

Europe Gas Tracker 2025: Hydrogen edition

Key takeaways

- A sprawling hydrogen network is planned across Europe, including twelve projects that would expand or convert liquified natural gas (LNG) terminals to import hydrogen derivatives, 50,165 kilometers (km) of hydrogen gas pipelines, and 44.6 gigawatts (GW) in gas-fired power capacity proposed to burn hydrogen, per a new, comprehensive survey of European hydrogen infrastructure conducted by Global Energy Monitor (GEM). A hydrogen network of this scale, with power production as a major end use, is impractical and unrealistic as a decarbonization strategy.
- Europe's hydrogen plans follow the rapid LNG infrastructure growth set off by Europe's gas crisis, which led Europe's import capacity to increase by 31% since February 2022. Five projects came online this year, amounting to 28.7 billion cubic meters per year (bcm/y) in new LNG import capacity, but the pace of new proposals has nearly ground to a halt with just one new import project mooted in 2024.
- The proposed system of hydrogen-capable pipelines is over 40% longer than what GEM had recorded in the March 2024 Europe Gas Tracker report, and it is equivalent to two-fifths the length of the existing European gas transmission pipeline network.
- Germany has among the most hydrogen projects in planning across each of the three types of infrastructure, with one-half of the import projects, one-fifth of

the pipeline length, and almost one-third of hydrogen-burning power capacity in development in GEM's dataset.

- Many hydrogen projects lack core details, such as start years and blending percentages, indicative of their tentative nature and the risk that they could lock in fossil fuel consumption if they move forward without credible plans to use green hydrogen. For instance, among twelve hydrogen derivative import terminals just three have defined capacities and five have set start years.
- Europe's hydrogen infrastructure plans are still relatively immature, and only a fraction of these projects may ultimately materialize. No hydrogen derivative import projects have begun construction or taken final investment decisions (FIDs) indicating they will move forward, and just one hydrogen gas pipeline is currently being built. Among hydrogen power proposals, several pilot projects have begun operating with small amounts of hydrogen, but almost three-quarters of all capacity is still in the earliest announced phase. The vast majority of power projects have also not secured financing or contracts for green hydrogen supplies.

In the wake of Europe's rush to build LNG import terminals, sparked by Russia's invasion of Ukraine, a new infrastructure buildout is taking shape. A network of hydrogen-capable infrastructure including terminals, pipelines, and power plants is being developed with support from European governments. Hydrogen produced by renewable energy, referred to as green hydrogen, could be an important decarbonization tool in certain applications, such as industrial processes where fossil-based hydrogen is used today. However, a hydrogen network of this scale, with power production as a major end use, is a flawed decarbonization strategy. Hydrogen is inefficiently transported via terminals and pipelines, and it is inefficient and expensive as a fuel for baseload power generation. The elements of Europe's hydrogen plans that build on its methane gas network appear, at best, out of touch with the science and economics of hydrogen, and, at worst, like an attempt by the oil and gas industry to extend the lifetime of Europe's dependency on gas.

It is incumbent on Europe's governments to prioritize policy support and investments for green hydrogen projects in sectors where hydrogen is the best or only decarbonization solution, and to ensure that gas infrastructure operators and project promoters have concrete, realistic plans to transition from gas to green hydrogen. At present, European Union (EU) policy is not targeted enough to ensure that limited green hydrogen resources are used effectively.

For the first time, Global Energy Monitor (GEM) offers one of the most comprehensive overviews of the intersection between the proposed hydrogen network and existing European gas infrastructure. GEM's data include 1) import terminals for hydrogen derivatives (i.e., hydrogen, ammonia, and "synthetic LNG"¹) associated with existing LNG projects, 2) hydrogen gas pipelines, and 3) hydrogen-burning proposals at gas-fired power plants in development. GEM finds that the majority of these projects are still in early stages and have not advanced to construction or other key milestones. Crucially, planning is [far behind](#) for renewable hydrogen production projects that would supply the hydrogen network, according to the International Energy Agency (IEA). The hydrogen hype could well prove to be a bubble.

Meanwhile, as of 2024, the buildout of European LNG infrastructure appeared to be slowing. Several major projects came online last year, but the pace of new proposals has nearly ground to a halt. As European gas demand [begins to fall](#), these projects are unnecessary and risk wasting public and private investment. Transmission projects originally proposed for methane gas, only to be reenvisioned by their developers for hydrogen gas, indicate the oil and gas industry's response to shifting winds.

This briefing provides an overview of GEM's 2025 Europe Gas Tracker data with a focus on hydrogen. These data reveal a hydrogen network that is still early in development, built on shaky foundations, and unlikely to decarbonize Europe's economies as its developers promise.

¹ Synthetic LNG, called eLNG and other names, refers to LNG synthesized from hydrogen and carbon (presumably from low-carbon sources) rather than extracted from gas fields.

The Europe Gas Tracker captures a wide slice of the hydrogen network

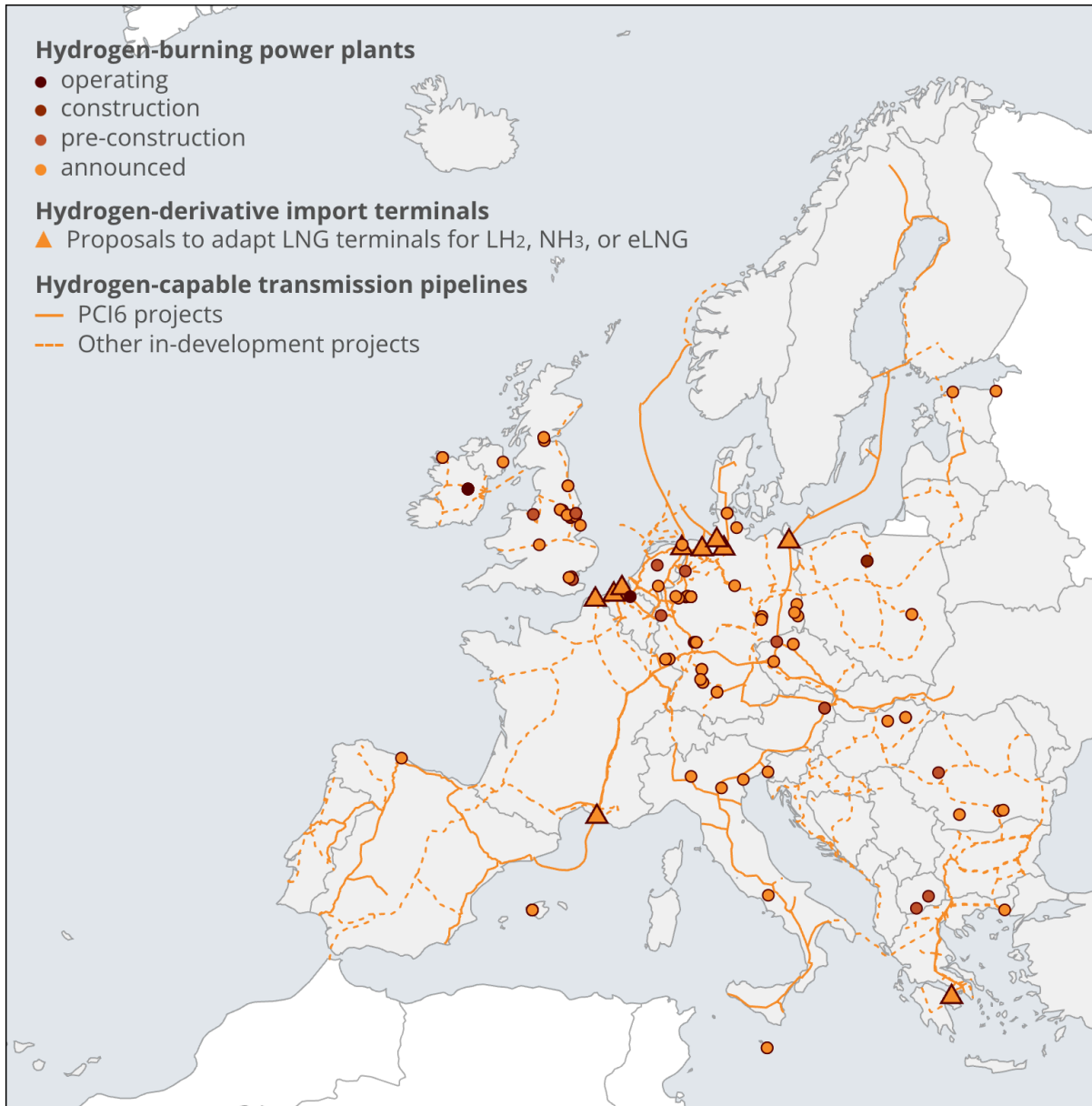
The January 2025 version of GEM's [Europe Gas Tracker](#) offers one of the most comprehensive surveys of European hydrogen infrastructure being developed alongside the region's methane gas network. The database includes the following types of projects, also shown in Figure 1:

- Twelve projects to import hydrogen derivatives, including liquefied hydrogen (LH₂), ammonia (NH₃), and synthetic LNG (eLNG), all associated with LNG terminals
- 323 new and retrofitted hydrogen-capable gas transmission pipeline projects totaling 50,165 km
- 96 gas-fired power projects with 44.6 gigawatts (GW) capacity for hydrogen-burning, associated with in-development gas plants²

² In this initial hydrogen survey, GEM did not research import terminals for hydrogen derivatives unaffiliated with existing LNG projects, nor comprehensively research hydrogen-burning proposals at already-operating gas-fired power plants.

Europe's hydrogen buildout risks prolonging gas dependence

In-development infrastructure related to Europe's hydrogen buildout, including pipelines, import terminals, and power plants



Source: Europe Gas Tracker, January 2025 release, Global Energy Monitor



Figure 1

Hydrogen terminals, pipelines, and power plants would build on Europe's existing gas network

Major European LNG import projects plan for a hydrogen future

Some of the major LNG import projects in Europe have begun planning to add or retrofit infrastructure to import hydrogen derivatives, including liquefied hydrogen (LH₂), ammonia (NH₃), and synthetic LNG (eLNG). Import projects for hydrogen derivatives are planned for long-operating facilities, such as Belgium's [Zeebrugge LNG Terminal](#), which envisions becoming the "Zeebrugge Multi-Molecule Hub," as well as at new projects arising out of Europe's gas crisis. Such projects include [Brunsbüttel FSRU](#) in Germany, which plans to import ammonia as early as 2026 and ultimately develop a facility to crack ammonia into hydrogen.

There are twelve hydrogen derivative import projects in GEM's database, shown in Table 1 (see [GEM.wiki](#) for more project details).³ With six proposals, Germany is planning the most hydrogen derivative projects associated with LNG terminals, followed by France and the Netherlands, with two each. In most cases, details are sparse, with minimal information available on capacities, start years, and even the specific fuel types.⁴ Just three terminals have defined capacities, and five have set start years. Two-thirds of these hydrogen projects are actively in development, and the remaining third, at the bottom of Table 1, have simply stated that they may retrofit LNG facilities for hydrogen derivatives at some point in the future, with no definite plans in place on how or when they will proceed. Missing details around hydrogen derivative import projects are indicative of their tentative nature and the risk that they could lock in fossil fuel consumption if they move forward without credible plans to source hydrogen derivatives produced from renewable energy.

³ A hydrogen derivative import project was considered to be associated with an LNG terminal, and included in GEM's data, if the sponsor makes a clear connection between the projects, or otherwise if the same sponsor is planning them at the same location.

⁴ For simplicity, where a project suggests it may import "hydrogen or other derivatives" without more details, it is recorded as LH₂.

The most common hydrogen derivative in the list is ammonia, with seven projects planning to import it. Compared to LH₂, ammonia is [easier to liquefy](#), has a higher energy density, and has a more established import and export industry. However, shipping ammonia to be cracked into hydrogen comes with its own challenges: ammonia is highly toxic, and the hydrogen cracking process is energy-intensive, [reducing](#) the fuel's round-trip energy efficiency to 30–40%. And while green ammonia is more cost-effectively shipped than LH₂, it is still [expensive](#) compared to fossil-based ammonia or direct electrification.

Hydrogen derivative import projects associated with LNG terminals

Hydrogen derivative import projects actively in development				
Associated LNG terminal (& status)	Country	Fuel	Fuel import capacity (mtpa)	Start year
Zeebrugge LNG Terminal (operating)	Belgium	LH ₂ , NH ₃	Unknown	Unknown
Dunkirk LNG Terminal (operating)	France	NH ₃	Unknown	Unknown
Fos Tonkin LNG Terminal (operating)	France	NH ₃	0.2	2029
Brunsbüttel FSRU (operating)	Germany	NH ₃	2.3	2026*
Lubmin FSRU (retired)	Germany	NH ₃	Unknown	2026
Wilhelmshaven FSRU (operating)	Germany	NH ₃	2.6	2030
Wilhelmshaven TES LNG Terminal (proposed)	Germany	eLNG	Unknown	2025
Eemshaven FSRU (operating)	Netherlands	LH ₂	Unknown	Unknown
LNG terminal retrofit proposed for future				
Brunsbüttel LNG Terminal (construction)	Germany	LH ₂	Unknown	Unknown
Stade LNG Terminal (construction)	Germany	NH ₃ , LH ₂	Unknown	Unknown
Dioriga FSRU (proposed)	Greece	LH ₂	Unknown	Unknown
Zeeland Energy FSRU (proposed)	Netherlands	LH ₂	Unknown	Unknown

Source: Europe Gas Tracker

*Brunsbüttel FSRU's ammonia import project is planned in two stages. The first 0.3 mtpa stage is planned to begin in 2026, and the second 2 bcm/y stage does not yet have a start year. For more information on each project, see GEM.wiki.



Table 1

Although most of the LNG terminals associated with these projects are operating or in construction, the majority of the hydrogen derivative projects are in early stages. None have entered construction or taken final investment decisions (FIDs) indicating they will move forward. Among the twelve in GEM's data, seven have signed preliminary (typically non-binding) agreements among their sponsors to pursue the project, and three have issued calls for market interest.

Maturity indicators for hydrogen derivative import projects associated with LNG terminals

Maturity indicators	Number of projects (out of 12 total)
Preliminary agreement signed by sponsor(s)	7
Issued call for market interest	3
Positive final investment decision	0
Began construction	0

Source: Europe Gas Tracker



Table 2

GEM's data on hydrogen derivative terminals focuses on plans associated with existing LNG projects in the [Global Gas Infrastructure Tracker](#) database. There are other hydrogen infrastructure data resources — such as the [Hydrogen and Production Infrastructure Projects Database](#) from the IEA and the [Hydrogen Infrastructure Map](#) from a joint initiative in cooperation with the European Hydrogen Backbone — which include projects unaffiliated with existing LNG projects, as well as other types of hydrogen infrastructure, such as production and storage.

The proposed hydrogen pipeline network has grown more than 40% in a year

GEM has tallied 50,165 km of hydrogen pipeline projects in development in Europe. This proposed network has [over 40% more pipeline](#) by length than what GEM recorded in the 2024 Europe Gas Tracker report, and it is now equivalent to two-fifths of the length of the existing European gas transmission pipeline network. The leading

countries planning to develop new hydrogen pipelines are Germany (9,154 km), Spain (6,020 km), and Bulgaria (4,476 km). A full breakdown of pipeline length in development by country, including how much of this development is supported by the European Commission's 6th Projects of Common Interest (PCI) list, is shown in Table 3 for the top ten European countries.

Hydrogen pipeline projects are being organized by the [European Hydrogen Backbone](#), an initiative involving 33 Transmission System Operators working in close coordination with the gas industry association Gas Infrastructure Europe. Pipeline projects have received significant public support through the most recent European Commission's PCI list, which offers funding and streamlined permitting to projects totaling 22,394 km. It is worth noting that some hydrogen pipelines on the PCI list appear nearly identical to older gas pipeline projects that were proposed for PCI status or that made it onto previous PCI lists, suggesting that gas companies could be using the new hydrogen branding to garner support for these projects — which could carry methane gas if the green hydrogen economy fails to materialize at the massive scale envisioned. Revamped gas proposals include large, cross-border connections such as the [H2Med Pipeline](#) project (the newest iteration of the [Midi-Catalonia Gas Pipeline](#)) and the [SouthH2 Pipeline](#) (a slightly altered [GALSI Pipeline](#)), as well as a number of smaller, national projects.

Hydrogen pipeline projects are relatively split among those that purport to use new vs. retrofitted gas pipelines. In terms of length, about 30% each plan to use new hydrogen pipelines, retrofit existing gas pipelines, or use a mix of new and retrofitted pipelines. For the final 10%, plans are unknown. However, hydrogen can damage or leak from pipelines that are not designed for it, and retrofitting pipelines would largely entail [replacing](#) them.

The majority of pipeline projects, for which blending percentage is known, plan to be capable of transporting 100% hydrogen, or close to a full hydrogen blend. Merely 10%

of projects by length state that they will use a 10% blend of hydrogen, whereas 36% of projects state they will carry about 100% hydrogen. There are 54% of projects by length that do not specify hydrogen blends.

Top 10 European countries with proposed hydrogen-capable transmission pipelines

Country	6th PCI list (km)	Additional proposed (km)	Country total (km)
Germany	3,756	5,398	9,154
Spain	3,138	2,883	6,020
Bulgaria	250	4,225	4,476
France	1,037	2,456	3,493
Greece	477	2,812	3,289
Italy	2,315	311	2,625
United Kingdom	12	2,000	2,012
Croatia		1,842	1,842
Finland	782	993	1,774
Romania		1,714	1,714

Source: Europe Gas Tracker



Table 3

Finally, despite the coordination and support hydrogen pipeline projects have received from the European Hydrogen Backbone and European governments, development is still in early stages. Just one small hydrogen pipeline has entered construction, a segment of the [Netherlands National Hydrogen Backbone](#) (30 km) at the Port of Rotterdam.

Hydrogen-burning power projects remain largely immature

GEM's data on hydrogen-burning power proposals finds that there are plans to implement 44.6 GW of such capacity at gas-fired power plants in development. These proposals include several categories of projects, and developers often do not provide enough information to differentiate which of these types is being planned: hydrogen blending into gas-fired power (i.e., less than 100% hydrogen), combusting 100% hydrogen, and "hydrogen-ready" gas-fired power plants that presumably can switch

from gas to hydrogen in the future — sometimes without defined timelines or defined commitments to actually switch to 100% hydrogen. The lack of detail surrounding when these hydrogen-ready proposals will burn 100% hydrogen (and the lack of green hydrogen supply secured, shown in Figure 3) could allow for gas power projects to move forward without credible plans to reduce their emissions.

In terms of capacity, one-fifth of projects propose to burn 100% hydrogen, one-fifth would blend up to 50% hydrogen, and for over half of the hydrogen usage percentage is unknown. Only a quarter of hydrogen burning projects at gas plants researched by GEM indicated that they would use green hydrogen, while almost two-thirds did not specify what type of hydrogen would be used.

Hydrogen-blending power projects are being developed under the premise that blending cleanly-produced hydrogen can reduce power plants' emissions, since hydrogen does not emit carbon dioxide when burned. Due to hydrogen's low energy density, [high levels of hydrogen blending](#) are needed to reduce overall emissions. For instance, a 50% blend of hydrogen in a gas-fired power plant corresponds to only a 24% reduction in emissions. In order to blend high levels of hydrogen, these projects would require specific equipment modifications, because modern gas turbines are only capable of burning a blend of gas and [up to about 20%](#) hydrogen without overhaul.

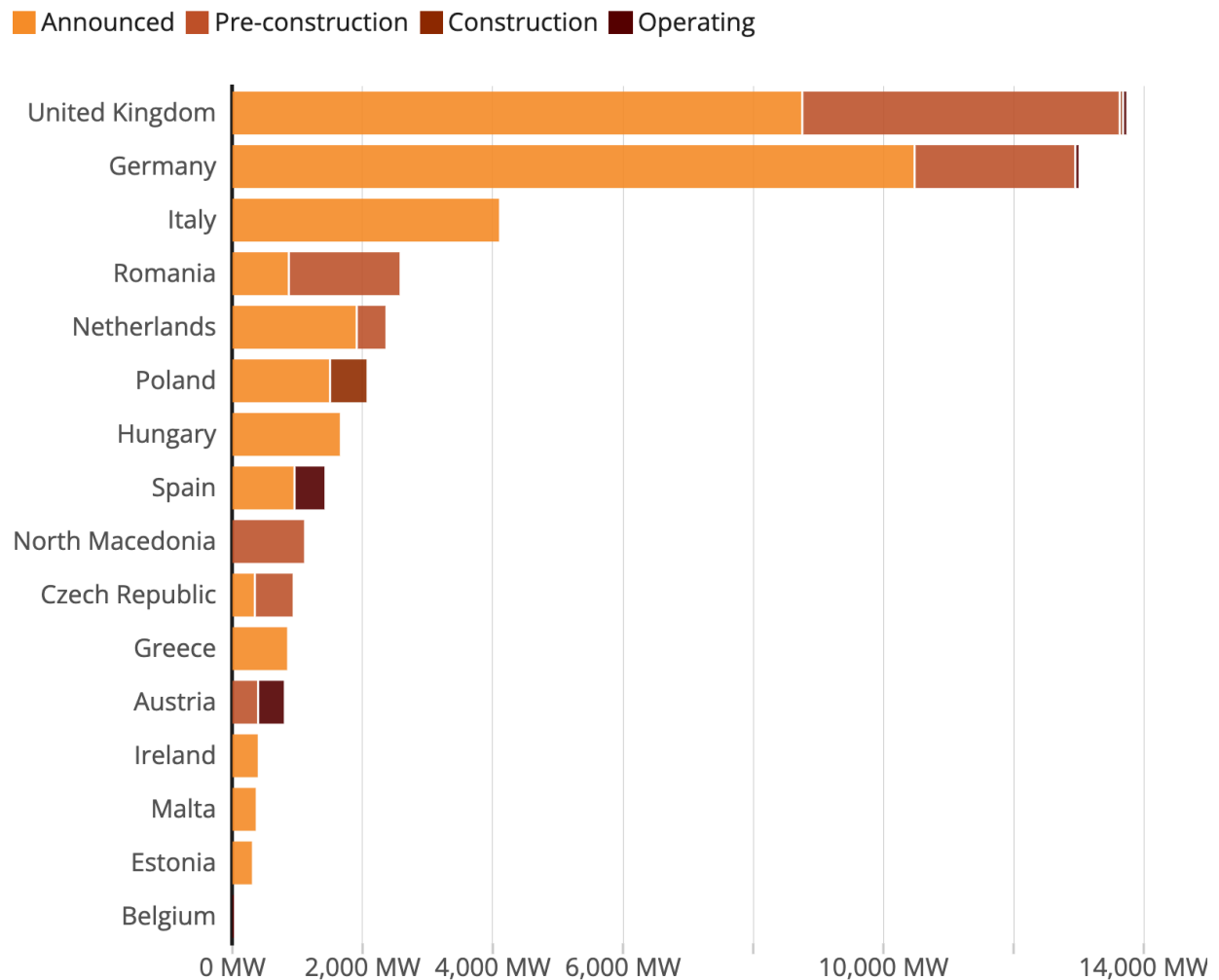
The NGO Deutsche Umwelthilfe details other issues with hydrogen-based power plants, including that pure hydrogen turbines are [not yet market-ready](#), and that planned projects are focused more on serving baseload rather than peaker needs, which would use limited green hydrogen resources inefficiently.

Two-thirds of these hydrogen-burning power proposals at in-development gas plants are concentrated in three countries: the United Kingdom (13.7 GW), Germany (13 GW), and Italy (4.1 GW), as shown in Figure 2. Germany's hydrogen power plans center

around “hydrogen-ready” power plants that promoters argue will eventually burn 100% hydrogen, although prominent projects have been [delayed](#) amid political turmoil.

The United Kingdom and Germany are planning the most hydrogen-burning power projects

Hydrogen-burning power capacity by status at European gas-fired power plants in development



Source: Global Oil and Gas Plant Tracker, Global Energy Monitor

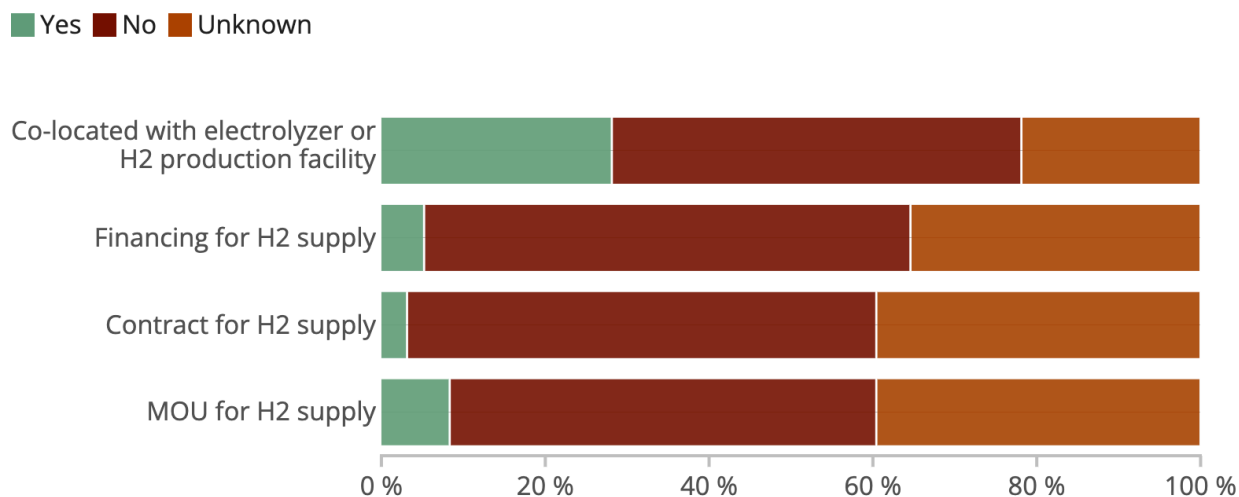


Figure 2

More hydrogen-burning power proposals have advanced than hydrogen terminal or pipeline projects, but the sector is still immature. There are two projects under construction representing less than 2% of in-development hydrogen burning capacity tracked by GEM. There are six operating projects that are small pilot projects blending low percentages of hydrogen. Almost three-quarters of projects by capacity are still considered announced, the earliest phase. Only 15% of projects have planned start years before 2030, and more than half of projects do not have a start year specified. Finally, only a small fraction of projects have secured memoranda of understanding (MOU), contracts, or financing for hydrogen to supply their power facilities, shown below in Figure 3.

Only a fraction of hydrogen-burning power proposals in Europe are close to being realized

Percentages of projects meeting maturity indicators among hydrogen-burning proposals at gas-fired power plants in development



Source: Global Oil and Gas Plants Tracker, Global Energy Monitor



Figure 3

The emerging hydrogen network is a flawed decarbonization strategy

The EU envisions renewable hydrogen playing a significant role in [decarbonizing the region's economy](#) by fulfilling 10% of its energy needs by 2050. Core EU policies such as the [EU Hydrogen Strategy](#) and [REPowerEU](#) set targets for renewable hydrogen production and imports and outline the sectors in which green hydrogen could play a role, including transport and industry. In particular, the most recent [Projects of Common Interest](#) and Mutual Interest (PCI/PMI) list adopted in November 2023 demonstrated the degree to which European policy has shifted, with as many as [65 of 166 projects](#) related to hydrogen.

Hydrogen is a versatile fuel, and renewable hydrogen technically can be used in a [wide range of applications](#) including for steel and cement production; industrial heat; fuel for vehicles, trains, ships, and aircraft; producing biofuels and synthetic fuels; power generation; heating homes; and energy storage. Hydrogen has been described as a ["swiss army knife"](#) for its versatility, but, as an author at the think tank Information Technology and Innovation Foundation notes, it's also a fitting descriptor because hydrogen is rarely the best tool for a given job. With respect to the infrastructure tracked by GEM — terminals, pipelines, and power plants — there are four significant drawbacks to building hydrogen projects atop the gas network.

First, retrofitting gas infrastructure to use hydrogen largely [entails replacing it](#), so it is expensive and more difficult than often implied by project developers. Infrastructure that transports gas is not automatically suitable for hydrogen because of the [differences](#) in the gasses' physical properties. Hydrogen can [embrittle materials](#), and it is a smaller molecule prone to leaking, which is an issue given that it is an indirect [greenhouse gas](#). Hydrogen [requires colder temperatures](#) than LNG to be liquefied, and

LNG terminals are [not easily converted](#) to liquefying hydrogen or other hydrogen derivatives even if certain components may be repurposed.

Second, hydrogen is an inefficient means of transporting energy, and it is inefficiently burned for heating and power. Using renewable electricity directly is always [more efficient](#) than using it to generate hydrogen, as even high efficiency electrolyzers incur about [30% energy losses](#) when splitting hydrogen out of water. For instance, the Environmental Defense Fund estimates heating homes with green hydrogen consumes [seven times more energy](#) than direct electrification. Transported by pipeline, hydrogen has a relatively [low energy density](#) compared to gas, which could present technical challenges for end uses originally designed for gas consumption.

Third, blending hydrogen into the gas network, which has been proposed as a [decarbonization strategy](#), offers little in the way of emissions reductions. Technical constraints with the existing European gas grid [limit blending](#) to small amounts in existing infrastructure, often less than 10%. Because hydrogen has an energy density three times lower than that of gas, a blending percentage of 5%, for example, [would only displace 1.6%](#) of gas demand, according to the think tank E3G. Friends of the Earth Europe has noted that, “The EU’s own Hydrogen Strategy identified a number of [issues with blending](#): it’s inefficient, it diminishes the value of hydrogen, it poses challenges to connecting networks across borders and for the design of the gas infrastructure.” With respect to blending hydrogen into gas-fired power plants, most new gas turbines can only blend up to about 20% hydrogen without [overhauling](#) the equipment; and again, because of hydrogen’s low energy density, this translates to a [relatively small gas savings](#) (e.g., 20% hydrogen blending enables only 7% reduction in gas consumption).

Fourth, and finally, there is a massive gap between expected renewable hydrogen production and the hydrogen needed to fuel a network of this scale. [Only 0.3%](#) of hydrogen produced today is green hydrogen. In its net-zero scenario, the IEA calls for 70 million tonnes per year (mtpa) of green hydrogen production capacity by 2030.

Production projects totaling merely 3 mtpa had reached final investment decisions as of last spring, and Bloomberg New Energy Finance (BNEF) has estimated that around 16 mtpa in green hydrogen production might be [achievable by 2030](#).

High projected costs of green hydrogen have been one factor depressing production and demand forecasts. The Energy Transitions Committee recently downgraded its global hydrogen requirements for 2050 from around 800 mtpa to 450 mtpa, noting that [hydrogen remains expensive](#) whereas the costs of clean electrification and battery storage are falling. A BNEF forecast in December 2024 [tripled](#) its prior 2050 cost estimate for the fuel, finding that green hydrogen was unlikely to become competitive with fossil-based hydrogen in most markets due to the high cost of electrolyzers.

The European Court of Auditors found that the European Commission's targets for hydrogen production were unlikely to be met and "[driven by political will](#) rather than being based on robust analyses." If new "hydrogen-capable" infrastructure comes online without green hydrogen to supply it, or without green hydrogen that is cost-competitive, this infrastructure could lock in fossil fuel consumption in Europe's energy sector by using gas or fossil-based hydrogen instead.

How should green hydrogen be used?

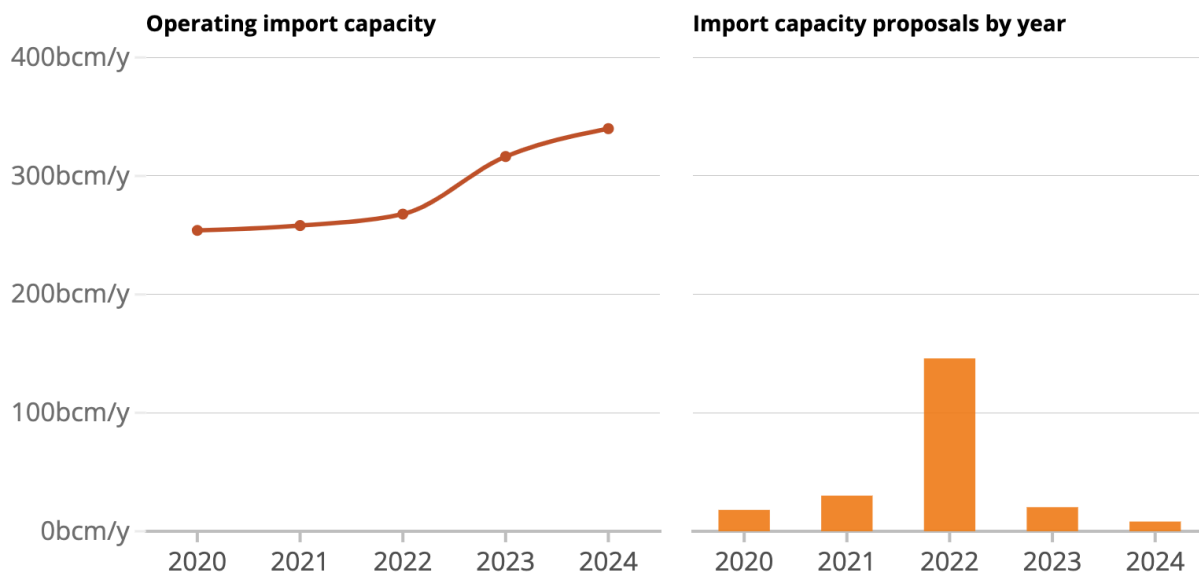
Ideally, green hydrogen should be used [close to where it is produced](#) to avoid the challenges and costs associated with transporting it. It should be targeted for applications where it replaces existing fossil-generated hydrogen, such as ammonia production, and for sectors that [cannot be decarbonized with electrification](#) such as cargo shipping, long-haul aviation, and steelmaking. These so-called unavoidable uses are the highest priorities on the "[hydrogen ladder](#)." The extensive hydrogen transportation network and hydrogen-capable power plants in planning in Europe fail to meet these criteria, and risk making poor use of limited green hydrogen supplies.

As hydrogen plans proliferate, new LNG proposals settle down

The planned buildout of hydrogen infrastructure follows on the heels of a rush to build new LNG import capacity, set off by Russia's invasion of Ukraine. As shown in Figure 4, Europe's LNG import capacity continues to grow as new projects come online, but the pace of new proposals has nearly ground to a halt, continuing a slowdown noted in last year's [Europe Gas Tracker report](#). In 2024, just one new LNG import terminal was proposed in Europe, [Teesside WaveCrest LNG Terminal](#) (8.2 billion cubic meters per year (bcm/y)) in the United Kingdom.

Europe's **operating** LNG import capacity continues to grow, but the volume of new **proposals** has slowed

LNG import capacity, in billion cubic meters per year (bcm/y)



Source: Europe Gas Tracker, January 2025, Global Energy Monitor



Figure 4

In 2024, Europe added a net 28.7 bcm/y in new LNG import capacity. Two new projects came online, Greece's [Alexandroupolis FSRU](#) (5.5 bcm/y) and Germany's [Mukran FSRU](#) (13.5 bcm/y), the latter of which required the FSRU vessel from the now-retired [Lubmin FSRU](#) project (5.2 bcm/y). In addition, this year, three capacity expansions were completed at Italy's [Toscana FSRU](#) (+1.3 bcm/y), Belgium's [Zeebrugge LNG Terminal](#) (+6.4 bcm/y), and Poland's [Świnoujście Polskie LNG Terminal](#) (+2.1 bcm/y).

A further 23.3 bcm/y in new capacity reached FID this year, between Germany's [Stade LNG Terminal](#) (13.3 bcm/y) and [Brunsbüttel LNG Terminal](#) (10 bcm/y). These onshore facilities are intended to replace two interim, floating projects: [Stade FSRU](#) (6 bcm/y), currently under construction, and the operating [Brunsbüttel FSRU](#) (5 bcm/y). Between the Stade and Brunsbüttel projects that reached FID and an additional 36.3 bcm/y in import capacity under construction, Europe will likely increase its total LNG import capacity by at least 11% by 2030, to a total of 375.8 bcm/y.⁵

The field of proposed European LNG import projects remains large at 140.5 bcm/y, equivalent to two-fifths Europe's operating capacity. However, these projects' prospects become dimmer with each passing year as structural gas demand falls due to Europe's climate policies and renewable energy installations.

Europe's own energy watchdog, the EU Agency for the Cooperation of Energy Regulators (ACER), has said that LNG demand was likely to [peak this year](#). The Institute for Energy Economics and Financial Analysis (IEEFA) has forecasted that Europe likely already reached peak LNG consumption and has found that half of the EU's LNG terminals had [capacity utilizations below 50%](#) during the first half of 2024. Indicative of this overcapacity, the Lubmin FSRU and Mukran FSRU facilities at Germany's Rügen island operated at a [combined capacity of 8%](#) in 2024, and the German government-owned operator of Wilhelmshaven FSRU [shut down](#) the facility for the 2024–25 winter season. "Germany's costly LNG terminals aren't paying off," Bloomberg

⁵ This total assumes that interim facilities or facilities with planned retirement dates are retired by 2030. These facilities include Brunsbüttel FSRU, Stade FSRU, Wilhelmshaven FSRU, and Le Havre FSRU.

reported in January, as their [high operating costs](#) are a disincentive to using them for LNG imports.

Even if Europe faces a challenging year ahead refilling gas storage [depleted](#) by cold weather and the shutoff of Russian gas supplies through Ukraine, its capacity for LNG imports does not appear to be a constraint.

New LNG terminals already under construction in Europe are likely to exacerbate its overcapacity, and proposed terminals have become increasingly unnecessary.

Conclusion

With twelve import projects, 50,165 km in pipelines, and 44.6 gigawatts of power capacity in planning, the ways in which European countries propose building a hydrogen network atop their gas infrastructure are taking shape. Green hydrogen will be a limited, important resource for decarbonizing parts of the economy, but these plans risk using it in the wrong ways: transported over great distances and inefficiently burned for baseload power. Green hydrogen production is failing to take off as quickly as envisioned by Europe's governments and organizations like the IEA, and a hydrogen-capable network of this scale could simply slow Europe's transition away from gas, if it is ultimately used for gas or fossil-based hydrogen. European policy aimed at bolstering renewable hydrogen production; targeting it toward appropriate applications, such as replacing fossil-produced hydrogen in industrial applications; and ensuring gas infrastructure operators have realistic, concrete gas-to-hydrogen transition plans in place is more likely to aid the region's energy transition and avoid locking in new fossil fuel consumption.

About the Europe Gas Tracker

The Europe Gas Tracker is an online database that identifies, maps, describes, and categorizes methane and hydrogen gas infrastructure in the European Union and surrounding nations, including gas pipelines, liquified natural gas (LNG) terminals, gas-fired power plants, and gas fields. Developed by Global Energy Monitor, the tracker uses footnoted wiki pages to document each project and is updated annually. The Europe Gas Tracker derives its data from GEM's global trackers, namely, terminals and pipelines from the Global Gas Infrastructure Tracker, power plants from the Global Oil and Gas Power Tracker, and gas fields from the Global Oil and Gas Extraction Tracker.

About Global Energy Monitor

Global Energy Monitor (GEM) develops and shares information in support of the worldwide movement for clean energy. By studying the evolving international energy landscape and creating databases, reports, and interactive tools that enhance understanding, GEM seeks to build an open guide to the world's energy system. Follow us at www.globalenergymonitor.org and on Twitter/X [@GlobalEnergyMon](https://twitter.com/GlobalEnergyMon).

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