

WHAT THE EU GREEN DEAL MEANS FOR EUROPEAN GAS SUPPLIERS CASE STUDY
NORWAY

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E3G (2021)

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BRIEFING PAPER August 2021

WHAT THE EU GREEN DEAL MEANS FOR EUROPEAN GAS SUPPLIERS CASE STUDY NORWAY

LISA FISCHER

The EU Green Deal sets out an ambitious framework for phasing out fossil fuels, notably fossil gas. The speed and scale of the potential transformation is enormous, and the bloc's suppliers need to develop strategies to adapt.

This briefing outlines why fossil fuel suppliers to the EU need to act now. It also examines the factors that will shape how Norway will likely be affected; as a supplier country that uniquely relies on the EU for 66-73% of its gas exports over the last five years.¹

European gas demand is set to decline

Strong government for gas in the last decade

Over the last decade, the challenges surrounding gas in the EU have changed fundamentally. EU gas demand peaked in 2010, then reached a low in 2014, and has been slowly climbing back to similar levels to 2010.²

¹ And 44% of oil exports, [Norwegian Petroleum data](#), July 2021

² Eurostat, [NRG_CB_Gas](#), July 2021



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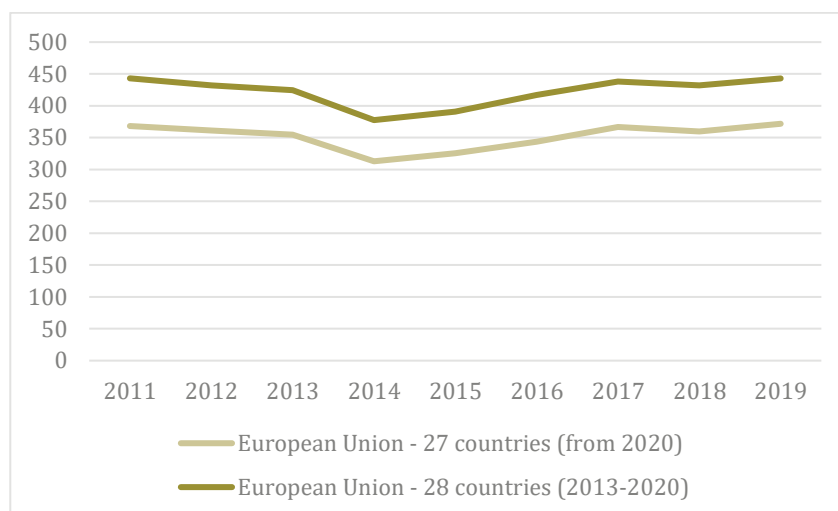


Figure 1 EU gas demand (mtoe), Source: Eurostat

On the one hand, the aftermath to the 2009 gas crisis, when supply from Russia via Ukraine was disrupted for two weeks,³ and the 2014 Ukraine crisis led to a focus among policy makers to improve energy security in the EU. In the first half of the last decade this focussed on increasing access to multiple supply sources through infrastructure expansion (new pipelines and liquified gas terminals).

On the other hand, climate targets, the increasing cost competitiveness of renewables and availability of other means to reduce import dependency (such as energy efficiency) have opened new avenues to increasing European energy security. In 2019, the European Commission recognised that *“Considering that future natural gas demand is estimated to significantly decrease in line with the Green Deal objectives, natural gas infrastructure no longer needs support [through EU regulation].”*⁴

Climate targets require a strongly declining role for fossil gas

Changes in the economy have led to a constant downward revision of expectations of EU gas consumption. While the regulation in the EU’s 2016 “Clean Energy Package” already represented a significant step towards a declining role for gas, expectations that a coal-to-gas switch would prop up gas demand remained.

However, subsequent modelling for the EU’s climate neutrality target in 2018 and the EU’s 2030 target in 2021 started to challenge this assumption.

³ European Commission Staff Working Document, **SEC (2009) 977**

⁴ European Commission Proposal for a Revised TEN-E regulation, **COM (2020) 824 final**

Expectations over gas demand declined due to stronger climate targets and falling prices of cleaner sources of energy. The EU's new target for a 55% greenhouse gas reduction by 2030 implies a further significant reduction in gas use. European Commission modelling shows that the EU's gross inland consumption of gas would drop by 28% compared to 2015.⁵ By 2050, this reduction would be almost 70%, with other scenarios (modelling climate neutrality by 2050) showing an even starker drop.⁶ All remaining natural gas will be used with carbon capture or as feedstock.

While EU domestic gas production is also falling, this rapid reduction in demand means that gas imports to the EU are still expected to fall by over 40% by 2030.⁷ As a result, Europe does not need further gas import capacity to enable security of supply, even in the case of extreme disruption scenarios.⁸

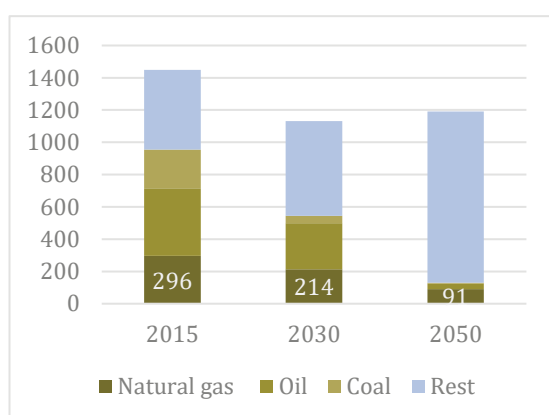


Figure 2 EU Energy Gross Inland Consumption (mtoe), Source: EU Climate Target Plan 2030 ALLBNK Scenario

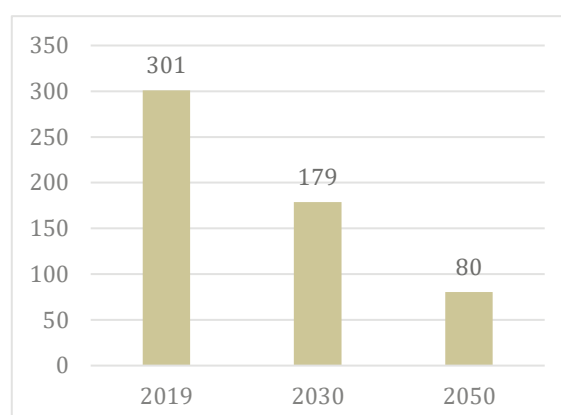


Figure 3 EU fossil gas imports (mtoe), Source: EU Climate Target Plan 2030 ALLBNK Scenario

The UK, another key trading partner for Norway, is heading in a similar direction. Its latest adopted carbon budgets mean that the share of fossil fuel products in final energy consumption is expected to fall from around 80% today to less than 20% in 2050. Natural gas use would be limited to CCS enabled technologies (e.g. production of hydrogen and combustion for electricity generation).⁹

⁵ And 36% for final energy consumption

⁶ The Commission's **climate neutrality scenarios** from 2018 see an even starker reduction of 83%-88% in natural gas consumption between 2015 and 2050 (TECH and LIFE scenarios).

⁷ Commission Staff Working Document Impact Assessment for Stepping Up Europe's 2030 Climate Ambition, **SWD (2-2-) 176 final**, using the ALLBNK scenario

⁸ Artelys (2020), **An updated analysis on gas supply security in the EU energy transition**

⁹ Department for Business, Energy and Industrial Strategy (2021), Impact Assessment for the sixth carbon budget, **BEIS012(F)-21-CG**



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This has sparked a debate over how to replace fossil gas consumption. Hydrogen is expected to ramp up significantly – but is only one tool in the toolbox (*see next section*). Projections over the future production and use of hydrogen vary greatly – the European Commission scenarios see hydrogen replacing gas to some extent, but still at significantly lower volumes to today’s gas consumption.

A key component of the EU’s hydrogen strategy is a focus on renewable electricity-based hydrogen in the long term, with ambitious ramping up of targets to 2030 and a focus on decarbonising existing hydrogen production initially¹⁰. A large share of this is expected to be produced in the European neighbourhood, for example North Africa and the Ukraine – but credible policies for supporting their renewables production commensurately are still missing.

The debate on what this means for existing gas infrastructure is ongoing. Regulators have signalled that they see no case for the development of a full hydrogen backbone, similar to existing gas infrastructure.¹¹

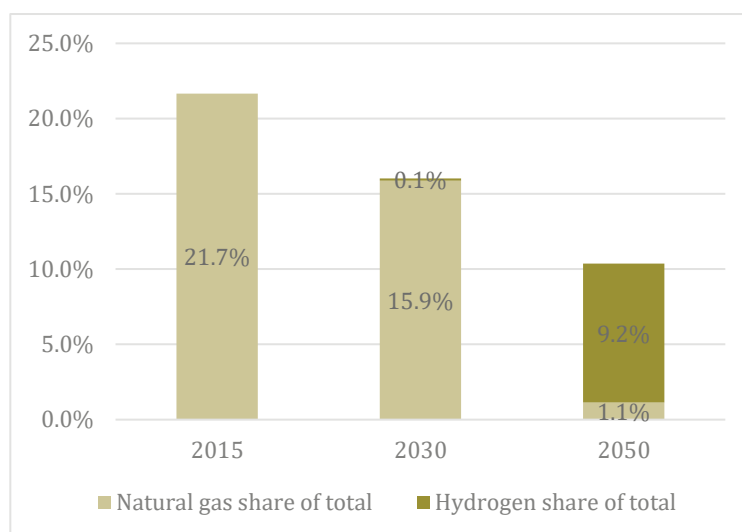


Figure 4 EU gas and hydrogen share of final energy demand,
Source: EU Climate Target Plan 2030 ALLBNK Scenario

From target to reality: Implementation of EU climate policies are likely to erode demand for fossil gas

Under the current legislature, the EU has enshrined both its 2050 and 2030 targets in law. It is also creating an independent scientific advisory board to continuously evaluate progress against those targets. However, this framework

¹⁰ European Commission, A Hydrogen Strategy for a climate-neutral Europe, **COM (2020) 301 final**

¹¹ ACER (2021), **Transporting Pure Hydrogen by Repurposing Existing Gas Infrastructure**



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does not guarantee that those targets will be met. In the end, policy implementation and the market will shape the reality.

Households and electricity are by far the largest consuming sectors of gas in the EU, together accounting for over 73% of the EU's gas consumption in 2017. Industrial end uses account for most of the remainder.¹² This section gives a brief stock take of current EU policies that will have an impact on these three main areas of demand for fossil gas.

The **buildings sector** is the backbone of the delivery of the EU's climate targets to 2030. Since mature solutions exist, this sector is expected to make faster reductions than the economy as a whole.

Current renovation rates are only around 1%,¹³ and overall heat pump sales are nowhere near the rates needed. But annual sales rates of heat pumps have increased by over 30% since 2015,¹⁴ indicating a potentially exponential growth trend.

To close this gap, the EU has published the Renovation Wave plan in 2020 and put together a set of implementation instruments. The proposed revision of the energy efficiency directive from July 2021 foresees an increase in renovation rates of 3% and introduces these as binding targets. Economic recovery efforts have the potential to boost trends for the electrification of heat, as indicated by an evaluation of 17 recovery plans.¹⁵ Efforts are under way to increase the share of renewable sources in buildings and in district heating and cooling systems. At the same time, several countries have already introduced limits to fossil fuel boilers or are contemplating bans.¹⁶

In the **power sector**, the EU has focussed most of last decade on eliminating coal. While great progress has been made, much more needs to be done. But several factors could contribute to marginalising the role of gas instead of introducing a coal-to-gas switch.

The current power generation mix in the EU has an average emissions intensity of 291g CO₂e/kwh, and only nine countries have an emissions intensity above 350g/kwh, the approximate best of a kind performance of a new build gas power

¹² CEPS (2019), [The future of gas in Europe: Review of recent studies on the future of gas](#)

¹³ European Commission (2019), [Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU](#)

¹⁴ [European Heat Pump Alliance data](#), July 2021

¹⁵ Green Recovery Tracker (2021), [Recovery investments and the European energy transition](#)

¹⁶ ClimateXChange (2021), [A review of heat decarbonisation policies in Europe](#); E3G (2021) [Closing the Gap to Climate Neutrality](#)



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plant without carbon capture.¹⁷ This means that in most places the climate benefits of a coal-to-gas switch are no longer obvious.

The EU's latest proposed renewables legislation targets 40% renewables in final energy consumption by 2030, compared to the current 20%.¹⁸ While significant system stability questions still need to be resolved on the way to a fully renewable power system, the integration of markets and the deployment of demand response solutions are both being used more frequently.¹⁹

Industry decarbonisation efforts have been sluggish so far. Industry consumption of natural gas currently occurs for processes at different temperatures and as feedstock. Low and medium temperature processes generally can be replaced with heat pumps or electric boilers. These account for just under half of current industrial gas consumption (EU-28).²⁰ The policy landscape is still patchy, with the core instrument being the EU's Emissions Trading System. Current discussions in the EU are considering a significant increase in ambition of this instrument, with additional proceeds being reinvested into accelerating decarbonisation but free allocations for parts of industry to continue. The other half, high temperature use and feedstock use, is likely to switch away from natural gas more slowly, as alternatives such as hydrogen are ramping up.

About half of all industrial gas use is in four EU countries (France, Germany, Poland and Italy).²¹ Those four countries will therefore determine to a large extent the future of industrial gas use in the EU.

Hydrogen production is another driver of gas use in industry. This hydrogen use is expected to shift from refinery and chemicals sectors today to steel and chemicals, but remain at stable levels overall (*Figure 5*). The EU's hydrogen strategy, published in 2020, targets existing hydrogen production as a key area to be substituted with renewable hydrogen. Newly proposed legislation would bring a binding target for 50% of hydrogen used in industry to be switched to renewable hydrogen.

¹⁷ European Environment Agency data, **IND-353-en**, 2021

¹⁸ Reuters, **EU unveils plan to increase renewables share in energy mix to 40% by 2030**, July 2021

¹⁹ For example in Italy: <https://carbontracker.org/new-gas-power-in-italy-could-waste-billions-and-miss-chance-to-cut-home-bills/>

²⁰ OIES (2019), **Decarbonisation and Industrial demand for gas in Europe**

²¹ Same as above



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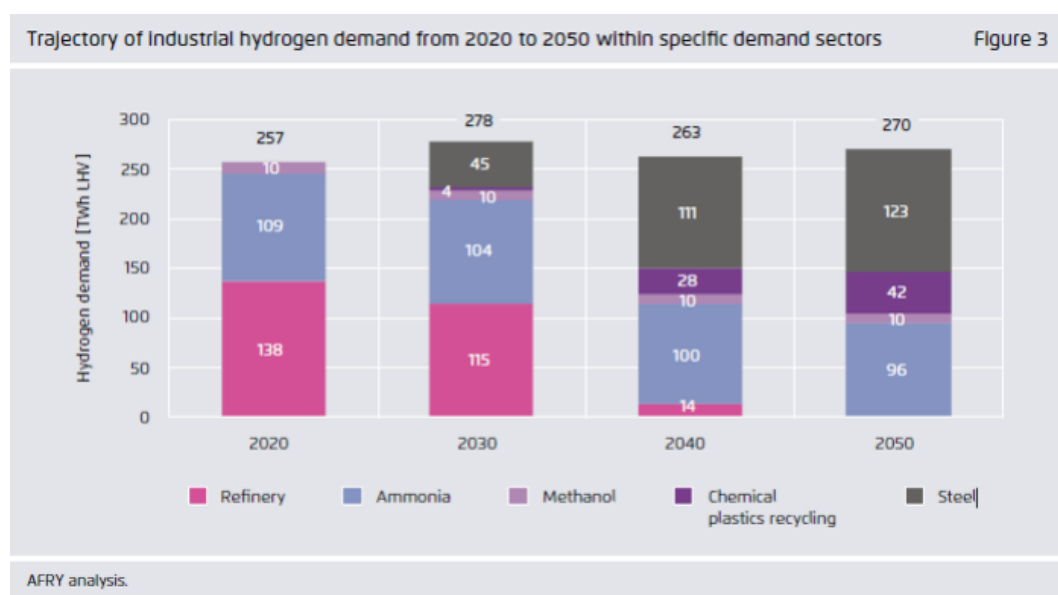


Figure 5 Source: Agora Energiewende (2021), *No Regret Hydrogen*

These changes build off a fast-paced shift in **the broader regulatory and policy landscape that is already under way:**

The EU is moving away from financing new gas infrastructure. Gas is excluded from the EU budget's Just Transition Fund, Recovery and Resilience Fund, Connecting Europe Facility and the Modernisation Fund. The European Investment Bank also committed to end lending to all fossil fuel projects including gas by 2022.²² Regulators are increasingly aware of the stranded asset risk from gas infrastructure, having withdrawn approval for pipelines (such as the MidCat pipeline²³) and are warning against stranded assets and overreliance on conversion to hydrogen.²⁴ The EU's sustainable finance taxonomy published earlier this year includes only very few uses of gas, with another proposal later in 2021 expected to set out the eligibility of gas in detail.

The process to facilitate the development of cross-border infrastructure is also increasingly shifting away from fossil fuels. The Commission's proposed "TEN-E regulation" that has previously lent political support to the development of pipelines such as the Baltic Pipe now explicitly excludes fossil fuel infrastructure.

The key challenge for the EU has been – and still is – to reconcile this domestic transition with a whole web of relationships developed with its suppliers and

²² EIB (2019), [EU Bank launches ambitious new climate strategy and Energy Lending Policy \(eib.org\)](https://www.eib.org/en/press/2019/04/eu-bank-launches-ambitious-new-climate-strategy-and-energy-lending-policy)

²³ Global Energy Monitor Wiki, [Mid-Catalonia Pipeline](https://www.gem1.org/en/projects/mid-catalonia-pipeline/)

²⁴ ACER (2021), [Transporting Pure Hydrogen by Repurposing Existing Gas Infrastructure](https://www.acer.europa.eu/press/2021/04/transporting-pure-hydrogen-by-repurposing-existing-gas-infrastructure), ACER (2019), [The Bridge Beyond 2025](https://www.acer.europa.eu/press/2019/04/the-bridge-beyond-2025)



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neighbouring transit countries. Far from having found a solution, the EU has now at least recognised the need to overhaul its approach. The EU's foreign affairs ministers concluded in early 2021 that *".. the transition [...] could – in the medium-term – have adverse impacts on some, notably those dependent on the export of fossil fuels, including in the EU's broader neighbourhood. EU and Member State foreign policy and external action will need to anticipate such geopolitical and security challenges, by promoting as well as supporting the development of socially just economic and energy diversification plans, and providing, where necessary, targeted support to the most affected in order to support the transformation of their economies."*

Factors that shape potential impacts on Norway as a key supplier

As the EU's imports of gas decline over time, a smaller market will be more strongly contested. While some infrastructure projects are still underway (such as the Baltic Pipe), changes may come faster than expected. 60% of the EU's long-term gas import contracts are due to run out before 2028.²⁵ When thinking about the role and position of Norway, there are three main considerations – price, climate impact and energy security:

- **Price:** The cost of gas production in Norway is one of the highest in Europe, estimated at \$1.04/MMBtu compared to Gazprom's expenditure of \$0.4/MMBtu.²⁶ This has been reflected in EU import prices in the past, with Norwegian imports only becoming more competitive since 2019.²⁷ Whether this is an economically sustainable strategy for Norway remains to be seen and will be critical in whether Norway can rely on price as a competitive edge in a shrinking market.
- **Relative climate impact:** The EU is actively seeking to minimise its extraterritorial impacts from gas imports as it ramps down imports simultaneously. Performance in terms of methane emissions will play a key role.²⁸ This is an area where Norway may have an advantage over other sources. The other dimension of this relates to the future ability of supplying hydrogen to Europe. The EU has a clear preference for renewable based hydrogen, which also has a cost advantage in the long run. Norway, with its access to carbon capture storage sites and oil and gas resources may favour a different strategy, but in that context bears

²⁵ ACER [presentation](#) at the Madrid Forum (October 2020)

²⁶ Gas Processing News (2017), [Norway's gas expansions vie with Russia for EU demand](#)

²⁷ European Commission (2020), [Quarterly report on European Gas Market Vol 13 Issue 2](#), Figure 34

²⁸ European Commission, [EU Methane Strategy](#) (2020)



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the risk of competition from lower emissions, lower cost hydrogen providers in the long term.

- **Energy security:** A driving factor of EU decision making will still be energy security and limiting supply dependence on a small number of countries. Norway has always been perceived as a reliable supplier of gas. This may not change, but the overall volumes of imports are likely to decline which could change the negotiation power of the EU. Meanwhile, other energy security concerns are taking a more central position for the EU. Foreign ministers remarked in January 2021 that *“The Council recognises that the nature of energy security is evolving from concerns about access to fossil fuels at affordable prices sourced on volatile markets, towards the need to secure access to the critical raw materials and technologies necessary for the energy transition whilst avoiding new dependencies, as well as ensuring resilient supply chains, cybersecurity and the protection and climate adaptation of all, and in particular, ‘critical’ infrastructure”*.