

Italy's Soaring Gas Investments Ignore Falling Demand

Ana Maria Jaller-Makarewicz, Lead Energy Analyst, Europe, IEEFA



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Key Findings

Italian energy company Snam continues investing in gas infrastructure despite Italy's recent declining demand for the fuel.

Snam's increased investments often provide it with higher regulated revenues. Such incentives may encourage excessive capital expenditure.

The company owns a significant share of Italy's LNG infrastructure and two of the country's planned LNG terminals.

Falling LNG demand will lead to lower utilisation rates for Italy's expanding fleet of regasification terminals.



Executive Summary

Italy's declining gas consumption raises questions about its continued investment in the fuel. The country's gas demand dropped by 19% from 2021 to 2024. Meanwhile, liquefied natural gas infrastructure construction plans could see the country triple its regasification capacity from 16.1 billion cubic metres in 2022 to 47.5 billion cubic metres in 2026.

Snam Rete Gas, part of the Snam Group, is a key player in Italy's gas market. It operates a 32,000-kilometre nationwide pipeline network and supplies around 95% of the Italian market. Most of Snam's revenues are regulated to ensure that services are provided to third parties according to non-discriminatory criteria.¹ Such regulations could lead companies to unnecessarily increase investments.

Regulatory agencies in various European countries have been aiming to mitigate the risk of regulatory incentives potentially providing a bias towards excessive capital expenditure.² In Italy, energy regulator ARERA launched a programme in 2021 called Regulation by Objectives of Expenditure and Service to help consolidate and strengthen investment selectivity and efficient infrastructure use.³ This led to a new approach to revenue setting.

Despite this change, Snam's investments and regulatory revenues have been growing. Its regulated revenues increased by 20.1% year on year in the first half of 2024. This rise was mainly driven by a higher weighted average cost of capital and regulated asset base growth in its gas transportation and storage segments.

Gas Hub Plans Risk a Lack of Demand

Italy's liquefied natural gas (LNG) import capacity is expected to increase by 22% in the first quarter of 2025 as natural gas grid operator Snam opens its 5 billion cubic metre (bcm) Ravenna floating storage and regasification unit (FSRU). This investment does not align with the country's declining gas and LNG demand in recent years. Its gas demand dropped by 19% between 2021 to 2024. LNG imports fell 12% last year, according to Kpler.

Research published in 2024 by Italian energy regulator ARERA highlights that "LNG has been crucial to replace Russian pipeline gas supplies. However, further development of LNG infrastructure in a context of decreasing gas demand could result in significant overcapacity and could cause utilisation rates to fall again."⁴

¹ Snam. [Regulation](#). 17 July 2024.

² ARERA. [Methodology review for a regulatory framework based on a total expenditure approach \('ROSS-base'\)](#). December 2021.

³ ARERA. [Strategic Framework 2022-2025 of the Italian regulatory authority for energy, networks and environment](#).

⁴ ARERA. [LNG in Italy: infrastructures, market design and challenges](#). 10 June 2024.

Italy as a Gas Hub

Italy's goal to become a gas hub for Europe influenced its rapid investments in LNG infrastructure. Since February 2022, the country has added 7.5 bcm of regasification capacity, including the expansion of the Toscana FSRU and Adriatic LNG terminals and the installation of a new FSRU in Piombino. As well as the upcoming Ravenna FSRU launch, a new terminal in Porto Empedocle is due to start operating in 2026. To end its dependency on Russian gas imports, Italy is also considering developing the shelved Gioia Tauro terminal, which could process 12 bcm of LNG annually.⁵ It was proposed in 2005 and could be commissioned in 2026.

This buildout could triple the country's LNG regasification capacity from 16.1 bcm in 2022 to 47.5 bcm in 2026. As gas consumption in Italy and Europe is expected to decrease in the coming years, there is a risk that this increase in capacity might not be needed.

Snam owns a significant share of Italy's operational LNG terminals and 100% of two planned terminals.

⁵ Ports Europe. [Port of Gioia Tauro is a possible site for LNG regasification terminal](#). 11 April 2024.

Table 1: Italy's LNG Terminals

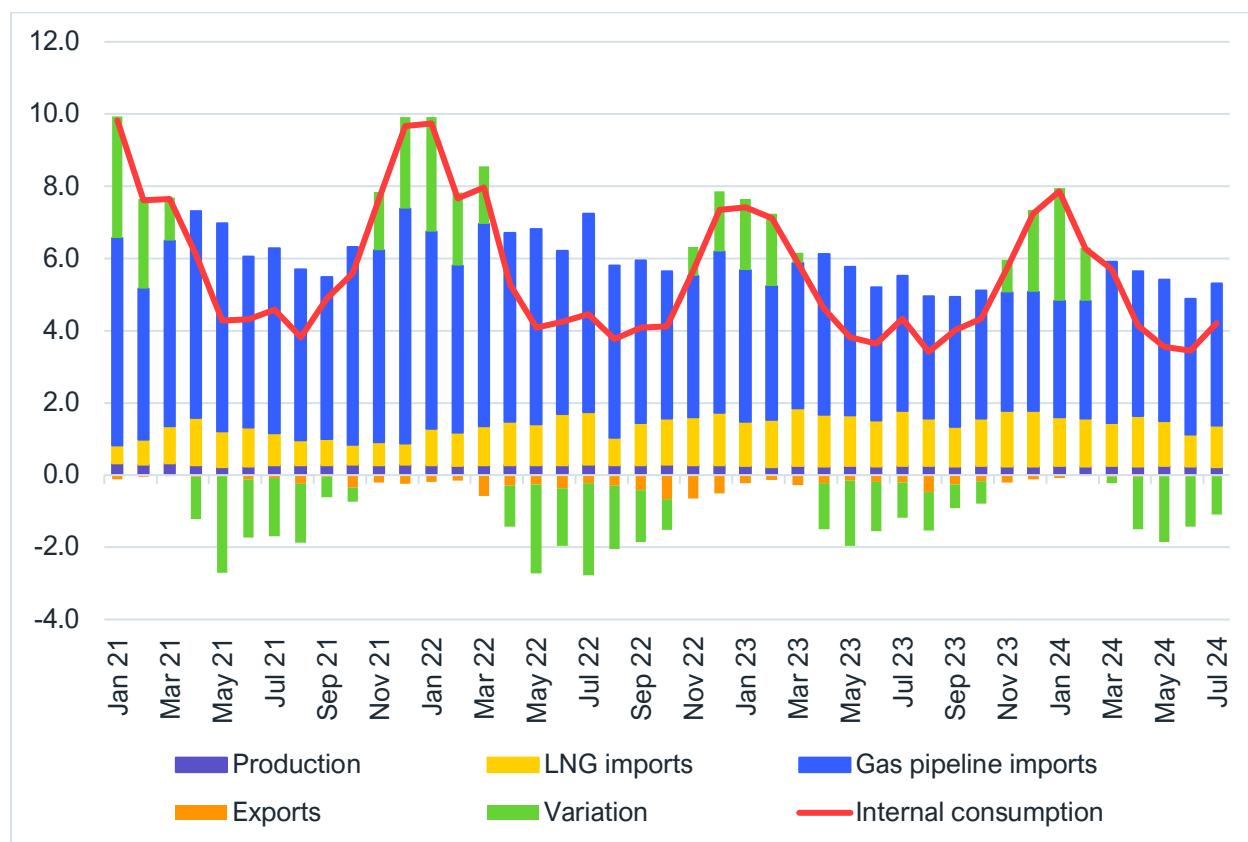
Installation name	Start-up year	Operator	Shareholders	2021 capacity (bcm)	Capacity additions (bcm)			
					2022	2023	2025	2026
Toscana FSRU	2013	OLT Offshore LNG Toscana	Snam (49.07%), Igneo Infrastructure Partners (48.24%), Golar LNG (2.69%)	3.6		1.5		
Panigaglia (onshore)	1971	GNL Italia	Snam Rete Gas (100%)	3.5				
Adriatic LNG (offshore gravity-based structure)	2009	ExxonMobil, QatarEnergy, Snam	Snam (30%), VTTI (70%)	8.0	1.0			
Piombino (Italis LNG FRSU)	2023	FSRU Italia	Snam (100%)			5.0		(5.0)
Liguria (Italis LNG FRSU)	FSRU will move to Liguria in 2026	FSRU Italia	Snam (100%)					5.0
Ravenna (FSRU BW Singapore)	Planned for 2025	Depositari Italiani GNL	Snam (100%)				5.0	
Porto Empedocle	Planned for 2026	Nuove Energie (owned by Enel)	Enel (100%)					8.0
Gioia Tauro	Planned for 2026	LNG Medgas Terminal	Iren (50%), Sorigenia (50%)					12.0
Total installed capacity				15.1	16.1	22.5	27.5	47.5

Source: Gas Infrastructure Europe, Statista, IEEFA.

Italy's Gas Consumption Keeps Declining

Italy's gas demand dropped 19% from 2021 to 2023 and was flat in 2024.

Figure 1: Italy Monthly Gas Balance (bcm)



Source: Italian Ministry of Environment and Energy Security.

While the country's gas production has been low and stable in recent years, gas pipeline imports declined by 28% from 2021 to 2023.

Italy's imports of Russian gas via the Trans Austria Gas pipeline decreased from 29.1 bcm in 2021 to 2.8 bcm in 2023, a 90% drop. In that time, imports of Libyan gas via the Greenstream pipeline fell 22%. On the other hand, gas coming from northwest Europe via Switzerland through the Transgas pipeline tripled between 2021 and 2023, imports of Algerian gas via the Trans-Mediterranean pipeline increased 9% and imports of Azeri gas via the Trans Austria Gas pipeline grew 38%.

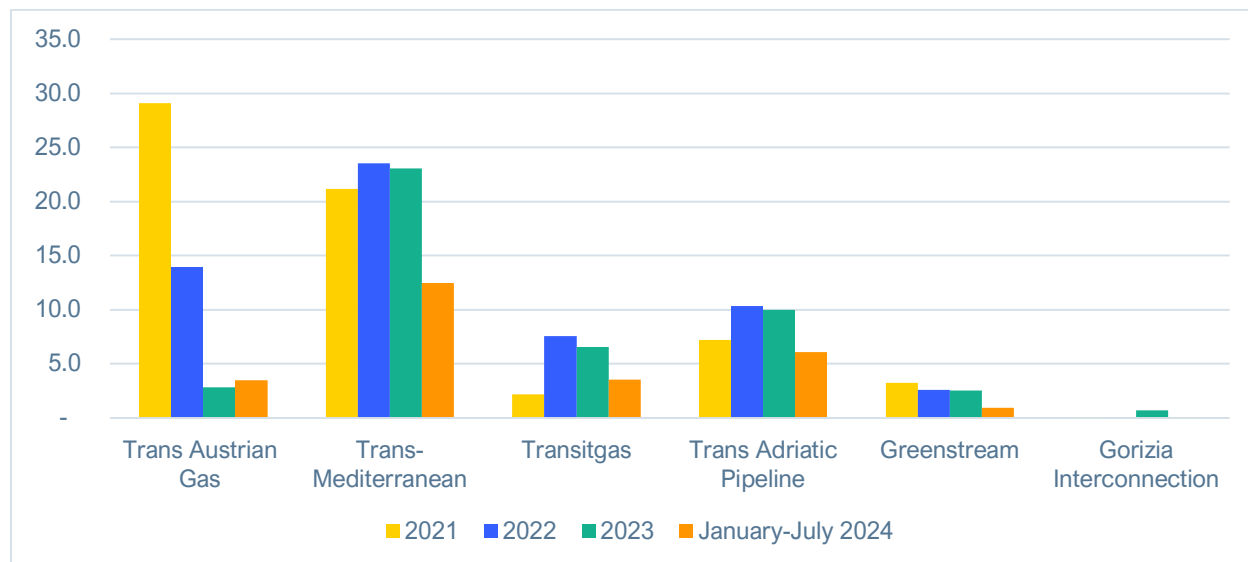


The average utilisation rate of Italy's LNG terminals from January to September 2024 suggests that regasification volumes are not keeping up with expanding LNG capacity.

As for LNG, Italy's imports increased 71% from 2021 to 2023, but they fell 12% in 2024.

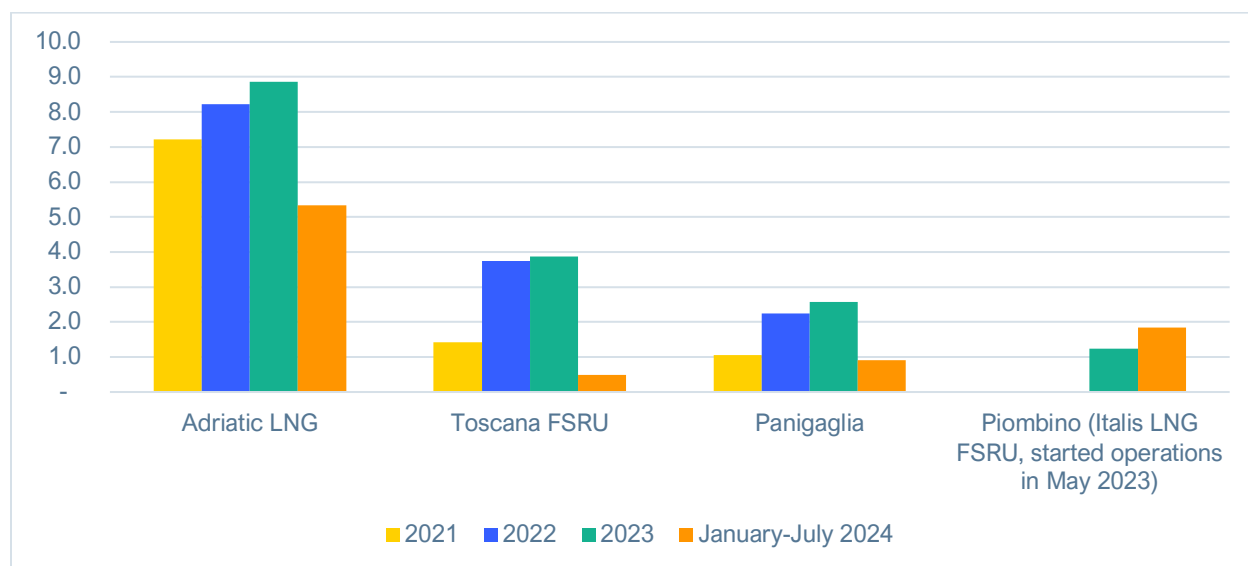
Imports at the Panigaglia and Toscana FSRU terminals more than doubled between 2021 and 2023, while those at the Adriatic LNG terminal increased 23%. The FSRU Italis LNG at Piombino started operations in May 2023.

Figure 2: Pipeline Gas Flows to Italy (bcm)



Source: Kpler, IEEFA.

Figure 3: LNG Flows to Italy (bcm)

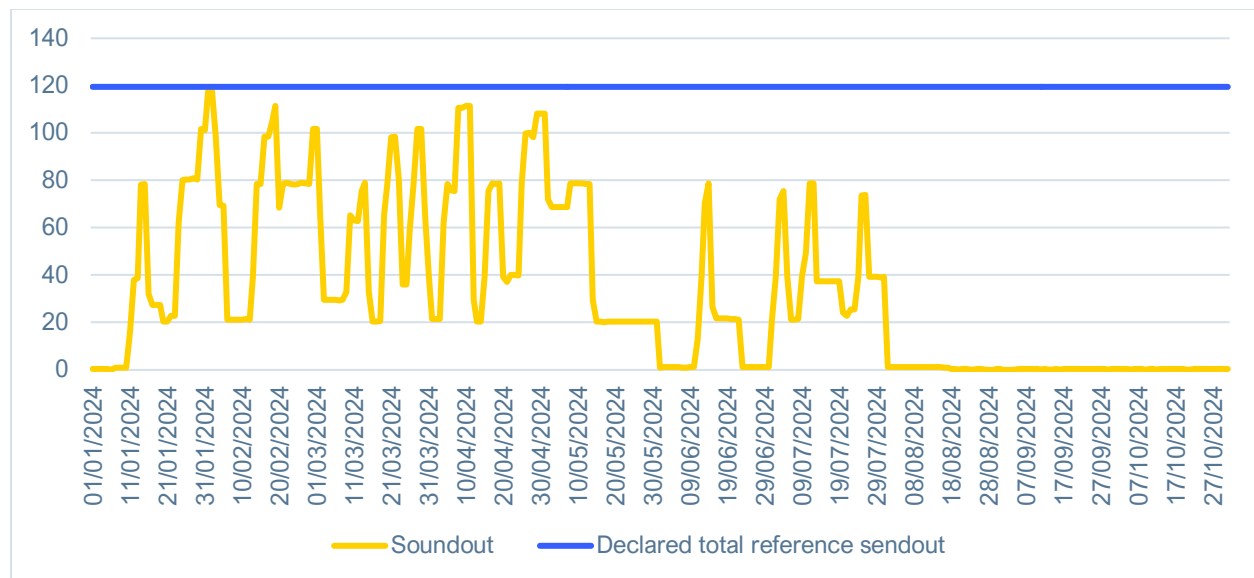


Source: Kpler, IEEFA.

The average utilisation rate of Italy's LNG terminals from January to September 2024 suggests that regasification volumes are not keeping up with expanding LNG capacity. In that timeframe, the

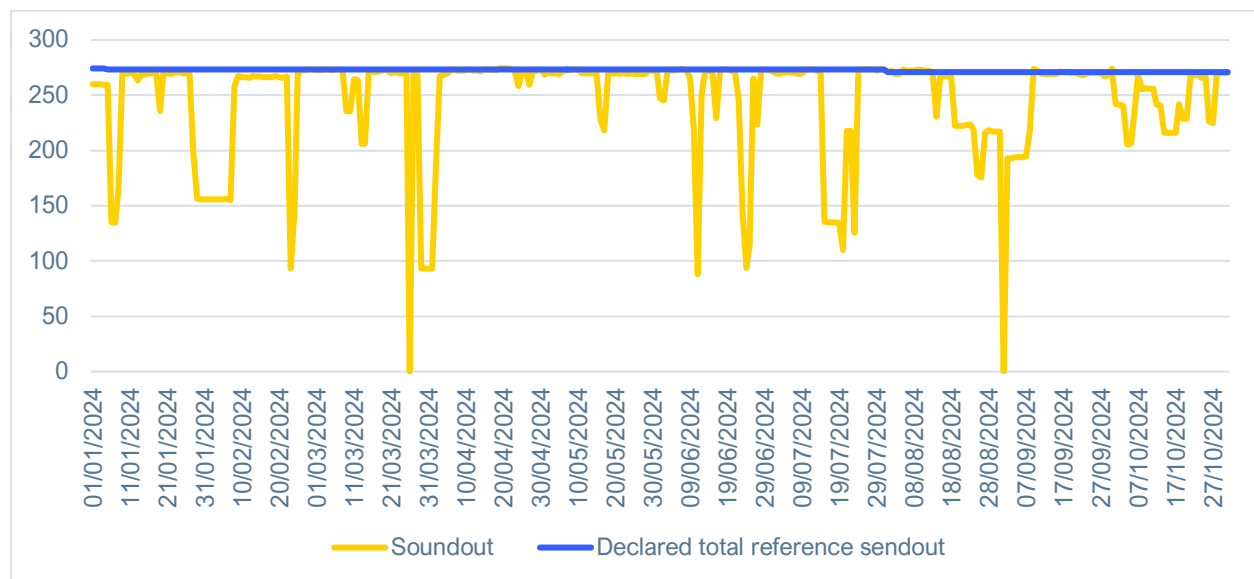
utilisation rates were high for Adriatic LNG (90%) and Piombino (67%), but much lower for Panigaglia (28%) and Toscana FSRU (13%), which has been out of service since the end of February 2024.

Figure 4: Panigaglia LNG Terminal Utilisation Rate (Gigawatt-Hours per Day)



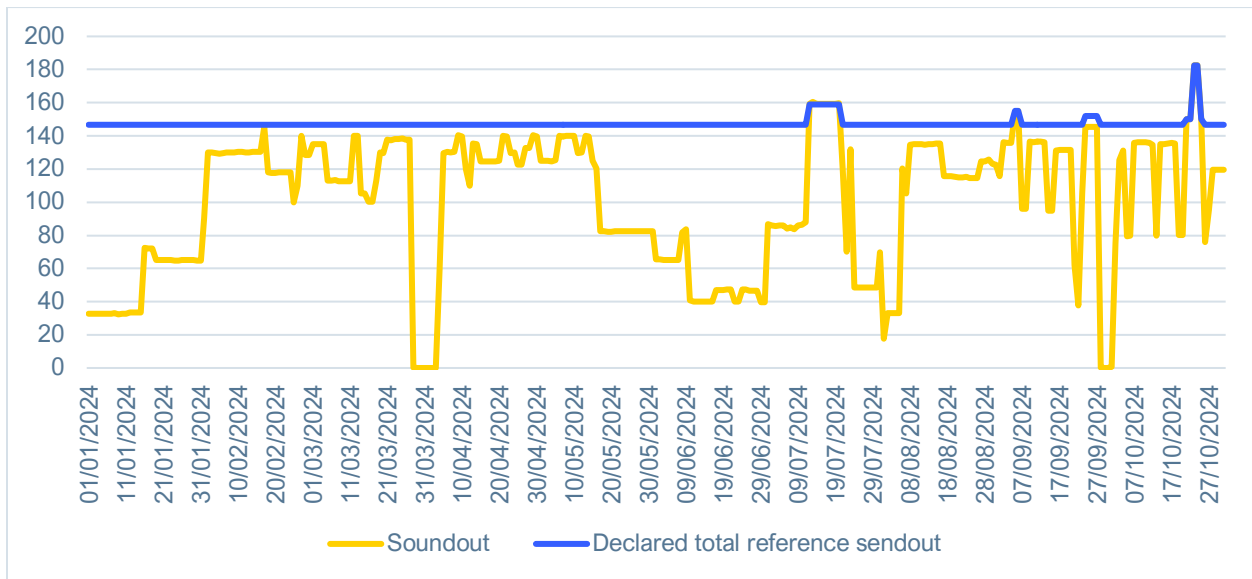
Source: Gas Infrastructure Europe.

Figure 5: Adriatic LNG Terminal Utilisation Rate (Gigawatt-Hours per Day)



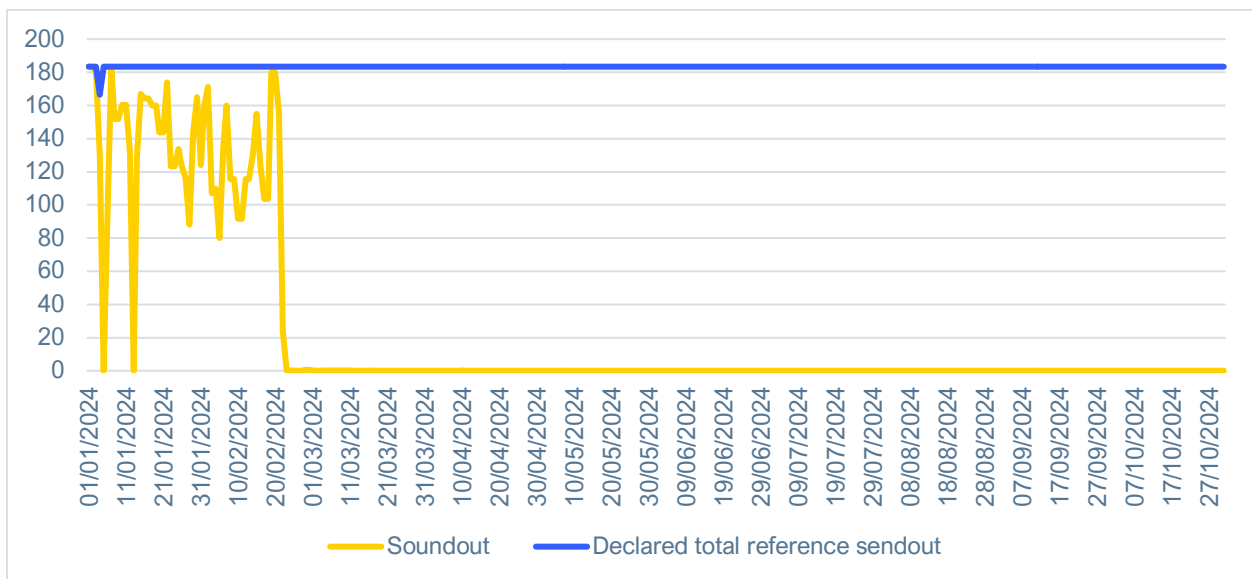
Source: Gas Infrastructure Europe.

Figure 6: Piombino LNG Terminal Utilisation Rate (Gigawatt-Hours per Day)



Source: Gas Infrastructure Europe.

Figure 7: Toscana FSRU Utilisation Rate (Gigawatt-Hours per Day)



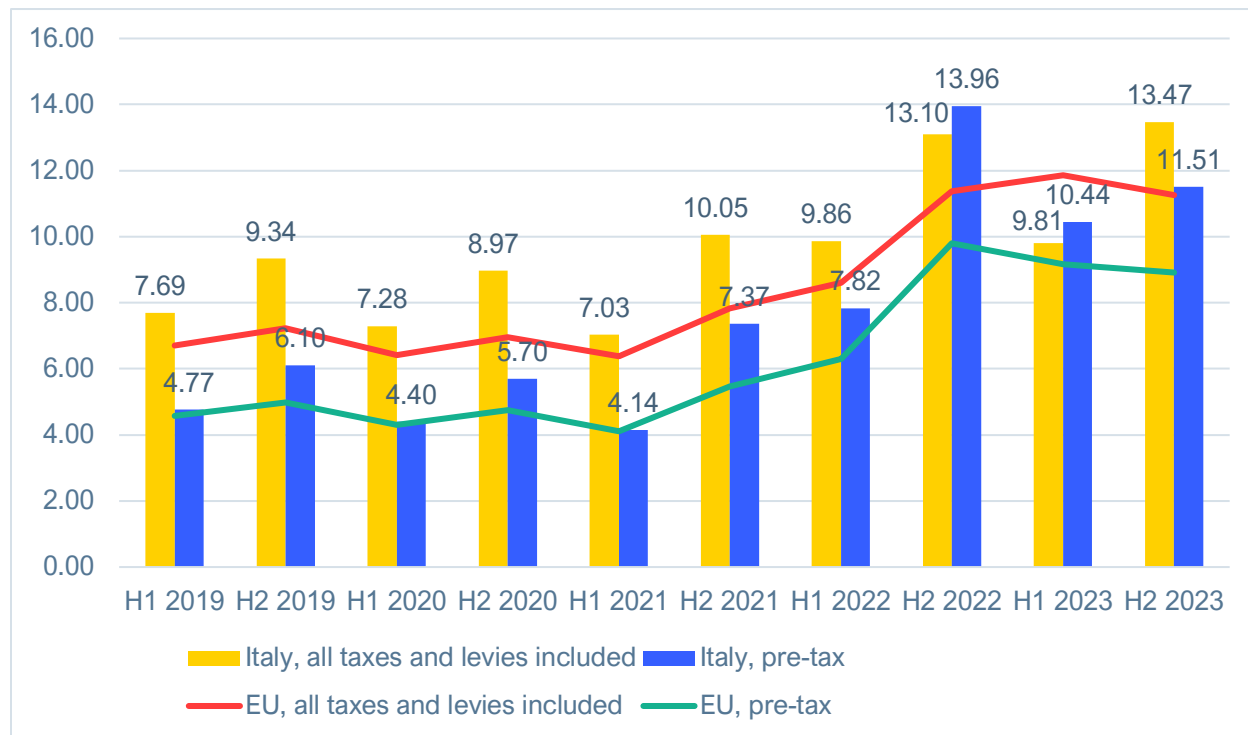
Source: Gas Infrastructure Europe.

If Italy's gas consumption continues falling, its LNG demand will be less than one-third of its regasification capacity by 2030.

Italy Has Among Europe's Highest Natural Gas Prices

In the second half of 2023, Italian domestic customers' natural gas tariffs were higher than the European Union (EU) average.

Figure 8: Italy and EU Household Gas Prices (€ per 100 Kilowatt-Hours)



Source: Eurostat.⁶

Italy depends heavily on natural gas imports⁷ and on the high taxation applied to the fuel's consumption. For instance, value-added tax accounted for 22% of Italian household gas prices in H1 2022. Consumers also pay a regional tax and a tax based on energy consumed. To help consumers face cost increases, the Italian government decreased the value-added tax on gas to 5% for the end of 2022 and 2023.

Average EU household gas prices skyrocketed in 2022 amid Russia's full-scale invasion of Ukraine. That year saw Italy's gas price increase to a record €13.5 per 100 kilowatt-hours. Average EU household gas prices declined in the second half of 2023.

⁶ Eurostat. [Natural gas price statistics](#). October 2024.

⁷ Statista. [Dependency rate from imports of natural gas in Italy from 2006 to 2021](#). 23 May 2024.

A Market Dominated by One Player

Snam Rete Gas, part of the Snam Group, is Italy's main gas transmission system operator. It operates a 32,000-kilometre nationwide pipeline network and supplies about 95% of the Italian market. All Snam Rete Gas pipelines have reverse flow capability.⁸

In comparison, Società Gasdotti Italia, Italy's second-largest transporter of natural gas, operates a pipeline network of about 1,300 kilometres, mainly in the south of the country.

Snam also controls Infrastrutture Trasporto Gas, which operates the 83-kilometre Cavarzere-Minerbio pipeline that transports gas from the Adriatic LNG terminal to a national distribution network hub.⁹

Italy's gas distribution sector is highly fragmented. Snam owns 13.5% of Italgas,¹⁰ the country's most significant gas distribution company, which owns 28% of the distribution network.

Snam has the largest ownership of gas pipelines in the EU.¹¹ Its pipeline network has a combined length of approximately 38,000 kilometres, in Italy and abroad.¹²

A consortium comprising Snam (60%), Enagás (20%) and Fluxys (20%) owns 66% of Greek gas system operator DESFA.

Regulated Revenues Incentivise Investments

Most of Snam's revenues are regulated to ensure that services are provided to third parties according to non-discriminatory criteria.¹³ Such regulations can encourage companies to increase investments to raise revenues.

Snam's regulated activities are gas transport, dispatching, storage and regasification. The regulations mainly define the allowed revenues and tariffs, the rules to access infrastructure and the quality of provided services.

ARERA regulates Italy's tariff systems for gas transportation, storage and regasification services. For instance, it defines the criteria for setting the tariffs in each regulatory period.

⁸ International Energy Agency. [Italy Natural Gas Security Policy](#). 18 October 2022.

⁹ Snam. [Snam completes the acquisition of Infrastrutture Trasporto Gas and 7.3% of Adriatic LNG from Edison](#). 13 October 2017.

¹⁰ Snam. [Acquisition and divestments](#). May 2024.

¹¹ Statista. [Length of pipelines owned by leading natural gas transporting companies in the European Union \(EU\) as of 2019](#). July 2019.

¹² Snam. [About us](#). 30 September 2024.

¹³ Snam. [Regulation](#). 17 July 2024.

At the EU level, the Agency for the Cooperation of Energy Regulators helps ensure that a single European market for electricity, and similarly for natural gas, functions well.

The regulatory framework applicable to EU LNG infrastructure varies across member states. The terminals are incorporated in the regulated asset bases of national systems. This is to mitigate investment risks by ensuring secured revenue with tariffs set through regulated procedures to allow third-party access.¹⁴

Some EU terminals are subject to negotiated access regimes through direct negotiations between operators/promoters and users. These terminals are exempt from granting third-party access.

FSRUs typically operate under negotiated regimes. Such terminals secure capacity through long-term contracts to reduce the risk of future cost uncertainties.

A Reviewed Approach to Regulated Revenues

Regulatory incentives potentially create a bias towards excessive capital expenditure (capex).¹⁵ Regulatory agencies in various European countries have been working to mitigate this side effect.¹⁶

ARERA launched a programme called Regulation by Objectives of Expenditure and Service (ROSS) in 2021 to transform energy infrastructure regulation. This led to a new approach to setting the revenues of electricity and gas infrastructure services regulated by the authority.

The rationale behind ROSS is to:¹⁷

- Encourage companies' accountability by strengthening a forward-looking approach to spending
- Support the energy transition
- Enhance the integration of output-based mechanisms (or performance-based incentives, where system needs are typically defined in terms of measurable outcomes or performance metrics)

For revenues in the ROSS methodology, it is crucial to understand the shares of revenue covering capex and operational expenditure (opex).¹⁸ The ROSS methodology applies from 2024. As a result, the 2024 expense baseline acts as a reference to determine gas transmission tariffs.

¹⁴ European Union Agency for the Cooperation of Energy Regulators. [Analysis of the European LNG market developments](#). 19 April 2024.

¹⁵ ARERA. [Methodology review for a regulatory framework based on a total expenditure approach \('ROSS-base'\)](#). December 2021.

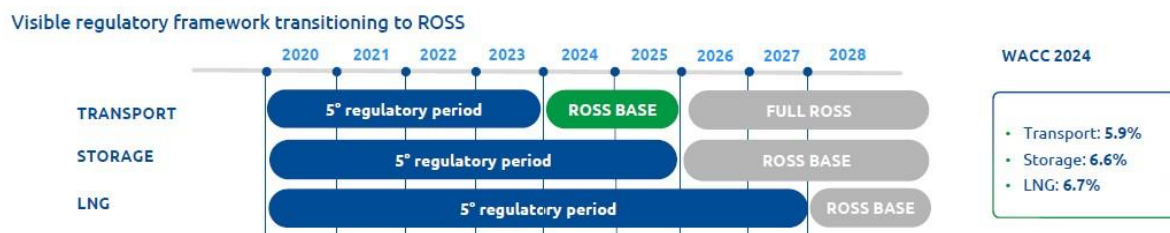
¹⁶ Ibid.

¹⁷ ARERA. [Workshop with analysts and investors 2023](#). 12 April 2023.

¹⁸ ARERA. [Initial guidelines: Tariff regulation criteria for the natural gas transmission and metering service for the sixth regulatory period \(6PRT\)](#).

A new regulatory code approved by ARERA introduces ROSS's main characteristics. The code defines the general criteria for the definition of the expenditures baseline and the remuneration of grid operators over eight years (2024-2031).¹⁹ Allowed revenues for grid operators directly influence users' tariffs, which are differentiated for each network service.²⁰

Figure 9: Visible and Supportive Regulation Underpinning Snam's Strategic Plan



Source: Snam.²¹

The ROSS concept's overarching framework includes three steps: the definition of the expenditures baseline, the calculation of monetary incentives and the computation of allowed revenues.²²

1. The total expenditures baseline is the sum of a capex-based and an opex-based baseline. The capex-based baseline is, in the first application, set equal to the actual capex. Therefore, no incentives are set on capex yet.
2. Core incentives are the difference between the total expenditures baseline and a firm's total expenditures. This difference represents the productive efficiency gained by the firm, and it is further distinguished into opex and capex efficiency components.
3. A firm's allowed revenues are the sum of actual expenditure and the share of efficiency gains. A "fixed opex-capex share" approach is then applied to calculate slow and fast money, remunerating the firm based on the sum of fast money, return on capitalised costs and depreciation. The expenses related to assets with a useful life of less than three years are considered "fast money", and "slow money" are all other expenses.

The weighted average cost of capital (WACC) identifies the allowed return to the invested capital and is calculated according to the capital asset pricing model.²³ The investments could be incentivised through a further remuneration added to the base return rate.

¹⁹ Bovera, F., Schiavo, L.L. & Vailati, R. [Combining Forward-Looking Expenditure Targets and Fixed OPEX-CAPEX Shares for a Future-Proof Infrastructure Regulation: the ROSS Approach in Italy](#). Current Sustainable/Renewable Energy Reports. 23 August 2024.

²⁰ Ibid.

²¹ Snam. [2023-27 Strategic Plan](#). 25 January 2024.

²² Bovera, F., Schiavo, L.L. & Vailati, R. [Combining Forward-Looking Expenditure Targets and Fixed OPEX-CAPEX Shares for a Future-Proof Infrastructure Regulation: the ROSS Approach in Italy](#). Current Sustainable/Renewable Energy Reports. 23 August 2024.

²³ Snam. [Regasification Regulation](#). 14 April 2023.

Snam's Investments

Snam has continued investing in gas and LNG infrastructure in recent years, despite recent declines in Italy's gas and LNG demand.

Investments:

- 2022
 - €400 million to acquire the Golar Tundra FSRU and for other LNG infrastructure investments
 - €1.6 billion on gas infrastructure
 - €300 million on the energy transition, including €200 million on biomethane acquisitions
 - The regulatory asset base (RAB) increased 5% thanks to new investments
- 2023
 - €331 million to acquire the FSRU BW Singapore
 - €410 million to acquire 49.9% of SeaCorridor, an operator of gas pipelines that connect Algeria and Tunisia to Italy
 - RAB increased 6% thanks to new investments
- H1 2024
 - Ravenna LNG terminal upgrading
 - Gas transportation network investments
 - Works on the Adriatic Backbone gas interconnector

Table 2: Snam Investments

Investments (€ million)	2021	2022	2023	H1 2023	H1 2024
Gas infrastructure	1,223	1,611	1,978	665	1,101
Transport	1,013	1,015	1,147	471	796
Storage	160	173	225	91	101
LNG	50	423	606	103	204
Energy transition	47	315	216	69	58
Total	1,270	1,926	2,194	734	1,159

Source: Snam.

Snam's increased investments often lead to higher regulatory revenues. The company's regulatory revenues grew by 14.4% in 2023 and by 20.1% YOY in H1 2024. In contrast, they decreased by 7.1% in 2022.

Snam's Revenues Do Not Depend on Gas Volumes

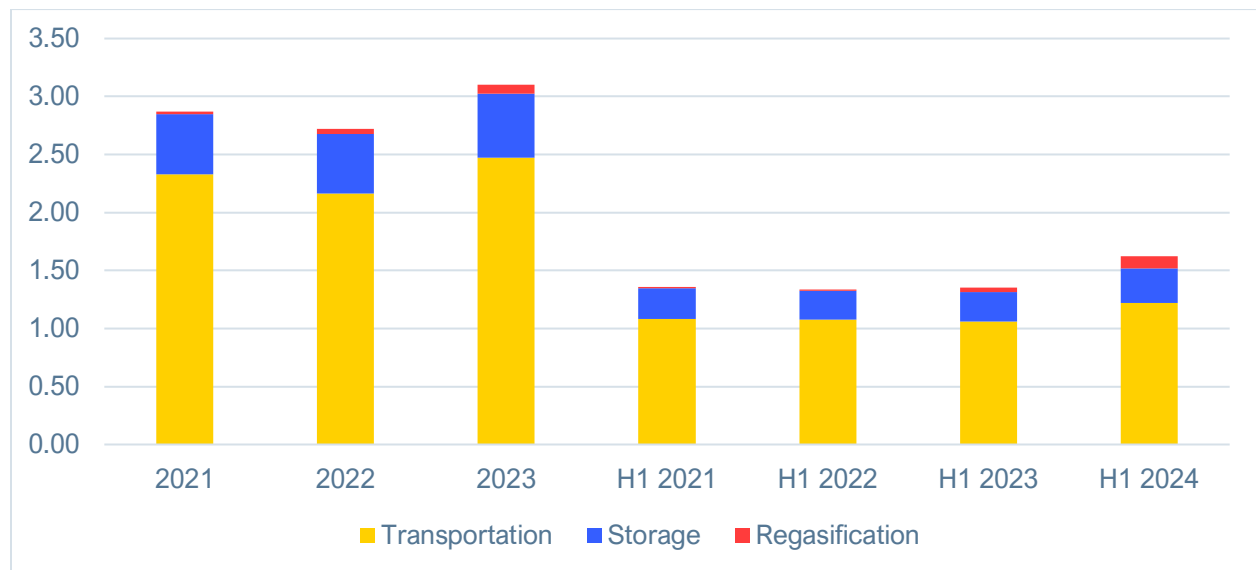
Snam's 2023 regulatory revenues increased by €385 million. The company's 20.1% YOY (€272 million) jump in H1 2024 regulated revenues was mainly attributable to:²⁴

- WACC increasing in all business segments (+€86 million)
- RAB growth in the transportation and storage segments (+€74 million, including lower input-based incentives)²⁵
- The ROSS effect on the gas transportation business (+€33 million)
- Operations at the Piombino regasification terminal (+€43 million)
- Revenues recognition of the higher regasified volumes in 2023 (+€29 million compared with the higher revenues for 2022 recognised in 2023)
- Output-based incentives (+€8 million), thanks to greater flexibility services provided to users of the storage service for short-term auctions, particularly for the counterflow service (+€13 million), partly offset by lower incentives in the transportation sector (-€5 million)

²⁴ Snam. [Financial results for the first half of 2024: +57.9% investments, sustained growth of adjusted EBITDA, adjusted net profit at 691 million euros](#). 31 July 2024.

²⁵ Input-based incentives is a traditional approach to regulating companies by assessing how much money they spend to deliver or improve a service.

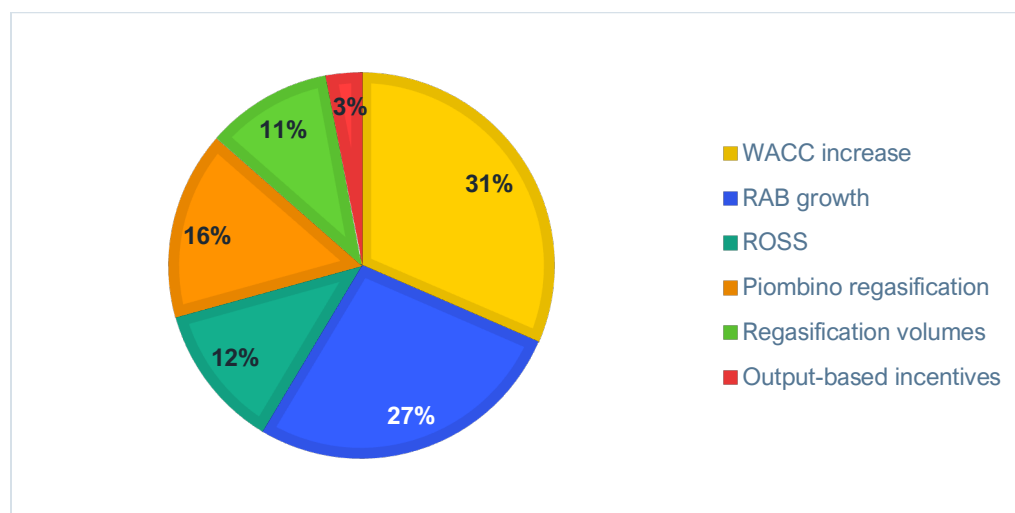
Figure 10: Snam Regulated Revenues (Billion Euros)



Source: Snam.

Of Snam’s high increase in regulated revenues in H1 2024, only 11% was a result of regasification volumes and just 3% because of output-based incentives. The rise was instead mainly driven by a higher weighted average cost of capital and regulated asset base growth in its gas transportation and storage segments.

Figure 11: Snam Regulated Revenue Increases in H1 2024



Source: Snam.

Despite gas volumes not determining Snam's high regulated revenues, its share price has increased.

In May 2024, investment research firm CFRA raised its share price target on Snam to €5.00 from €4.50, maintaining a hold rating.²⁶ The adjustment came after Snam reported a 17.8% YOY increase in earnings before interest, taxes, depreciation and amortisation for the first quarter of 2024, reaching €703 million. This growth was attributed to strong regulated revenues, although it was partially offset by a lower contribution from energy transition activities.²⁷

In 2022, Magellan Financial Group reported that as Snam is an economically regulated utility with less than 1% of its revenue linked to gas volumes, its revenue is not expected to change much.²⁸ Earnings are instead tied to Snam's investment into the regulated asset base and the allowed return on capital the regulator sets on this spending.²⁹ This framework provides predictability and stability to the company's earnings outlook. The invested capital is indexed to inflation over time, providing a protection of real earnings power for investors.³⁰

To address the inconsistency of increasing gas infrastructure investments despite Italy's recent declining gas demand, the Italian regulatory framework should align investment incentives with actual market needs.

²⁶ Investing.com. [Snam shares hold rating; price target raised to EUR5.00 from EUR4.50](#). 16 May 2024.

²⁷ Ibid.

²⁸ Magellan Financial Group. [Stock Story: Snam](#). October 2022.

²⁹ Ibid.

³⁰ Ibid.

About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

About the Author

Ana Maria Jaller-Makarewicz

Ana Maria Jaller-Makarewicz is the Lead Energy Analyst for IEEFA's Europe team. Her research focuses on topics related to gas and LNG, as well as other relevant European energy issues.

Ana Maria is an international energy consultant with more than 25 years of experience in power, and natural gas markets and industry.

She worked in Colombia for electric utilities, a gas distribution company and at a university. In the U.K., she worked as an energy consultant analysing the global natural gas market. She advised electricity regulators in Bosnia and Herzegovina and the Ministry of Power in Nigeria and served as an independent contractor for the United Nations Framework Convention on Climate Change (UNFCCC). She has designed and led energy training programmes in Africa, Asia, the Middle East, Latin America and Europe.

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