezahlbare Wärme ohne Flüssiggas](#)

<sup>11</sup> Bruegel, October 2022, [National energy policy responses to the energy crisis](#)



## France

Table 2. France: Rating at a glance

Measures addressing highest gas-consuming sectors	Gas demand reduction in long term	Climate impact	Social fairness
France has primarily targeted households and industry through price caps, short-term measures unlikely to reduce gas demand. Recently announced energy sufficiency measures aim to reduce demand by 10% in industry this winter and in households by 2024.	The recent emphasis on energy sufficiency with planned energy reduction of 10% across all sectors may lead to lasting behavioural change favouring demand reduction. The planned policies to facilitate renewables deployment and improved subsidies for transitioning from fossil boilers should cut long-term demand.	Expenditure in 2022 has heavily favoured short-term generalised price caps. These do not incentivise reduced energy use, and by removing the price signal may have led to increased use by wealthier consumers. Planned policies promoting energy sufficiency and accelerated renewable energy deployment should reduce gas consumption in the future.	While the energy price caps will undoubtedly have helped many vulnerable households, they are non-targeted. A small energy cheque has offered extra support to the most vulnerable. Greater targeting, investment in cheap renewables and building renovation for those in social housing would strengthen the social benefit.

France’s gas consumption per capita and per euro of GDP is below the EU average, but due to its size it is still the third largest consumer in absolute terms. Gas use is highest in the sectors of households (31% of gas use) and industry (28%). The country is significantly less reliant on Russian gas imports than some of its neighbours. Only 17% of gas imports come from Russia, following a process of diversification that brought imports through its four LNG ports up to a 43% share of total gas imports in 2020.

The impact of the gas crisis has been exacerbated by a concurrent drop in electricity production from nuclear. The government has responded with major expenditure in price caps and other short-term financial assistance to citizens and businesses, contributing to keeping a lid on inflation, but has been slower to announce longer-term measures. The beginning of the rise in energy prices coincided with the months leading up to the presidential election in April 2022.

Given that nuclear energy provides around 70% of France’s electricity, the unavailability of over half of the country’s fleet significantly increased the pressure on energy supply. The government reopened a coal generator for the





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winter in October 2022, just six months after it had been formally decommissioned.<sup>12</sup> A new floating storage regasification unit (FSRU) LNG terminal at Le Havre is planned to be in operation by September 2023.<sup>13</sup> So far France has resisted calls from Spain, Germany and Portugal to recommence construction of the MidCat pipeline that would provide an additional link between Spain's LNG and central European markets.<sup>14</sup> The project would be a costly investment at €3 billion and would not be ready in time to ease the gas crisis this or next winter.

Government investment has focused on shielding consumers from higher energy prices. A series of short-term measures stretching back into 2021, at a large cost to the public budget, were mostly generalised rather than targeted towards those most in need. They include a general freeze on gas tariffs at October 2021 prices until the end of 2022, which was recently extended into 2023 with a 15% increase on the frozen tariff.<sup>15</sup> (The real year-on-year price increase in gas prices at the beginning of October 2022 was around 83%.<sup>16</sup>) The measure affects all residential gas consumers. Electricity prices were restricted to a 4% increase for residential, public and SME consumers in 2022 and a 15% increase for 2023. The 40% of households with the lowest revenues (12 million households) will receive means tested energy cheques of €100–200 at the end of 2022; the policy is costed at €1.8 billion.

Aside from protecting consumers from high energy prices, the government has boosted subsidies for replacement of fossil fuel heaters by €1000. Whilst this is a positive development that should reduce demand for gas in heating of buildings, it is not accompanied by additional renovation support, necessary to ensure the efficiency of the new heating system. It therefore risks contributing to an existing problem whereby the vast majority of renovation funding applications are for isolated actions such as boiler replacement,<sup>17</sup> rather than deep structural renovation.

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<sup>12</sup> Villeneuve, September 2022, **A Saint-Avold, on rallume la centrale à charbon pour éviter les coupures d'électricité cet hiver**, *Le Monde*

<sup>13</sup> Les Echos, July 2022, **Gaz : TotalEnergies retenu pour le terminal méthanier flottant du Havre**

<sup>14</sup> Euractiv, September 2022, **MidCat pipeline stand-off puts EU's energy solidarity to the test**, Paul Messad

<sup>15</sup> Ministères de la Transition écologique et de la Cohésion des territoires, et de la Transition énergétique, September 2022, **Bouclier tarifaire pour le gaz naturel**

<sup>16</sup> This policy was first introduced in autumn 2021 until the following spring, but was then extended to the end of 2022 following the Russian invasion of Ukraine.

<sup>17</sup> IDDRI, March 2022, **Energy renovation, an essential tool for long-term protection against energy price rises**



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As the crisis has progressed the French government has put a greater emphasis on reducing demand with the development of an energy sufficiency plan covering all sectors of the economy. The plan aims to reduce demand by 10% in two years<sup>18</sup> compared to 2019 and covers all energy use, not only gas. Businesses have been asked to reduce their energy usage already this winter by 10% compared to 2019, develop formal energy savings plans in September 2022 and designate an energy savings ambassador. The plans will be used to aid the government to assess the risks of rationing. The government has also announced a law accelerating deployment of renewables,<sup>19</sup> improving support and loosening procedural blockages. France was the only EU country not able to reach its 2020 target for renewables deployment.

France has invested a lot in protecting consumers from high energy prices, but policies have largely failed to specifically target the most vulnerable households. The generalised freeze of gas prices for households also risks removing the price signal that could help to lower demand and incentivise the government's calls for energy sufficiency. Policies to accelerate renewables deployment require multiannual energy savings commitments from companies and subsidise fossil boiler replacement in homes will help to reduce demand in the mid- to long-term. France should progressively redirect budgetary resources away from subsidising the energy supply of non-vulnerable consumers towards helping them reduce their demand, such as through renovation.

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<sup>18</sup> Gouvernement français, October 2022, [Plan de sobriété énergétique](#)

<sup>19</sup> Ministères de la Transition écologique et de la Cohésion des territoires, et de la Transition énergétique, July 2022, [Agnès Pannier-Runacher annonce des mesures d'urgence pour accélérer le développement de la production d'énergies renouvelables](#)



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Table 3. France: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Households (31%)	Gas price freeze	Low	Low	Negative	High
	Energy sufficiency measures	High	Medium	Positive	N/A
	Energy cheques for low-income	Low	Low	N/A	High
	Fossil fuel boiler replacement subsidy	High	High	Positive	High
Industry (28%)	Support for energy intensive industry	Low	Low	Negative	N/A
	Energy savings plan winter 2022	High	Low	Positive	N/A
	Energy sufficiency plan	High	Medium	Positive	N/A
	Support for SMEs' electricity bills	Low	Low	Negative	High
Commercial & public services (16%)	Support for energy bills	Low	Low	Negative	High
Electricity & heat generation (19%)	Electricity price cap	Low	Low	Negative	High
	Acceleration of RE administrative procedures	Medium	High	Positive	Medium



## Germany

Table 4. Germany: rating at a glance

Measures addressing highest gas-consuming sectors	Gas demand reduction in long term	Climate impact	Social fairness
Germany has a host of measures addressing the buildings and power sector but actions in industry are constrained to very blunt instruments with more limited potential for long-term gas use reduction. Some of the most impactful policies in the building sector are yet to be solidified from proposal into concrete action, and many consist primarily of voluntary or incremental measures. Stronger regulations and instruments, especially in the building sector, would better ensure long-term benefits.	Generally, German measures have the potential to reduce gas demand in the long term. However, they primarily target the next 1–2 winters, and more structural approaches have not yet been implemented well.	Overall, German measures are designed to minimise climate impact. Where there is a reliance on fossil resources, sunset clauses have been put into place. These need to be tightened and brought forward (especially for LNG) for full Paris Agreement alignment, and subsidies for fossil fuels phased out.	Although Germany has tried to incorporate social inequality into its crisis response, this has often been blocked by opposition to the high levels of government expenditure needed. More could be done to target measures and more effectively support the most vulnerable groups.

Germany, one of the largest importers of Russian gas, has had an overall strong and rapid response to the energy crisis. Nearly a third (30%) of gas use in Germany goes towards household heating, with further significant shares to industry (27%), and electricity and heat generation (26%). Germany used to source around half of its gas from Russia, resulting in significant pressure to rapidly phase out Russian gas. The crisis response has therefore resulted in some tension between short-term emergency diversification of fossil fuel sources to reduce the economic impacts of high gas prices, and medium-term measures that would accelerate the energy transition, but which are contingent on support from the finance ministry. Short-term measures such as replacing Russian gas with LNG from other sources, or reverting to coal without clear measures to mitigate resulting emissions, are not climate-aligned and risk locking Germany into a fossil fuel-based energy system for decades. There is strong positive development of medium-term measures such as higher renewable energy targets, improving energy efficiency in buildings, streamlining administrative procedures for renewables, and setting ambitious heat pump targets. However, there is more scope to structurally reduce gas.



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Germany is quickly diversifying gas imports through increased imports from Norway, Belgium and the Netherlands. It is also building up LNG import infrastructure, which it currently lacks. Five floating storage regasification units (FSRUs) are expected to come online over the next twelve months, facilitated by accelerated planning (“LNG Acceleration Act”) and direct financing by the government. Plans for permanent LNG terminals were also revived, although these will not come online in the short term. The “LNG Act” does set an effective phase-down date by requiring all LNG terminals to switch to climate-neutral hydrogen after 2043, but the technical and cost feasibility is questionable.<sup>20</sup> Previously decommissioned coal power plants were brought back online to help reduce gas use for electricity generation.

However, climate change remains a central topic for the current government. The overall response to the crisis has also signalled a significant shift, particularly compared to the previous administration. Various policy packages were announced to accelerate renewable energy deployment and to decarbonise the building sector. Measures to increase renewable energy and replace gas dependence include: a 2030 target for 80% of power to come from renewable energy; higher targets for offshore wind and increasing the amount of land for onshore wind (to reach 115 GW of wind power by 2030); and adding 215 GW for installed solar power by 2030. As recently as September 2022, measures to reduce the tax and administrative burden for decentralized solar PV were announced, benefitting both households and commercial and public services. These measures will not have an immediate impact on gas reduction however, as gas use remains concentrated in household heating and industry, both of which will first require electrification.

The government is also working on a de facto ban for new fossil fuel heating. From January 2024, all new heating installations would have to be powered by at least 65% renewable energy. Energy efficiency measures have also been implemented, including spending €56.3 billion on renovating the worst performing buildings in the period 2023–2026, and mandatory boiler efficiency inspections before the end of this winter. Bottlenecks in the construction industry are likely to hold back progress, so there needs to be a plan to scale up capacities and increase renovation rates (currently 1%). A target to install 500,000 new heat pumps on average annually until 2030 was announced in

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<sup>20</sup> Acatech, August 2022, [Optionen für den Import grünen Wasserstoffs nach Deutschland bis zum Jahr 2030. Transportwege – Länderbewertungen – Realisierungserfordernisse](#)



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June,<sup>21</sup> coupled with expanding production capacities for heat pumps and support for training programmes for installation. This is yet to be finalised and will likely mean that most heat pumps will be installed later in the 2020s. Recently, €2.98 billion<sup>22</sup> was announced to support new district heating systems and decarbonise existing ones by using at least 75% renewable energy (though the maintenance and expansion of existing district heating systems that run on fossil fuels may also be subsidised). This is potentially significant in the long term, but construction of new systems likely has a low gas reduction potential in the short term, due to significant planning and construction spanning several years.

Internal divisions threaten uniform progress however, as the finance ministry uses limits on fiscal space to limit finance for the climate transition while prioritising short-term subsidies and bailouts for households and industry. The government has also announced a €5 billion support programme for energy- and trade-intensive industry. The Ministry for Economy and Climate (BMWK)<sup>23</sup> claims these measures will not counter incentives to save energy, but such large sums to cover industry energy bills may not support long-term reduction in gas demand.

Furthermore, Germany recently announced a €200 billion spending package to cap gas and power prices primarily for households, and provide funding to support businesses. The details of the amounts or which businesses will receive funding are not yet clear. Such a spending package might effectively result in subsidising gas consumption, and without proper targeting may also not reach the most vulnerable households and businesses.

A mandatory energy saving measure requires enterprises with an energy demand above 10 GWh per year and with existing energy management plans to implement all energy saving measures that would pay off in the next two years.<sup>24</sup> There are some other short- and medium-term mandatory measures for households and industry lasting 6–24 months. These anticipate reducing gas demand by about 2% and could save €10.8 billion in the next two years.

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<sup>21</sup> Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen, June 2022, [Breites Bündnis will mindestens 500.000 neue Wärmepumpen pro Jahr](#)

<sup>22</sup> Euractiv, September 2022, [Berlin kicks off €3 billion district heating subsidy scheme](#)

<sup>23</sup> Bundesministerium für Wirtschaft und Klimaschutz, July 2022, [5 Milliarden Euro Hilfsprogramm für energieintensive Industrie startet](#)

<sup>24</sup> Bundesministerium für Wirtschaft und Klimaschutz, August 2022, [Habeck: "Treiben energieeinsparung weiter voran" Bundeskabinett billigt Energieeinspar-Verordnungen](#)



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The federal government also announced a public energy savings campaign to encourage energy saving measures in households and offices, as well as solidarity among citizens to reduce energy imports and climate impacts.<sup>25</sup>

Germany has one of the highest levels of funding allocated to support households and businesses from the energy crisis, committing to €110.2 billion since September 2021<sup>26</sup> (and not including the most recent commitments made at the end of September 2022), though per capita this amounts to around 1300 euro. Large parts of these sums are however direct or indirect subsidies for higher energy consumption, such as the gas price cap or a temporary VAT reduction on gasoline. While the most vulnerable groups have seen their share of the relief measures increase recently, the overall nature of the relief packages remains regressive.

Germany's overall gas consumption has decreased but has been replaced primarily by the emergency short-term solutions of coal and oil. The decrease in gas use can also be attributed to milder weather and the strong market signal of high gas prices – which may now be reduced due to the recently announced price cap. A recent E3G study shows that Germany risks paying up to €200 billion more for gas until 2030, under historical prices. Gas consumption for heating and warm water are the largest gas use case in Germany and could be reduced down to just a third of today's levels by 2030 – calling into question the need for new gas import infrastructure.<sup>27</sup> Strict phase-out dates for LNG, an end to subsidies for fossil gas, mandatory energy saving measures, and continuing expand renewable energy and energy efficiency, will be crucial to setting gas use on a consistent downward trend. Germany therefore needs to do more to solidify energy savings and gas use reduction as part of the country's energy future.

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<sup>25</sup> Bundesministerium für Wirtschaft und Klimaschutz, [www.energiewechsel.de](http://www.energiewechsel.de)

<sup>26</sup> Bruegel, September 2022, [National fiscal policy responses to the energy crisis](#)

<sup>27</sup> E3G, October 2022, [Bezahlbare Wärme ohne Flüssiggas](#)



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Table 5. Germany: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social benefit
Households (30%)	Renovation of worst performing buildings	Medium	High	Positive	Medium
	<b>Proposal</b> to ban new fossil fuel heating (starting 2024)	Medium	High	Positive	Medium
	Reduced tax and admin burden for decentralised solar	High	High	Positive	Medium
	<b>Proposed</b> heat pump target	High	High	Positive	Medium
	Energy savings public campaign	High	Low	Positive	Medium
Industry (27%)	Mandatory energy savings	Medium	Low	Negative	N/A
	Direct state aid for energy intensive industry	Low	Medium	Negative	Medium
Commercial & public services (13%)	Energy saving measures	Medium	Low	Positive	N/A
	Immediate renovations and efficiency upgrades	Medium	High	Positive	N/A
	Reduced tax and admin burden for decentralized solar	Medium	High	Positive	N/A





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Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Electricity & heat generation (26%)	Fuel-switching (coal)	High	Low	Negative	N/A
	Large-scale (utility) renewable rollout	Low	High	Positive	High
	Small-scale (household, rooftop, decentralised) renewable rollout	Low	High	Positive	High
	Expansion of renewable district heating	Low	High	Positive	High
	Gas price cap	Low	Low	Negative	Medium



## Hungary

Table 6. Hungary: Rating at a glance

Measures addressing highest gas-consuming sectors	Gas demand reduction in long term	Climate impact	Social fairness
Hungary has reformed the price caps on electricity and gas, and differentiated between levels of usage, returning some incentive to reduce demand especially for high gas consumption in households. Other measures remain limited. Investment in renewable energy and support for improving building efficiency are critically needed.	The recent reform to the price cap and other measures are limited in short-term impact and seem unlikely to be maintained for the long term. Combined with new gas investments, Hungary's measures are unlikely to lead to long-term reduction. Hungary needs to invest in demand side measures, especially structural building renovations, to achieve significant long-term gas reductions.	As most of Hungary's measures are unlikely to lead to long-term gas reduction, and the country is also looking to postpone the coal phase-out and frack for shale gas, climate alignment is low.	Though there is some positive impact, the energy price cap is not sufficiently targeted and does not sufficiently reduce negative social impacts. There are few other measures and very little direct support either for vulnerable groups or for energy efficiency improvements and renewables deployment. Current reforms to the residential energy price cap may also lead to a deepening of energy poverty.

Gas makes up about 33% of Hungary's total energy supply, of which the majority (85%) is imported from Russia.<sup>28</sup> The primary sectors for gas consumption are households (34%) and electricity and heat generation (26%). Gas provided half of the heating demand in the building sector, and 26% of electricity generation in 2020.<sup>29</sup> State-owned energy group MVM recently committed to a new 15-year contract with Gazprom to supply 3.5 bcm annually via the Turkstream pipeline, which supplies gas from Russia via Turkey, Bulgaria and Serbia.<sup>30</sup> The pipeline is one of Hungary's primary gas suppliers. Combined with the country's high oil imports, limited domestic production of gas (around 1.5 bcm) and some electricity imports, Hungary is particularly exposed to supply risks.

<sup>28</sup> IEA, 2022, [Hungary 2022 – Energy policy review](#)

<sup>29</sup> IEA, 2022, [Hungary 2022 – Energy policy review](#)

<sup>30</sup> Reuters, October 2022, [Hungary finalises deferred payments deal with Gazprom – minister](#)



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Pre-crisis, Hungary showed signs of ambition in setting its climate targets. It was one of the first countries to make climate commitments legally binding (Climate Protection Act 2020) and one of the first in the region to plan a coal phase-out (until 2025). The 2020 National Energy and Climate Plan set targets for 90% low-carbon energy by 2030. However, this includes nuclear energy and there is thus likely to be significant investment in expanding nuclear at the expense of renewables. And although the targets included expanding solar PV capacity to 6.5 GW by 2030, developing grid flexibility, installing a million smart meters, 200,000 household rooftop solar panels and 1000 MW of storage capacity by 2026 – Hungary remains among the least ambitious in its renewable energy and energy efficiency targets.

Renewable energy has grown significantly since 2010, but remains extremely low (only 2% of total energy supply in 2020). In addition, there have only been slight declines in coal as share of total energy supply, and these have been replaced primarily with oil and gas, leaving Hungary's households heavily reliant on gas.<sup>31</sup> Hungary has had retail price caps on electricity and gas in place for the last decade in the residential sector (Universal Service Schemes), to combat energy poverty and increase affordability. (For a short period of time caps were also in place for SMEs and municipalities due to the COVID crisis.) However, these price caps were criticised as they primarily benefitted higher income and high energy users, while also removing an incentive for energy efficiency and reduced fossil fuel consumption.

In July 2022, Hungary declared a state of emergency, effective August, and removed the price caps on energy prices for high energy users, in part to reduce the strain on the national budget.<sup>32</sup> Households are now eligible for the capped prices up to 2523 KWh/year for electricity, after which they pay double. The limit for gas is 1729 cubic meters/year, after which a 7x price increase applies. Although reform has been called for and the usage differentiation is a positive step, the updates do not do enough to reduce gas consumption. They have also led to higher prices for some lower income households – potentially leading to an increase in energy poverty next winter. Buildings in rural areas especially are very energy inefficient, which may lead to usage exceeding the caps and thus high prices. The reform of the gas and electricity prices does encourage households, SMEs, and municipalities to invest in energy efficiency and

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<sup>31</sup> IEA, 2022, [Hungary 2022 – Energy policy review](#)

<sup>32</sup> Reuters, July 2022, [Hungary to scrap energy price caps for high usage households](#)



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renewables. However, high costs and bottlenecks in materials and labour supply are a problem. As there are few support programmes for energy efficiency or renewables deployment to accompany the price cap reform, positive impacts on gas consumption, social affordability and climate targets remain limited.

The emergency action plan also included an increase in domestic gas production from 1.5 bcm to 2 bcm, as well as a ban on exports of gas to neighbouring countries. The export ban potentially violates EU solidarity provisions for gas and undermines EU cooperation on energy. Investments in new domestic gas (primarily shale) extraction are not only most likely economically unviable but would also counteract Hungarian and EU climate targets, damage local environments and lock the country into further gas use. The emergency action plan also increases the output of the Mátra coal plant and the lignite mines that supply it, and postpones the country's coal phase-out and just transition plans from 2025 to 2029.

Hungary was the only country to oppose the European Commission's "Save Gas for a Safe Winter" plan, which aimed to reduce gas use by 15% between August 2022 and March 2023.<sup>33</sup> But in September 2022, the government announced new targets for reducing gas consumption by public buildings and companies by 25% this winter.<sup>34</sup> The government also plans to limit heating temperatures in public buildings, regulate firewood prices, implement a scheme to support energy intensive small businesses by covering half of the increase to their energy bills compared to last year and help improve energy efficiency. However, the residential sector is still under-incentivised and comprehensive support for renovations and energy efficiency are lacking.

Although Hungary has taken some steps to address the high cost of energy prices, it has done little to reduce gas consumption. Particularly in the long term, rather than investing in further gas production and delaying the coal phase-out, the country should focus on accelerating the deployment of renewables and ensuring households and industry have the financial and administrative support needed to invest in structural energy efficiency improvements.

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<sup>33</sup> Euractiv, July 2022, [EU-27 approves demand gas reduction plan after power struggle with Brussels](#)

<sup>34</sup> Reuters, September 2022, [Hungary aims to cut gas use 25% at public institutions – govt](#)



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Table 7. Hungary: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Households (34%)	Gas price cap	Low	Low	Negative	Medium
Industry (17%)	<b>Announced</b> scheme to support energy intensive industry	Low	Low	Negative	N/A
	Gas consumption reduction target (companies)	Medium	Low	Positive	N/A
Commercial & public services (13%)	Gas consumption reduction target (public buildings)	Medium	Low	Positive	N/A
	Heating limit (public buildings)	Medium	Low	Positive	Medium
Electricity & heat generation (26%)	Domestic gas production	Low	Low	Negative	Low
	Export ban	Low	Low	N/A	N/A
	Fuel switching to coal	Medium	Medium	Negative	Low



## Italy

Table 8. Italy: Rating at a glance

Measures addressing highest gas consuming sectors	Gas demand reduction in long term	Climate impact	Social fairness
Although most measures are in the two sectors with highest gas use (Households and Electricity & heat generation), there is limited targeting and thus very little gas use reduction. The focus on short-term fixes like diversifying sources and reducing high prices should be avoided. Renewables expansion is positive but not sufficient to replace gas demand.	Italy’s measures are not on track to reduce gas use in the long term. While there is some expansion of renewables and investment in structural energy efficiency improvements, these should be further incentivised and expanded.	The short-term subsidies for energy costs as well as investment in new gas infrastructure appear to outweigh the scale of investment in renewables and energy efficiency.	Italy has invested significantly in supporting households and businesses impacted by the high energy prices. But further and improved targeting of measures to support the most vulnerable groups will strengthen the social benefit, as will long-term investment in an energy system not tied to high LNG prices.

Gas made up 31% of Italy’s total energy consumption in 2020, albeit with a downward trend in demand in recent years (2005–2019).<sup>35</sup> Italy’s primary sectors for gas use are electricity and heat generation (42%) and households (27%). 95% of Italy’s gas is imported, of which Russian imports made up 40% at the beginning of 2022, but this has since reduced to 25%.<sup>36</sup> Households mainly use gas for heating – Italy is one of the countries with the largest share of gas boilers for primary heating. Furthermore, approximately 60% of Italy’s building stock was built before energy efficiency criteria were established in 1976, resulting in a high degree of energy consumption in buildings.

Italy has mainly reacted to the energy crisis by diversifying gas sources, particularly through increased supplies via existing pipelines (TAP from Azerbaijan, TransMed, from Algeria) and LNG (from Egypt, Congo, Angola, and

<sup>35</sup> ECCO, March 2022, [Risparmio e rinnovabili per uscire dalla dipendenza del gas](#)

<sup>36</sup> ECCO, September 2022, [Energy security a new argument for rapid decarbonisation in Italy](#)



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Qatar). On the table is also a proposal to increase regasification capacity, and potentially also domestic production capacity. This leads to a real risk that short-term fixes to diversify supply will lead to lock-in of gas infrastructure (such as new LNG terminals, gas pipelines and investments in gas extraction projects in third countries) and undermine medium- and long-term solutions to phase out gas in line with EU targets.

Although renewable targets are set out in Italy's National Energy and Climate Plan, these have not yet been updated in line with the European Climate Law targets or the Fit-for-55 proposals. The Jacques Delors Institute<sup>37</sup> estimates that installing 10 GW of renewable energy per year would put Italy on track to displace 7.5 bcm of gas by 2025, about a quarter of Italy's Russian gas imports. Italy has committed to six new windfarms,<sup>38</sup> as well as to several tens of GW of new offshore wind deployment. Former Prime Minister Mario Draghi also announced streamlined administrative processes and accelerated investments in new renewables, with the intention of making renewables a key aspect of the country's response to the energy crisis.

A key measure implemented by the Italian government is the Superbonus scheme, an incentive programme for household energy efficiency renovations, which would offer tax rebates to cover up to 110% of associated costs. Initially implemented in July 2020 and extended again in May 2022, the programme has provided nearly €21 billion in subsidies and was initially welcomed. It remains one of the only incentive programmes which covers the full upfront cost of renovation. However, uncertainty about the measure's future and weak conditions for qualifying under the programme has led to an overly high number of applications. This has increased wait times for renovation work, while the lack of targeting has led to benefits going to wealthier households, rather than to the most vulnerable. The high number of applications has also led to high costs for the state and resulted in bottlenecks for access to materials and labour. The Superbonus programme also still includes financial support for upgrading to fossil gas boilers. As a result, the long-term gas reduction potential of the measure is classed as medium for the time being.

Further measures include a VAT reduction for gas bills – which does not differentiate based on consumption or income, several billion euros to expand the “social bonus”, which discounts bills for low-income families, and the option

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<sup>37</sup> Institut Jacques Delors, May 2022, [United in Diversity? National responses to the European energy crisis](#)

<sup>38</sup> France24, March 2022, [The Med gets first offshore wind farm as Italy vows energy revolution](#)



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to pay energy bills in instalments. Tax credits for energy intensive companies and those facing a significant increase in their energy bills were also set up, however there is no targeting of support based on energy efficiency improvements nor based on exposure to competition from countries with lower prices. Italy also implemented a windfall tax on energy companies, which would tax 10% of their profits in order to fund some of these programmes.

Italy has allocated €59.2 billion<sup>39</sup> since 2021 to tackling the crisis. However, the majority of this money is in the form of short-term support and energy subsidies. The planned expansion of renewable energy is certainly critical, but will not be enough to reduce gas consumption in the long term, particularly if Italy also continues to pursue a strategy of gas diversification. The national election results on 25 September and a new right-wing government may also indicate a shift towards less climate-friendly and less EU-oriented policies. It remains to be seen how the new government will approach energy issues. Italy should therefore further strengthen its renewable energy deployment and improve the Superbonus scheme or similar energy efficiency incentives to get on track towards a long-term gas phase-out.

*Table 9. Italy: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact*

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Households (27%)	Support for vulnerable groups	Low	Low	N/A	High
	Renovation incentive (Superbonus Scheme)	Medium	Medium	Positive	High
	VAT Reduction	Low	Low	Negative	Medium
Industry (14%)	Tax credits for energy intensive industry	Low	Low	Negative	N/A
	Support for energy bills	Low	Low	Negative	High

<sup>39</sup> Bruegel, September 2022, **Methodological note**





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Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Commercial & public services (12%)	VAT Reduction	Medium	Medium	Positive	N/A
Electricity & heat generation (42%)	Windfall tax	Low	Low	N/A	Medium
	Renewables expansion	Medium	High	Positive	Medium
	Streamlining RE administrative procedures	Medium	High	Positive	Medium



## Netherlands

Table 10. The Netherlands: Rating at a glance

Measures addressing sectors with highest gas consumption	Gas demand reduction in long term	Climate impact	Social fairness
The Netherlands has reacted strongly to boost investment in renewables and lower dependence on gas for electricity generation. Extensive long-term measures for reducing demand in households will also reduce gas consumption for heating. This is countered by medium-term expansion of LNG and temporary expansion of coal use.	The large investment and ambition in reducing household demand will be crucial to reducing gas use in the long term. Large-scale rollout of offshore will also reduce demand for electricity generation from fossil fuels. Continued commitment to closure of the Groningen field sends a signal about reducing future dependence on gas.	Strong commitments to energy efficiency and renewables are countered by short-term measures that could be better targeted to reduce gas demand, and the temporary expansion of coal use.	The targeting of low-income groups for additional energy allowances and prioritization of least energy efficient buildings for renovation is likely to help the most vulnerable both now and in the long-term.

The Netherlands has by a significant lead the highest annual consumption of gas per capita in the EU (0.087 TJ/person; the EU average is 0.035). Use is particularly high in electricity generation (38% of gas use). It is also used widely for heating homes and by industry. The country has responded quickly to the gas crisis, introducing a mixture of climate-friendly and less-climate friendly measures. Medium- to long-term measures to reduce household demand and ramp up renewables production are joined by short-term measures to diversify gas supply with additional LNG terminals and removal of caps on coal use.

While the Netherlands is a major producer of gas, in recent years it has become a net importer as it is reducing extraction from the Groningen gas field. 15% of imports consumed in the Netherlands came from Russia in 2020 (6 bcm).<sup>40</sup> Following the invasion of Ukraine, the Netherlands announced it would stop

<sup>40</sup> NOS, Mei 2022, [Kunnen we wel snel zonder Russisch gas?](#)



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Russian imports of gas by the end of the year<sup>41</sup> and moved quickly to increase LNG import capacity. Two FSRUs in Eemshaven have now been opened and are expected to each add 4 bcm capacity. Expansion of the existing LNG terminal at Rotterdam will add 4–8 bcm to the existing 12 bcm capacity. It should be noted that some of this capacity will serve other countries. In another short-term measure, the government temporarily (2022–2024) removed a cap that had restricted coal-fired power plants to 35% capacity. The government has estimated that this will lead to 9 Mt additional CO<sub>2</sub> emissions and has said it will implement measures to compensate for these. However, the measures announced so far<sup>42</sup> are vague and will not be applied until well into the future, making their implementation more difficult to track.

Meanwhile, the country has maintained its long-term objective of closing the Groningen gas field in 2024. Seismic activity associated with extraction has caused damage to buildings and immense social anxiety over the last decade regarding the safety of continuing to operate the gas field, leading the government to announce in 2018 that it would be closed. However, given its size – it is the biggest gas field in the EU – there has been increasing pressure to ramp up extraction in the current context. So far, the government has resisted, although it will no longer permanently close any wells in 2022. Production will be reduced to 2.8 bcm for the year ending October 2023,<sup>43</sup> down from 4.5 bcm in the previous year.

Medium- to long term measures show greater ambition to move away from gas. The target for offshore wind capacity was doubled from 11 GW to 20 GW, which will contribute to reducing the heavy reliance on gas for power generation. A major programme for insulation was also launched. This programme aims to spend €4 billion improving the energy performance of 2.5 million homes, approximately 30% of the housing stock. Homes with the lowest energy rating (E, F and G) will be renovated first, subsidised at 30% of costs for homeowners, with additional help for those who are unable to finance the work themselves. From 2030, houses with E, F or G ratings cannot be rented out.<sup>44</sup> Alongside this, a phase-out of gas boilers is planned from 2026, with hybrid heat pumps announced as the standard for new installations and replacements from that date. This sends a clear signal to manufacturers of coming market change and

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<sup>41</sup> Rijksoverheid, April 2022, [Kabinet: eind dit jaar geen energie uit Rusland – maatregelen voor vullen gasopslagen](#)

<sup>42</sup> Rijksoverheid, September 2022, [Kamerbrief over aanbieding concept-Klimaatnota](#)

<sup>43</sup> Reuters, September 2022, [Dutch limit Groningen gas production despite energy crisis](#)

<sup>44</sup> Rijksoverheid, June 2022, [Duurzaam wonen voor iedereen](#)



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must be accompanied by training of heat pump installers. Subsidies of €500–2500 are available for purchase of heat pumps.<sup>45</sup>

Several short-term measures have been introduced to help households and small businesses pay energy bills. In its September 2022 budget, the government announced a price cap on fixed volumes of electricity and gas, beyond which consumers pay market price. The volumes are a flat rate based on the average consumption of a Dutch household. While the policy is aimed at limiting consumption, the limit is relatively high, which could restrict energy saving potential. In its current form the policy also penalises households with a heat pump, who have limited gas use but higher electricity use; the government has signalled that it is working on a solution. The policy will be at least partly financed by a windfall tax.

While the Netherlands' gas consumption has decreased since the beginning of the war in Ukraine, this can largely be put down to mild weather and high gas prices reducing consumption, particularly in industry. Important steps towards reducing dependence in the medium- to long-term have been taken through strong policies on cutting residential building demand, privileging vulnerable households, and increasing ambition for the share of renewables in the energy mix. However, the Netherlands must be careful to avoid locking itself in to gas for the coming decades through plans to develop LNG capacity in Rotterdam, issuing permits for gas exploration, and raising gas production.<sup>46</sup> The lifting of restrictions on coal power generation must be temporary and end by 2024, and the government must introduce the promised emission compensation measures.

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<sup>45</sup> Rijksoverheid, [Krijg ik subsidie voor een warmtepomp?](#)

<sup>46</sup> Tweede Kamer der Staten-Generaal, July 2022, [Versnellingsplan gaswinning Noordzee](#)



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Table 11. Netherlands: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Households (22%)	Energy allowance for vulnerable groups	Low	Low	N/A	High
	Insulation programme	Medium	High	Positive	High
	Phase out gas boilers 2026	Medium	High	Positive	High
	Increased subsidy heat pumps	High	High	Positive	High
	Reduced VAT on energy	Low	Low	Negative	Medium
	Energy price cap linked to consumption	Medium	Low	Negative	High
Industry (16%)	Reduced energy tax	Low	Low	Negative	Medium
Commercial & public services (9%)	Reduced energy tax	Low	Low	Negative	Medium
Electricity & heat generation (38%)	Removal of cap on coal power	Low	Low	Negative	Low
	Double offshore wind capacity	Medium	High	Positive	High
	Continued closure of Groningen gas field	Medium	High	Positive	High



## Poland

Table 12. Poland: Rating at a glance, energy-related measures since March 2022

Measures addressing highest gas-consuming sectors	Gas demand reduction in long term	Climate impact	Social fairness
Measures addressing households have focused on ensuring continued supply of fuel for the winter in the face of shortages. They incentivise reduced energy consumption. Subsidies for switching fuel boilers have been extended to cover home insulation. Additional measures concerning industry since the invasion of Ukraine have not been identified.	Indications from ministers suggest gas may play a smaller role than planned as a transition fuel between coal and renewables, but this may prolong use of coal. The government has signalled it is discussing measures that would facilitate deployment of onshore and offshore wind and quickly increase capacity; this must become a reality as soon as possible.	Poland remains very reliant on coal. While the government has announced a target for 50% renewables in 2040 it has not yet indicated a clear pathway. Record heat pump installations and the extension of residential heating subsidies to include home insulation are positive steps.	Poland has invested in measures to shield consumers, especially households, from increased energy prices. Means-tested subsidies are now available for home insulation. But winter fuel shortages risk dirtier fuel being used with concomitant health risks.

While Poland is not one of the most gas-reliant economies in the EU, the country had been looking to use gas as a transition fuel as it moves away from coal, which remains the dominant fuel source. Gas made up 17% of Poland’s total energy supply in 2020, compared to 40% for coal.<sup>47</sup> Around a quarter (24%) of gas supply is used by households, another quarter by industry and just under a fifth in electricity and heat generation (18%).<sup>48</sup>

Poland has diversified its gas supply over the last decade while also increasing it by around 70%. Russian gas, once the sole source of imported gas, accounted for around half of Poland’s gas use in 2020. This meant that the impact of Russia’s decision to cut off supply in April 2022 was less drastic than it might have been; the contract with Gazprom was already coming to an end six months later. The new Baltic Pipe gas pipeline connecting Poland with Norwegian gas supplies in

<sup>47</sup> IEA, 2022, **Poland 2022 – Energy policy review**

<sup>48</sup> Eurostat data, 2019, **Final energy consumption**



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the North Sea via Denmark opened in October 2022. It has a maximum capacity of 10 bcm, similar to the quantity that was being annually imported from Russia. However, it is not expected to reach this capacity until 2023.<sup>49</sup> Other sources include an LNG terminal importing gas from Qatar and the USA, new interconnectors linking Poland to LNG terminals in Lithuania, and gas sources from Mediterranean countries and the Caucasus via Slovakia. A doubling of the Gdansk FSRU capacity to 12 bcm is also planned but this would not be operational until 2028.<sup>50</sup>

However, the war in Ukraine and explosion of gas prices has created a shift in focus, calling into question the role of gas as a transition fuel. Ministers have acknowledged the need to transition from coal directly to renewables (and nuclear).<sup>51</sup> This is backed up by some positive policy signals. In terms of electricity generation, the country's recently reworked energy plan "PEP2040", expected to be finalised later this year, includes a target for half of energy production to come from renewables by 2040.<sup>52</sup> The renewables share target for 2030 in its national energy and climate plan was 23%. The National Recovery and Resilience Plan foresees an upgrade to the electricity grid that should unlock development of offshore wind, and Poland is part of a group of Baltic countries that have agreed to increase offshore wind capacity.<sup>53</sup> A bill to replace the 2016 de facto ban on new onshore wind farms, which hobbled their previous growth, with less restrictive rules has been put before parliament. Poland plans to open its first nuclear plant in 2033 with a capacity of 1–1.5 GW.<sup>54</sup>

In the residential heating sector, 2022 data shows increasing consumer interest away from gas boilers towards heat pumps. Poland's Clean Air Programme is distributing €25 billion to households over 11 years to fund the transition from solid fuel heating and energy renovation. While the programme design initially expected funding to be directed primarily towards new gas boilers, it appears that gas prices have shifted consumers towards requesting support for heat pumps. Figures from the first half of 2022 show that applications for heat pumps rose to 60% of all funding applications to the programme. Applications for gas

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<sup>49</sup> Reform Institute, 2022, **REPowerEU: will it be a new impulse for the long-needed energy policy reforms in Poland?**

<sup>50</sup> Poland@sea, June 2022, **Poland's FSRU floating LNG terminal capacity will be doubled**

<sup>51</sup> Government of Poland, May 2022, **Jacek Sasin na Światowym Forum Ekonomicznym w Davos: pandemia i wojna zmieniły postrzeganie świata**

<sup>52</sup> Government of Poland, April 2022, **Założenia do aktualizacji Polityki energetycznej Polski do 2040 r. z marca 2022 r.**

<sup>53</sup> Euractiv, August 2022, **EU's Baltic Sea countries agree offshore wind power capacity boost**

<sup>54</sup> Reuters, November 2018, **Poland expects first nuclear power plant to start in 2033**



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boilers fell from 40% to 23%.<sup>55</sup> On the other hand, a draft district heating strategy from May 2022 still planned the addition of over 5 GW of gas-fuelled generation for district heating.<sup>56</sup> Around 43% of households in Poland use district heating, which is primarily powered by coal (70%).<sup>57</sup>

The government has introduced short-term measures to shield households. These include a price cap on electricity for the first 2000 kWh consumed, and additional discounts for households who reduce consumption by at least 10% compared to the previous year. This policy incentivises consumers to reduce their consumption while making energy more affordable. VAT on gas and heating had already been reduced to 0% and 5% respectively on 1 February. The total cost of lowering energy prices was estimated at €10.6 billion in August 2022.<sup>58</sup> A one-off payment of 3,000 zloty (€625) to cover the high price of coal was introduced in the summer.<sup>59</sup>

Poland has taken important steps since the invasion of Ukraine to reduce its gas demand but must avoid the trap of prolonging its dependence on coal. Measures such as the energy cap incentivising reduced consumption, means-targeted renovation subsidies and facilitation of offshore and onshore wind deployment will have positive climate and social impact. However, reverse fuel-switching and investments in fossil gas infrastructure risk creating future lock-in. The difficulty of using gas as an intermediary transmission fuel in the journey from coal to renewables is an opportunity for Poland to upgrade its climate ambitions. It should take the opportunity to be ambitious and move directly from coal to secure, cheap, clean energy, using the revision of its 2040 energy strategy and new NECP in 2023 to plot an accelerated decarbonisation pathway. As well as setting targets, it must plan to simplify permitting procedures for renewables and connect them to the grid. Economic opportunities are arising from the transition, such as Daikin's plan to build a heat pump factory in Poland;<sup>60</sup> the government can ensure these materialise and help the Polish economy in the longer term.

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<sup>55</sup> Politico, October 2022, [Putin's war accelerates the EU's fossil fuel detox](#)

<sup>56</sup> Reform Institute, 2022, [REPowerEU: will it be a new impulse for the long-needed energy policy reforms in Poland?](#)

<sup>57</sup> Forum Energii, 2019, [Heating in Poland 2019](#)

<sup>58</sup> Reuters August 2022, [Curbing energy prices in Poland will cost 50 bln zlotys -PM](#)

<sup>59</sup> Reuters, July 2019, [Poland to give households one-off payment to offset rising coal prices](#)

<sup>60</sup> Reuters, July 2022, [Japan's Daikin to build heat pump factory in Poland -sources](#)





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Table 13. Poland: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Households (24%)	Subsidies for switch from coal to gas boilers or heat pumps*	Medium	Medium	Neutral	Medium
	Extended subsidies for insulation (Clean Air Plus)	Medium	High	Positive	High
	Price cap rewarding low energy users	Medium	Low	Negative	High
Industry (25%)	Proposed support for energy intensive industry	Low	Low	Negative	N/A
Commercial & public services (9%)	10% energy savings state administration	High	Low	Positive	N/A
	Tariff protection for priority services (hospitals and creches)	Low	Low	Negative	High
Electricity & heat generation (18%)	Prolongation of coal	Low	Medium	Negative	Low
	Large-scale renewable rollout	Medium	High	Positive	High
	Continued shift from coal to gas in district heating	Low	Low	Negative	Medium

\*As explained in the text above, in the first half of 2022 subsidy requests for heat pumps overtook those for fossil fuel boilers. The policy remains “medium” because it can still be used to subsidise fossil gas boilers.



## Spain

Table 14. Spain: rating at a glance

Measures addressing highest gas consuming sectors	Gas demand reduction in long term	Climate impact	Social fairness
In its highest gas use sectors of Industry and Electricity & heat generation Spain has responded primarily with measures that provide short-term relief, rather than real reductions in gas use.	Spain relies primarily on short-term measures that provide relief with few measures that will lead to long-term changes in gas use.	There is some positive climate impact, primarily through continued renewables expansion. Spain’s previously ambitious climate targets will also likely help keep the country on track. However, it must avoid lock-in to new gas sources and phase out fossil fuel subsidies.	Spain has focused on addressing the economic and social impacts of the energy crisis. The targeting of measures to especially support the most vulnerable groups, while maintaining price signals for decarbonisation, could be improved.

About 22%<sup>61</sup> of primary energy consumption in Spain comes from gas. Nearly all is imported, but only 8% of imports come from Russia (all of which is LNG) while the majority of imports comes from Algeria and the US. However, as international oil and gas prices rose, Spain’s high energy dependence, especially on oil, meant that consumers saw the prices for electricity, heating and transportation skyrocket. Already in 2021 Spain was among the countries with extremely high electricity bills and this has only worsened over the past year. The primary gas-use sectors in Spain are electricity and heat generation (42% of gas use) and industry (28%).

Given high electricity prices, the Spanish government together with Portugal, negotiated a price-setting system for electricity with other member states in autumn 2021, to cap the wholesale natural gas price in their domestic markets – the “Iberian exception”. The measure is estimated to reduce the cost of electricity bills to consumers by an average of 25%. However, a recent study by Esade Center for Economic Policy found that the gas price cap may actually lead to an increase in gas consumption, as well as effective leakage of the money

<sup>61</sup> Statista, June 2022, [Distribution of primary energy consumption in Spain in 2021, by fuel type](#)



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invested into the gas price cap to France in the form of cheaper gas-generated electricity.<sup>62</sup>

The government recently mandated energy saving measures for commercial and public services: regulating temperatures and lighting, and setting a requirement for energy efficiency inspections before the end of 2022. It shared information as part of an energy saving campaign.<sup>63</sup> However, some of these mandatory energy saving measures are opposed at the regional level, with some governments (notably Madrid) appealing to the Constitutional Court, refusing to enforce and even encouraging noncompliance.<sup>64</sup>

Spain has implemented a number of policies intended to support households and businesses: from direct vouchers for household energy bills to expanding aid programmes for self-consumption (onsite production and consumption of electricity) and renewables. The government has adopted a Royal Decree which will mobilise €16 billion:<sup>65</sup> €6 billion in the form of direct aid and tax rebates, and €10 billion in the form of new guarantees from the state-owned bank, Instituto de Crédito. Among a series of tax relief measures, the VAT on gas has been reduced from 21% to 5% from October until the end of 2022.<sup>66</sup> According to Prime Minister Pedro Sanchez, the implemented measures so far have reduced electricity and energy taxes by as much as 80%. Euractiv reports that from April 2022 until the end of the year, the Spanish government will have allocated more than €15 billion to deal with the energy crisis.<sup>67</sup>

Spain plans to generate 74% of its electricity from renewable sources by 2030 and is already one of Europe's largest wind energy producers. The third Vice-President and Minister of Ecological Transition, Teresa Ribera, announced support for renewables expansion by shortening permitting timelines for projects up to 75 MW for wind and 150 MW for solar PV, as well as modifying existing legislation to support deployment of floating solar PV, self-consumption, and electricity storage. Spain's NECP plans 6 GW additional renewables capacity annually up to 2030, a figure that would be increased under RePowerEU, and

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<sup>62</sup> Esade Center for Economic Policy, September 2022, [Estimando el efecto del tope al precio del gas](#)

<sup>63</sup> El País, August 2022, [Claves sobre el nuevo plan de ahorro energético: ¿a quién afecta? ¿qué medidas incluye?](#)

<sup>64</sup> Cinco Días, September 2022, [Ayuso recurrirá ante el Constitucional el decreto de ahorro energético del Gobierno](#)

<sup>65</sup> La Moncloa, March 2022, [The Government of Spain approves the National Response Plan for the consequences of the war in Ukraine](#)

<sup>66</sup> Euractiv, September 2022, [Spain to temporarily lower VAT on gas amid price hikes](#)

<sup>67</sup> Euractiv, June 2022, [Spain approves anti-crisis package targeting energy companies](#)



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anticipates significant gas demand reduction from its 2020 Hydrogen Roadmap and 2022 Biomethane/Biogas Roadmap. But in the past four years renewable installed capacity has only been about 14 GW, and there remains a risk of further challenges from potential social resistance to large renewables projects. It is critical that Spain consider measures that ensure benefits are left with the communities in which new renewables are installed.

Spain has revived a proposal abandoned in 2019, the MidCat pipeline,<sup>68</sup> to supply gas via the Pyrenees and France to western Europe. Advocates present this as a short-term measure to supply the central European network with re-gasified LNG, which will eventually be converted to supply green hydrogen. However, building a new fossil gas pipeline risks locking Europe into continued gas use. A possible alternative pipeline,<sup>69</sup> linking the Italian city of Livorno with an LNG terminal in Barcelona, would similarly do little to meet short-term demand needs, while risking lock-in to expensive LNG imports.

Spain has responded strongly to the energy crisis by trying to alleviate the impacts on households and businesses. However, measures to expand renewable energy and improve energy efficiency have been mediocre, with most of the response geared towards short-term relief and solutions. Although short-term relief is needed, the Spanish government must align these measures with a longer-term decarbonisation agenda and enable clean energy investment and structural reduction of energy demand. This is the only solution to structurally reduce the inflationary crisis in a future context of continued high LNG prices. Spain will need to do more both to meet its own targets as per its current NECP (as well as the revised NECP to be submitted in 2023) and to align with EU targets.

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<sup>68</sup> Euractiv, September 2022, [MidCat pipeline stand-off puts EU's energy solidarity to the test](#)

<sup>69</sup> Reuters, September 2022, [Analysis: Pyrenees pipeline puts EU energy divisions in stark relief](#)



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Table 15. Spain: Energy-related measures since February 2022 by sector, assessed according to gas reduction potential and social and climate impact

Gas-use sector (% of total gas use)	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social benefit
Households (11%)	Direct vouchers for energy bills	Low	Low	Negative	High
	VAT reduction on gas	Low	Low	Negative	Medium
Industry (28%)	Direct aid to energy intensive industry	Low	Low	Negative	N/A
Commercial & public services (6%)	Energy savings mandate	Medium	Medium	Positive	N/A
	Public campaign for energy savings	Medium	Low	Positive	Medium
	Energy efficiency inspection requirement	Medium	High	Positive	N/A
Electricity & heat generation (42%)	Gas price cap	Low	Low	Negative	Medium
	Support for self-consumption renewables	Medium	High	Positive	Medium
	Faster permitting for wind and solar PV	Medium	High	Positive	Medium
	Support for storage installations	Medium	High	Positive	Medium



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## RECOMMENDATIONS

1. **Think beyond the next winter:** The European Commission and EU member states should pivot plans and institutional capacities towards addressing the 2022–2025 delivery gap. Gas markets are not expected to relax for multiple years. Therefore, Europe needs to pick up speed on clean energy as soon as possible. It must also boost the supply chains, skills development, renovation rates and enabling infrastructure needed to meet long-term goals.
2. **Set clear targets for gas demand reduction and ensure monitoring:** The European Commission should provide clarity by setting targets for EU gas use by 2025, 2030 and 2050 and report annual progress to the European Parliament.
3. **Align ambition with REPowerEU:** EU institutions should align legislation currently under negotiation with the REPowerEU targets.
  - a. **Energy Efficiency Directive:** Set a binding sub-target for renewable heating and cooling to better ensure progress. Plan district heating and cooling locally to support reduction of gas demand. Explicitly exclude all fossil boilers from energy efficiency, and exclude all fossil fuel technology from energy savings accounting.
  - b. **Energy Performance of Buildings Directive:** Back Mandatory Energy Performance Standards (MEPSs) with a clear timeline, and heavily renovate least performing buildings in the short term. Set a mandatory target for a climate neutral building stock by 2050, and a phase-out date for fossil fuels in buildings. Set definitions for ‘zero-emissions buildings’ and ‘deep renovation’ that clearly exclude a role for gas.
  - c. **Renewable Energy Directive:** Set a more ambitious overall target (at least 45%), and binding targets for sectors. Exclude all low-carbon fuels, and streamline and improve permitting processes.
  - d. **Social Climate Fund:** Protect the right to clean and affordable energy. Support vulnerable households to make the necessary investments to decarbonise the transport and building sectors. Target SCF funds to the most vulnerable groups, including unemployed, low income, those in energy or mobility poverty, and the systematically disadvantaged, such as rural and racialised communities. Make compliance with air quality standards and phase-out of fossil fuel appliances a conditionality when



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- using public funds. Include strong social safeguards to direct revenues towards structural measures and support the most vulnerable in adopting cleaner alternatives.
- e. **Eco-design Directive:** Include binding efficiency requirements for heating and cooling.
4. **Protect the right to affordable and clean energy:** Member states should target measures towards citizens with the lowest ability to adjust their gas consumption. First, clean energy solutions should be made affordable and available to those most exposed to high gas prices as a matter of priority. Second, the Social Climate Fund and national support mechanisms should support vulnerable groups at increased risk of energy and mobility poverty and who do not have the means to switch to cleaner, fossil-free alternatives.
5. **Secure “good practice” policies across Europe:** Our analysis suggests that there is significant scope for member states to learn from each other’s policy design. This report highlights some good practice policies. The European Commission could provide the necessary guidelines and support infrastructure to ensure learning and monitoring of effectiveness.
- a. Member states increasingly recognise that **renewable energy deployment, energy efficiency, and shielding the most vulnerable citizens are key** to mapping a sustainable path out of the energy crisis. Best practices for efficient targeting and consideration of social fairness can be improved.
  - b. Extra attention should be paid to **avoid lock-in to new gas supplies**. The short-term need to secure new gas sources or help cover high energy bills should not lead to investments in infrastructure which will not be needed within 5–10 years, or result in further fossil fuel subsidies beyond the immediate next two winters.
  - c. Industry has been more responsive to the high gas price signal and has seen a greater share of demand reduction. But member states should **support industry decarbonisation** via a twofold approach. Firstly, allow the pressure of price signals to reach industry and set an incentive to reduce gas demand. Secondly, put measures in place to incentivise a switch towards long-term, structural energy efficiency and process improvements (for example, electrification of heat or improvements in material efficiency).



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# ANNEX

## Methodology

The methodology of the assessment was based on an application of a “gas reduction ladder” (see the next section of this annex). The ladder outlines policy categories in four key gas use sectors (households, industry, commercial & public services, electricity & heat generation) and their theoretical impact on short- and long-term gas reduction, climate goals, and the distribution of social benefits. The measures are categorised as having **High**, **Low** or **Medium** impact on short- and long-term gas reduction and on the degree of social benefit. Climate impact is categorized as either **Positive** or **Negative**. Percent shares of gas use in each industry sector given in the country tables is taken from E3G’s briefing on EU gas sector data based on Eurostat data from 2019, extracted in July 2022.<sup>70</sup>

### Climate impact

This assessment considers the climate alignment of measures taken to phase out gas use. As described in Chapter 2 in the section on LNG diversification, some measures may reduce gas (particularly Russian gas) use in the short term but will do little to ensure a transition towards a decarbonised economy. Diversifying gas sources, new LNG or pipeline infrastructure, or switching from gas to coal, oil or wood will not reduce the climate impact of electricity generation, heating homes, or industrial production. Similarly, artificially reducing gas prices may remove the price signal and decrease the incentive to reduce demand. Although some of these measures may be needed to secure energy supplies for the immediate term, they will not decarbonise our economy.

Conversely, some measures will not only reduce gas use in the medium to long term, but will also support the transition to an affordable, secure and climate neutral economy. These include incentives for immediate and structural energy efficiency renovations, massive expansion of renewable energy sources, and improving grid demand management. Countries are ranked more favourably if their response to the energy crisis considers climate targets and long-term energy transition, and implements measures with a climate positive impact (see the gas reduction ladder for a full list of measures and their potential climate impact).

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<sup>70</sup> E3G, July 2022, [EU gas sector: Data for decision makers](#)





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### Social fairness

The significantly high price of gas over the last years has focused attention on the extremely precarious position of many households as well as small- and medium-sized enterprises (SMEs). In 2019, over 30 million Europeans<sup>71</sup> were unable to adequately heat their homes. It is estimated that this number has significantly increased over the last two years – and could now be as high as 80 million households.<sup>72</sup> The high gas prices have also exacerbated an already growing cost-of-living crisis and are a key driver of global inflation and rising food shortages. As Europeans are increasingly struggling to pay their energy bills, measures to reduce gas use must also consider the most vulnerable households and most affected industries – to support communities, protect jobs and safeguard a functioning economy, as well as ensure political buy-in for the energy transition.

It is critical therefore that member states implement measures that not only reduce gas use, but also effectively support the most vulnerable. Sweeping measures, such as VAT reductions, broad tax credits or generalised renovation programmes can often result in regressive tax policy or fail to reach the most inefficient and worst performing buildings. Conversely, there are several measures that can both support households in reducing gas use and benefit those most impacted by high gas prices financially and in terms of health. These include: targeted energy efficiency retrofitting in low-income neighbourhoods; direct payments to help cover energy bills targeted to the most vulnerable communities; and fully covering the costs of installing efficient heat pump systems. Similarly, investment and rollout of new renewable energy sources as well as demand-side management, is a medium- to long-term investment in affordable energy systems.

We include health impacts as well as economic impacts in our rating of social fairness. For example, measures which reduce gas use by reverting to coal or wood burning might secure heating access but may do so at the cost of increasing air pollution and health impacts. This is especially the case for already vulnerable groups in society, who are disproportionately impacted by higher rates of pollution-related illness. The rating of social fairness of certain measures therefore also considers positive or negative health impacts.

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<sup>71</sup> Jacques Delors Institute, February 2021, **Europe needs a political strategy to end energy poverty**

<sup>72</sup> COST, November 2021, **80 million European households struggle to stay warm. Rising energy costs will make the problem worse**



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### **Final note on methodology**

Many of the measures assessed have either only recently been implemented or may even still be in the final stages of passage. This assessment is in part therefore based on the potential of these measures to reduce gas in the long term and positively contribute to climate and social inequality. The effectiveness of each policy will however depend significantly on the details of implementation, such as: the duration, scope, level of funding, and whether a measure is binding or voluntary. The colour categorization of **High**, **Low** or **Medium** is meant as a general guideline, with the caveat that the full impact will depend on the structure and implementation of the policy, which may only be fully assessed ex-post.

In the country assessments, qualitative assessment of the level of gas reduction for different measures is further described in the text. The gas reduction ladder is used as a high-level guiding framework for comparison purposes, while keeping in mind that the full impact of these policies cannot yet be conclusively determined.



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## Gas reduction ladder: priorities for gas reduction

Table 16 provides an overview of categories of policies or measures which could have been taken in response to the energy crisis. Their potential to reduce gas in the short term and the medium to long term, and their climate impact and degree of social fairness, are indicated.

Table 16. Gas reduction by sector and policy

Gas-use sector	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Households	Immediate household renovations & efficiency	High	High	Positive	Medium
	Energy saving measures	High	Low	Positive	High
	Structural renovation & efficiency	Medium	High	Positive	Medium
	Reverse fuel switching	High	High	Negative	Low
	Reducing gas prices	Low	Low	Negative	High
	Direct payments	Low	Low	N/A	High
	Public energy savings campaign	High	Low	Positive	Medium
Industry	Measures for energy efficiency improvements	High	High	Positive	N/A
	Measures for material efficiency improvements	High	High	Positive	N/A
	Contract swaps	High	Low	Positive	N/A
	Measures for electrification of gas use (low temp heat)	Low	High	Positive	N/A
	Measures for RE hydrogen on site	Low	High	Positive	N/A
	Prioritising production of critical goods	Low	High	Positive	N/A



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Gas-use sector	Policies	Short-term reduction	Mid/long-term reduction	Climate impact	Social fairness
Industry	Reverse fuel switching	High	High	Negative	N/A
	Direct state aid with conditionality	Low	High	Positive	N/A
	Direct state aid without conditionality	Low	Medium	Negative	N/A
Commercial & public services	Energy saving measures	High	Low	Positive	N/A
	Immediate renovations and efficiency upgrades	High	High	Positive	N/A
	Structural renovations and upgrades	Low	High	Positive	N/A
Electricity & heat generation	Large-scale renewables rollout	Medium	High	Positive	High
	Small-scale renewables rollout	High	High	Positive	High
	Battery and storage rollout	Low	High	Positive	High
	Reverse fuel switching	High	High	Negative	N/A

## Notes

### Incentives for immediate household renovations and efficiency measures

include draught-proofing; roof insulation; rooftop solar; replacing inefficient electrical appliances; small-scale insulation such as replacing windows; and (gas) boiler optimisation and flow temperature reduction.

**Incentives for structural renovation and efficiency** include structural insulation; heat pump rollout; smart meter rollout; and energy management system rollout.

**Public energy savings campaigns** are given only a ranking of “medium” for social fairness impact. Although they can be effective when it comes to raising awareness, without targeting (that is, a focus on high-energy users), they risk alienating those already living in energy poverty – individuals with limited or no



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option to reduce their consumption even further – without direct support. Furthermore, vulnerable groups are often synonymous with parts of the population that have low levels of trust in government and may not be receptive to such campaigns. Additionally, energy savings campaigns are given a short-term gas reduction impact of “high” as the IEA finds that a “well-designed” programme can have significant energy savings potential.<sup>73</sup>

**The N/A rating** is given where the measure does not result in direct impacts to social welfare of household consumers. Of course, industry is vital for social welfare, as are changes to the commercial and public buildings or to electricity and heat generation.

**Industry** includes a differentiation of types of direct state aid. This is to clarify that some types of conditional state aid, which are tied to emissions reductions, uptake of clean technology, or other energy saving improvements, can lead to reduction of both gas use and emissions. Direct state aid that is not conditional and directly or indirectly subsidises continued fossil fuel use is detrimental to both gas reduction and climate targets.

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<sup>73</sup> IEA, July 2022, **Empowering people to act: How awareness campaigns and behaviour campaigns can enable citizens to save energy during and beyond today's energy crisis**