S&P Global
Commodity Insights

Pipeline Infrastructure Limited

PRESENTS

ANNUAL GAS FORUM

2025

Event Summary Report

Table of contents

Introduction

The 3rd edition of the Annual Gas Forum, hosted by Pipeline Infrastructure Ltd. (PIL), was held at the Hyatt Regency, New Delhi, on January 17, 2025. This year's forum centered on the theme "Fueling India's Future: The Power of Gas in Energy Transition". It convened an impressive array of stakeholders—ranging from regulators, policymakers and industry leaders to energy professionals and investors. The event served as a dynamic platform, early in the year, to shape the dialogue on gas on its pivotal role of natural gas for meeting the needs of energy security and the energy transition, a unique role for gas in the energy mix.

The forum's agenda was designed to address critical and timely topics, such as the global trends reshaping energy markets and their specific implications for India's gas sector. High-level panel discussions explored the strategic importance of enhancing India's gas infrastructure to meet future demand while highlighting the cross-sectoral opportunities to scale up gas adoption. The conversations further delved into the role of natural gas in mitigating local air pollution, its synergies with renewable energy sources, and its indispensable contribution to creating a cleaner and more reliable energy system.

By fostering collaboration and knowledge-sharing among stakeholders, the Annual Gas Forum 2025 provided actionable solutions for advancing India's gas sector and a renewed basis for driving collective action. It underscored the importance of leveraging innovative policies, investments, and partnerships to unlock the full potential of natural gas as a critical enabler of the energy transition.

With its forward-looking agenda, engaging discussions, and robust participation, the forum reaffirmed natural gas's critical role in achieving India's energy goals and sustainable economic growth. This report highlights the key insights, policy recommendations, and actionable steps identified during the deliberations to catalyze progress in India's natural gas sector.

The following segment outlines the key policy actions emphasized by participants during the conference deliberations.

Key Policy Actions from Forum Discussions

1

Shifting the basis for Gas Policy making to recognize its full value

Gas policies must elevate the role of gas in the energy mix by balancing pricing, cost, and value. Current policies undervalue gas, overlooking its air quality and system flexibility benefits, and its effectiveness with renewables in cutting emissions, as it emits less carbon per molecule than coal while using fewer molecules for equivalent power. The push for gas should emphasize public health benefits—as seen with CNG adoption—over purely economic interests. Reforms should account for coal's external costs, incentivize MSME consumption, and adjust the merit order to reflect gas's full value.

2

Enhancing Gas Infrastructure and Investments

Accelerating investments in gas pipelines, regasification infrastructure, and commercial storage facilities is essential to meet growing energy demand. Beyond the current 25,000 km of pipelines, efforts should focus on expanding and modernizing infrastructure to ensure reliability, efficiency, and seamless integration with renewable energy sources. Additionally, increasing storage capacity is vital to enhance system flexibility and meet peak demand scenarios effectively.

3

Boosting Gas Penetration Across Sectors

Efforts to promote gas adoption across sectors should introduce consumption-linked incentives and cleaner fuel mandates for MSMEs, phase out LPG use in the residential sector through PNG infrastructure, and encourage the use of compressed natural gas (CNG) in transport. Integrating gas into urban planning for new development projects and expanding LNG trucking corridors along major highways can further enhance gas accessibility and infrastructure. Additionally, utilizing re-

gasified LNG (RLNG) during peak electricity demand seasons, along with replacing coal and diesel with natural gas in industrial sectors and urban areas, can significantly reduce emissions and align with decarbonization goals.

4

Pricing Reforms and Economic Incentives

Reducing natural gas costs by including it under the Goods and Services Tax (GST) framework can address inflated prices caused by state taxes. Coal, despite its link to poorer air quality, is in GST. At the same time, competitive and transparent pricing mechanisms, based on complete marketing and pricing freedom, can help manage volatile energy costs while ensuring fair usage charges for infrastructure.

5

Policy Reforms for Emissions Reduction

Implementing emission benchmarking for industries and incentivizing sectors to meet or exceed these standards can accelerate emissions reduction. Promoting the integration of carbon capture technologies with natural gas use, such as in the production of low-carbon hydrogen, would further enhance the environmental credentials of natural gas. Moreover, addressing methane emissions with a "zero tolerance" approach by improving detection, reporting, and mitigation measures is equally critical for reducing greenhouse gas emissions.

6

Recognizing the role of Natural Gas as a Bridge Fuel

Recognizing natural gas as a bridge fuel is vital to support both energy security and decarbonization goals. Drafting a National Energy Roadmap that clearly defines the role of natural gas across sectors will provide a comprehensive vision for infrastructure development and decarbonization. Promoting natural gas as a cleaner, flexible, and transitional fuel in domestic and multilateral forums will reinforce its role in the energy transition.

7

Accelerating City Gas Distribution (CGD) Expansion

Expanding the CGD network to achieve a threefold increase in volumes by 2040 will require robust infrastructure investment and streamlined approval processes. Incentivizing CNG adoption for commercial vehicles in untapped urban markets, such as Mumbai, can further enhance the sector's growth and contribution to energy transition goals.

8

Enhancing Market Liquidity and Price Discovery

Allowing a portion of domestic and long-term contract gas volumes to be traded on exchanges can improve price discovery and liquidity. Establishing a virtual trading hub, independent of state taxes and tariffs, will further enhance market efficiency and set transparent pricing benchmarks.

9

Overcoming Supply Chain and Infrastructure Challenges

Encouraging CGD players to diversify their procurement strategies through the Indian Gas Exchange, short-term contracts, and bilateral negotiations can improve supply chain resilience. Ensuring reliable supply sources and mitigating volatility in APM gas allocation are essential to maintain affordability and support adoption, particularly in the CNG sector.

10

Encouraging Partnerships and Collaboration

Collaboration across industries, such as gas and steel, can drive innovation and sustainable solutions for decarbonization. Public-private partnerships should also be fostered to leverage shared expertise and resources, enabling advancements in infrastructure development and clean energy technologies.

Below, is a description of the presentations and panel discussions that were undertaken at the third edition of the Annual Gas Forum in New Delhi.

Presentation – Global Macro Trends and Outlook for Indian Gas sector

At present, the international gas market is at an important **pivot point**. It is transitioning from a sellers' market to a more buyer-friendly environment. The energy crisis following the Ukraine conflict resulted in a loss of over 2 million barrels a day of oil equivalent of Russian pipeline gas from the global market. This has caused pain for LNG importers, resulting in supply shortages and high prices, and has resulted in Europe competing with Asia for gas supply. New supply cannot replace the lost Russian supply due to long lead times. On the other hand, the next five years will see a move away from a period of reset to a period of catch up, signified by a new wave of LNG supply. From 2020-2024, there was minimal incremental LNG supply, and compounded by the Russian supply crunch, resulted in very high prices. **In the next five years, significant LNG capacity growth is expected, with 6% growth in 2025, 10% in 2026, and over 50% by 2030, as facilities under construction come online.** The US has played a major role in recent LNG contracting (2022-2023), although this slowed in 2024 due to pause in permit applications for new LNG export projects. **Future policy changes in the US could further boost the country's LNG exports**. Near-record levels of LNG contracting in 2022-2024 indicate robust commercial activity, a precursor to increased investments and eventual supply growth.

Portfolio players or aggregators are dominating the recent LNG contracts, giving rise to the question whether LNG is a long-term contract business or a spot term contract business. These portfolio players are answering the question by **offering flexible contracts (short, medium, or long-term) tailored to buyers' needs while underwriting long-term LNG investments**. Buyers face a choice between contracting directly with producers or relying on portfolio players for flexible supply, with cost implications.

According to S&P Global's forecast, **the global LNG market will transition from a seller's market to a more balanced market by 2026-27 and even a loose or surplus market by 2027–2030, driven by significant supply growth from the US, Qatar, and other producers**. This shift will likely lead to downward pressure on LNG prices, offering relief to buyers, including India. However, LNG is not a low-cost commodity, and the indicative cost of exporting US LNG to India (in terms of total delivered price) will be in the $8–$12/MMBtu. **Indian buyers must evaluate whether to link contracts to Henry Hub or oil prices. Oil-linked contracts may be more attractive if oil prices remain below $80–$90 per barrel**. A mixed pricing strategy can help hedge risks.

Coal, oil and gas still reign supreme in India's energy landscape. **Gas accounts for ~6% of India's primary energy mix, significantly lower than the global average of 22%**. Increasing gas penetration, as achieved by Gujarat (~23%), is critical for aligning India's energy landscape with global benchmarks. Relief from high LNG prices is expected with the growing supply. However, the high costs of importing LNG necessitate strategic planning, investment in infrastructure, and competitive pricing mechanisms to enhance gas affordability and adoption.

However, **the growth of gas in India is stuck between dynamics of slow growth in regulated end use-markets (such as power and fertilizer) and lower volumes in unregulated end-use markets (such as MSMEs, city gas distribution, transport)**. In terms of competitors to gas, coal dominates regulated power markets, while unregulated markets compete with liquid fuels.

Gas accounts for only 3% of power generation in India, far below global and regional averages (Bangladesh is at 56%, Southeast Asia is at 31%, Asian average is 10%, world average is 23%). **Gas adoption in India's power sector is challenged as barriers include the cost disparity between gas and coal, and the rise of cheaper renewables.**

India faces international pressure at multilateral forums like COP to reduce coal dependency and increase natural gas usage. However, there needs to be a different perspective on how developing countries like India use gas as a transition fuel compared to developed nations. Multilateral organizations could help cover the

cost difference through mechanisms such as the Just Energy Transition Partnership. However, this partnership is facing challenges in implementation as evidenced in South Africa, Indonesia, and Vietnam.

Moving forward, will there be a shift away from multilateralism, towards a more transactional approach in energy deals, raising questions about how to structure more creative and effective power agreements with better fuel mix solutions. Current data shows poor utilization of gas-fired power plants, with only about 30% of plants achieving utilization rates above 35%, according to S&P Global's power research.

There are **near term opportunities for introducing RLNG in power**. Demand spikes are expected during summer due to increased peak electricity demand, slow coal capacity additions, and potential shortfalls in hydroelectric generation could lead to a 25% increase in demand over the base case, as16–26 mmscmd of LNG could enter the power sector from April–June 2025.

In the **longer term, India's power system will shift from capacity surplus to capacity deficit by 2025, creating a stronger case for gas at the margins**. Increased flexibility, such as commercial gas storage, will be needed to meet the changing nature of energy demand.

The **changing energy transition narrative in 2025 will focus on balancing multiple priorities**: Maintaining reliable power supply ("keeping the lights on"), meeting climate change goals, addressing air pollution concerns, and ensuring energy security. Current policies undervalue gas, failing to consider its air quality and system flexibility benefits. Reforms should focus on accounting for coal's external costs, implementing consumption-linked incentives for MSMEs, and adjusting the merit order to reflect the full value of gas.

There are encouraging signs for gas adoption, particularly in the medium and small-scale enterprise sector, which has shown 136% growth in gas consumption (second only to fertilizer sector demand). There's an upcoming price-led opportunity around 2026, emphasizing that India shouldn't "miss the bus on gas" as it has proven successful in developed nations as a partner fuel for both energy security and transition.

Natural gas can serve as a crucial bridge fuel for India, supporting both energy security and transition goals, particularly as the country moves into a capacity deficit situation.

Fireside Chat - What's missing in India's Gas story?

The fire-side chat focused on the need for India's renewed commitment to natural gas as a transitional fuel and long-term asset to complement its clean energy goals. The discussion focused on the need for a clear policy framework to highlight gas's potential as a cleaner substitute for coal, balancing intermittent renewables, and serving as a fuel in the transport sector.

Over the past decade, significant advances in India's gas infrastructure have been made, and include a widespread network of city gas distribution, expansion of regasification facilities, and growth in pipeline networks. Despite these achievements, **gas demand and utilization have not kept pace, with gas still comprising only 6% of India's energy mix**. This reflects the challenge of increasing gas market share in a rapidly growing economy, even as gas volumes grow globally.

Under President Trump's administration, a shift in policy towards oil, gas, and LNG exports is expected, as the new administration is seemingly in favor of an energy dominance approach. However, permitting is no longer the primary constraint; instead, legal challenges by NGOs will emerge as a significant hurdle. All energy infrastructure, including LNG projects, faces risks of delays due to regulatory and legal opposition.

There is a **need for a multidimensional approach to energy security**; it must balance economic, environmental, and social dimensions. **India's need to use coal and gas for development must be acknowledged**, in contrast with the US approach, which has exhausted its "carbon space" and must now reduce its emissions.

Regarding the role of gas in India's transition, it was pointed out that though gas is not necessarily a cleaner fuel than coal, its usage must be under consideration. **Gas is critical for improving air quality, particularly in Delhi and NCR, by replacing coal and diesel in power, transport, and industrial sectors**. Delhi successfully transitioned to using gas in its transport sector, by converting 100,000 vehicles to CNG from 2000 to 2002 and developed supporting infrastructure with entities like IGL.

Currently, **price is the main barrier to gas adoption. Taxes such as state-wise VAT and import tax (in Gujarat) make gas costlier than coal and diesel**. It was advocated that **gas must be brought under GST** to reduce costs. There are gas policies including lack of mandates and fiscal strategies to prioritize gas over dirtier fuels. Accordingly, price incentives and regulatory mandates must be tied to local air pollution goals.

Taking a broader perspective on climate action, it was pointed out that gas, while cleaner than coal in some contexts, is not a perfect solution, especially if methane emissions are not addressed. **Transition strategies must consider both climate and local air quality**, with a focus on affordability and infrastructure expansion.

It has been researched that **gas becomes economically viable in the $7-9 MMBtu range, displacing coal while providing better regulatory ease and predictability**. Gas adoption simplifies compliance for industries due to reduced inspections and regulatory controls compared to coal. From the point of view of gas adoption by industry, particularly the MSMEs, high gas prices make them uncompetitive. Policy support, such as tax reforms (e.g., bringing gas under GST), is crucial to lower costs. Surmounting infrastructure limitations by expanding gas pipelines and reducing security costs are essential. Furthermore, avoiding charges for unused gas is also critical for fair pricing.

For India to transition from coal to gas and increasing the share of gas in the energy mix from 6% to at least 10% for reducing air pollution in its cities, there are **international examples** that it can look to learn from. The United States achieved significant emissions reduction through low-cost natural gas, the European Union used carbon pricing (ETS) to incentivize coal-to-gas switching, especially in high-cost resource markets like the UK and Spain, and Turkey mandated coal-to-gas switching through legislation, significantly improving air quality in regions like Istanbul.

Pointing out the challenges in India's approach, especially its policy focus on renewables over gas, it was advocated that **while renewables reduce emissions, the coexistence of coal and renewables (due to overcapacity in coal) hinders the air quality improvement**. Renewable energy projects also face challenges in getting commissioned and/or securing PPAs, partly due to coal oversupply. Instead, the Delhi NCR and other pollution hotspots in India should prioritize gas over coal in power generation to achieve immediate air quality benefits.

A power system reliant on coal and renewables is inefficient for emissions reduction, likened to a "diet of salad and ice cream." A **natural gas and renewables mix is more effective in reducing emissions**, as natural gas emits less carbon per molecule than coal and uses fewer molecules to produce equivalent power. Methane emissions from natural gas operations can diminish its environmental benefits but are manageable with better detection, reporting, and prevention measures.

Industry leaders at COP 28 have pledged "zero tolerance" for methane emissions, but there are concerns about commitment and accountability in meeting these goals. **Effective methane management requires transparency, accurate reporting, advanced detection technologies, and eliminating gas flaring**. Despite its benefits, natural gas remains a fossil fuel and is only half as clean as coal, reinforcing the need for complementary clean energy policies.

On the issue of the urgency in adopting low-carbon technologies, it was advised that **technology must drive decarbonization at full speed, but we cannot wait for its large-scale deployment**. Natural gas has a critical role as a transitional fuel for rapid decarbonization. At the same time, it was also pointed out that while natural gas serves as a transition fuel for countries like India, it cannot play the same role for the United States and Europe, which have exhausted their carbon budgets and need accelerated decarbonization.

Developing countries, including India, require access to natural gas for energy security and as a cleaner alternative to polluting fuels. There is strong support for LNG exports from regions like the U.S. to meet India's

growing energy needs. **Mandates are essential to drive the transition to cleaner fuels and technologies, ensuring accountability and rapid action**. The push for technologies like electric vehicles must align with broader goals of reducing pollution and congestion, especially in urban areas. Merely increasing EV adoption without addressing associated issues may worsen environmental challenges.

The **key issue of the missing element in India's gas story is bridging the price gap between coal and gas. Multilateral financing could fill this gap,** and a potential solution could be a deal involving U.S. LNG, which could be financially supported to make gas more competitive with coal. This approach would increase demand for LNG, especially in India.

There is a **lack of clear purpose for gas**. It was argued that the push for gas should not solely be driven by economic or business interests but should be framed around public health benefits, as was the case with CNG adoption in the past. **The focus should be on the health and environmental advantages of using cleaner fuels like CNG and CBG, particularly in terms of reducing air pollution and fostering a circular economy**. Challenges that were highlighted include finalizing contracts and creating a seamless ecosystem for CBG production and use. This includes making the necessary infrastructure work to enable the sale of CBG and related byproducts like liquid fertilizer, which could further support agricultural carbon sequestration.

Coal remains competitive due to its domestic availability and the current state of energy policy. Despite its environmental disadvantages, coal is often seen as a more stable and accessible option compared to gas. Therefore, there needs to be a clear, compelling reason for gas adoption if it is to succeed in displacing coal.

Panel Discussion - Accelerating Investments in India's Natural Gas Pipelines

India's natural gas sector is rapidly expanding, with the country aiming to increase its natural gas share in the primary energy basket. The country has operational transmission pipeline length of nearly 25,000km and has almost 8,000 CNG stations. However, to accommodate the future energy needs and evolving energy mix, substantial investments are required to expand and modernize the country's natural gas infrastructure. Currently, natural gas constitutes a small fraction of India's power generation, less than 3%, but strategic investments can position it as a more reliable baseload solution to support renewable energy integration. The session explored the crucial role of natural gas infrastructure in India's energy transition and the urgent need for enhanced investments to meet growing energy demands.

The session highlighted that the **primary risks in pipeline projects** include offtake risk, which focuses on ensuring adequate demand for the pipeline's capacity, and implementation risk, which concerns delays in approvals and construction. To address these challenges, key strategies were discussed, including securing an anchor load at the outset to ensure demand stability, and implementing incentivizing mechanisms such as viability gap funding (VGF) to support project feasibility and mitigate financial risks. While it was acknowledged that lenders and investors are increasingly interested in the CGD sector, it was emphasized that achieving a **balanced customer mix** across industrial, commercial, and residential segments is essential for project viability.

During the panel it was suggested that investment in pipelines can be driven by incentivizing existing pipeline operators for cost-plus pipelines; incentivizing the bidding criteria and establishing a mechanism for pipeline operators to self-assess demand and decide gas tariffs, in accordance with PNGRB guidelines. A panelist advocated that prioritizing pipeline network expansion is essential for creating demand, and both must go hand in hand to drive the future of gas in the energy transition. Additionally, it was emphasized that pipeline operators and CGD companies, have to come out from their silos. They need to drive discussions to assess the gas demand and have the mutual understanding. The panel also highlighted the potential of hybrid models, such as LCNG (Liquefied to Compressed Natural Gas), to provide interim solutions for regions lacking pipeline connectivity. State-level initiatives were recognized as influential in reducing costs and streamlining pipeline development. While some states have implemented forward-thinking policies, pipeline

developers in other regions still encounter issues related to land acquisition and high permission charges, which impact project feasibility.

Additionally, the **challenges of gas pricing**, accessibility, and supply volatility were discussed, with the need for stable and long-term gas contracts being a priority to ensure the growth of India's gas infrastructure. The potential of natural gas to reduce emissions and support India's transition to a cleaner energy future was also a key focus, with several panelists calling for clear emission targets and supportive policies to increase the adoption of gas in industrial and transportation sectors. A panelist mentioned that the **viability of the entry-exit tariff model is currently under evaluation**. However, it is not the right time for its implementation, and more time will be required for proper assessment. The panelist pointed out that it would be challenging for the transmission system, particularly in the absence of GST and since far-flung areas have yet to be adequately served.

A panelist highlighted ongoing pilot projects that demonstrate the feasibility of blending hydrogen, which could significantly reduce carbon emissions and enhance the viability of existing pipelines. However, challenges such as material compatibility, safety concerns, and regulatory gaps were noted as key hurdles that require immediate attention. It was mentioned that UK's policy framework, allowing for hydrogen blends, can serve as a model for India, where similar initiatives are gaining momentum. The collaboration between policymakers and industry stakeholders will be pivotal in advancing these initiatives.

Public-private partnerships (PPPs) were identified as a critical avenue for financing infrastructure projects. The session concluded with a call for a **multi-pronged approach that combines regulatory clarity**, innovative financing mechanisms, and stakeholder collaboration to accelerate investments in pipeline infrastructure. As India transitions towards a sustainable energy mix, developing an adaptive, resilient, and **future-ready pipeline network** will play a critical role in meeting its energy security and environmental goals.

Panel Discussion - Natural Gas in India's multi-dimensional fuel strategy

India is rich in natural resources, including non-renewable sources such as oil, gas, and coal, and inexhaustible ones like sunlight, and wind. The availability of diverse resources provides the **leverage for developing a multidimensional strategy to achieve energy security**. The nation has set ambitious renewable energy targets in this direction, aiming for 500 gigawatts by 2030, with 160 gigawatts already installed. However, renewable energy comes with its own set of limitations, the primary being its intermittent availability.

The panel agreed that natural gas has played a crucial role in bridging this gap of renewable energy sources, particularly in India's evolving transport sector. Over the past two decades, Compressed Natural Gas (CNG) has proven successful as a fuel with its widespread adoption across India, while Liquefied Natural Gas (LNG) presents a **compelling opportunity, especially in the trucking industry,** where it can serve as a cleaner and more efficient alternative to diesel. Thus, gas can be seen as a crucial transition fuel for decarbonization, especially in hard-to-abate industries.

Panelists acknowledged that currently, gas accounts for only 6% of India's primary energy mix. This low percentage can be attributed to challenges such as competition from low-cost alternatives and its regulated pricing regime. **Freedom of pricing will also boost domestic production,** which is vital in creating a gas-based economy. To compete effectively among low-cost alternatives, gas needs to be priced around $7-8 per MMBtu. Additionally, the lack of pipeline infrastructure and insufficient storage capacity pose significant challenges to the growth of natural gas in the energy mix.

The panelists highlighted that an important step to improve the percentage of natural gas in India's primary energy mix could be the **drafting of a National Energy Roadmap**, clearly emphasizing the role of natural gas in each sector, while outlining the vision and the need for infrastructure development. Partnerships and collaboration can play a crucial role in advancing the technical aspects of both the upstream and downstream sectors within the energy industry. Leveraging shared expertise and resources through collaboration between various industries, such as the gas and steel sectors, can drive the development of innovative solutions that reduce emissions and promote sustainability while supporting decarbonization efforts. For example, the **steel industry's decarbonization can be enhanced** through the use of cleaner energy sources like natural gas, while also improving the efficiency of gas production and distribution systems. These collaborative efforts are essential for achieving broader environmental goals and accelerating the transition to a low-carbon economy.

The consensus among panelists was clear. The Government must play an important part by providing policy support and incentives while ensuring regulatory predictability. For instance, the government can incentivize early adoption of LNG in the transport sector by **reducing GST on LNG vehicles, offering toll exemptions, and providing green number plates**. These measures would lower costs, promote cleaner transport solutions, and enhance LNG's competitiveness in the sector, to overcome the LNG Market volatility. **Regulatory predictability is also essential** for the growth and stability of the gas sector, as it ensures that critical infrastructure projects, such as pipelines and terminals, are approved and completed successfully and without unexpected delays, accelerating the expansion of its gas infrastructure. **Clear and consistent regulations help attract investment** by reducing the perceived risks associated with regulatory uncertainty, making long-term planning and development more viable for businesses. Furthermore, **uniform state regulations** can significantly benefit the gas industry by eliminating regional discrepancies, facilitating smoother operations, and enhancing market confidence.

Effective policy implementation should focus on achieving desired outcomes without favoring specific energy sources or technologies. A key aspect of this approach is rewarding low emissions through targeted incentives, encouraging innovation and progress across the energy sector. A successful example of this approach is the U.S. Inflation Reduction Act (IRA), which **prioritizes emission reduction without selecting energy winners or losers.** By **creating a level playing field,** such policies can foster competition and allow market forces to operate freely to increase production and liquidity.

Panel Discussion - CGD: A Growth engine for India's Natural Gas market

The panel discussion on CGD: A growth engine for India's natural gas market focused on the city gas distribution network, part of India's national gas grid. India's rapid growth in energy demand is putting natural gas at the forefront of its transition to cleaner fuels, with CGD expected to drive this growth, accounting for over 60% of India's energy mix by 2030. The panel explored the transformative potential of CGD in expanding natural gas access across urban and rural regions and its accompanying challenges.

The **CGD sector is expected to grow threefold by 2040, reaching 120 mmscmd, supported by policy initiatives, infrastructure expansion, and improved affordability**. Mumbai, a significant market, has 30% penetration in the CNG vehicle segment, leaving a large untapped potential, especially in commercial vehicles, where penetration is only 3-4%.

CNG accounts for 70% of CGD volumes, with notable advantages:

- Cost savings: **CNG is 20-45% cheaper than diesel and petrol (considering efficiency).**
- Infrastructure improvement: More CNG stations are being established, including along highways, enhancing consumer confidence for intercity travel.
- Improved vehicle performance: New OEM models (e.g., Tata's with boot space) have addressed earlier concerns about retrofitted CNG systems.

But there are challenges to overcome such as targeting the liquid fuel market is easier than replacing coal and petcoke, which require policy incentives to drive substitution. **For PNG, high restoration charges hinder pipeline expansion, despite significant investments by CGD entities**. To replicate successes like Delhi's shift away from polluting fuels, consistent incentives are needed across states. The CGD sector is positioned for 10-12% annual growth, driven by robust demand in CNG, industrial/commercial segments, and continued policy and infrastructure development.

In terms of accelerating the adoption of natural gas, the MSME sector was advocated as a prime area of focus. MSMEs (1 million units employing 120 million people) contribute 30% to GDP but are heavily rely on pollutant fuels due to cost pressures and lack of regulation. It was proposed that there is a **need to introduce Consumption-Linked Incentives (CLI) for 3–5 years to encourage MSMEs to transition to natural gas on the lines of Production-Linked Incentives (PLI) for manufacturing**. It was also that there is a need to address the disparity where MSMEs in NCR are mandated to use natural gas, while those outside use cheaper pollutant fuels, creating an uneven playing field. There is a need to implement a uniform policy for cleaner fuel adoption nationwide to enhance competitiveness, sustainability, and productivity.

On the topic of residential PNG adoption, it was pointed out that despite decades of PNG availability, **cities like Mumbai and Ahmedabad still rely on LPG due to a lack of builder incentives and mandatory PNG adoption policies**. LPG subsidies (e.g., INR 500 subsidies or free cylinders) make LPG more attractive compared to PNG, which requires an upfront INR 6,000 connection fee. Solutions proposed were declaring PNG cities for phased LPG sunset policies, starting with pre-2007 urban areas, **providing direct subsidies or benefit transfers for PNG connections to make them affordable and competitive**, and creating incentives for builders to adopt PNG in new and existing residential projects, fostering a shift in consumer perception towards PNG as a modern utility.

Addressing the affordability challenges for Indian gas customers, and simultaneously securing reliable and cost-effective gas supplies, it was pointed out that there is an **urgent need to address the near-term challenges like the uncertainty in the allocation and availability of gas from APM** (Administered Pricing Mechanism) and new well sources, which are sourced from mature fields that are nearing plateau or decline. **Securing a sustainable gas supply is critical to meeting long-term growth targets**, as CGD penetration grows and the demand-supply gap widens.

For CGD players, the key recommendations were to adopt a judicious mix of short- and long-term procurement strategies to mitigate price volatility. In terms of pricing strategy, it was advised to select between Henry Hub or Brent-linked pricing based on suppliers' strengths rather than a fixed percentage split of both indices, and to optimize procurement by working with sellers who offer the best terms for each pricing structure. CGD players can leverage opportunities to resell surplus gas in case of long-term commitments exceeding immediate needs. They can also move beyond standard competitive bidding to bilateral negotiations, which can yield win-win commercial structures with added flexibility for CGDs while maintaining affordability.

Venturing towards enhancing liquidity on India's gas exchange, it was recommended to allow a portion of domestic gas production (e.g., 10%) to be sold on the exchange to improve price discovery, with gradual expansion. It was also opined that there should be gas release mandates to encourage incumbents with long-term contracts to sell a small percentage (e.g., 5–10%) of their gas on the exchange. Combining spot and

long-term contract gas on the exchange can improve pricing benchmarks. **Establishing a virtual trading hub, where trading is independent of state taxes and transmission tariffs, can significantly enhance price discovery and market efficiency. This can aid in growing the share of gas traded on the exchange from the current 2% of total consumption to 5–10% by 2030**. India's balanced mix of domestic production and imports provides a competitive edge over Europe, which relies heavily on imports. With growing sectors such as power, fertilizer, and industrial demand, there is strong potential to boost gas consumption and exchange activity.

Recent volatility in APM gas allocation to the CGD sector has a direct impact on affordability. CNG prices in some regions now equal or surpass diesel prices, threatening growth as affordability and savings are critical drivers for adoption. **The sector must try to adapt by diversifying gas procurement through IGX, short-term contracts, and new well gas sources**. Continued collaboration with policymakers is essential to sustain growth through incentivization and strategic support.

Lastly, to accelerate infrastructure development for CGD growth, there is a need to overcome geographical and competitive factors. For example, urban areas like Mumbai face land scarcity, restricting CNG station expansion. Rural regions have dispersed populations, making PNG infrastructure costly and underutilized.PNG competes with subsidized LPG and CNG faces challenges from diesel, petrol, EVs, and potentially hydrogen. To overcome these challenges, there is a need to **provide targeted incentives to improve affordability and competitiveness of PNG and CNG against their alternatives like LPG, diesel, and EVs**. Transition from the current "permit-and-dig" model to streamlined approvals to reduce delays and engage credible third-party inspection agencies to handle site inspections efficiently, with regulators retaining oversight for compliance enforcement.

In summary, the CGD sector is a very promising sector, and it is going to be a growth engine for natural gas consumption in the country.

Abbreviations

Acronym	Details
APM	Administered Price Mechanism
CNG	Compressed Natural Gas
CGD	City Gas Distribution
CLI	Consumption-Linked Incentives
COP	Conference of the Parties
ETS	Emissions Trading System
GST	Goods and Services Tax
IRA	Inflation Reduction Act
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MMscmd	Million Metric Standard Cubic Meters per Day
MSME	Micro, Small, and Medium Enterprises
PLI	Production-Linked Incentive
RLNG	Re-gasified Liquefied Natural Gas
VGF	Viability Gap Funding

Slides – Global Macro Trends and Outlook for Indian Gas sector

‘Pivot Point’—
The Re-Ordering of Global Gas Markets

Michael Stoppard, Chief Strategist Global Gas, S&P Global

India’s Gas Story

Gauri Jauhar, Executive Director Energy Transition Consulting, S&P Global

Annual Gas Forum 2025
New Delhi
17th January 2025

EPIL

S&P Global
Commodity Insights

Pivot Point—Re-ordering global gas

Reset
2022–25

Fixed Supply Volume

<u>The Russian—Ukrainian energy crisis</u>

- The ‘law of long lead times’
- Europe and Asia competing

Catch-Up
2026–30

New Supply

<u>New LNG supply wave</u>

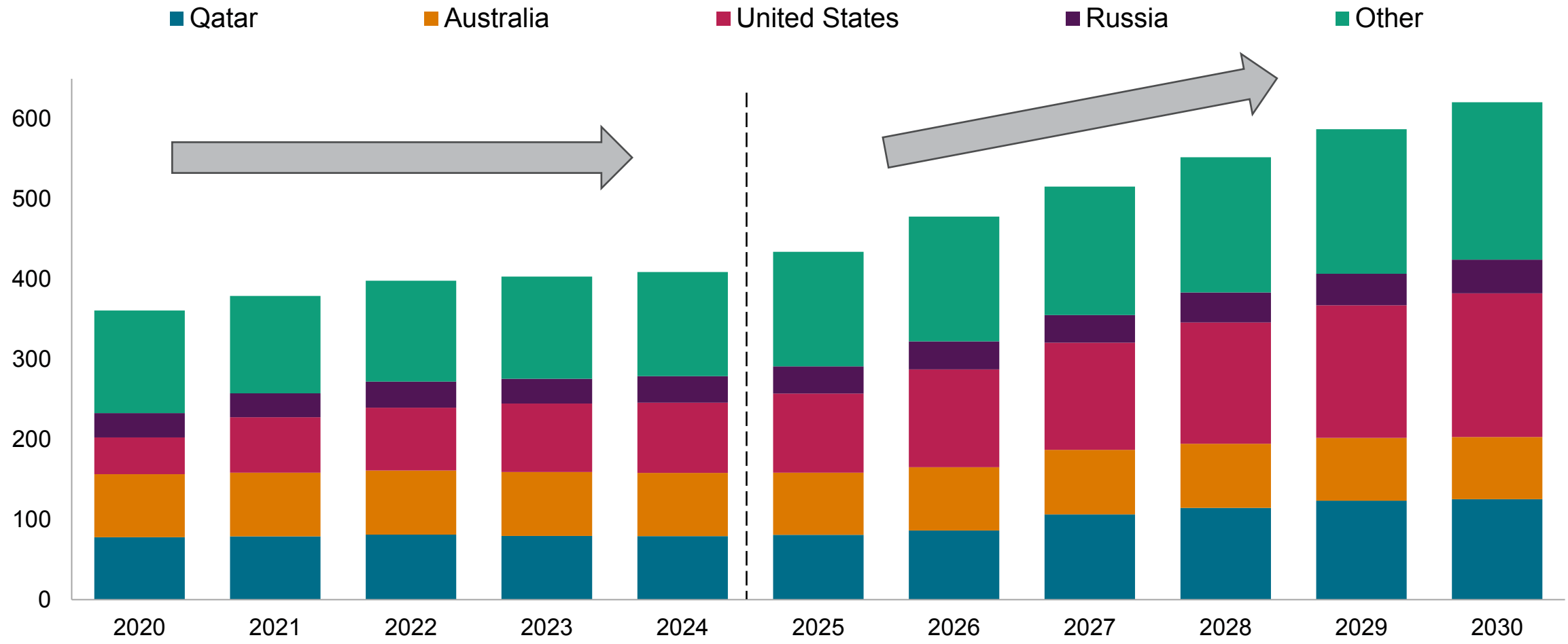
- Low Russian pipe exports
- AI-driven demand boost?

- Catch-up or overshoot?

Source: S&P Global Commodity Insights.

A new LNG supply wave is starting—even without a possible Trump boost

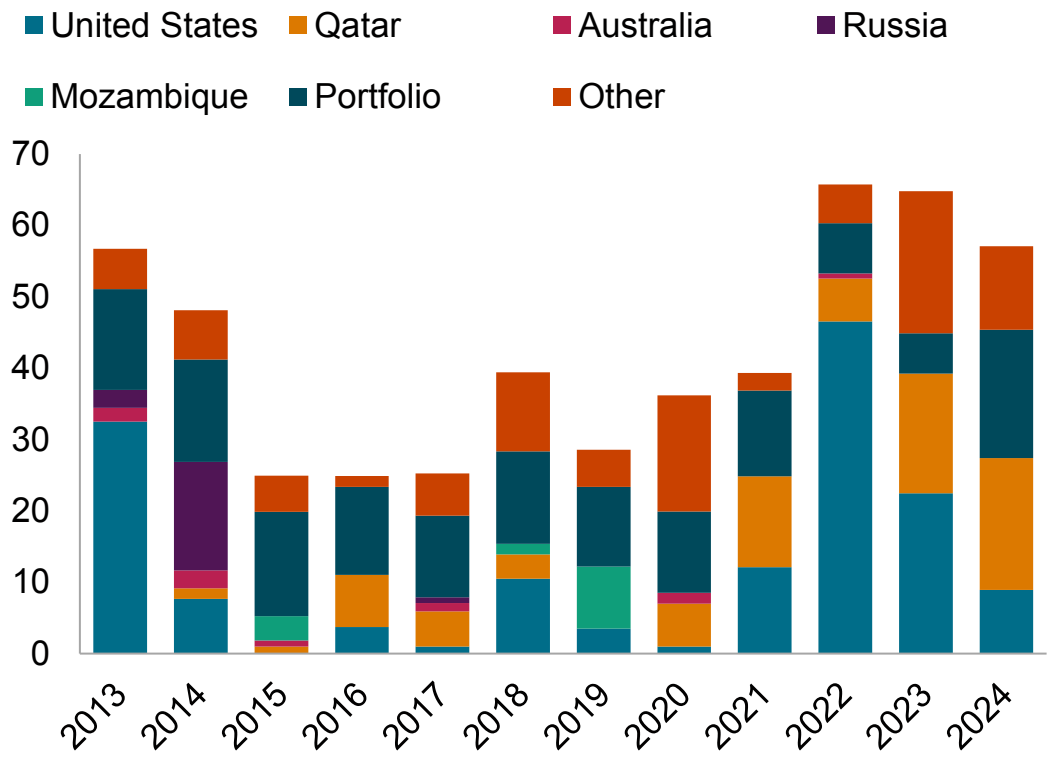
Global LNG supply outlook (MMt)



Data compiled Jan. 14, 2025.
Source: S&P Global Commodity Insights.

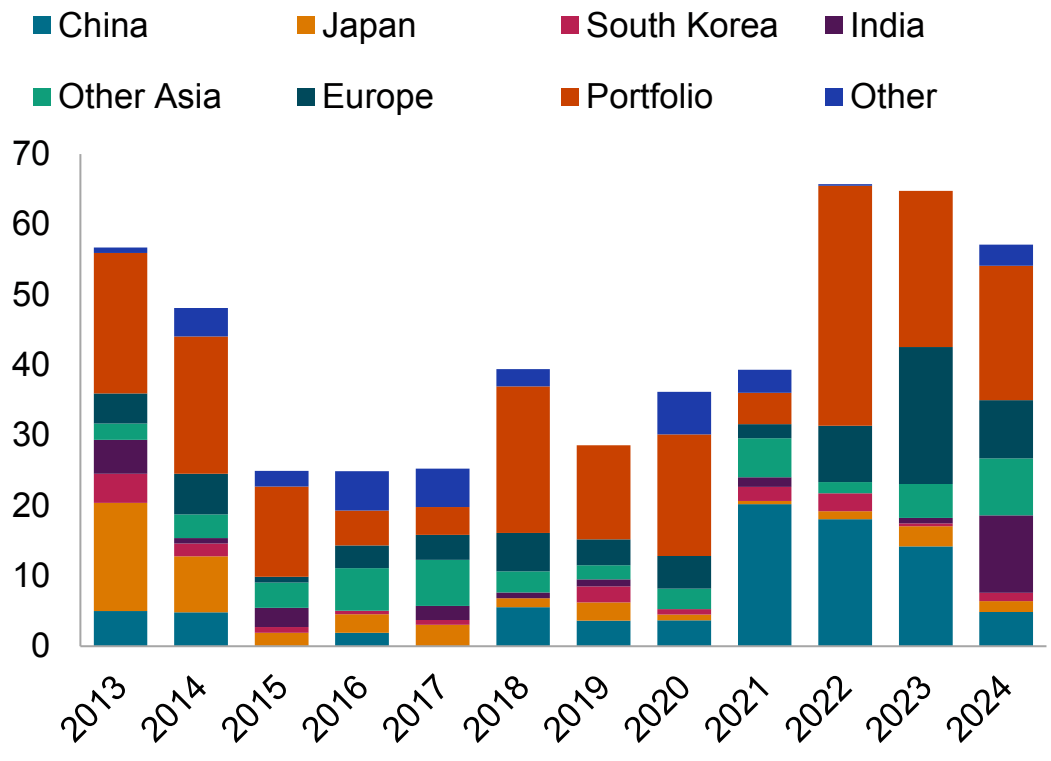
Record LNG contracting activity—note the portfolio players…

LNG contracts by year signed and export country (MMtpa)



Data compiled Jan. 14, 2025.
Notes: Includes only Sale and Purchase Agreements (SPAs) and Liquefaction Tolling Agreements (LTAs).
Source: S&P Global Commodity Insights.

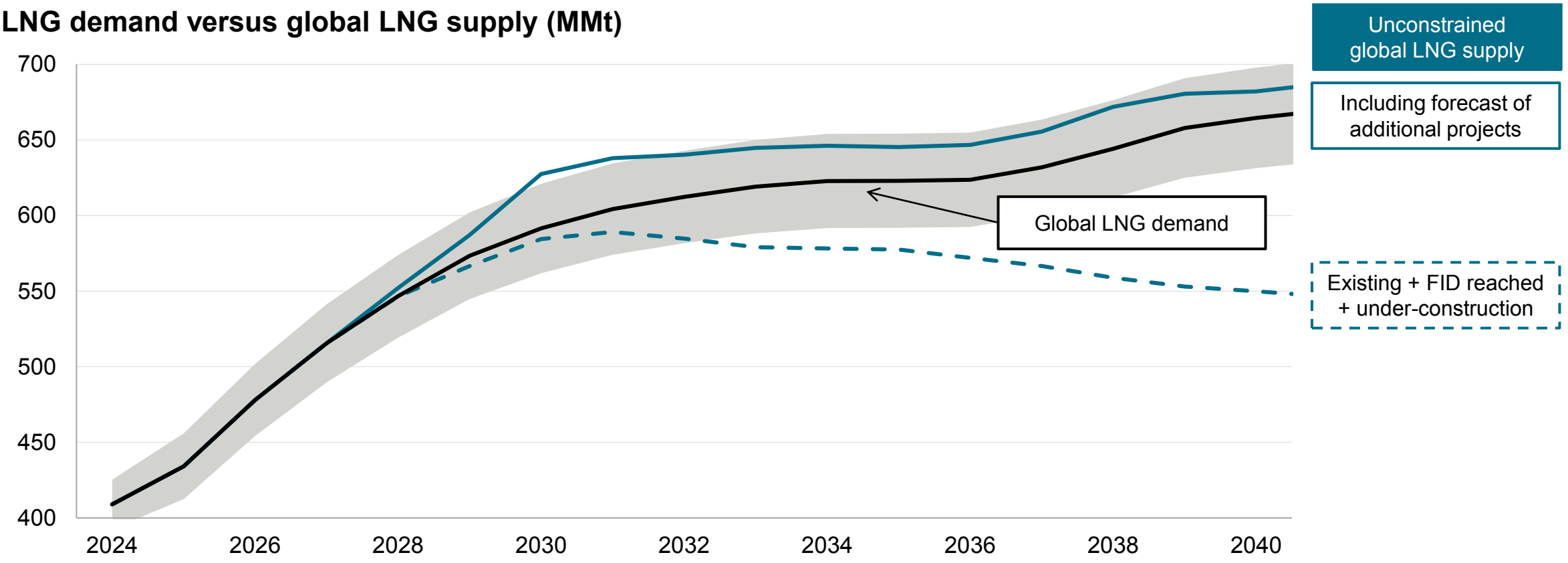
LNG contracts by year signed and import market (MMtpa)



Data compiled Jan. 14, 2025.
Notes: Includes only Sale and Purchase Agreements (SPAs) and Liquefaction Tolling Agreements (LTAs).
Source: S&P Global Commodity Insights.

LNG supply growth may outpace demand, with risk of surplus in 2030–31

LNG demand versus global LNG supply (MMt)

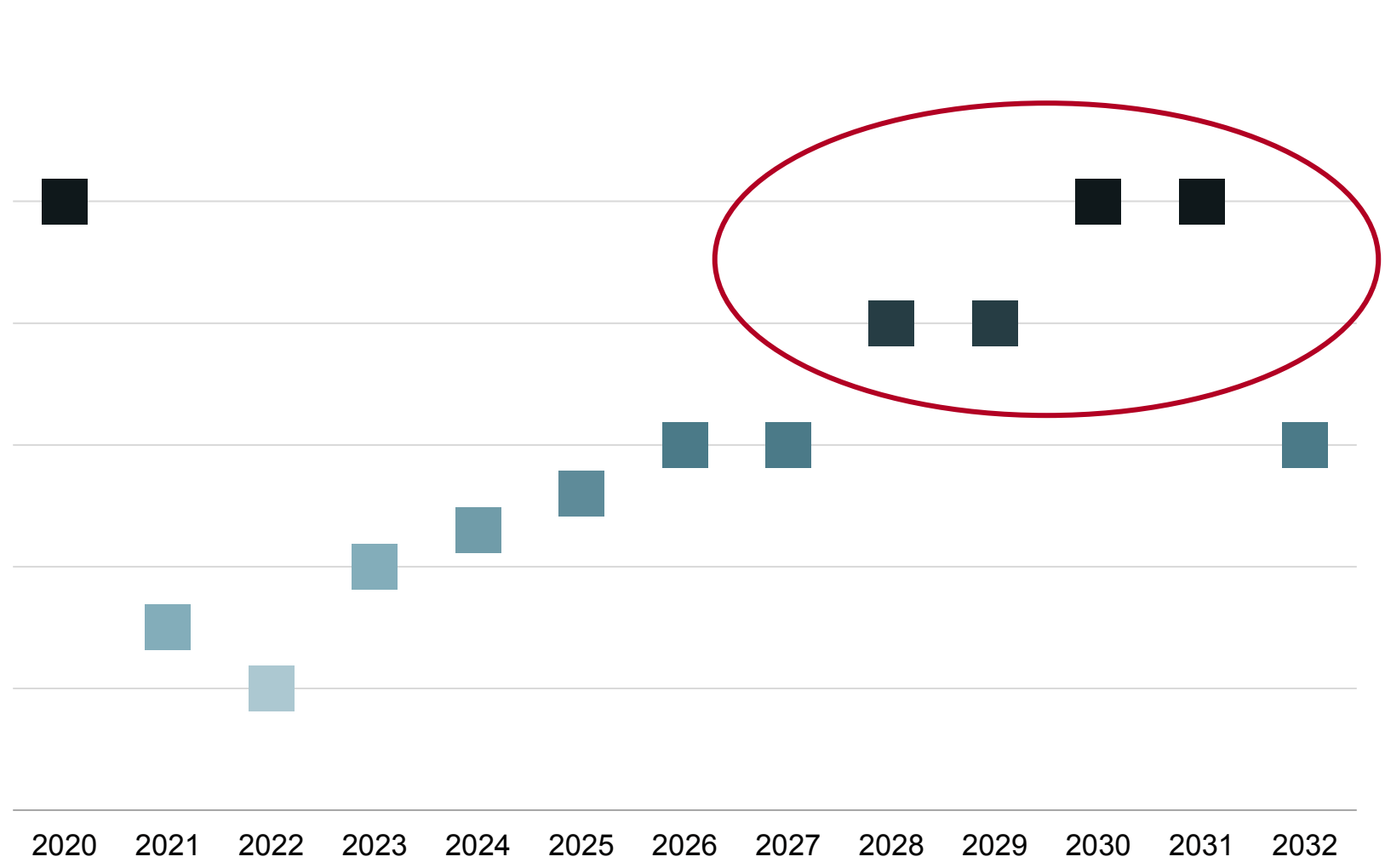


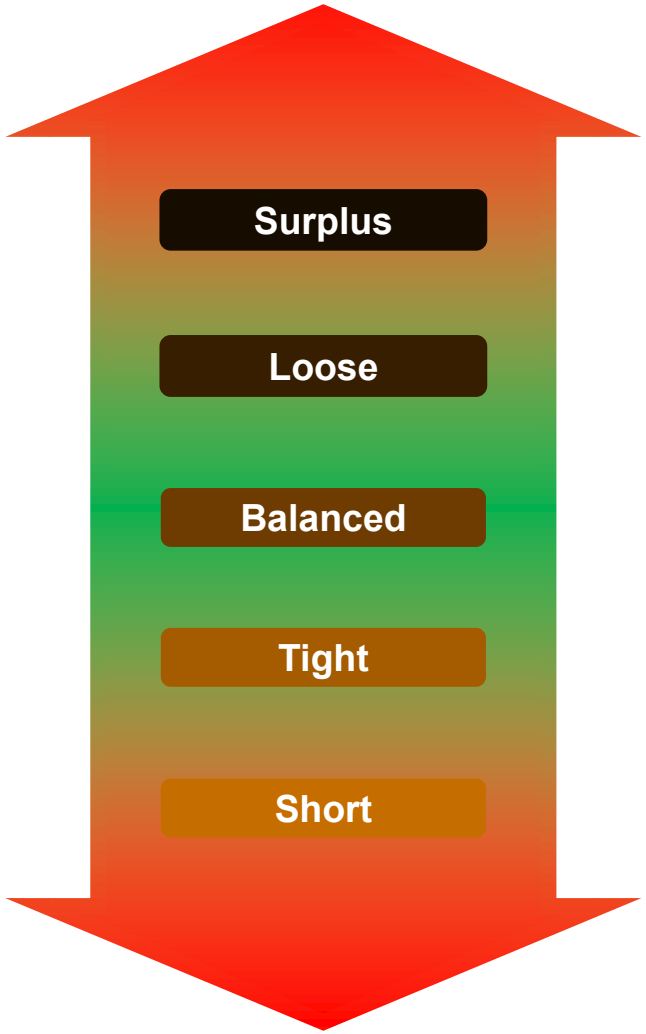
Data compiled Jan. 08, 2025.

Grey shaded area represents the reasonable range of demand up- and downside; we consider the LNG market loosely balanced as long as supply is within the grey range. Pre-FID refers to liquefaction status; pre-FID fields at existing facilities are included in the Existing status.

Source: S&P Global Commodity Insights.

Market Balance Barometer

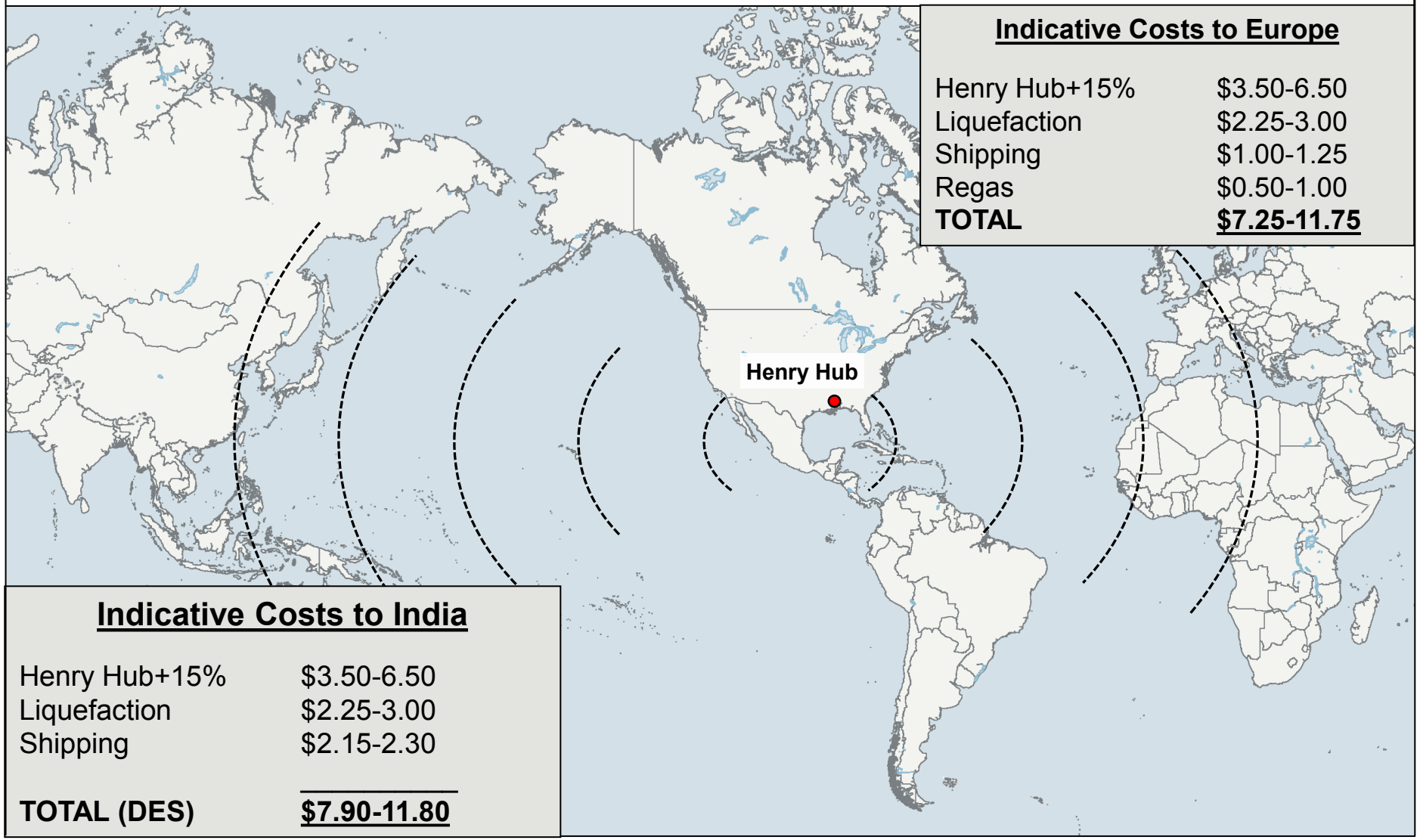




Data compiled Jan. 2025.
Source: S&P Global Commodity Insights.

The US sets a global gas competitive price benchmark

Indicative costs of US LNG exports ($ per MMBtu)



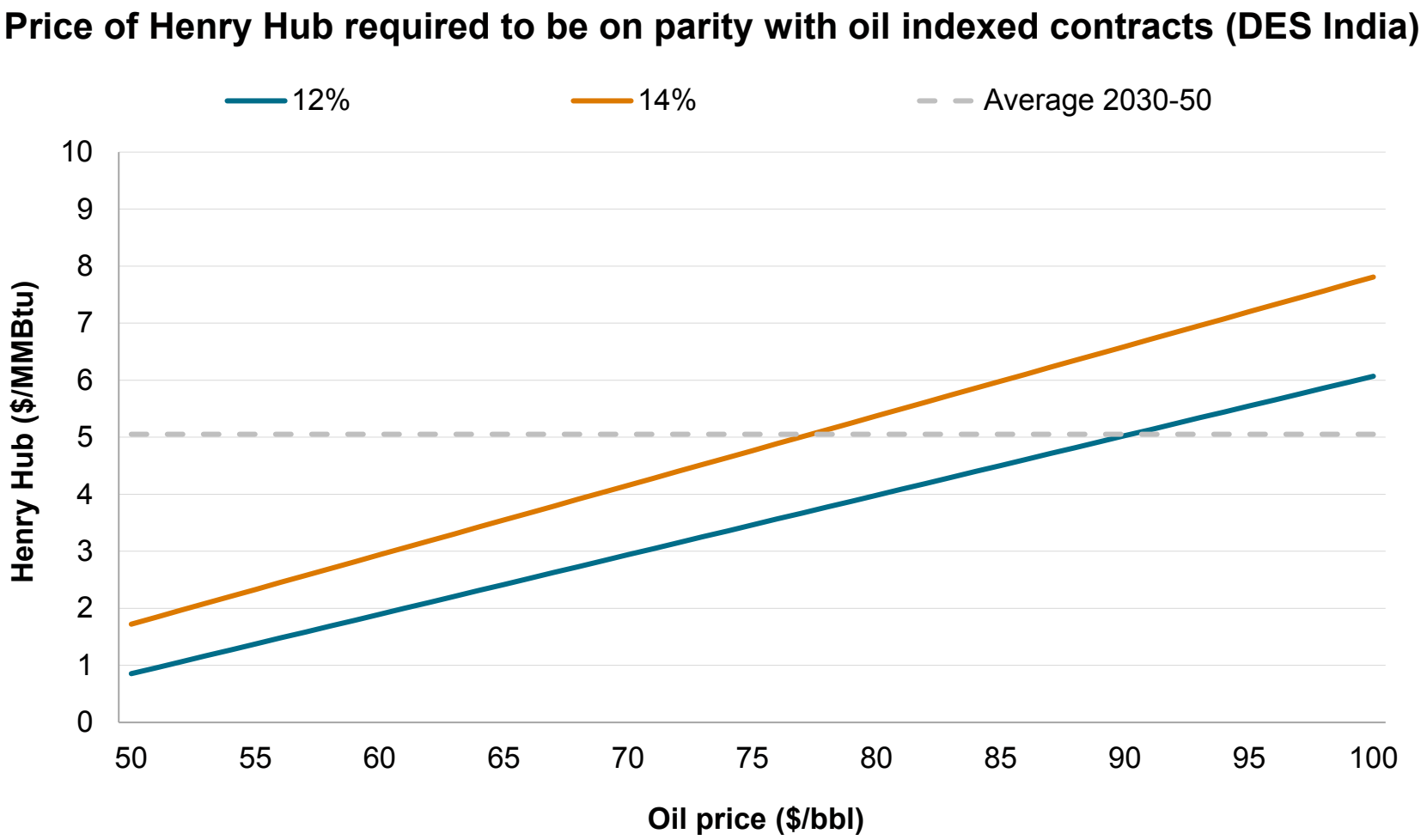
Indicative Costs to Europe

Henry Hub+15%	$3.50-6.50
Liquefaction	$2.25-3.00
Shipping	$1.00-1.25
Regas	$0.50-1.00
TOTAL	**$7.25-11.75**

Indicative Costs to India

Henry Hub+15%	$3.50-6.50
Liquefaction	$2.25-3.00
Shipping	$2.15-2.30
TOTAL (DES)	**$7.90-11.80**

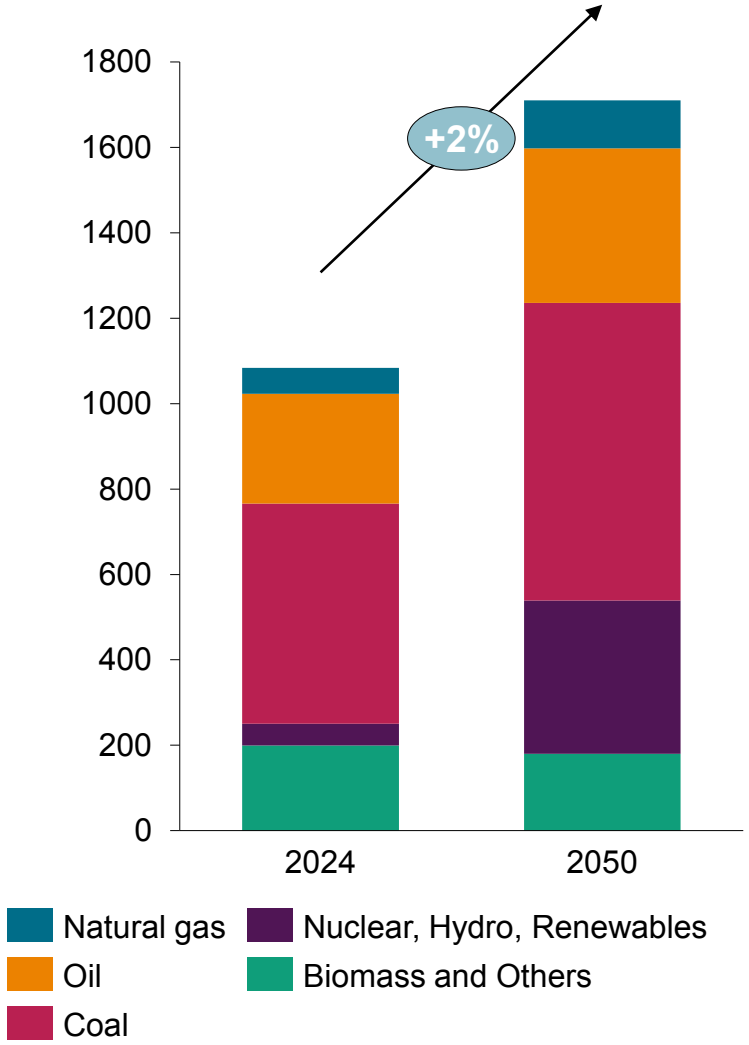
Henry Hub contracts may be more expensive than oil slope contracts



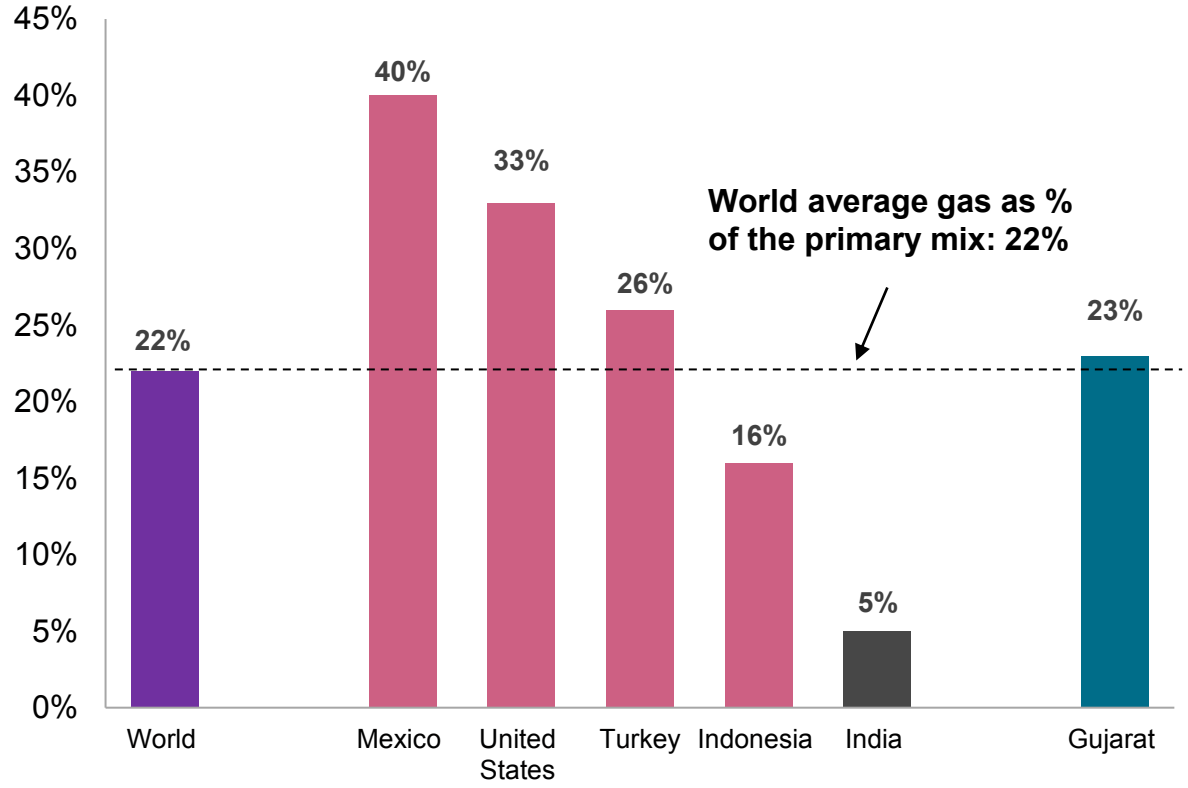
Data compiled Jan. 2025.
Source: S&P Global Commodity Insights.

Gas Reality In India

Coal, oil, and gas still reign supreme in India's energy landscape (mtoe)



Share of natural gas in the primary energy mix



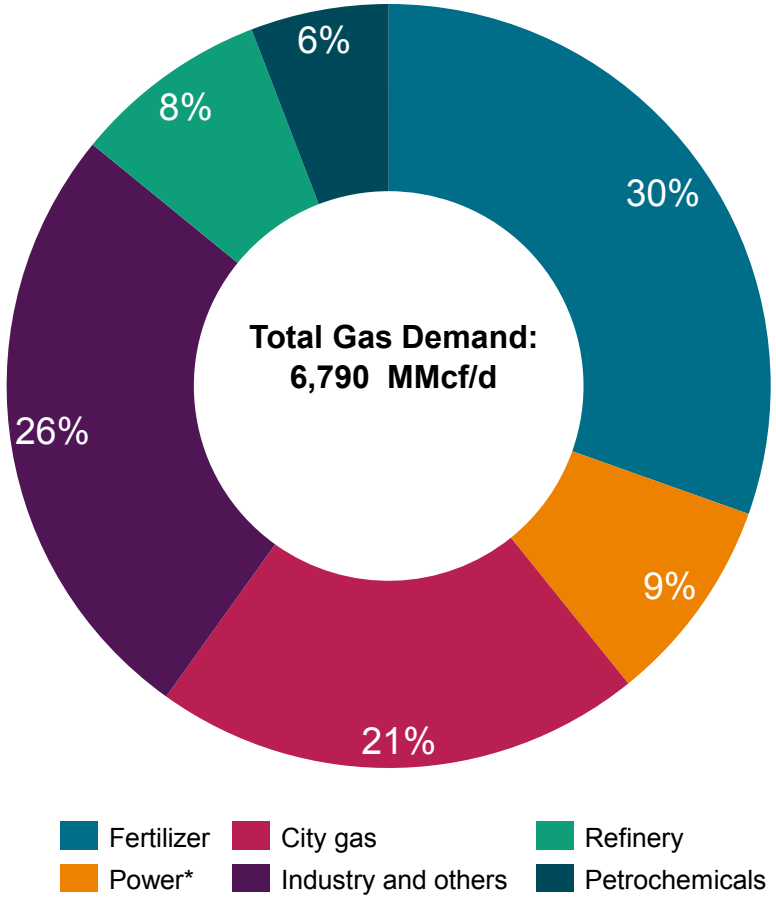
Source: S&P Global, ORF

India’s Gas Story

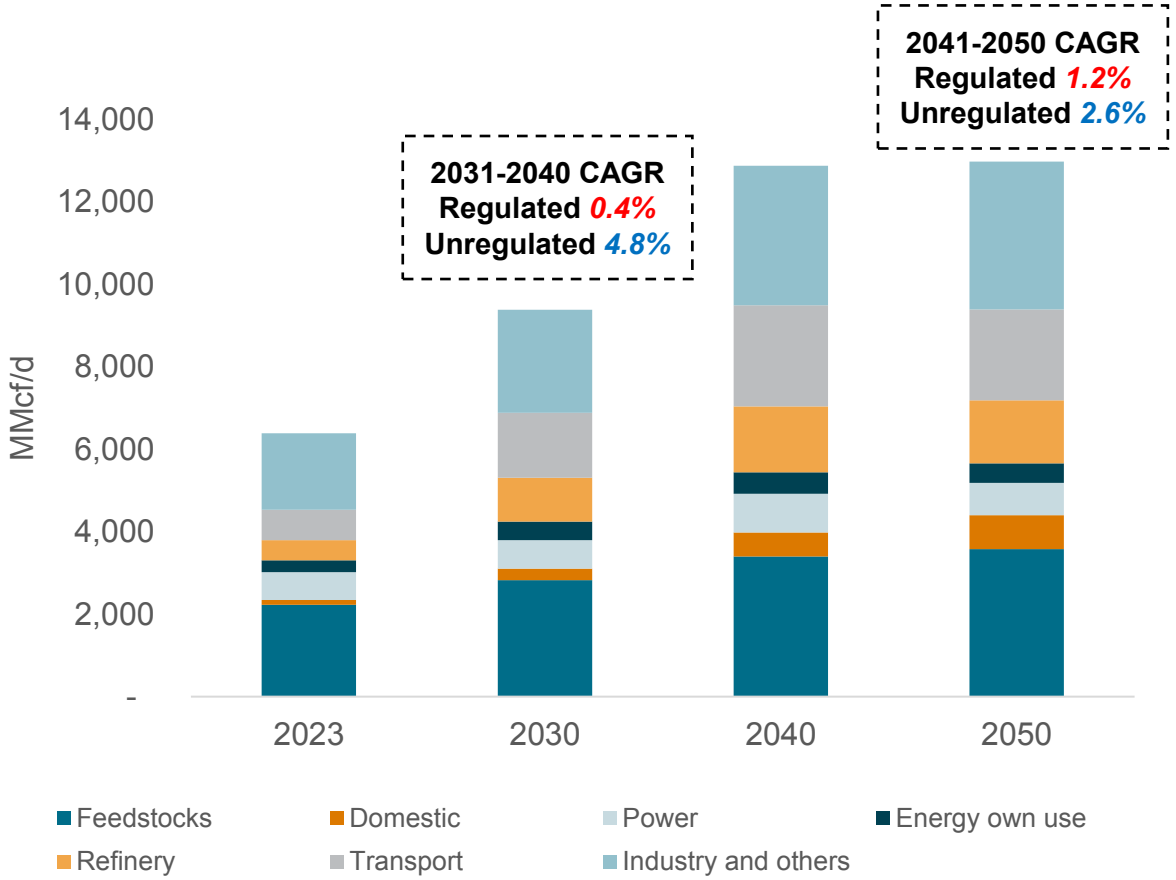
Gauri Jauhar, Executive Director Energy Transition Consulting, S&P Global

Growth of gas is stuck between dynamics of slow growth in regulated end-markets and lower volumes in unregulated end-markets

India gas demand outlook, as of Nov 2024 (MMcf/d)



India gas demand Outlook (MMcf/d)

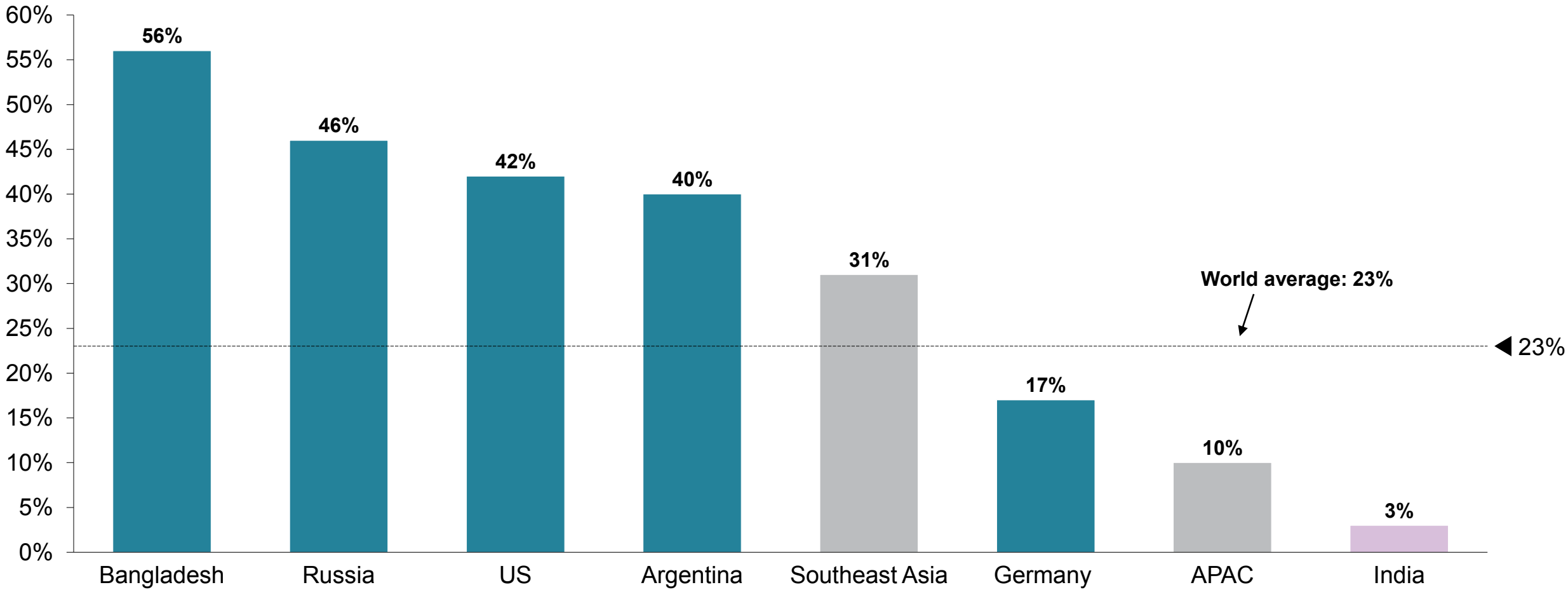


Regulated end use sectors include power generation and fertilizers sectors. ***Unregulated*** end use sectors include industry, city gas distribution (CGD), transport and other uses

Source: S&P Global Commodity Insights

India's power sector **trails global and APAC averages** for Natural Gas share in power generation mix

Comparison of share of natural gas in power generation mix for 2023

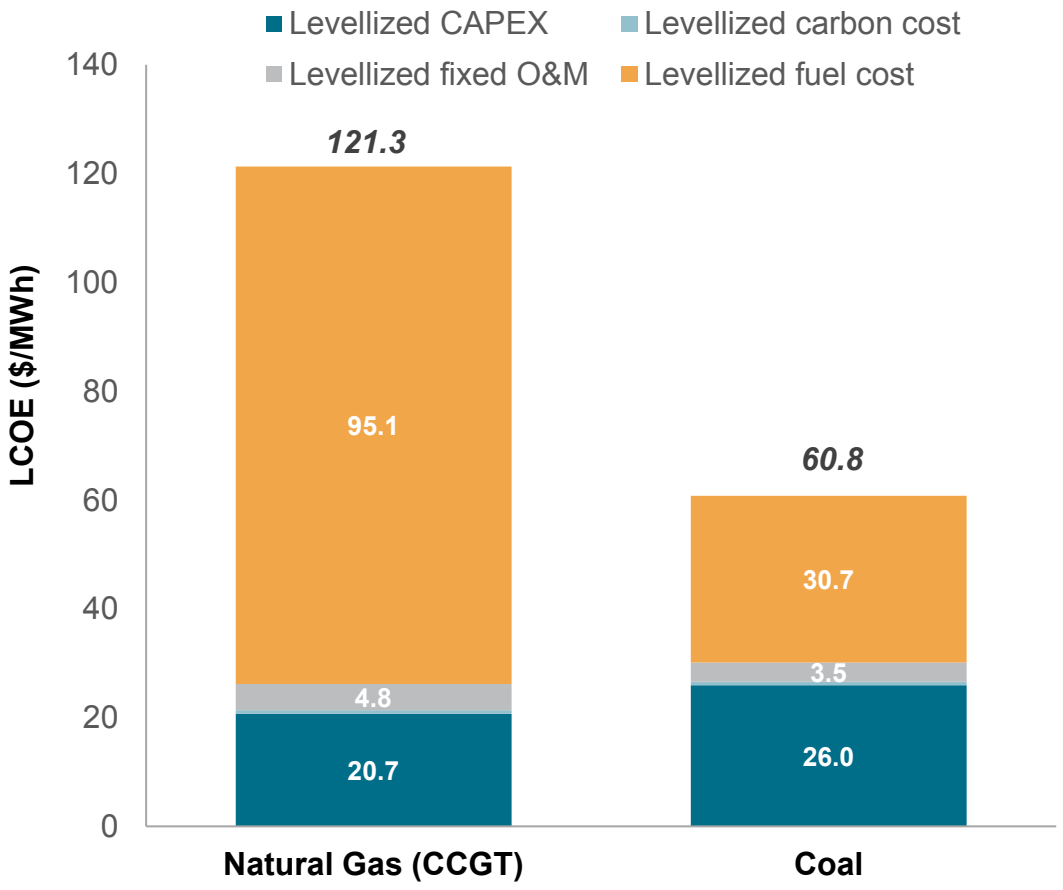


Source: S&P Global Commodity Insights

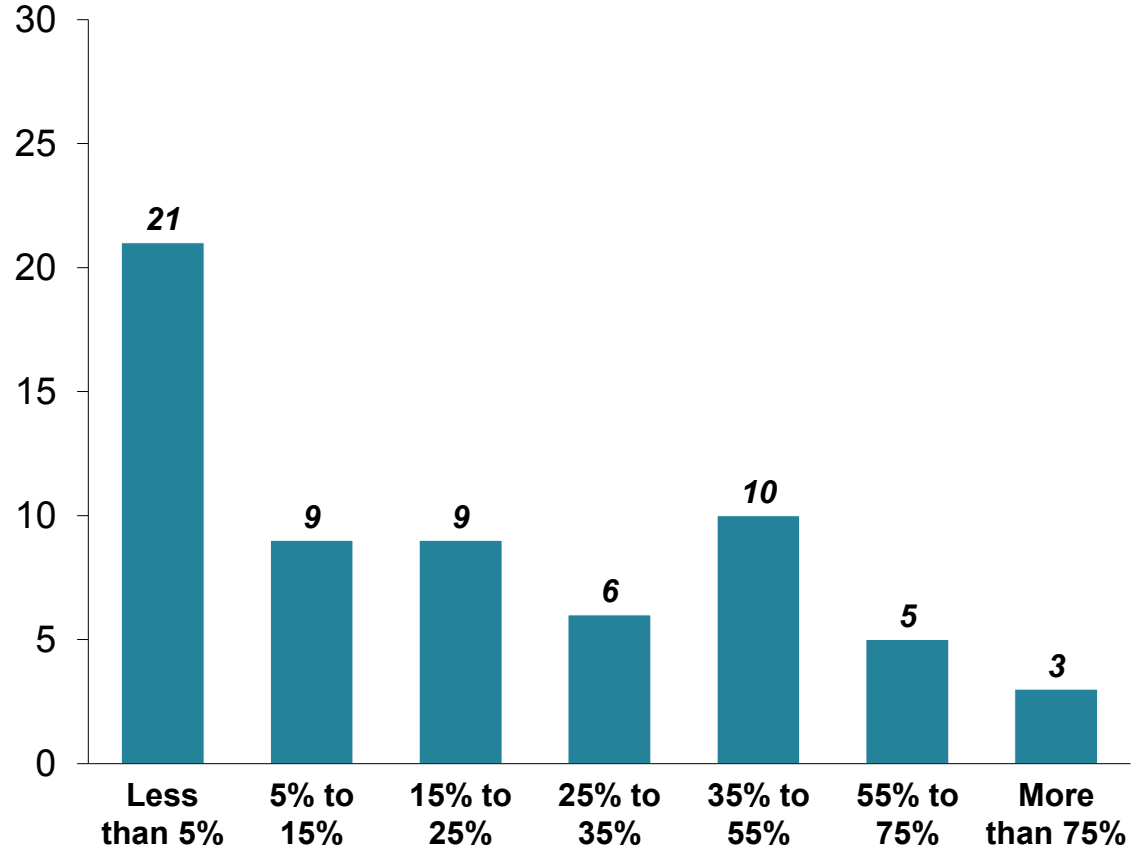
CI Consulting

Gas adoption in India's power sector is challenged with **cheaper** coal and renewables

LCOE breakdown for India by technology in 2024 (2022$/MWh)



India: Gas-fired power plants and utilization rates (average for FY 2017 to FY 2025)



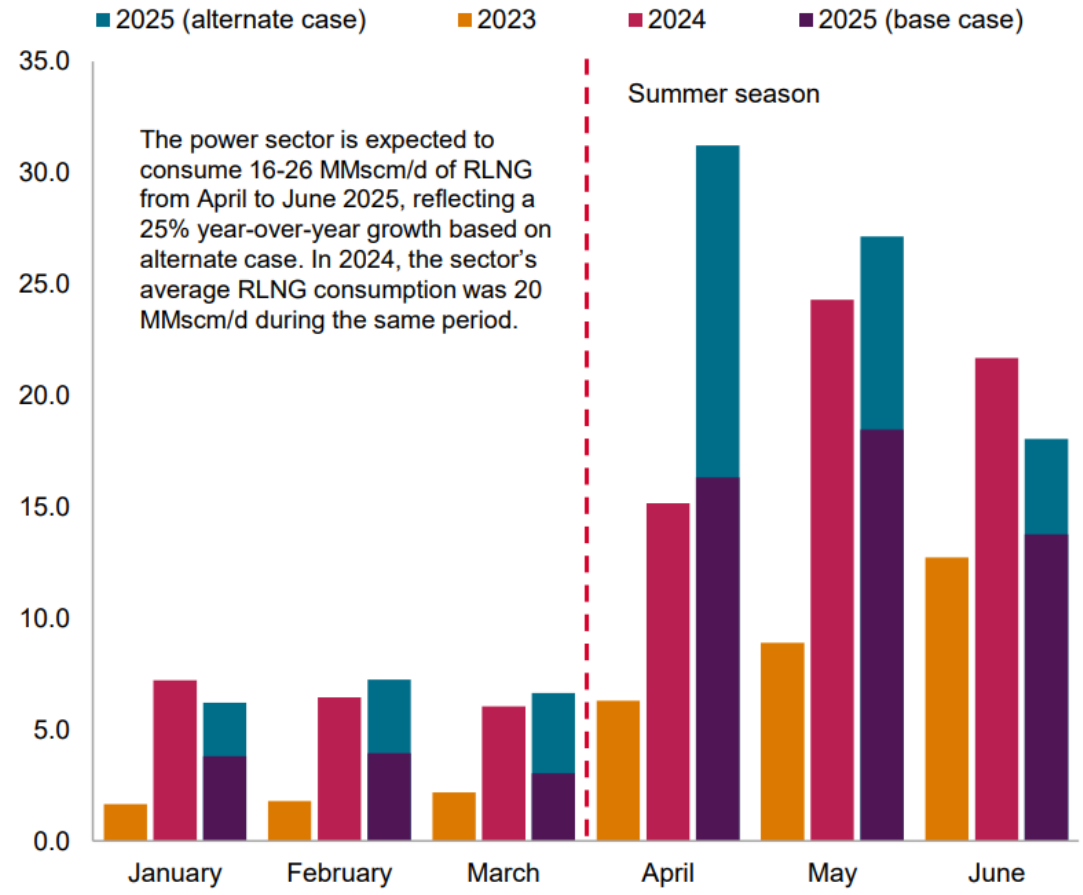
*The data is until October 2023.
Source: S&P Global Commodity Insights

However, **near-term** opportunities exist in 2025 for RLNG in power
Longer-term, opportunities exist as India shifts from capacity surplus to capacity deficit in 2025

Factor supporting higher growth of RLNG during April to June

- Higher electricity demand growth during summer season
- Slow pace of coal capacity addition
- Risk of lower-than-average hydro generation
- Peak generation requirement during nonsolar hours and higher ramp-up/down requirements

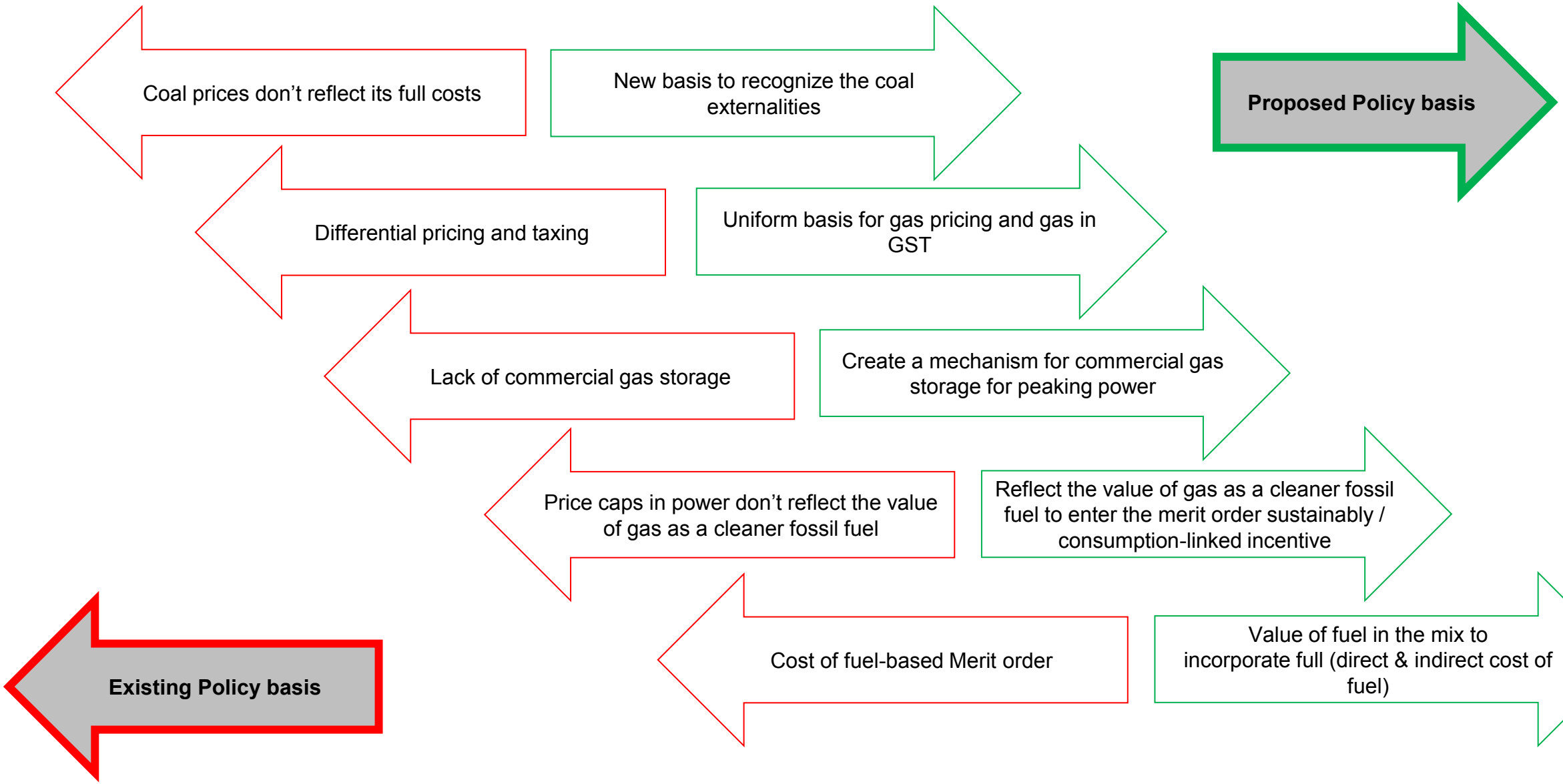
RLNG consumption by power sector (MMscm/d)



Source: S&P Global Commodity Insights

CI Consulting

Shift in basis for **Gas Policies required to recognize its value in cleaner air quality**



Disclaimer