

# The EU Methane Regulation: The 2027 MRV requirement's impact on EU Oil and Gas Supply

Public report



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# The EU is the largest global buyer of LNG, and its demand is expected to increase

#### Key takeaway

#### Description

LNG market to become buyers market in 2028, with EU as the largest buyer

- The EU was the largest LNG importer in 2024, with 116 BCM in imports, 20% of global LNG production, as it continued to diversify away from Russian gas
- Global LNG supply is set to grow steadily over the next decade, increasing 4% per annum from 2025 to 2035. The US, Qatar, and Australia will remain the top exporters while growth primarily is driven by the US
- To deliver growth, the US liquefaction capacity is expected to increase to more than 350 BCM by 2035, up from today's 150 BCM. This expansion reinforces the US's position as the marginal supplier to the EU gas market
- An oversupplied market is projected between 2028 and 2032, as new liquefaction capacity comes online faster than increase in demand. This dynamic is likely to shift negotiating power toward buyers such as the EU during this period
- EU gas importers continue booking new regasification volumes, suggesting their confidence to continue importing LNG

EU LNG demand is on the rise to replace Russian gas

- Norway and Russia have been the EU's largest gas suppliers, but Russian piped gas imports are rapidly decreasing and are mainly replaced by LNG
- To support this transition, the EU regassification capacity is being ramped up from ~240 BCM today to >300 BCM by 2027
- The US and Qatar supply more than half of the EU's LNG, while Russia still contributes close to 25%. EU ministers have, however, backed a proposal to halt long-term Russian LNG contracts from 2028
- Spot market cargoes have played a key role in replacing the piped Russian gas, and are likely to remain important going forward to replace Russian LNG as well
- France, Belgium, and Spain are the largest buyers of Russian LNG, but there remain ample sourcing opportunities from alternative suppliers in the global market

# Sufficient OGMP2.0 Level 5 volumes projected to be available – Implementation key to limit friction

#### Key takeaway

#### **Description**

Sufficient OGMP2.0 Level 5 supply is expected

- The EU Methane Regulation makes upstream methane measurement, reporting, and verification mandatory. Its measurement and reporting requirements are aligned with the OGMP2.0 framework, using Level 5 as the reference standard for equivalence
- Around 600 BCM of OGMP2.0 Level 5 gas supply is projected to be available by 2027, twice the EU's forecasted demand. The challenge lies in key current suppliers, such as Algeria and Qatar, being at risk of non-compliance and facing penalties
- Algerian production is considered unlikely to reach Level 5 by 2027. Long-term contracts may however, allow for a temporary bypass of the regulation
- Qatar has modern infrastructure and strong technical capabilities and should be able to reach Level 5 by 2027, yet progress in the past two years has been slow. Like Algeria, Qatar may benefit from exemptions of long-term contracted volumes, which make up a significant share of its EU-bound volumes
- For crude oil, sufficient Level 5 supply is expected to be available to meet EU refineries' needs. Additionally, the high liquidity of the global oil market reduces reliance on specific exporting countries. However, the limitation in sourcing flexibility of optimal compliant crude grades and/or penalties could place pressure on the refinery industry which already operate with slim margins

Undefined gas tracing methodology and unclear rules are challenging for the industry

- · While sufficient OGMP2.0 Level 5 supply is expected, the industry has concerns about other aspects of the regulation
- The gas tracing methodology is yet to be defined. The industry has expressed concerns that a strict approach could penalize key suppliers, particularly the US, where feedgas for LNG is highly blended, potentially leading to higher gas prices in the EU
- The OGMP2.0 framework is not a set of standards, and some industry actors have expressed concern that third-party verifiers' protocols could differ from their own processes, potentially introducing additional requirements and delaying compliance
- The lack of clarity on penalties has raised concerns, particularly the penalty ceiling of up to 20% of global turnover. While this represents a theoretical maximum rather than a likely penalty level for non-compliance of MRV regulations. The industry seeks clearer guidance on penalties to improve regulatory certainty, and the sentiment toward the regulation
- No third-party verification protocols are in place, nor are pre-accredited third party verifiers. Both required to be compliant with the regulations.
- The EU aims to increase transparency on methane emissions by disclosing upstream data, but operators are concerned that this could conflict with confidentiality clauses and affect commercial terms for both supply agreements and project financing
- Despite ongoing uncertainty around compliance and penalties, which has driven higher spot market activity, sustained long-term contracting, particularly for regassification capacity, signals the industry's confidence in its ability to align with the regulation

## Achieving compliance with the EU MRV requirement by 2027 is possible with a pragmatic approach

#### Key takeaway

#### **Description**

Country-level analysis of eight key EU countries shows that OGMP Level 5 gas sourcing is possible

- The EU overall has ample LNG regasification capacity and a well-connected pipeline network that can move gas across borders, allowing significant flexibility in sourcing compliant volumes and replacing Russian gas
- Germany, France, and the Netherlands largely rely on pipeline gas suppliers that are expected to be OGMP2.0Level 5 compliant. Any Russian LNG imports will need to be replaced, and spot volumes should be sourced from OGMP2.0 Level 5 compliant exporters
- Spain has significant spare regasification capacity to source compliant LNG. However, around 85% of its 2027 gas supply is currently expected to come from Algeria, Russia, or uncontracted volumes, implying a sizable shift to compliant sourcing or penalties for imported volumes
- Italy faces a potential shortfall of around 10 BCM in regasification capacity if non-compliant volumes are replaced. High reliance on Algerian and Libyan pipeline gas drives this exposure, likely requiring continued payments of penalties or increased reliance on imported LNG
- Slovakia and Hungary remain dependent on Russian pipeline gas today. However, indirect access to EU regasification capacity through the interconnected pipeline network provides a viable path to transition toward compliant volumes and the replacement of Russian gas
- Romania is expected to sustain its role as a gas exporter, with a significant increase in surplus volumes from 2028, resolving any domestic supply challenges
- Tracing methodology in the new regulation is of high importance to all the major importers studied, as 2/3 of their imports come from gas flows that are blended
- Methane measurement itself is expected to have a negligible impact on the EU gas price. Verification costs can be low, but require streamlined and effective processes

A pragmatic approach is needed for a successful implementation by 2027

- The EU Commission has no mandate to define a tracing mechanism, leaving it to the industry to establish a workable methodology adhering to the requirements. The methodology must maintain regulatory integrity and transparency while being feasible for the industry to implement. It will also need to mitigate the liability and verification challenges related to the backward-looking verification methodology that the regulation requires
- Stakeholders are exploring book-and-claim and trace-and-claim approaches, with several alternatives proposed by organizations such as EDF, RMI, and CATF
- The EU Commission and member states should provide clear guidance on penalties and nominate accredited verifiers to reduce short-term liability concerns and provide clarity
- While the EU Commission aims to increase transparency and public availability of methane emission data, it must also protect confidential information. The industry should work with the Commission to align expectations and clarify the scope of data disclosure required under the regulation

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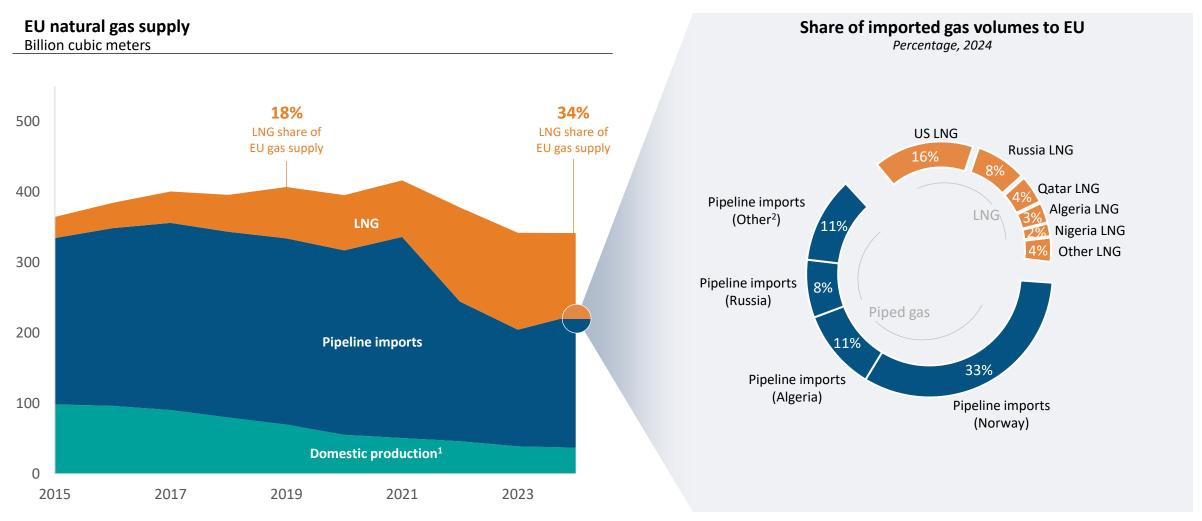
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# Overview of sources for EU natural gas - LNG imports on the increase

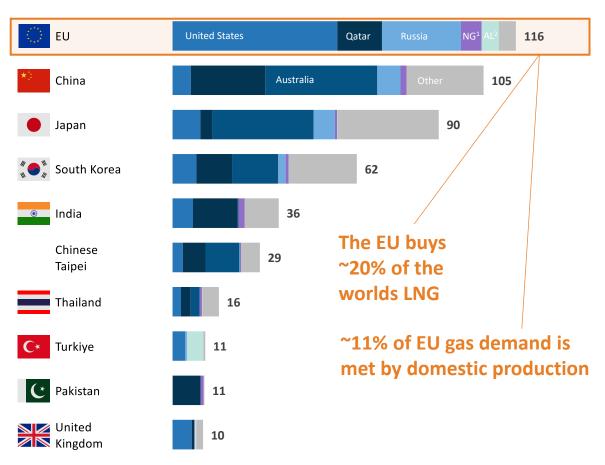


<sup>1)</sup> Production mainly the Netherlands and Romania 2) Azerbaijan and the United Kingdom are the largest importers in the other group. Sources: Rystad Energy research and analysis, Rystad Energy GasMarketCube; Rystad Energy LNG Trade Tracker

## EU is the largest LNG importer globally in 2024 with a 20% market share

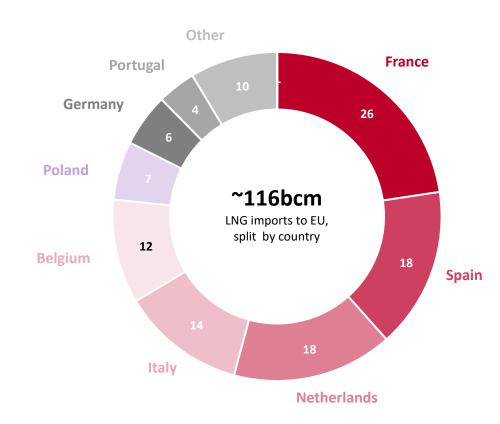
#### Top 10 LNG importers, split by exporter<sup>2</sup>, 2024

Billion cubic meters



#### **EU LNG import by country**

Billion cubic meters



1) Nigeria 2) Algeria

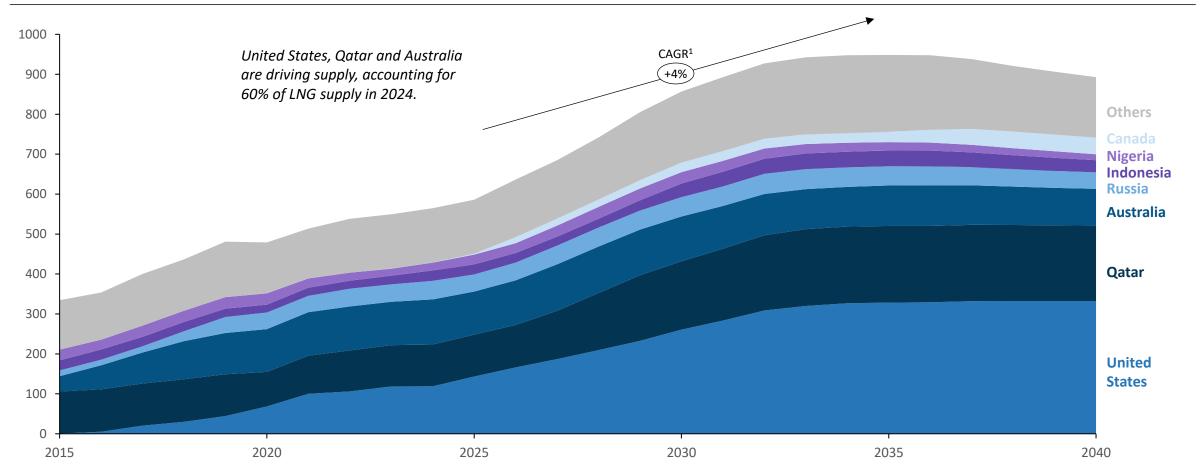
Source: Rystad Energy research and analysis; Rystad Energy GasMarketCube

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# Global LNG supply increasing towards 2035 – US expected to become the largest exporter

#### **Global LNG production by country**

Billion cubic meters

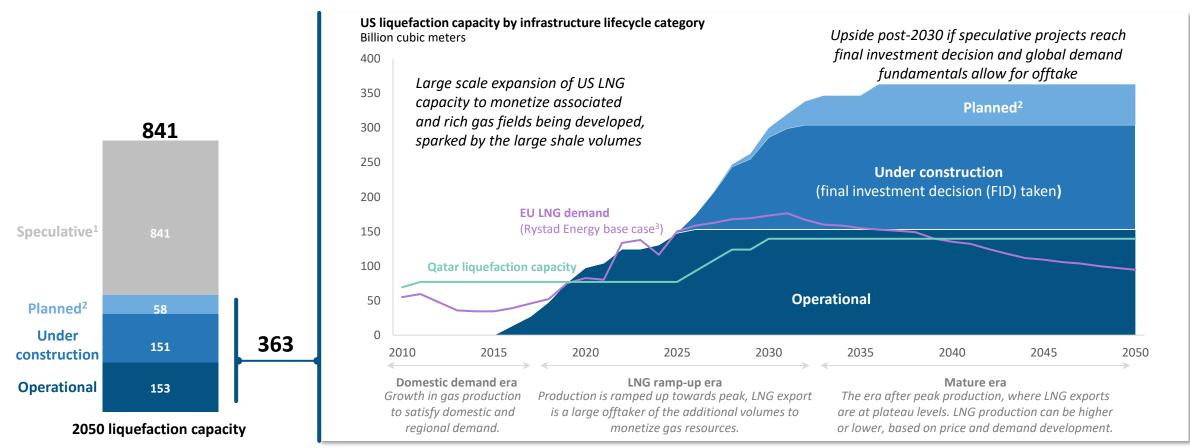


1) CAGR: Compounded annual growth rate 2025-2035 Source: Rystad Energy research and analysis; Rystad Energy GasMarketCube

# The US is the major driver of projected global LNG supply increase

#### US liquefaction capacity by infrastructure lifecycle category

Billion cubic meters



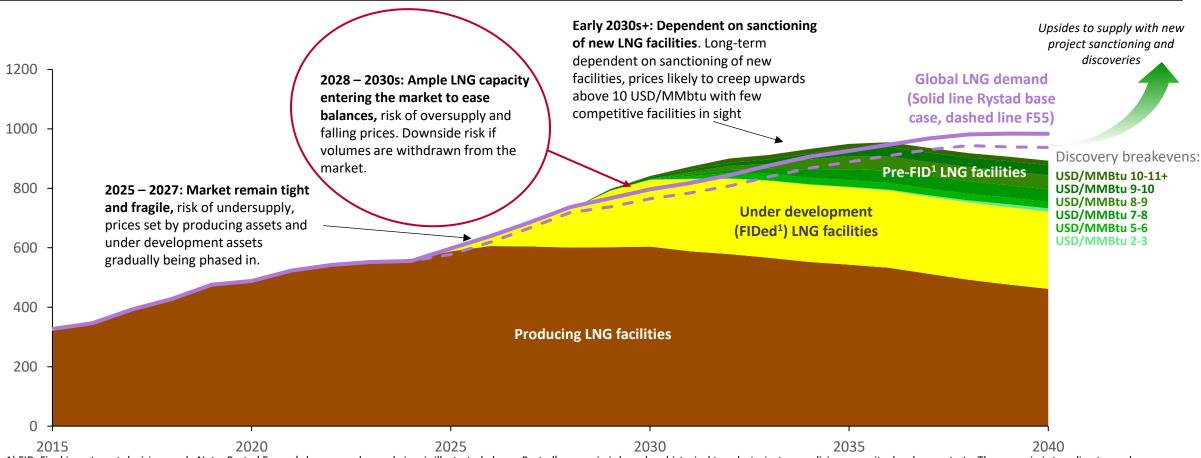
<sup>1)</sup> Speculative projects are projects with low likelihood of being sanctioned in Rystad Energy Base Case. 2) Planned projects are pre-FID projects likely to proceed given RE Base Case demand, project economics, and planning status. 3) Rystad Energy's base case demand is Rystad's best estimate on natural gas demand based on estimates for the EU's renewables penetration, power mix, energy demand, etc. It closely aligns with a 2.0-degree scenario.

Sources: Rystad Energy research and analysis; Rystad Energy GasMarketCube

# Global LNG oversupply making the market increasingly a buyer's market starting in 2028

#### Global LNG demand and supply balance

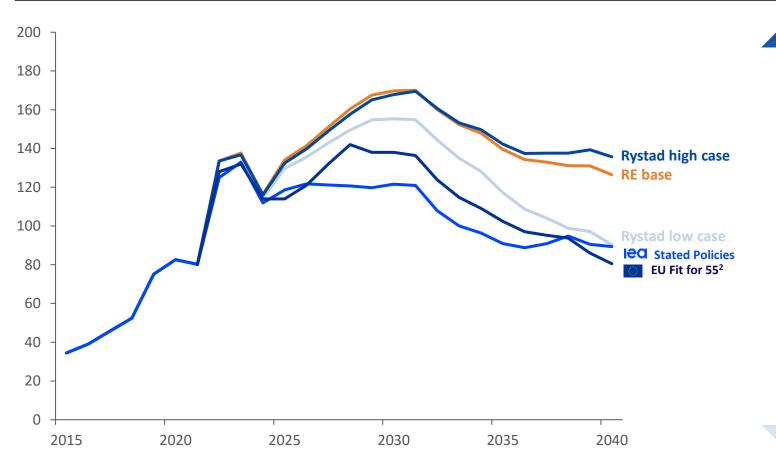
Billion cubic meters



1) FID: Final investment decision made Note: Rystad Energy's base case demand view is illustrated above. Rystad's scenario is based on historical trends, trajectory, policies, capacity development etc. The scenario is trending towards a 2.0/2.1-degree scenario. Note: The dashed line represents the Fit for 55 scenario of EU and the solid line is Rystad's base case. Rystad LNG demand from external parties are calculated based on their total European/EU gas demand, minus domestic gas production and piped imports data from Rystad Energy. Trajectory from 2030 to 2040 based on the EU's linear demand trend from 2024 to 2030.. Source: Rystad Energy research and analysis; Rystad Energy GasMarketCube

# LNG import sustained across all scenarios, EU to remain a significant participant in the LNG markets, buyers' markets reinforced in lower gas demand scenarios

LNG demand in the EU across varying Rystad Energy degree (DG)- and industry scenarios Billion cubic meters



- Russian gas phase-out: The pace and duration of the Russian gas phase-out will have a direct impact on LNG demand which replace this gas
- Industrial rebound: Increased industrial activity will drive LNG demand, as this segment makes up more than 40% of gas demand in 2025

LNG upside demana

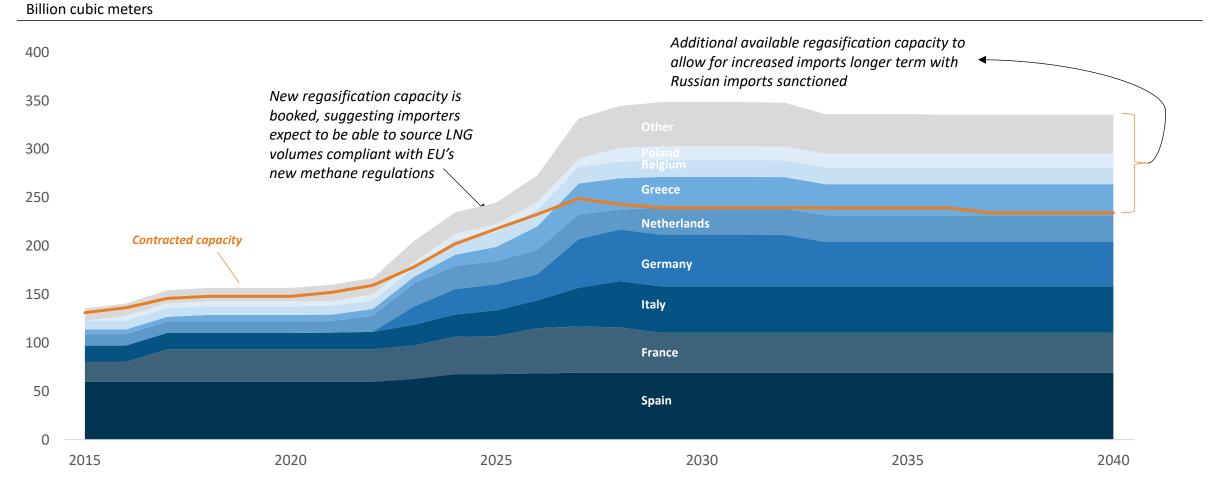
LNG downside demand

- LNG price decrease: If relative competitiveness of LNG and gas to increase to other energy sources, demand should increase in line with a semi-elastic demand
- Faster renewables adoption: Faster build-out of renewables will displace gas in the power sector
- Efficiency mandates: EU regulations require lower energy consumption by 2030, structurally reducing demand
- Increased electrification and hydrogen substitution: Electrification and hydrogen substitution will reduce the direct use of natural gas

<sup>1)</sup> RE degree scenarios are based on RE GasMarketCube. LNG demand from external parties are calculated based on their total European/EU gas demand, minus domestic gas production and piped imports data from Rystad Energy. 2) Trajectory from 2030 to 2040 based on the EU's linear demand trend from 2024 to 2030. Sources: Rystad Energy research and analysis, Rystad Energy GasMarketCube; Rystad Energy EnergyScenarioCube; Reuters

# Firm commitment to contract regas, yet options remain to boost imports amid Russian sanctions

## Regasification capacity in the EU and contracted capacity

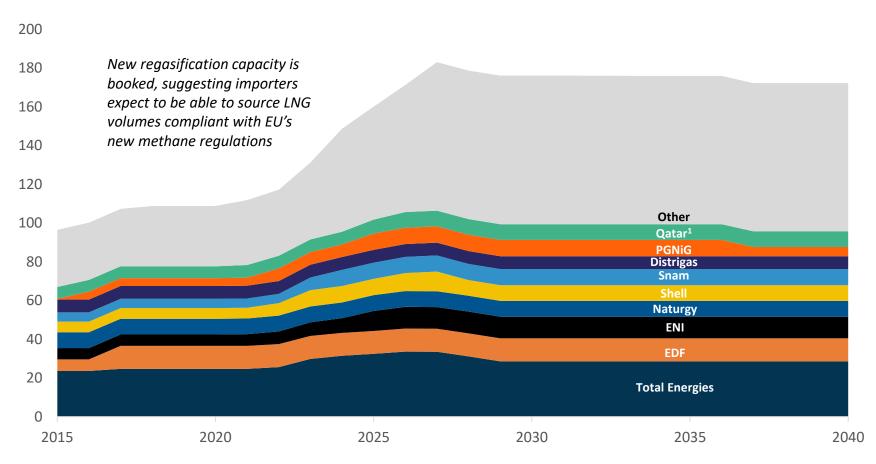


Sources: Rystad Energy research and analysis; Rystad Energy GasMarketCube; Rystad Energy LNGTradeCube

# Strong commitment from EU importers to contract regasification capacity despite new methane regulations

#### Booked regas. capacity in the EU by company

Billion cubic meters

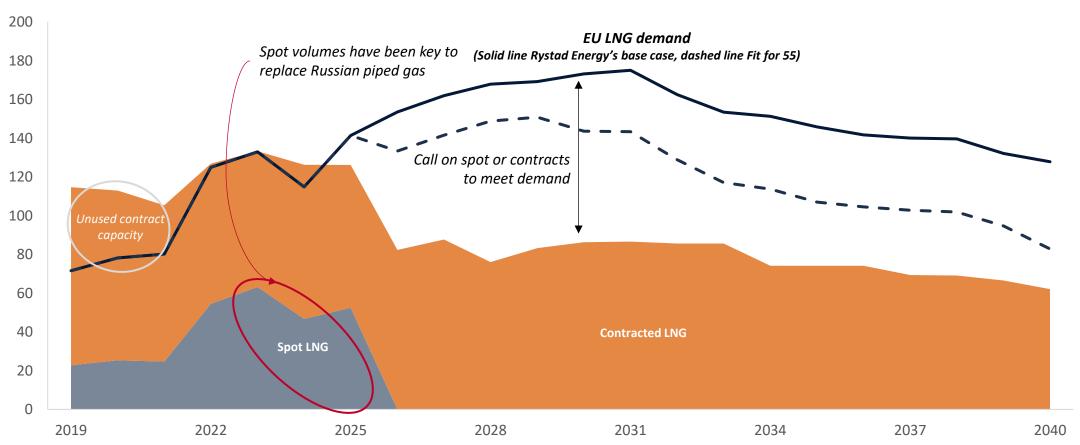


- The fact that gas importers continue to book new regasification volumes suggests they are confident in their ability to continue importing LNG despite the uncertainties of the EU Methane Regulation. Large incumbents and state-owned entities are the ones that are signing most regasification contracts.
- These contracts obligate buyers to utilize or financially settle for capacity, even if market or regulatory conditions change

<sup>1)</sup> Includes Qatar Petroleum, Qatar Energy and PowerGlobe Qatar. Note: The contracts include all disclosed contracts in the EU Sources: Rystad Energy research and analysis; Rystad Energy GasMarketCube; Rystad Energy LNGTradeCube

# Forward, EU will have a growing call on spot and yet-to-be contracted volumes to meet demand

# **EU production and imported gas, Rystad Energy base case**<sup>1,2</sup> Billion cubic meters



<sup>1)</sup> LNG demand from external parties are calculated based on their total European/EU gas demand, minus domestic gas production and piped imports data from Rystad Energy. Trajectory from 2030 to 2040 based on the EU's linear demand trend from 2024 to 2030. 2) Contracted volumes refers to long term SPA agreements. 2) EU has announced a phase out of Russian gas imports and by November 2027 all Russian gas volumes will be phased out. Sources: Rystad Energy research and analysis; Rystad Energy GasMarketCube; Rystad Energy LNGTradeCube

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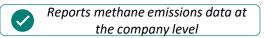
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<u>Appendix</u>

# More than 60 upstream operators are committed to achieving full compliance with the EU MRV requirements, including multiple of the majors

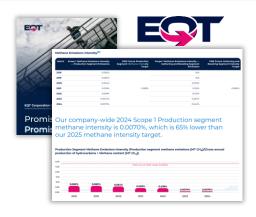
#### Reporting of methane emission data in the industry

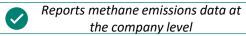




"In pursuit of our emissions reduction targets, we are dedicated to reducing our GHG emissions and transparently reporting our progress. A key component of this strategy is reducing methane emissions and maintaining the methane emissions reductions already implemented"

-Expand Energy, Sustainability Report 2024

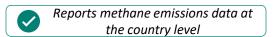




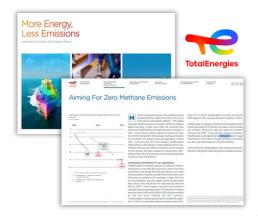
"Our company-wide 2024 Scope 1 Production segment methane intensity is 0.0070%, which is 65% lower than our 2025 methane intensity target"

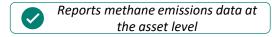
-EQT Corporation, ESG Report 2024





"In 2024, we continued to deliver methane emissions intensities well below our 0.2% target, with overall methane emissions intensity at 0.04% for Shell-operated oil and gas assets with marketed gas and 0.001% for Shell-operated oil and gas assets without marketed gas" -Shell, Annual Report and Accounts 2024





"We are on track to reach our -50% target a year ahead of our 2025 target, aiming for zero methane emissions by 2030 (-80% target). For this reason, we have decided to extend to all our Upstream Oil & Gas operations the target of methane intensity emissions below 0.1% (and not only to Upstream gas operations)"

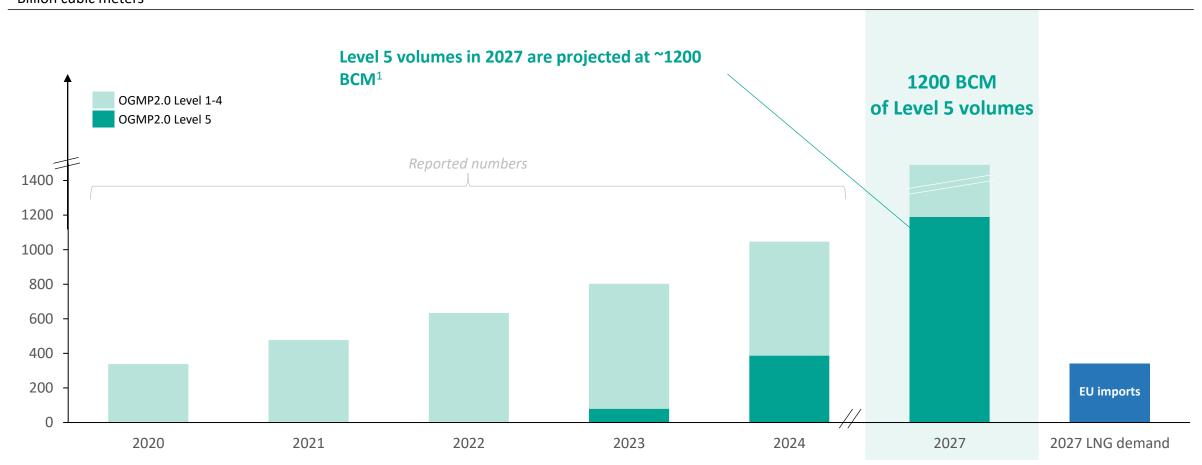
-Total Energies, Sustainability & Climate report 2024

Note: OGMP consists of more than 150 companies, with leading entities such as ExxonMobil, Chevron, bp, TotalEnergies, Eni, Shell, ADNOC, CoP, Petrobras, Woodside etc. being notable contributors. Also domestically focused American entities such as Expand and EQT are members. OGMP2.0 Level 5 meets the monitoring and reporting requirements of the EU Methane Regulation per Article 28(5a). In addition, Article 28(5a) requires importers to demonstrate that imported crude oil and natural gas are subject to independent third-party verification of such reporting.

Sources: Rystad Energy research and analysis; Expand Energy; EQT Corporation; Shell; TotalEnergies; United Nations Environment Programme; OGMP; EU Methane Regulation

# Projected 2027 OGMP2.0 Level 5 gas volumes are twice the EU's forecasted demand

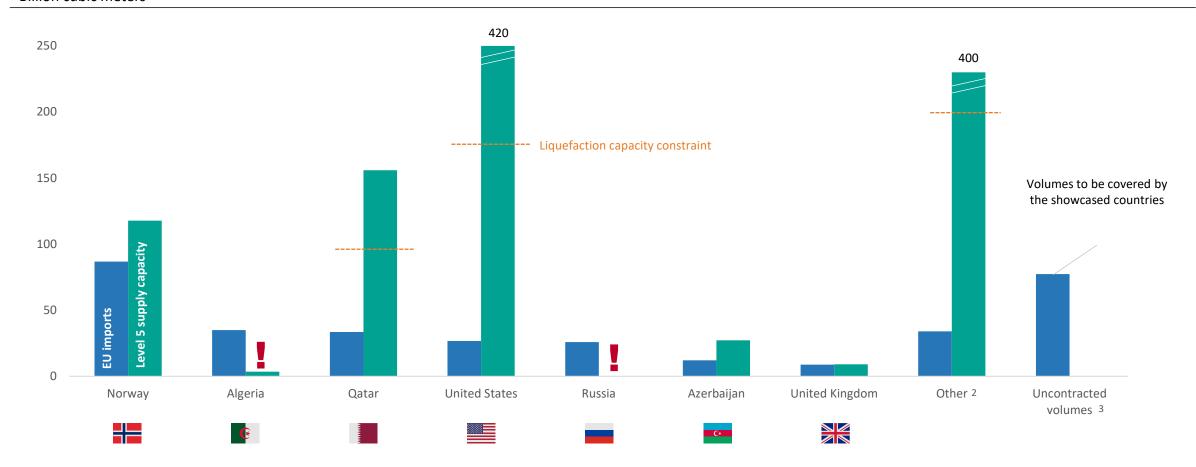
# OGMP2.0 gas volumes split by level, historic and 2027 forecast, and EU import demand Billion cubic meters



<sup>1)</sup> By 2027, all Level 4 and 5 production is expected to reach Level 5. Operators with two years of Gold Standard Reporting/Pathway are also expected to achieve 100% Level 5 production. For operators in their first year of the Gold Standard Pathway, 50% of Level 3 production is expected to reach Level 5 by 2027. Exemptions made for Qatar Energy and Vår Energy where 100% is assumed to reach Level 5 by 2027. See appendix for details on calculations; Sources: Rystad Energy UCube; OGMP: Rystad Energy research and analysis

# In the aggregate, OGMP2.0 L5 volumes expected be available

# 2027 EU gas imports and expected OGMP2.0 Level 5 gas supply capacity<sup>1</sup> by export country Billion cubic meters

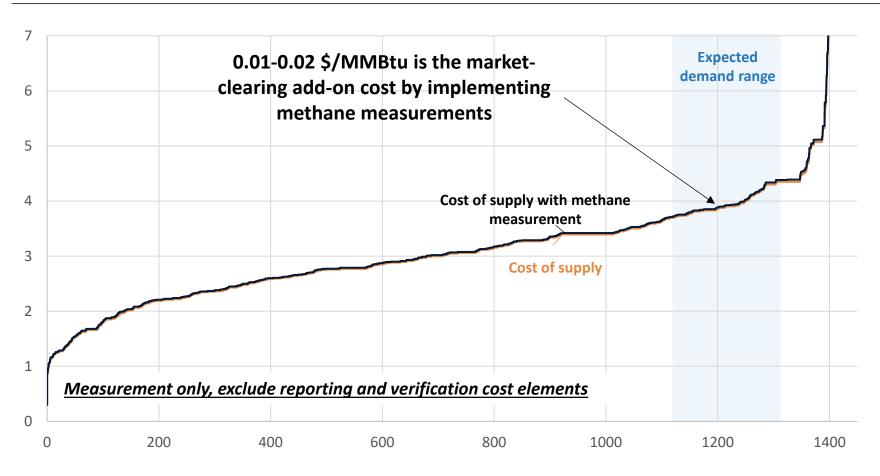


<sup>1)</sup> See appendix for calculation details 2) Countries that are not exporting gas are excluded. 3) Residual demand are volumes not covered by active contract offtake and piped volumes.; Sources: Rystad Energy research and analysis; Rystad Energy Ucube; Rystad Energy GasMarketCube; OGMP

## Methane measurement will have a negligible impact on the upstream gas price-break evens

#### Methane measurement impact on US prices

Billion cubic meters (x-axis) and USD/MMBtu (y-axis)



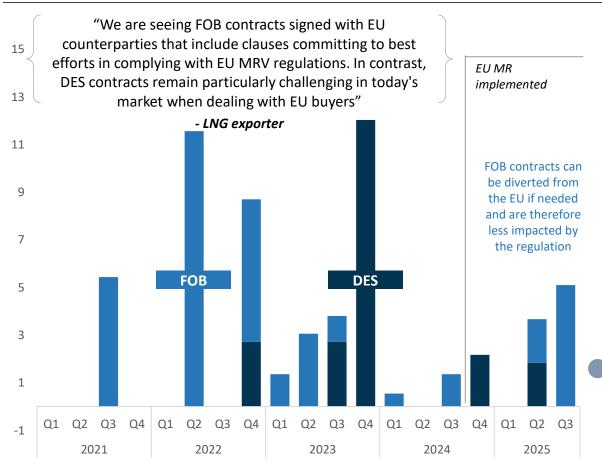
- A \$300 MRV installation cost per well has a minimal impact on breakeven prices, indicating that MRV costs have a minor effect on LNG costs.
- The MRV-related cost addition applies at the upstream level but is layered on top of the Henry Hub-linked price and subsequent LNG value chain costs. Upstream components (Henry Hub and feedgas) represent only a small share of the total landed cost, which is largely driven by midstream elements such as liquefaction, transport, and regasification.
- Consequently, the MRV-related cost increase has a 2–3x smaller relative impact once these midstream cost components are included, making the overall effect on EU-delivered LNG prices marginal, if one excludes potential liability and other regulatory cost additions.

Sources: Rystad Energy research and analysis; Rystad Energy GasMarketCube

# No clear change in LNG contracting activity post EU Methane regulation took effect in 2024

#### Signed contracts to the EU split by FOB and DES, 2010-2025<sup>1</sup>

Billion cubic meters



# Data include only identified contracts Source: Rystad Energy research & analysis; LNG Trade Tracker

#### **FOB (Free on Board)**

- United States exporters of LNG are more active in the FOB LNG contracting.
- Higher flexibility for buyers as volumes can be rerouted elsewhere.

#### DES (Delivered Ex-Ship)

- Qatar exporters are most active in DES LNG contracting and longterm contracts.
- DES contracts are delivered at the final location.
- Lower flexibility but higher transparency of delivery and quantitates for both sellers and buyers

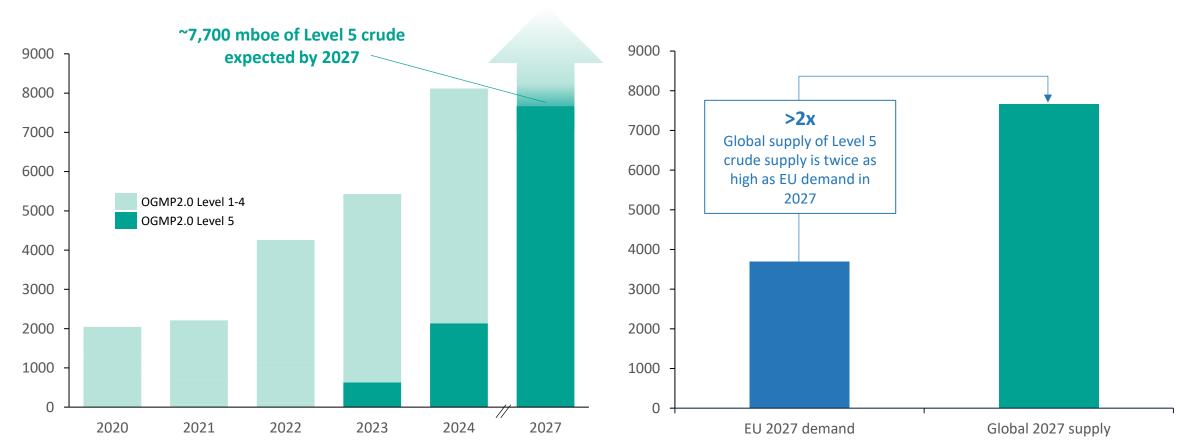
#### **LNG** contracting trends

- FOB and DES contracts have risen sharpy following the invasion of Ukraine, as evident by 2022 and 2023 contracts.
- 2024 and 2025 have had continued paced of contracting, despite some market participants flagging contractual delays

## Crude volumes likely available as supply increase rapidly and market face less trade constraints

# OGMP2.0 crude oil supply development 2020-2024 and 2027<sup>1</sup> Million boe

**2027** crude oil demand to the EU and OGMP2.0 level 5 crude production<sup>1</sup> Million boe

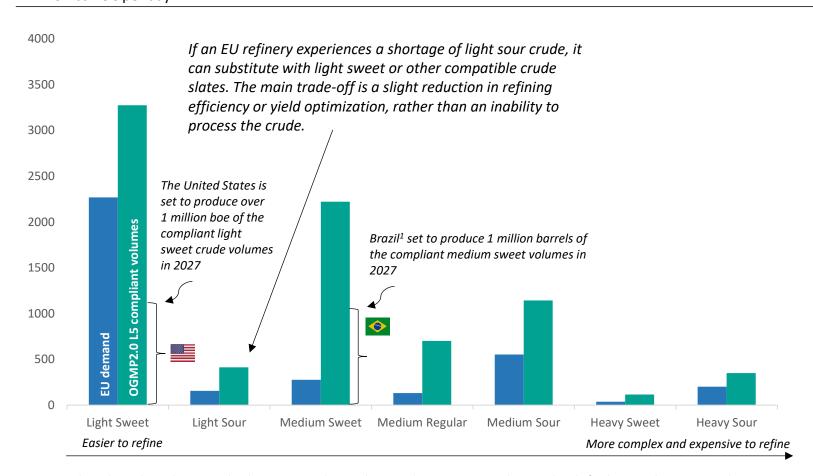


<sup>1)</sup> By 2027, all Level 4 and 5 production is expected to reach Level 5. Operators with two years of Gold Standard Reporting/Pathway are also expected to achieve 100% Level 5 production. For operators in their first year of the Gold Standard Reporting/Pathway, 50% of Level 3 production is expected to reach Level 5 by 2027. Exemptions made for Qatar Energy and Vår Energy where 100% is assumed to reach Level 5 by 2027. See appendix for details on calculations; Sources: Rystad Energy UCube; OGMP: Rystad Energy research and analysis

# Availability of crude oil at OGMP2.0 Level 5 not expected to pose a concern for EU refineries by 2027

Crude and condensate imports to the EU (OGMP2.0 L5) by grade and OGMP2.0 L5 compliant production for countries exporting to EU, 2027

Million barrels per day



- European refineries will likely continue to have access to ample crude volumes across all major grades by 2027.
- Light sweet crude remains the dominant import category, largely supported by U.S. supply, while sufficient availability of medium and sour grades ensures operational flexibility.
- This diversity of sources and grades underscores that crude quality will not be a limiting factor for EU refinery throughput or supply security. However, Rystad Energy have not evaluated intra country pipeline constrains which could potentially limit exports of the Level 5 crudes, neither on exporter nor importer sides.
- Operators achieving level 5 OGMP2.0 can become the preferred – and potentially – long-term suppliers to EU.

Note: Brazil – and Petrobras – have 100% level 3 OGMP2.0 volumes. They joined OGMP in 2023 with a stated goal of reducing and reporting methane emissions. See appendix for calculation details Source: Rystad Energy research and analysis; Rystad Energy Oil Trading Solution

# Oil can easily be transported and traded across regions, giving producers and buyers flexibility in where they source supply

#### Crude oil value chain

#### **Upstream**



#### Flexibility in sourcing

Oil is a global commodity sourced from a wide range of regions and sources, spanning all continents and various supply sources, both on- and offshore.

#### Midstream



#### Traded across regions

Crude oil can be transported via pipelines, tankers, rail, and trucks, providing high flexibility to move supply efficiently from diverse production regions to refineries and global markets.

#### **Downstream**



#### Refined and distributed

Crude oil is refined into products such as gasoline, diesel, jet fuel, and petrochemical feedstocks. These products are then stored, blended, and distributed to end customers across transport, industry, and consumer markets.

#### **Market Dynamics**

#### The liquid spot market allows for quick rerouting

- Crude oil and refined products are priced and traded through liquid spot and futures markets, allowing cargoes to be redirected quickly to where prices or demand are strongest. The market is characterized by an abundance of suppliers, ensuring high competition, diverse sourcing options, and strong resilience against regional disruptions.
- The global oil market is roughly 10–15 times larger than the traded LNG market in energy-equivalent terms (≈5,500 TWh vs. 400–500 TWh traded LNG annually)
- In contrast, natural gas requires infrastructure of pipelines and/or liquefaction to be transported.

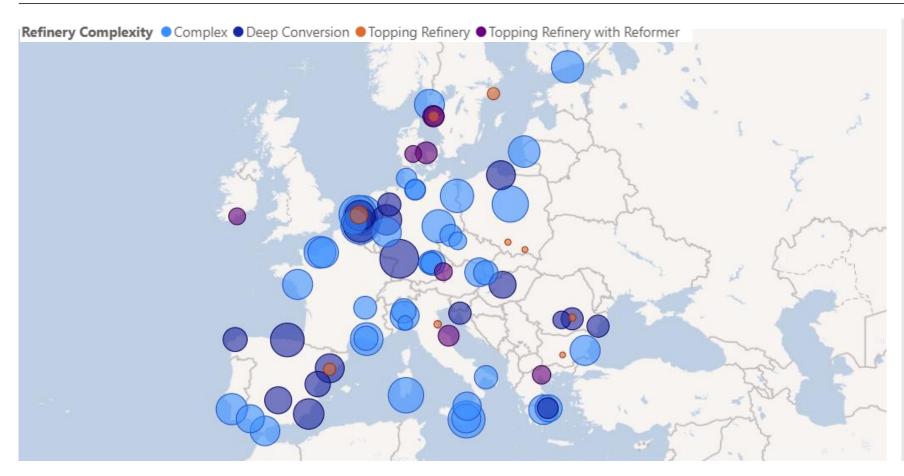
The global spot market structure enables faster reallocation of volumes

The crude value chain provides flexibility for producers and buyers

# EU refineries can process different crude grades if needed

#### Crude and condensate imports to the EU by grade, 2024

Million barrels per day



- Most refineries in the EU are complex facilities capable of processing a wide range of crude grades, enabling them to process a wide range of crude grades.
- EU refineries are generally configured for flexibility, especially after years of importing diverse crude grades from multiple regions.
- While some plants are optimized for certain blends (like light sour crudes), most can adjust their slate through operational changes, blending, or processing lighter crudes such as light sweet in place of light sour.
- Impact on refinery margin's, existing contractual routes and matching of exporters and refiners have not been studied in this study.

Sources: Rystad Energy research and analysis; Rystad Energy Oil Trading Solution

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Part 1: Summary

Part 2: Ample global LNG supply gives the EU leverage to set global environmental and transparency standards

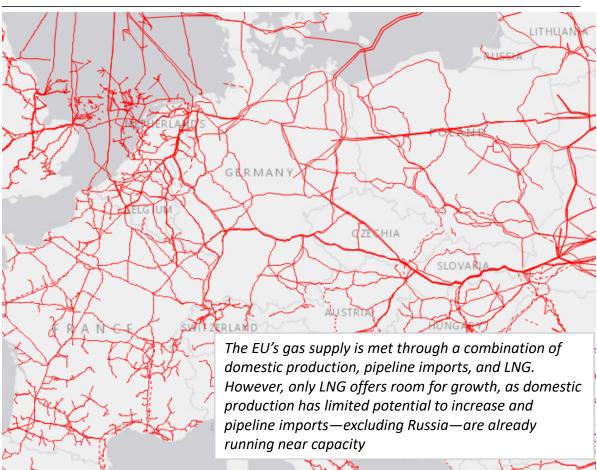
Part 3: EU Methane regulation's MRV requirements are achievable with high global supply of OGMP 2.0 Level 5 volumes

Part 4: Member States' position with respect to OGMP 2.0 Level 5 supplies

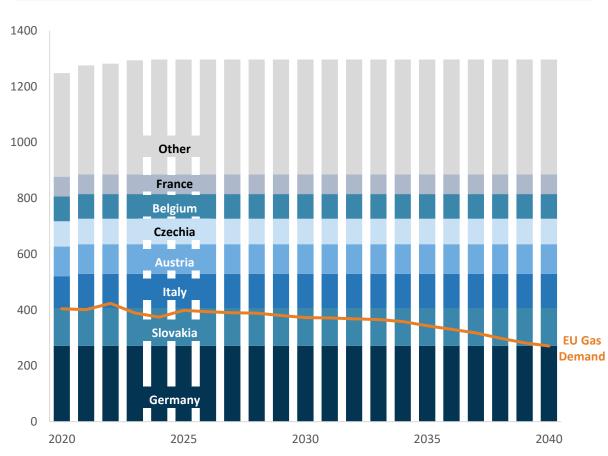
<u>Appendix</u>

# The EU has a significant pipeline network, allowing imported LNG and piped-gas to be distributed between countries from the receiving terminal

#### Gas pipeline network in the EU



# **EU cross border pipeline capacity by import country and gas demand**Billion cubic meters



Sources: Rystad Energy research and analysis; Rystad Energy GasMarketCube

# Several countries with volumes at risk; however, alternative sourcing provides "safety net"

	Piped Gas exporters to EU			LNG exports to EU
	Norway/UK	Russian	Algerian	All LNG suppliers
		No volumes		Key focus is securing OGMP2.0 L5 LNG volumes through spot or new contracts.  Limited volumes needed.
	OGMP2.0 L5 piped volumes			LNG imports must replace Russian LNG and secure OGMP2.0 L5 cargos
				Netherland's high dependency on spot market may introduce challenges and new contracts are needed
â		No volumes	Largest supplier at highly at risk due to non-OGMP2.0 L5 volumes	85% of the country's gas volumes will need to be sourced on new contracts to bring OGMP2.0 L5 gas to the country
				Limited direct LNG risk, but lost pipeline volumes push demand beyond regas capacity, requiring intra-EU pipeline flows
	No volumes (net exporter)			
	No Volumes	Landlocked - Russian dependency	No volumes	No LNG volumes. As a landlocked country, Hungary depends on pipeline imports and traditionally relied on Russian gas. Alternative pipeline routes from Croatia and Greece have capacity to replace this Russian gas as all have higher available regas. capacity
<b>*</b>	ivo volumes			No LNG volumes. Slovakia's gas demand is relatively low, and the country is expected to shift its dependence from Russian to intra-European sources, a transition initiated since 2022

Note: Compliant volumes above are based on the forecasted volumes of level 5 OGMP2.0 supply and does not account for potential other regulatory challenges, e.g., tracking and verification. Similarly, this is the case for the preceding pages. Sources: Rystad Energy research and analysis

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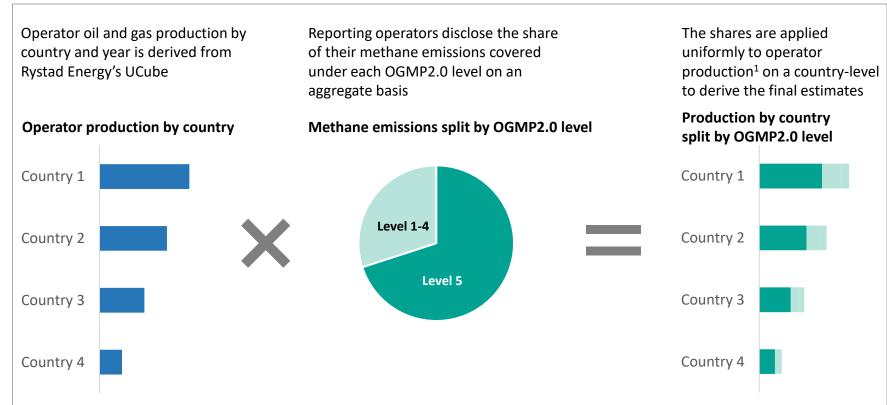
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## **Appendix**

# To estimate OGMP2.0 production, country-level production is multiplied with reported OGMP2.0 levels

#### Methodology for estimating OGMP2.0 level production data by country

#### Methodology for 2020-2024 data



#### **Methodology for 2027 estimates**

By 2027, all Level 4 and 5 production is expected to reach Level 5.

Operators with two years of Gold Standard Reporting/Pathway are also expected to achieve 100% Level 5 production. For operators in their first year of the Gold Standard Pathway, 50% of Level 3 production is expected to reach Level 5 by 2027. All other production is not expected to do so.



Gold Standard Reporting: company has achieved OGMP2.0 Level 5 within deadline



Gold Standard Pathway: company is in line to reach Level 4/5 within 3 years for operated assets



Do report emissions, but not in line with Gold Standard Pathway

<sup>1) 37</sup> of 44 companies have 90% of emissions or production at one level/region giving a high accuracy despite the limited granularity of the data Sources: Rystad Energy research and analysis; United Nations Environment Programme; OGMP



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