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Fueling India's Future: The Power of Gas in Energy Transition

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Presentation - Macro Trends and Outlook for Indian Gas sector to 2040

Global energy markets are undergoing significant transformations driven by a mix of geopolitical, economic, and technological factors, with a growing shift towards decarbonization and sustainability. While the demand for clean energy technologies such as solar PV, wind turbines, electric cars, batteries, electrolyzers, and heat pumps is set to triple by 2035, fossil fuels, particularly oil and natural gas, continue to play a vital role. By 2040, Natural gas is expected to maintain 20% share in global primary energy demand in S&P Global's Inflections scenario (Base case) and 18% in the Green Rules scenario. It is expected to remain a key energy source, especially in non-OECD countries, while coal demand declines. In India, natural gas is increasingly seen as a pivotal component in the country's energy transition, which aims to boost its share of natural gas in the energy mix from 6% to 15% by 2030. The sector's growth is driven by industrial, residential, and transport demands, particularly for its ability to provide flexible, cleaner energy compared to coal. As India continues to expand its gas infrastructure, including pipelines and LNG terminals, natural gas will play a crucial role in meeting both energy security goals and carbon reduction targets, supporting India's ambition for net-zero emissions by 2070. This session will provide an in-depth look at various global energy scenarios and their implications for India's gas sector, highlighting the role of natural gas in achieving the country's economic growth and sustainability ambitions.

Key Questions for Discussion:

- How will natural gas fit into India's broader strategy to reduce its carbon footprint and achieve net-zero emissions by 2070?
- What steps are necessary to achieve 15% share for natural gas by 2030?
- How will India manage the cost of natural gas, especially LNG, to ensure it remains competitive with other energy sources like coal, renewables, and liquid fuels?

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

There is a need for renewed commitment for Gas at the highest levels of policy making in India. Natural gas needs to be viewed not only as a transitional fuel but also as a long-term asset that can complement India's clean energy goals. India needs a clear and consistent policy framework to reaffirm gas as a crucial component of its energy strategy. Gas's ability to act as a cleaner substitute for coal in power generation and industrial applications, its role in balancing intermittent renewables, and its potential to serve as a fuel in the transport sector needs to be highlighted.

A sector-specific roadmap is needed to drive the growth of gas in India. Customized strategies for each sector will help address infrastructure and supply chain challenges. This approach will involve targeted incentives, customized policy measures, and a timeline for implementation that aligns with national energy and climate objectives.

By re-establishing confidence and belief in gas, creating a truly integrated view of its potential, and outlining sector-specific growth strategies, India can bridge the gaps in its gas story. The goal is not just to increase the share of gas in the energy mix but to leverage it effectively as part of a clean, secure, and affordable energy future.

Key Questions for Discussion:

- What policy reforms are necessary to restore investor and stakeholder confidence in India's gas sector?
- How can gas's role in India's emission reduction goals be better understood and integrated across sectors?
- What specific measures are needed to address infrastructure and supply chain gaps in different sectors for gas adoption?

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

India is undergoing a significant transformation in its energy sector, with natural gas playing a pivotal role in enhancing the energy mix. The government's focus on increasing the share of natural gas requires substantial investments in infrastructure, particularly the expansion of the national pipeline network. India's current pipeline density is low compared to advanced economies, leading to mismatches between supply and demand, as seen in underutilized terminals like the Kochi LNG terminal. The limited pipeline network, exacerbated by inconsistent domestic production and reliance on imported LNG, impedes investments in new infrastructure. The government has recognized this gap and is working to develop a comprehensive Natural Gas Grid to connect various gas sources to markets, meeting demand from key sectors such as power, fertilizers, and city gas distribution (CGD). This initiative aims to address regional imbalances and enhance the transportation of gas safely and efficiently. Currently, India's pipeline network spans approximately 25,000 km, with 10,800 km more under construction, especially in the eastern and southern regions. Despite progress, challenges remain, including the need to modernize import terminals, expand the CGD network, and streamline interstate coordination. This panel discussion will provide valuable insights into how accelerating investments in India's natural gas pipeline infrastructure can play a key role in addressing energy challenges, stimulating economic growth, and supporting India's transition to a more sustainable energy future.

Key Questions for Discussion:

- How can public-private partnerships be structured to enhance investment in pipeline projects? What innovative financing models can be employed to reduce the financial burden on investors?
- How can industry ensure that the development of natural gas pipelines minimizes environmental impacts?
- What lessons can be learned from other countries that have successfully developed their natural gas pipeline systems?

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

Natural gas is increasingly becoming a key player in India's energy landscape, currently comprising 6% of the energy mix, supported by both domestic production and imported liquefied natural gas (LNG). According to S&P Global Commodity Insights forecast, India's gas demand is expected to rise by 47% to 9,381 MMcf/d by 2030, from 6,384 MMcf/d in 2023, and LNG imports are expected to double from current levels to roughly 40 million mt/year by 2030.

According to S&P Global Commodity Insights, India's gas production is projected to peak at 124 MMcm/d by 2028, declining to 115 MMcm/d by 2030, necessitating LNG imports of 385 MMcm/d to

meet the 2030 consumption target of 500 MMcm/d, which represents a 173% increase from current levels. Achieving this target will depend on various factors, including infrastructure development, securing long-term contracts to stabilize prices, and balancing market conditions with renewable energy adoption. The government has implemented several initiatives to enhance affordability and accessibility of gas. Nonetheless, challenges such as inadequate infrastructure, competition from cheaper energy sources, and environmental concerns must be addressed through coordinated efforts among government, private sectors, and stakeholders to foster a conducive environment for the gas sector's growth. This panel discussion will offer the audience a comprehensive understanding of how natural gas fits into India's evolving, multi-dimensional fuel strategy and its critical role in the country's energy future.

Key Questions for Discussion:

- How does natural gas fit into India's broader energy transition strategy, especially in comparison to other fossil fuels and renewable energy sources?
- Given India's reliance on imported natural gas, what measures can be taken to ensure long-term energy security, particularly with fluctuating global gas prices and geopolitical risks?
- What are the key factors that will influence the future growth trajectory of natural gas in India's integrated energy strategy?

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

India, one of the fastest-growing major economies, is poised for significant energy demand growth, making natural gas a key player in its transition to cleaner fuels as part of its commitment to achieving net-zero emissions by 2070. To ensure reliable access to natural gas, robust infrastructure development, including terminals, pipelines, and storage facilities, is crucial. The City Gas Distribution (CGD) network, which is integral to the National Gas Grid, will drive much of this growth, especially in providing Compressed Natural Gas (CNG) for transportation and Piped Natural Gas (PNG) for industrial and domestic use. By 2030, the CGD sector is expected to account for over 60% of the consumption growth necessary to raise natural gas's share to 15% of India's energy mix. Despite the significant expansion of the CGD network, with 33,753 km of natural gas trunk pipelines authorized and an increase in CNG stations from 938 in 2014 to 4,629 in 2022, there are still infrastructure gaps, particularly in Tier-II and Tier-III cities and rural areas. The number of PNG connections has also risen, with a target of 120 million by 2030. Challenges remain, such as the high upfront costs of expansion, regulatory hurdles, consumer awareness, and ensuring a steady supply of competitively priced natural gas. To address these challenges, India needs to foster collaboration among stakeholders, streamline regulations, incentivize investments, and promote consumer awareness about the benefits of natural gas, which will be pivotal in advancing the country's transition to a cleaner, sustainable energy future. The panel will explore the transformative potential of CGD in expanding access to natural gas for households, industries, and transportation across urban and rural regions. Additionally, the panel will examine the challenges of scaling up CGD infrastructure, such as regulatory hurdles, financing, and the need for technological innovation.

Key Questions for Discussion:

- How will CGD distributors navigate the challenge/impact of government cutting APM gas allocation?
- What are the most significant infrastructure bottlenecks hindering the expansion of the CGD network in India?

- What additional regulatory or policy reforms are essential to overcome existing challenges and further accelerate CGD expansion?