

Europe Gas Tracker Report 2023





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ABOUT THE EUROPE GAS TRACKER

The [Europe Gas Tracker](#) is an online database that identifies, maps, describes, and categorizes gas infrastructure in the European Union and surrounding nations, including gas pipelines, liquefied 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.

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ON THE COVER

Venture Global's Calcasieu Pass LNG facility in Cameron Parish, Louisiana. Photo by John Allaire.

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FURTHER RESOURCES

For additional data on proposed and existing gas plants, see [Summary Tables](#) on the GEM website. To obtain data from the Europe Gas Tracker project, visit the [Download Data](#) page. All Global Energy Monitor data are freely available under a [Creative Commons Attribution 4.0 International Public License](#) unless otherwise noted.

Europe Gas Tracker Report 2023

Baird Langenbrunner, Greig Aitken, Robert Rozansky, and Harvey Hassan

EXECUTIVE SUMMARY

In the ongoing fallout of the Russian invasion of Ukraine, the EU gas panic threatens a massive overcapacity buildout at the hands of a few member states that have harnessed and in some cases ignored EU policy recommendations. If most of it comes to fruition, this added import capacity now on the table and being rapidly developed in various countries will lead to expanded fossil gas infrastructure and carbon emissions that further distance the EU from its greenhouse gas mitigation goals.

- In response to the gas crisis that began in 2021, worsened by Russia's invasion of Ukraine in early 2022, the EU has proposed, revived, or fast-tracked 30 liquefied natural gas (LNG) terminal projects.
- Between January 2022 and February 2023, research from Global Energy Monitor (GEM) shows that 35.2 billion cubic meters per year (bcm/y) of gas import capacity was commissioned among eight LNG terminal projects, plus another 11.1 bcm/y in transmission pipelines.
- In total, the current proposed LNG import buildout of 227.2 bcm/y would increase the EU's maximum import capacity by 136%. An additional 60.5 bcm/y of gas pipeline import capacity is also proposed, as well as thousands of kilometers (km) of within-EU gas transmission pipelines.
- If all of these projects were successfully built and commissioned, the capital expenditure would amount to an estimated €53.5 billion, €4.2 billion of which is associated with projects already under construction. LNG terminals would account for €22.1 billion of this, and pipelines an additional €31.4 billion.
- The proposed LNG import expansion, led by a handful of countries including Germany, Greece, Italy, and the Netherlands, is uncoordinated and ignores EU climate goals, and additional infrastructure will add to existing overcapacity.
- A large hydrogen gas transmission pipeline network is proposed in the EU that will further entrench the bloc in fossil fuels, as much of it is existing or proposed methane gas pipelines that are suggested for conversion in the next two decades, despite the high costs and risks of doing so.

INTRODUCTION

Russia's invasion of Ukraine and the removal of Russian gas from EU markets caused a "gas panic" and a sense of [urgency](#) around building new gas projects. Unusually warm weather and emergency gas rationing helped EU states [get through](#) the winter of 2022/23 without catastrophic gas shortages—but the threat of a gas "lock-in" for the region continues as new pipelines and LNG terminals are touted as long-term solutions to the immediate crisis of war and market disruptions.

The EU's current dependence on gas has also become increasingly expensive. The latest data from the European Commission [show](#) that between July and September last year, EU countries [spent](#) €101 billion (US\$109 billion) on gas imports, a 249% jump from the €29 billion spent in the third quarter of 2021. Moreover, current gas storage surpluses do little to guarantee the availability of gas in [future winters](#), as the EU faces a tight gas market until new U.S. LNG export infrastructure [comes online](#) in 2024.

At present, eight LNG import terminal projects are under construction, and an additional 38 projects are proposed. A majority of these are completely new proposals that have emerged in the past year; some are revived proposals from the last decade.

This gas fervor has been driven by a combination of factors. First, by REPowerEU, the Commission's 2022 plan to wean itself off Russian fossil fuel imports following the invasion of Ukraine. Second, by states—primarily Germany—that have overreacted to the prolonged crisis by announcing plans for and financially supporting an excessive amount of new import capacity. Third, by the gas industry, which has seized the crisis opportunity and pushed for excessive levels of new import capacity. The short-term impact was an expensive race to purchase and import LNG ahead

of the 2022/23 winter. But the myopic and uncoordinated nature of this crisis—including the fast-tracking of some LNG import projects and a broader recommitment to building import LNG and pipeline infrastructure—is stoking concerns about its long-lasting impacts.

REPowerEU is proving to be at odds with the European Climate Law, adopted in June 2021 to meet the EU's climate-neutral by 2050 goal. To implement the law, [Fit for 55](#) was created to reduce net GHG emissions by 55% by 2030, but the eagerness with which the member states are pursuing gas import projects threatens these goals. In particular, it has emerged that, in spring 2022, Germany [ignored](#) the Commission's recommendations regarding additional capacity and instead embarked on a highly unnecessary import capacity expansion program. Moreover, the EU27 voted in December 2022 to [weaken](#) the bloc's planned law to cut methane emissions in the oil and gas sector.

Finally, adding to these contradictory policies is the EU's response to Covid-19, the Recover and Resilience Facility (RRF). In the past year, the RRF has co-opted language from REPowerEU and Fit for 55 to place [more focus](#) on the energy transition, though in early 2023 the Commission announced it would allow RRF funds to be spent on "urgent" energy infrastructure, including up to [€60 billion](#) on fossil fuel projects, a move that is seen as [greenwashing](#) and propping up polluting industries. The Italian government, for one, has signaled its intent to [seek](#) EU public money support under RRF for the national grid operator Snam's €9 billion gas infrastructure expansion plans. Such policy decisions have the potential to facilitate the rise of more gas import infrastructure and increased greenhouse gas emissions.

EUROPE'S GAS BUILDOUT

A volatile year and more to come

The past year has been [chaotic](#) for the global gas market. Europe's gas stockpiling drove competition and led to record-high gas prices both in Europe and Asia. At the same time, gas demand in the Asia-Pacific region was suppressed largely because the countries in the region were outcompeted. The resulting impacts include India, Indonesia, and Pakistan burning more coal—in the short-term at least—as an alternative fuel source; widespread [blackouts](#) in Bangladesh and Pakistan due to fuel shortages; and electricity shortages in Africa as food and energy prices compound lingering Covid-19 impacts.

The EU now has a glut of gas during what has turned out to be a mild [winter](#), though the 2023/24 winter is a large unknown. Covid-19 curbed China's energy demand in 2022, but as it lifts its restrictions in early 2023, economic recovery and increased demand could bring about a [surge](#) in global gas prices in spring and summer when it comes time for the EU to stock up

Methane addiction

In the past year, the EU has proposed or recommitted to a total of 149.4 bcm/y of in-development LNG import infrastructure, and construction began on 53.6 bcm/y of import capacity in that time frame. By comparison, Global Energy Monitor's (GEM's) Europe Gas Tracker shows that, prior to the war in Ukraine, the EU's operating import terminals had 164 bcm/y of available regasification capacity, though this total capacity was far from being fully utilized.

Since January 2022, import capacity of 35.5 bcm/y was commissioned at eight LNG terminal projects (Table 1, on the next page). In the same period, six pipeline

for winter 2023/24. The EU's electricity grid, partially reliant on gas, will also be under [strain](#).

These winter preparations will need to happen in a European gas import landscape that is starkly different from a year ago. Throughout 2022, gas imports from Russia [decreased](#) from over 50% to just above 10%, a combination of the Commission's REPowerEU-driven diversification and Russia's reactive [curtailment](#) of pipeline flows. Deliveries through the [Nord Stream gas pipeline](#) for example—which previously supplied about 35% of EU27 gas in a typical year—have [shrunk](#) by three-quarters. Running parallel is the 55-bcm/y [Nord Stream 2 Gas Pipeline](#), completed in 2021 but never successfully operational. It suffered first from an indefinite shelving by the German government days before Russia's invasion of Ukraine and, in September 2022, it was mysteriously [sabotaged](#) along with Nord Stream 1. The few [other pipelines](#) supplying Russian gas to the EU are also tipped to continue drying up their supplies into Europe.

projects were commissioned (Table 1) that allow for an additional 12.7 bcm/y of import capacity, and an additional 11.1 bcm/y of within-EU transmission capacity became operational to connect Poland, Lithuania, and Slovakia as well as Greece and Bulgaria. Together, these projects are estimated to have cost approximately €6.3 billion in capital expenditure.

In the near term, the EU has an additional 198.5 bcm/y of LNG import capacity in development that is set to come online through 2026, 71.5 bcm/y of this within 2023 alone (Table 2, on the next page).

Table 1. LNG import terminals and within-EU gas transmission pipelines commissioned during 2022 and until February 2023. The capital expenditure costs for Lubmin FSRU Phase 1 are presumed to be one-third of the €100 million total.

Project name	Country	Capacity (bcm/y)	Estimated cost (million €)	Month commissioned
Pipeline projects				
Beglej-Dermantsi-Batultsi-Kalugerovo Pipeline Rehabilitation and Partial Replacement	Bulgaria		67.48	January 2022
Medgaz Gas Pipeline Capacity Expansion	Spain	2.7	67	February 2022
Gas Interconnection Poland-Lithuania (508 km)	Poland, Lithuania	2.4	566	May 2022
Poland-Slovakia Gas Pipeline (165 km)	Poland, Slovakia	5.7	270	August 2022
Baltic Pipe Project	Norway, Denmark, Sweden, Poland	10.0	2100	September 2022
Gas Interconnector Greece–Bulgaria (IGB)	Greece, Bulgaria	3.0	240	October 2022
LNG terminal projects				
Świnoujście Polskie LNG Terminal Expansion	Poland	1.2	427	January 2022
Femshaven FSRU	Netherlands	8.0	500	October 2022
Hamina LNG Terminal	Finland	0.1	100	October 2022
Revithoussa LNG Terminal FSU Capacity Expansion	Greece	0.8		November 2022
Wilhelmshaven FSRU	Germany	7.5	450	December 2022
Inkoo FSRU	Finland	5.0	460	January 2023
Lubmin FSRU Phase 1	Germany	4.5	33.3	January 2023
Brunsbüttel FSRU	Germany	8.0	1000	February 2023

Source: Europe Gas Tracker, Global Energy Monitor.

Table 2. Total LNG import capacity under development as of 1 March 2023, grouped by reported start year (summed for 2023–2026, as found in project proposal/construction announcements) and status.

Start year	Status	Capacity (bcm/y)
2023	Construction	13.4
	Proposed	58.1
2024	Construction	6.4
	Proposed	30.4
2025	Construction	
	Proposed	47.2
2026	Construction	1.8
	Proposed	41.3

Source: Europe Gas Tracker, Global Energy Monitor.

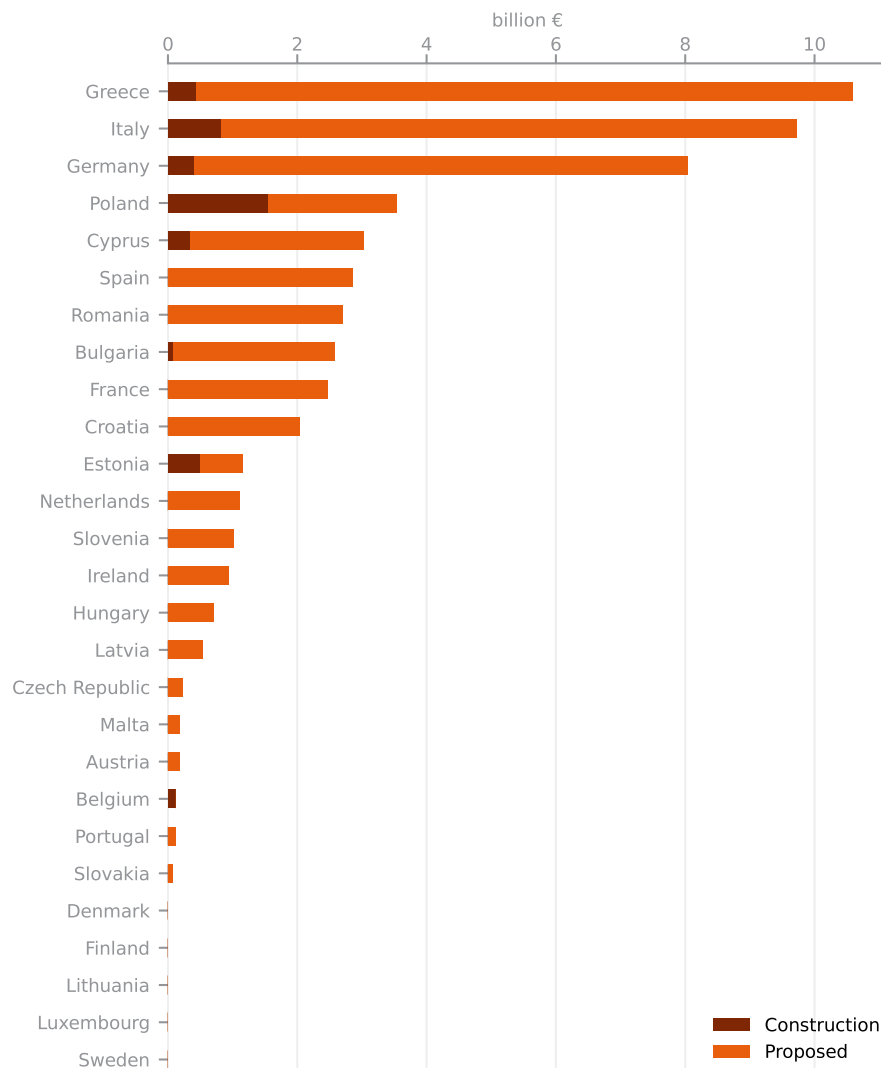
THE COSTS OF GAS PANIC

Capital expenditure

If all of these LNG terminal and pipeline transmission projects were successfully built and commissioned, the capital expenditure would amount to an estimated €53.5 billion, €4.3 billion of which is associated with projects already under construction (Figure 1).

Greece, Italy, and Germany together account for about 53% of these estimates, highlighting the massive scale—and short-term thinking—of the intended buildout in these countries.

Figure 1. Capital expenditure estimates for pipelines and LNG terminals contained within EU member state borders.



Source: Europe Gas Tracker, Global Energy Monitor.

Across EU member states, nearly 13,300 km of pipeline are proposed or under construction, at an estimated cost of about €31.4 billion in capital expenditure (Table 3). The full scale of the planned LNG

terminal buildout, including projects beyond 2026 and those without estimated start dates, amounts to 227.2 bcm/y of additional import capacity and €22.1 billion (Table 3).

Table 3. Planned buildout and estimated cost for gas transmission pipelines and LNG import terminals in the EU, including all projects proposed or under construction.

Country	Pipeline length (km)	Pipeline cost (million €)	LNG import capacity (bcm/y)	LNG terminal cost (million €)	Total cost (million €)
Austria	59	179			179
Belgium			8.2	116	116
Bulgaria	1,125	2,578			2,578
Croatia	871	1,017	10.2	577	1,593
Cyprus	921	2,685	0.8	337	3,022
Czech Republic	158	219			219
Denmark					
Estonia	1	4	6.2	1,150	1,154
Finland					
France			18.5	2,448	2,448
Germany	582	1,758	74.3	6,791	8,549
Greece	2,607	8,262	26.6	2,312	10,574
Hungary	368	711			711
Ireland	26	78	10.9	855	933
Italy	2,070	5,325	36.3	4,376	9,701
Latvia	32	26	4.1	110	136
Lithuania					
Luxembourg					
Malta	70	181			181
Netherlands	45	134	9.0	961	1,095
Poland	1,281	2,618	14.3	917	3,536
Portugal	162	115			115
Romania	1,824	2,701			2,701
Slovakia	30	64			64
Slovenia	528	1,013			1,013
Spain	523	1,718	8.0	1,133	2,851
Sweden					
Total	13,282	31,385	227.2	22,081	53,467

Source: Europe Gas Tracker, Global Energy Monitor.

Potential emissions

If all 227.2 bcm/y of LNG import capacity were realized, the potential emissions associated with this infrastructure could be nearly 950 million tons CO₂ per year.¹ In addition to LNG terminal imports, a buildout of the proposed 60.5 bcm/y of methane gas imported via pipeline would add an extra 89.8 million tons CO₂ per year. This infrastructure, if commissioned, would

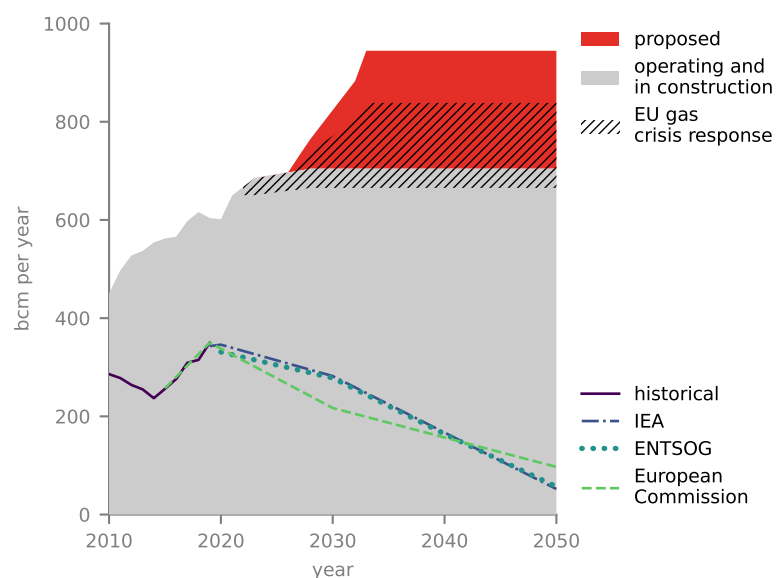
be locked in for years and possibly decades, exacerbating an existing gas dependency that is in direct conflict with the bloc's goal to **cut** emissions by 55% by 2030. Taken together, and on a yearly basis alone, this buildout would have a carbon footprint over one-third the value of the EU's **2019 GHG emissions** (about 3.5 billion tons CO₂).

The battle between short-term energy security and long-term mitigation goals

EU member states have **moved swiftly** to build additional LNG import infrastructure to allow them to replace Russian gas with gas from other sources. As

of March 2023, eight import terminal projects have been commissioned in the EU (Table 1), and another import terminal ([Paldiski FSRU](#) in Estonia) is under

Figure 2. Historical and future net import capacity for the EU.



Sources: Gray shading shows historical maximum natural gas import capacity summed from the GEM Europe Gas Tracker and historical ENTSOG transmission capacity maps.

Red shading shows future import capacity (pipelines and LNG terminals) from the GEM Europe Gas Tracker.

Historical data (purple line) show EU natural gas imports from ENTSOG transmission capacity maps for 2010–2021.

IEA scenario (indigo dash-dot line) shows inferred net import needs, calculated as the difference between projected demand and EU production for the Sustainable Development Scenario from the World Energy Outlook 2021.

ENTSOG (blue dotted line) shows the average gas import projections of two low-emissions scenarios in Figure 31 of the Ten Year Network Development Plan 2022.

European Commission scenario (green dashed line) portrays the average natural gas imports of three scenarios achieving 55% emissions reductions by 2030 from the EC's 2030 Climate Target Plan.

Data and analysis for this figure are described further in the [online methodology](#).

1. Emissions are estimated using import capacity values scaled by estimates presented in [Kühne 2021](#).

construction. An additional 23 import project proposals have been impacted by the crisis—five of which were revived from shelved or cancelled plans—and all but one are in the EU itself, the exception being the UK’s retired and now proposed-for-revival [Teesside GasPort FSRU](#). This crisis response has the potential to add 187.6 bcm/y import capacity to Europe, with an additional 39.6 bcm/y in development that hasn’t been measurably impacted by the crisis (Table A1).

Around half of these projects are floating storage and regasification units (FSRUs), vessels with regasification and storage capability that are modular, less costly to build, and can be installed on faster timescales. The remainder are onshore import terminals that carry a slower construction timeline and require more investor persuasion. FSRUs are also easier in theory to decommission, which is used to justify them as a short-term solution, but not when so many are being planned across the EU. Moreover, the contracts [signed](#) recently for EU-destined gas imports are typically 15–20 years long and lock in LNG reliance. This LNG import momentum places the EU at clear risk of blowing past its Fit for 55 goal of decreasing emissions 55% by 2030, now less than seven years away.

In this race for increased import capacity, Germany is the most fervent, having already commissioned 20 bcm/y at Wilhelmshaven, Lubmin, and Brunsbüttel and developing a total of 70.3 bcm/y additional import capacity to come online by 2026. This capacity would be spread across eight terminal locations

and nine separate projects, seven of which would be FSRUs. While McKinsey has suggested that Germany will need [some fossil gas](#) as it goes through its energy transition, its current buildout plans are seen as “[massively oversized](#).” German leaders have claimed the overcapacity is necessary to buffer for possible accidents, sabotage, or other events, though any additional LNG in the near-term will require emissions to decline [even more steeply](#) to reach mid- and long-term climate targets.

How do the EU-wide buildout plans stack up against EU climate objectives? The claim that Fit for 55 will lower EU’s gas consumption by [30%](#) (100 bcm/y) by 2030 needs to be reconciled with the rapid current fossil gas import expansion. Germany’s LNG import plans alone would increase gas import capacity by 90.3 bcm/y, and the entire bloc’s plans by 227.2 bcm/y (Table A1). While it’s unlikely the full scale of this buildout would ever become operational, the sheer size of it shows the lack of coordination of member states’ expansion and underscores the [need](#) to avoid building more import infrastructure and increase overcapacity even more, potentially through REPowerEU and RRF. Other important aspects of moving toward these targets include [improving](#) cross-border energy connections to improve the EU grid, [reforming](#) the electricity market to keep prices low for consumers, and [investing](#) in green technologies to remain globally competitive.

REGIONAL BUILDOUT

Table 4. Regional buildout estimates.

	Construction		Proposed	
	Cost (million €)	Import capacity (bcm/y)	Cost (million €)	Import capacity (bcm/y)
Western EU	510	13.2	12,809	103.6
Eastern EU	2,132	2.1	11,572	80.9
Southern EU	1,600	6.3	24,844	82.2 [50]
Northern EU	0	0	0	0

Costs are estimated for LNG import terminals and all pipeline infrastructure (import, export, and within-EU pipelines). Number in brackets for Southern EU represents the pipeline projects displayed in brackets in Table A2. For pipelines, costs are attributed to the regions where their routes have been or will be laid. Capacity values are calculated for import infrastructure only. Regional definitions are as follows. **Western EU:** Ireland, France, Belgium, Netherlands, Luxembourg, Germany, Austria; **Eastern EU:** Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Slovenia, Croatia, Hungary, Romania, Bulgaria; **Southern EU:** Portugal, Spain, Italy, Malta, Greece, Cyprus; **Northern EU:** Sweden, Finland, Denmark. Source: Europe Gas Tracker.

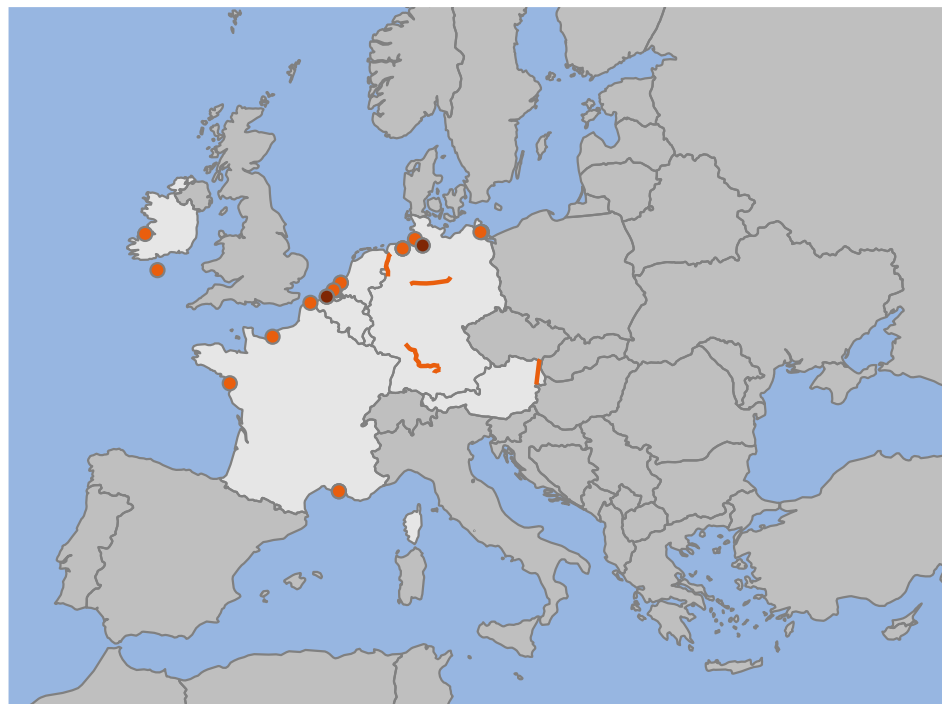
Western EU

Western EU leads in planned import capacity under construction at 13.2 bcm/y, with an additional 103.6 bcm/y proposed, from 23 LNG terminal projects in

development (Figure 3). A total of 11 pipeline projects are proposed in Western EU, though none of them would serve as import infrastructure.

Figure 3. Planned buildout of pipelines and LNG terminals in Western EU.

Orange shows proposed projects; red shows projects under construction.



Source: Europe Gas Tracker, Global Energy Monitor.

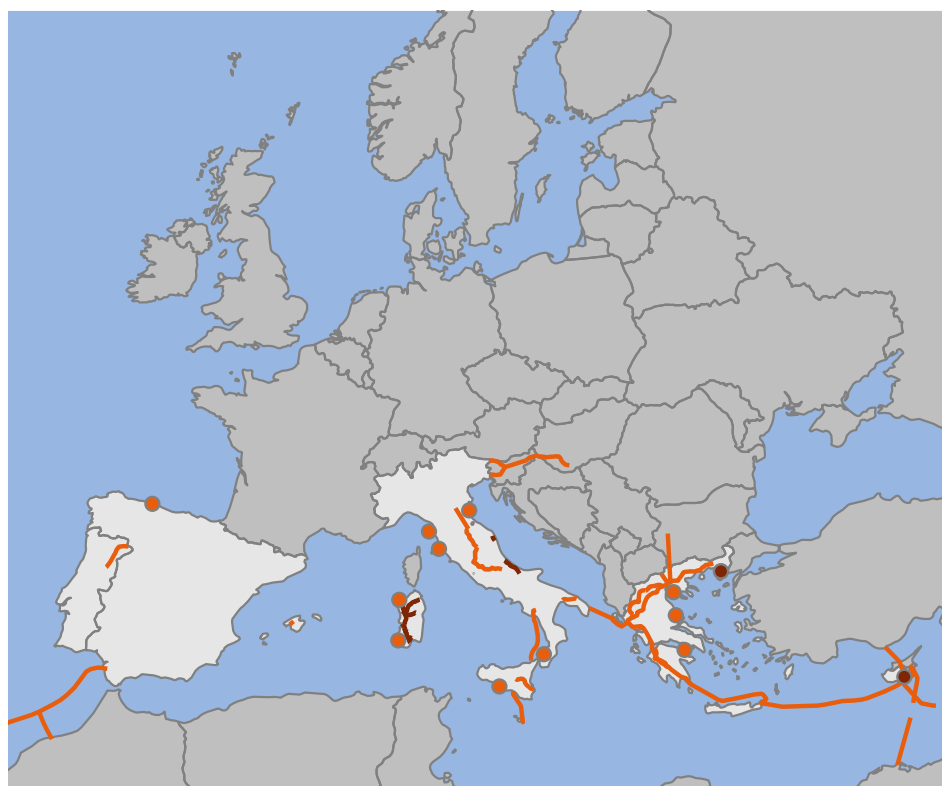
Southern EU

Southern EU has 6.3 bcm/y of import capacity under construction, with an additional 82.2 bcm/y proposed, from nine terminal projects and five EU import pipelines (Figure 4; Table A2). A total of 46 pipeline projects are in development in the region. An additional 50 bcm/y of import capacity from pipeline projects is also proposed as bracketed capacity values in Table 4. This includes 30 bcm/y from the [Nigeria-Morocco Gas Pipeline](#), an ambitious project that, if ever

constructed, would not be completed until the 2040s at current estimates, well after the first commitments to emissions reductions in the mid-2030s. In addition, 10 bcm/y would arrive in the proposed [East Med Gas Pipeline](#), as well as another 10 bcm/y in a proposed expansion, though this project is in a [tenuous](#) state now that the developers of the Israeli source gas field have stated a preference to export via liquefaction rather than pipeline.

Figure 4. Planned buildout of pipelines and LNG terminals in Southern EU.

Orange shows proposed projects; red shows projects under construction.



Source: Europe Gas Tracker, Global Energy Monitor.

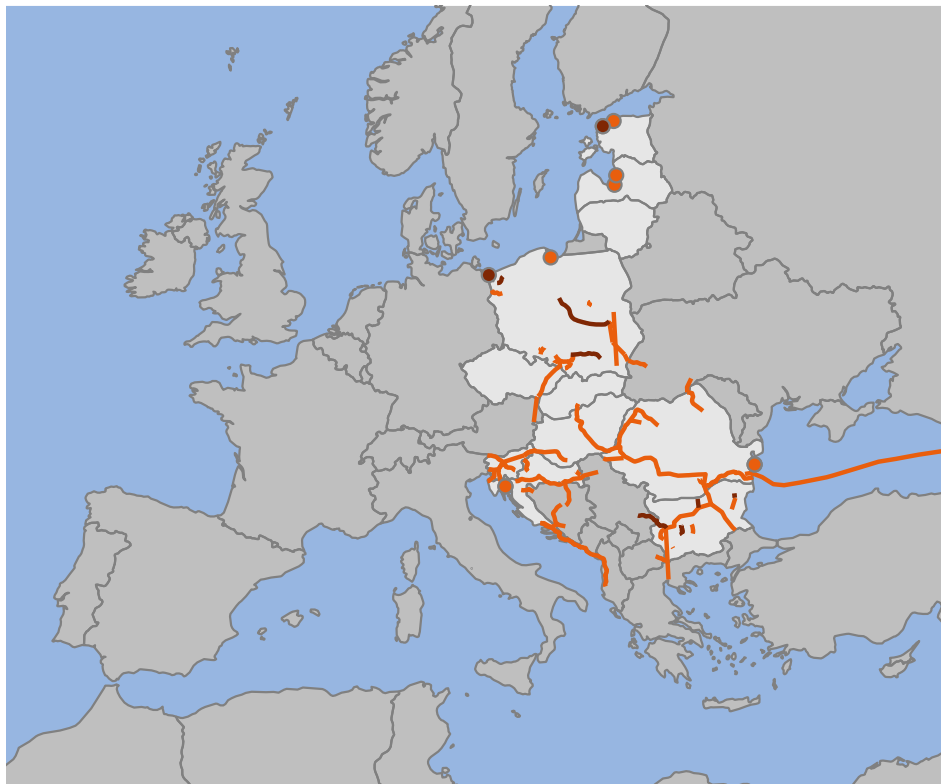
Eastern EU

Eastern EU has 2.1 bcm/y of import capacity under construction, plus another 80.9 bcm/y in the proposed phase, from nine total terminals and five pipeline

projects. An additional 29 pipeline non-import projects are in development in the region (Figure 5).

Figure 5. Planned buildout of pipelines and LNG terminals in Eastern EU.

Orange shows proposed projects; red shows projects under construction.



Source: Europe Gas Tracker, Global Energy Monitor.

Northern EU

Northern EU countries (Sweden, Finland, and Denmark) do not currently have any LNG or pipeline import infrastructure in development, though this

region does have plans to build out possible hydrogen gas transmission pipeline infrastructure (see [Hydrogen Hype](#) on the next page).

HYDROGEN HYPE

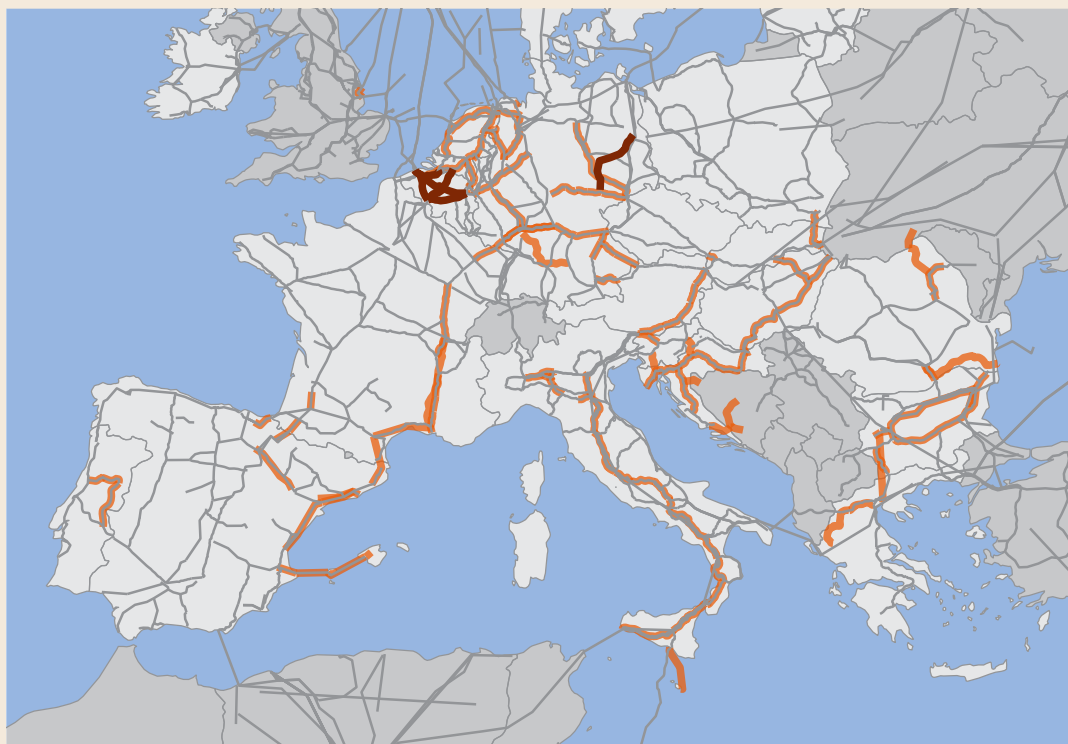
A deepening commitment to hydrogen as an alternative to carbon-based fuels in industry and energy generation was evidenced in 2022. The EU's most recent [ten-year plan](#) for transmission pipelines includes a substantial number of hydrogen (and gas) infrastructure projects that reflect the European Commission's response to the war in Ukraine and a longer-term commitment to decarbonized energy sources.

REPowerEU set ambitious targets for 10 million tonnes domestic production of green hydrogen for industry and transportation, supplemented by 10 million tonnes of imported hydrogen, by 2030. In 2022, the Commission [approved](#) two Important Projects of Common European Interest (IPCEIs) for the hydrogen value chain—Hy2Tech for the [mobility sector](#) and Hy2Use for [industrial applications](#)—with member states committing up to €10.6 billion in public funding.

Currently [95%](#) of the hydrogen produced in the EU is grey hydrogen—produced using unabated methane gas. While REPowerEU now certifies green hydrogen as a renewable energy source, the plan for securing it hinges on massive proposed production in the [North](#) and [Baltic](#) Seas, and up to 30 GW of electrolyzers powered by offshore wind farms are currently in the pre-feasibility phase. These projects rely heavily on proposed pipeline infrastructure to transport hydrogen onshore, including [AquaDuctus Hydrogen Pipeline](#), [Baltic Sea Hydrogen Collector](#), [Norway–Germany Hydrogen Pipeline](#), and the [H2Med Pipeline](#). None are slated to come online before 2030, however, and only a few hydrogen pipeline projects in Germany, Netherlands, and Belgium totalling 2,056 km have reached the pre-construction phase of development (Figure 6).

Piggybacking on this hydrogen fervor, European Transmission System Operators (TSOs) have been quick to

Figure 6. Pipelines within EU boundaries that are proposed to carry hydrogen.



Note: red routes are more advanced at the pre-construction stage (defined as reaching a status of “Advanced” or “FID” in TYNDP tables); orange routes are proposed. All other gray pipelines show operating and in-development gas pipelines for context. The full extent of the European Hydrogen Backbone is not shown here, given the speculative nature of this proposed network.

Source: Europe Gas Tracker, Global Energy Monitor.

propose a range of pipeline transmission projects, many of which fall under the umbrella of the [European Hydrogen Backbone](#) initiative. Notably, over 90% of proposals are expected—at least initially—to carry a blend of methane gas and hydrogen. This amounts to 119 proposed projects and an additional 7 in a more advanced pre-construction phase. Together these routes would equate to about 3,500 km of new pipeline and 13,800 km of repurposed existing gas pipelines within the EU’s boundaries (Table 5; Figure 6).

The case for an EU hydrogen transmission network is a weak one, primarily because of the cost and issues with retrofitting gas pipelines to carry hydrogen. Some TSOs have conducted field tests for carrying [5–10%](#) hydrogen blended into gas pipelines, but higher-percentage blends are untested, present substantially [higher risks](#), and are [uneconomical](#) to store and [transport](#). Higher-percentage hydrogen blends in power generation have also attracted [concern](#).

In many large proposals, TSOs claim they can “repurpose” existing methane pipelines at low cost. However, research [shows](#) that most pipeline repurposing would require major overhauls, given the significant differences between methane and hydrogen gas and their varied impacts on pipeline materials. The same is true for [converting](#) LNG terminals for hydrogen import. TSOs also promise that many of these pipelines will eventually switch to carrying majority or exclusively hydrogen. Considering the problems with repurposing, this claim is optimistic at best and deliberately misleading at worst.

Given these issues, a full buildout of a new hydrogen transmission network in Europe appears nearly impossible to justify in the face of alternative options and cheaper costs for low-carbon energy generation. Promoting hydrogen infrastructure at this scale will only further entrench the EU in fossil fuels.

Table 5. Note, “pre-construction” and “proposed” are defined in Figure 6 above.

Status	Type of hydrogen pipeline	km
Pre-construction (7 projects)	new	0
	repurposed	1,012
Proposed (119 projects)	new	3,507
	repurposed	12,831

Source: Europe Gas Tracker, Global Energy Monitor.

CONCLUSION

The European gas crisis that has played out since spring 2021, and was exacerbated in February 2022, has been a serious challenge. But while the war in Ukraine appears likely to affect Europe for longer than originally anticipated, the new gas infrastructure and contracts in development have the potential to affect emissions for decades beyond the net-zero horizon. According to the International Institute for

Sustainable Development, “there is [no room](#) for new fossil import infrastructure in Europe” if global emissions are to be kept in line with the 1.5°C Paris goal. These gas development plans, born out of crisis conditions, will soon be supplanted by cheaper renewable energy long before their usual, expected lifetimes. If these projects are built, Europe will be saddled with an extensive array of stranded gas assets.

APPENDIX

Table A1. LNG import infrastructure under construction and proposed in the EU.

Country	Terminal name	Capacity (bcm/y)	Cost (million €)	Import region
Construction				
Greece	Alexandroupolis FSRU	5.5	360	Southern EU
Cyprus	Cyprus LNG Terminal	0.8	337	Southern EU
Estonia	Paldiski FSRU		500	Eastern EU
Germany	Stade FSRU	5.0	394	Western EU
Belgium	Zeebrugge LNG Terminal 2024 Expansion	6.4	116	Western EU
Belgium	Zeebrugge LNG Terminal 2026 Expansion	1.8		Western EU
Poland	Swinoujście Polskie LNG Terminal Expansion 2	2.1	297	Eastern EU
Subtotal		21.6	2,004	
Proposed				
Greece	Argo FSRU	5.2	227	Southern EU
Romania	Black Sea LNG Terminal			Eastern EU
Germany	Brunsbüttel LNG Terminal	8.0	1,000	Western EU
Greece	Dioriga FSRU	2.6	300	Southern EU
France	Dunkirk LNG Terminal Debottlenecking	2.7	385	Western EU
Spain	El Musel LNG Terminal	8.0	1,133	Southern EU
France	Fos Cavaou LNG Terminal Expansion 1 (Debottlenecking)	2.8	389	Western EU
France	Fos Cavaou LNG Terminal Expansion 2	5.5	779	Western EU
Netherlands	Gate LNG Terminal Phase 3 Expansion	1.5	212	Western EU
Netherlands	Gate LNG Terminal Phase 4 Expansion	2.5	354	Western EU
Italy	Gioia Tauro LNG Terminal	12.0	1,000	Southern EU
Croatia	Krk FSRU Phase 1	3.2	25	Eastern EU
Croatia	Krk FSRU Phase 2	7.0	552	Eastern EU
France	Le Havre FSRU	5.0	394	Western EU
Germany	Lubmin FSRU Phase 2 (Vessel 1)	2.0	15	Western EU
Germany	Lubmin FSRU Phase 2 (Vessel 2)	7.0	52	Western EU
Germany	Lubmin RWE FSRU	5.0	394	Western EU
France	Montoir LNG Terminal Expansion	2.5	500	Western EU
Estonia	Paldiski LNG Terminal	2.5	400	Eastern EU
Italy	Piombino FSRU	5.0	394	Southern EU
Poland	Polish Baltic Sea Coast Terminal	12.2	620	Eastern EU
Italy	Porto Empedocle LNG Terminal	8.0	1,000	Southern EU
Italy	Porto Torres FSRU Terminal	5.0	708	Southern EU
Italy	Portovesme FSRU		260	Southern EU
Ireland	Predator FSRU	2.6	205	Western EU
Italy	Ravenna FSRU	5.0	916	Southern EU
Latvia	Riga FSRU Revived Project			Eastern EU
Ireland	Shannon FSRU	8.3	650	Western EU
Latvia	Skulte LNG Terminal	4.1	110	Eastern EU
Germany	Stade LNG Terminal	13.3	1,000	Western EU
Germany	TES Wilhelmshaven LNG Terminal	20.0	2,833	Western EU
Estonia	Tallinn LNG Terminal	3.7	250	Eastern EU
Greece	Thessaloniki FSRU	7.3	575	Southern EU
Greece	Thrace FSRU	6.0	850	Southern EU
Italy	Toscana FSRU Expansion (Efficiency)	1.3	99	Southern EU
Netherlands	VTI FSRU	5.0	394	Western EU
Germany	Wilhelmshaven NWO FSRU Terminal	9.0	709	Western EU
Germany	Wilhelmshaven TES FSRU Terminal	5.0	394	Western EU
Subtotal		205.6	20,077	
Grand total		227.2	22,081	

Source: Europe Gas Tracker, Global Energy Monitor.

Table A2. Pipeline transmission infrastructure proposed for gas import into the EU.

Lighter gray numbers in brackets are not counted toward the final Total row, as construction and funding for these projects do not appear likely in the near term.

EU country	Pipeline name	Status	Capacity	Length (km)	Cost (million €)	Import country (region)
Croatia	Bosnia and Herzegovina–Croatia South Interconnection Gas Pipeline	Proposed	1.5	63	41	Croatia (Eastern EU)
Cyprus	Cyprus-Turkey Gas Pipeline	Proposed	3.1	48	166	Cyprus (Southern EU)
Greece	East Med Gas Pipeline	Proposed	[10]	[1275]	[4090]	Greece (Southern EU)
Cyprus				[569]	[1827]	
Greece	East Med Gas Pipeline Expansion	Proposed	[10]	[0 new km]		
Cyprus						
Croatia	Ionian Adriatic Gas Pipeline	Proposed	5	262	284	Croatia (Eastern EU)
Cyprus	Israel Cyprus Gas Pipeline	Proposed	4	152	227	Cyprus (Southern EU)
Spain	Nigeria-Morocco Gas Pipeline	Proposed	[30]	[138]	[559]	Spain (Southern EU)
Bulgaria	North Macedonia–Bulgaria Gas Pipeline	Proposed	2.1	5	1	Bulgaria (Eastern EU)
Romania	Romania-Ukraine Interconnector	Proposed	2.8	146	125	Romania (Eastern EU)
Greece	Trans-Adriatic Gas Pipeline Expansion	Proposed	10	0 new km	1,035	Greece, Italy (Southern EU)
Italy					345	
Bulgaria	White Stream Gas Pipeline	Proposed	32	156	471	Romania (Eastern EU)
Romania				121	365	
Total			60.5	955	2,716	

Source: Europe Gas Tracker, Global Energy Monitor.

Table A3. All pipeline infrastructure (import, export, and within-EU transmission) under construction and proposed within EU borders.

Country	Pipeline name	Capacity (bcm/y)	Total pipeline length (km)	Estimated length in country (km)	Cost (million Euro)
Construction					
Bulgaria	Bulgaria-Serbia Interconnector Gas Pipeline	1.8	170	64	50
Poland	Gustorzyn-Wronów Gas Pipeline		308	308	926
Italy	Methanization of Sardinia Project		573	573	643
Poland	Pogórska-Wola-Tworzen Gas Pipeline		168	168	301
Pipelines with length < 150 km				346	317
Subtotal				1,458	2,236
Proposed					
Italy	Adriatica Pipeline	8.8	170	170	554
Germany	Bielefeld-Magdeburg Gas Pipeline		159	159	478
Romania	Black Sea Shore-Podisor Gas Pipeline		308	308	360
Portugal	Celorico-Spanish Border Gas Pipeline		162	162	115
Cyprus	Cyprus-Egypt Gas Pipeline	8.0	310	33	98
Czech Republic	Czech-Polish Interconnector Gas Pipeline (CPI)		207	155	211
Poland				52	70
Bulgaria	Dubnitza-Nikolaevo Gas Pipeline		321	321	966
Romania				651	1,401
Hungary	Eastring Pipeline	20.0	1,208	294	632
Bulgaria				233	502
Slovakia				30	64
Slovenia				117	125
Hungary	Hungary-Slovenia-Italy Interconnector Gas Pipeline	1.2	191	74	79
Italy				1	1
Croatia	Interconnector Croatia-Serbia	7.0	182	109	93
Cyprus	Israel-Egypt Offshore Gas Pipeline	10.0	593	43	131
Italy	Malta-Italy Gas Pipeline	2.0	159	89	229
Malta				70	181
Romania	North-Vest Romania Pipeline		518	518	405
Croatia	Omišalj-Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica LNG main evacuation pipeline	10.0	180	180	198
Greece	Poseidon Gas Pipeline	15.0	976	914	3,183
Italy	Omišalj-Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica LNG main evacuation pipeline	10	180	62	217
Italy	Sealine Tirrenica Gas Pipeline		255	255	766
Germany	South German Gas Pipeline		250	250	751
Spain	Spain-Italy Offshore Interconnector	30.0	700	350	1,052
Italy				250	350
Pipelines with length < 150 km				3,084	6,505
Subtotal				9,033	20,418
Grand total				10,491	22,654

Source: Europe Gas Tracker, Global Energy Monitor.

Table A4. Proposed hydrogen transmission pipeline infrastructure in the EU by member state, including blended hydrogen proposals.

Country	Proposed km of hydrogen pipelines (including blended)
Germany	3,827
Bulgaria	3,312
Italy	2,552
Spain	2,013
Romania	1,913
France	1,431
Croatia	893
Hungary	839
Netherlands	825
Belgium	734
Austria	726
Poland	706
Slovakia	647
Czech Republic	364
Portugal	298
Greece	196
Lithuania	165
Bosnia and Herzegovina	159
Slovenia	119
Estonia	82
Finland	73
Malta	70
United Kingdom	52
Türkiye	47
Georgia	47
Ukraine	38
Serbia	17
Denmark	0.4
Latvia	0
Total	22,145

Source: Europe Gas Tracker, Global Energy Monitor.