

BRIEFING May 2022

SUPPORTING FOSSIL HYDROGEN WOULD KEEP THE EU HOOKED ON GAS IMPORTS & WRECK THE EUROPEAN GREEN DEAL

SUMMARY

- > New analysis from Global Witness shows that proposals for the EU to support fossil hydrogen, a so-called ‘low carbon’ fuel, would undermine the European Commission’s plans for ending Russian gas imports well before 2030.
- > Hydrogen4EU, a lobby group including Shell, BP, Exxon and Total, wants the EU to subsidise a huge expansion of fossil hydrogen. Our analysis reveals this would require Europe to import even more fossil gas than it does today – from 274 billion cubic metres in 2021, to 303 billion cubic metres by 2030.
- > The harms caused by Europe’s dependency on fossil gas imports include exposure to price shocks, and EU payments for Russian gas supporting Putin’s military spending. Despite this, the European Parliament’s lead MEP for green energy is pushing to boost fossil hydrogen by including it in the Renewable Energy Directive.
- > By ramping up energy efficiency and 100% renewables, the EU could end fossil gas imports from Russia within four years and meet its Green Deal climate targets by 2040.
- > EU decision-makers should not provide policy support for fossil hydrogen and reject calls to include ‘low carbon’ fossil-based fuels in the Renewable Energy Directive, as well as in the reform of the Gas Regulation and Gas Directive.

The European Green Dispute – renewable energy vs ‘low carbon’ fuels

By approving the European Green Deal in January 2020, the EU committed to becoming the world’s first carbon-neutral continent by 2050. The EU’s plans involve rolling out a set of climate and energy policies, including to boost the production and use of renewable energy in Europe.

While the Green Deal’s overarching framework has been agreed, crucial decisions remain that will determine which pathways Europe will take towards a carbon-free energy system.

These include whether the EU will provide regulatory and financial support for so-called ‘low carbon’ fuels, which are commonly produced with non-renewable energy sources, or pursue a 100% renewables pathway to climate neutrality.

Gas industry lobbyists are pushing for ‘low carbon’ fuels to play a prominent role in the EU’s climate plans.¹ These include fossil hydrogen, which is made from fossil gas and otherwise known as ‘blue hydrogen’.²

EU policymakers highlight energy independence as a major benefit of the European Green Deal – that by switching to locally produced energy such as wind and solar, Europe will end its reliance on fossil fuel imports.³

Russia’s horrifying invasion of Ukraine, financed to a large extent by the revenues generated from selling oil and gas to Europe, has intensified calls to end the EU’s dependence on fossil fuel imports.

As Peter Liese MEP, a spokesperson for the European Parliament’s largest group, the European People’s Party (EPP), said: “it is imperative to accelerate the transition to renewable energy and ensure energy efficiency. The Green Deal is the solution, not the problem.”⁴

Yet analysis by Global Witness, presented below, shows that EU policy support for ‘low carbon’ fuels such as fossil hydrogen not only risks derailing progress towards its own climate goals, but also maintaining Europe’s dependence on imports of fossil gas.

The harms of gas import dependency

Currently, the EU imports 90% of its gas needs, with Russian supply accounting for almost 40% of its total gas consumption in 2021.⁵

Major international crises have brought the harms of Europe’s reliance on gas imports into sharp relief. Russia’s unconscionable war of aggression against Ukraine has highlighted the geopolitical risks created by Europe’s dependence on Russian gas. To a large extent, the country’s ability to wage war in Ukraine and undermine global stability comes from revenues generated by exporting oil and gas to Europe.⁶

Two-thirds of Russia’s gas exports went to Europe in 2020,⁷ and over a third of the country’s federal budget reportedly came from oil and gas sales in 2021.⁸ According to one industry expert, Russia was earning €600 million per day from gas sales to Europe in early March 2022,⁹ a source of income that helped Putin’s regime to amass a war chest of more than US\$640 billion.¹⁰

As such, Europe’s payments for a fuel that keeps its homes warm are supporting a brutal incursion across its eastern border by a major nuclear power.

The harms of gas import dependency have also been exposed by the ongoing energy price crisis that began in 2021, when wholesale fossil gas prices more than tripled.¹¹ By the end of the year, prices had reached all-time highs in Europe and Asia.¹²

The price hike was driven by global gas markets that are unpredictable, inherently volatile and beyond Europe’s control.¹³ Overly dependent on external trade for gas, Europe was heavily exposed to the social and economic damage caused by surging prices.

Even before the price shock, an estimated 50 million people were living in energy poverty in the EU.¹⁴ With soaring gas prices translating into higher energy bills, and high prices set to stay well into 2023,¹⁵ the awful consequences will be more European households struggling to stay warm and fed.

Industry’s ambitions for expanding fossil hydrogen in Europe would mean even higher gas imports than today

Hydrogen4EU is a pro-hydrogen lobby group funded by the oil and gas industry, including Shell, BP, Exxon and Total. It is promoting a ‘net zero’ energy scenario for delivering the European Green Deal that shows the EU, UK and Norway

producing 28 million tonnes of fossil hydrogen per year by 2030.¹⁶

As fossil hydrogen is made from fossil gas, and the production process is relatively inefficient,¹⁷ large amounts of fossil gas – an estimated 154 billion cubic metres (bcm) – would be needed to produce this amount of hydrogen.¹⁸

After including demand for fossil gas from other sectors, such as power generation and heating for homes, Hydrogen4EU estimates that overall demand for gas in Europe would be around 494 bcm in 2030.¹⁹

According to Rystad Energy’s projection of current market trends, domestic production of fossil gas in Europe is expected to be 191 bcm in 2030.²⁰ If 154 bcm of fossil gas were being used to produce fossil hydrogen in 2030, as per Hydrogen4EU’s energy scenario, this leaves a shortfall of 303 bcm that would need to be met through imports.

This 303 bcm shortfall is greater than the 274 bcm of fossil gas that Europe imported in 2021.²¹

In other words, producing the large volumes of fossil hydrogen promoted by Hydrogen4EU, and doing so with the help of EU policy support, would maintain or even increase Europe’s dependence on fossil gas imports.

Hydrogen4EU scenario: Europe’s fossil gas supply and demand in 2030

	Billion cubic metres (bcm)
Demand for producing fossil hydrogen	154
Demand in other sectors	340
Total demand for fossil gas	494
Domestic European production	191
Shortfall to be covered by imports of fossil gas	303

Source: Rystad Gas Market Cube, Hydrogen4EU

By 2050, Hydrogen4EU sees production of fossil hydrogen in Europe rising to 43 million tonnes per year.²² This would require an estimated 237 bcm of fossil gas to produce, plus a further 322 bcm needed for gas demand in other sectors, according to Hydrogen4EU’s scenario.²³

Domestic gas production in Europe is projected to be 72 bcm in 2050.²⁴ This leaves a supply shortfall of 487 bcm – almost 80% higher than the current 274 bcm of fossil gas imported by Europe.²⁵ In this scenario, Europe would remain heavily dependent on fossil gas imports long past 2050.

‘Low carbon’ fuels such as fossil hydrogen should not be included in the Renewable Energy Directive

The revision of the Renewable Energy Directive (RED) is a central pillar of the European Green Deal. First adopted in 2009, it aims to promote the production and use of renewable energy in the EU, such as wind and solar.

EU decision-makers are currently preparing to make substantial changes to RED. The MEP Markus Pieper, who leads the European Parliament’s policies on renewable energy, is calling for ‘low carbon’ fuels to be included in the directive.²⁶

‘Low carbon’ fuels have a lower carbon content than oil, gas or coal, but are commonly made from non-renewable sources of energy such as fossil gas or nuclear.²⁷

One ‘low carbon’ fuel above all is being heavily promoted by fossil fuel companies. This is fossil hydrogen, which is also known as ‘blue hydrogen’.

Oil and gas companies portray fossil hydrogen as a climate friendly replacement for fossil fuels, as it emits no greenhouse gases at the point of use.

But this only tells part of the story, as fossil hydrogen is made from fossil gas, which releases unacceptably high climate heating emissions

during its production, even if ‘carbon capture’ equipment is used to curb some of these emissions.²⁸

Even if all the 43 million tonnes of fossil hydrogen foreseen by Hydrogen4EU in 2050 complied with the EU’s emissions standard for hydrogen, it would still release up to 129 million tonnes of greenhouse gasses per year in Europe.²⁹

This matches current emissions from Belgium and Portugal’s energy use combined.³⁰ As such, fossil hydrogen should not be considered ‘low carbon’.

If adopted, the amendments to RED proposed by Markus Pieper MEP would provide a major boost for existing and prospective producers of fossil hydrogen, which are largely made up of oil and gas companies.

The proposed revision of RED would oblige Member States to ensure that their transport and heavy industry sectors meet targets for switching away from fossil fuels to renewable hydrogen.

However, the MEP Marcus Pieper’s amendments would allow fossil hydrogen to count towards these sectoral targets, and thereby provide a strong incentive for expanding its production in Europe.³¹

Other proposed amendments to the directive include creating an EU-wide system for giving ‘low carbon’ fuels a ‘green’ label.³²

The proposed revision of RED also includes a target to increase the share of renewables, such as wind and solar, in the EU’s overall energy mix. The European Commission is proposing the target should be a 40% share for renewables by 2030.

Since Russia’s invasion of Ukraine, however, the EPP’s energy lead Markus Pieper has called for a higher renewables target of 45%, in order to help reduce the EU’s dependence on Russian gas imports.³³

Yet including ‘low carbon’ fuels in RED would bolster demand for fossil gas and risk undermining the EU’s goal of reducing Russian imports.

On its own, the proposal for including ‘low carbon’ fuels in RED would not lead to the colossal volumes of fossil hydrogen envisioned by Hydrogen4EU. However, it would still be a major boost for existing and prospective producers of the fuel.

The proposed amendments would significantly incentivise the production of fossil hydrogen,³⁴ provide greater certainty for investors in the industry,³⁵ enhance the competitiveness of fossil-based fuels by labelling them ‘green’,³⁶ and potentially open the door to further state support for fossil hydrogen.³⁷

Moreover, including ‘low carbon’ fuels in RED is just one among many different proposals from EU lawmakers to provide regulatory and financial support for fossil hydrogen.³⁸ Cumulatively, these would incentivise a substantial expansion of fossil hydrogen production in Europe and risk maintaining its dependence on imports of fossil gas.

For these reasons, including ‘low carbon’ fuels in RED would undermine the EU’s progress towards its Green Deal objectives, and divert resources from developing renewable sources of energy which urgently need scaling up to decarbonise Europe’s economy.

‘Low carbon’ fuels should not be supported in the Gas Package

In December 2021, the European Commission published a set of legislative proposals to change the rules that govern the EU’s gas market, which is referred to as the Gas Package.

One of its central aims is to support the development of hydrogen infrastructure such as pipelines and storage facilities, as well as increasing the supply of hydrogen in Europe.³⁹

If carefully targeted towards the right sectors, policy support for renewable hydrogen, which is made from renewable electricity and virtually carbon free, would bring substantial climate benefits.

However, the Gas Package proposals make no distinction between different types of hydrogen, and therefore would provide support for both fossil-based and renewable hydrogen.⁴⁰

The proposed measures include a 75% to 100% discount on the fees paid by hydrogen suppliers to access pipelines, and allowing energy companies to charge gas-using households and businesses for the cost of building hydrogen infrastructure, even if they never use hydrogen.⁴¹

These are two among several more elements of the proposed Gas Package that would incentivise the production of fossil hydrogen in Europe, and thereby risk reinforcing the EU's dependency on gas imports.

As such, the Gas Package should exclude fossil hydrogen and support only renewable hydrogen in sectors that are hard to decarbonise with renewable electricity.

A sustainable alternative is viable and eliminates gas imports by 2030

An alternative energy scenario for Europe, produced by civil society groups, industry experts and academics, shows that the EU is able to eliminate Russian gas imports by 2025 and meet its Green Deal targets as early as 2040.

Developed by Climate Action Network Europe and the European Environmental Bureau, the Paris Agreement Compatible (PAC) model presents an ambitious Europe-wide energy scenario that is aligned with limiting global heating to 1.5°C, and uses only proven, market-ready technologies.⁴²

Along with accelerating energy efficiency gains and the electrification of sectors such as home heating and transport, a key element of the PAC

scenario involves a swift ramping up of domestic renewable energy use, in particular wind and solar, for the production of renewable electricity.

This leads to renewables covering 50% of Europe's energy consumption in 2030, and 100% by 2040.

Hydrogen still plays a role in the PAC scenario, but with the key difference of being made from renewable electricity rather than fossil gas, and thereby virtually carbon free.⁴³

The PAC scenario shows Europe's use of fossil gas dropping by 150 bcm from 2021 to 2025. This is almost equal to the 155 bcm of Russian gas imported into Europe in 2021. As such, if it were implemented immediately, the PAC scenario could virtually eliminate Russian gas imports within four years.⁴⁴

More gas from other countries is not the answer

In March 2022, the European Commission announced a strategy to eliminate EU imports of Russian well before 2030. This contains a much-needed emphasis on accelerating the transition away from fossil gas, including by boosting the deployment of renewable energy and ramping up the installation of heat pumps and the insulation of buildings.⁴⁵

However, the Commission is also proposing to reduce dependency on Russian gas imports in part by replacing them with gas supply from other countries, which raises the risk of spurring new investments in fossil gas infrastructure.

This would include the development of new gas extraction sites, which the International Energy Agency's 'net zero' scenario shows is incompatible with limiting global heating to 1.5°C.⁴⁶

As gas infrastructure has a lifespan of 30 to 80 years,⁴⁷ new investments would lock in gas dependency for decades to come and push the world closer to climate disaster.

While turning to alternative gas exporters may be a necessary short-term response to Russia's attack on Ukraine, this must not be used to justify new gas infrastructure investments. Instead, it should be a temporary measure that ends once renewables and energy efficiency are deployed at greater scale.

regulatory and financial support for fossil-based fuels including fossil hydrogen.

Conclusion and recommendations

From Angola to Myanmar to Libya, oil and gas revenues have long fuelled violent conflicts that too often receive little public attention in Europe. Now the horrifying invasion of Ukraine has brought fossil-fuelled warfare to the EU's doorstep and forced its political leaders to consider radical action.

Emergency measures to reduce Russian gas imports must be matched by a massive scaling up of energy efficiency, renewables and fossil-free heating to cut Europe's gas addiction, and with it household gas bills.

Yet the large-scale production of fossil hydrogen advocated by oil and gas interests would carry on pulling large-scale gas imports into Europe, along with all the social, economic and geopolitical risks this brings.

Instead of bowing to industry pressure for subsidising 'low carbon' fuels, the EU should focus on implementing a rapid and managed shift from fossil gas to genuinely sustainable sources of energy. To help achieve this goal:

- > **EU policymakers** should not provide policy support for fossil hydrogen, including by rejecting calls to include 'low carbon' fuels in the Renewable Energy Directive and Gas Package.
- > **EU policymakers** should set a target for renewables to meet at least 50% of Europe's energy demand by 2030 in the Renewable Energy Directive.
- > **Oil and gas companies** should phase out all oil and gas extraction, in line with limiting global heating to 1.5°C, and stop lobbying for

ENDNOTES

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