



CH
Market
Facilitation
Services

Strategic Advisory Report

Industrial Impact of Natural Gas Supply Cut

Focus: DRI Steel Units

March 2026

India’s Import Landscape

HS271111 corresponds to Liquefied Natural Gas (LNG) under the broader category of petroleum gases and other gaseous hydrocarbons. LNG is a critical energy input for several sectors in India, including fertilizers, petrochemicals, chemicals, ceramics, glass, textiles, and steel (particularly Direct Reduced Iron units). As domestic natural gas production remains insufficient to meet demand, India relies heavily on imports to ensure energy security and industrial continuity.

Over the past five years, India’s imports of HS271111 have shown significant fluctuations, reflecting global energy market volatility, demand recovery after the pandemic, and geopolitical developments affecting LNG supply chains.

Table: India’s import value of HS271111 (in US\$ billions)

India’s Top Importers 2024	2020	2021	2022	2023	2024
Qatar	3.34	4.76	8.54	6.53	6.50 (43%)
United States of America	0.83	2.07	1.75	1.43	2.57 (17%)
United Arab Emirates	0.79	1.50	2.85	2.23	1.74 (11%)
Angola	0.60	0.63	0.56	0.45	1.07 (7%)
Oman	0.38	0.74	1.03	0.45	0.81 (5%)
Nigeria	0.90	0.85	1.00	0.42	0.81 (5%)
India’s Total Imports of HS2711	7.91	12.08	17.77	13.26	15.21

Source: International Trade Centre

India’s LNG import basket is moderately concentrated, with Qatar accounting for around 43% of imports in 2024, making it the dominant supplier. Other important suppliers include the United States, United Arab Emirates, Angola, Oman, and Nigeria.

Two structural patterns emerge from the data:

- Strong Dependence on Middle Eastern Suppliers: A substantial share of LNG imports originates from the Middle East (Qatar, UAE, and Oman). This increases exposure to geopolitical tensions in the region.
- Growing Diversification: Imports from the United States and African suppliers such as Angola and Nigeria have increased, reflecting efforts to diversify sourcing and reduce regional concentration risk.

Despite diversification efforts, the Middle East remains a crucial node in India’s LNG supply chain due to geographic proximity, established long-term contracts, and competitive pricing.

Given the scale of LNG imports and the concentration of suppliers in the Middle East, a prolonged regional conflict could have several consequences for India:

- Short-term price increases due to market uncertainty and higher freight costs
- Supply disruptions or shipment delays, particularly from Qatar and other Gulf suppliers
- Greater reliance on alternative suppliers, such as the United States and African exporters
- Increased volatility in domestic gas availability, affecting energy-intensive industries

Impact Assessment

Certain steel producers operate Direct Reduced Iron (DRI) facilities that rely entirely on natural gas as the primary reducing agent in transforming iron ore into sponge iron. In these units, natural gas is not merely an energy source, it is the core chemical input that drives the reduction reaction. As a result, any disruption in gas availability directly constrains reactor stability, reduction kinetics, and overall sponge iron output, making DRI one of the highest-sensitivity segments within the steel value chain.

Why will disruption occur?

- Gas-based DRI plants rely on natural gas as the sole reducing agent, where the reforming process generates a carefully balanced mixture of hydrogen (H_2) and carbon monoxide (CO) required for the iron-ore reduction reaction. The system depends on a stable, continuous flow of reformer gas to maintain reduction equilibrium inside the shaft furnace. Any decline in natural gas availability disrupts the H_2 –CO composition, weakens reduction kinetics, and directly reduces sponge-iron output, placing gas-based DRI among the most supply-sensitive segments of the steel value chain.

Where technical bottlenecks appear

- DRI reactors operate in fixed-bed or fluidized-bed continuous flow; instability forces rate cuts.
- Switching to coal-based DRI requires logistics, capex, and is not feasible short-term.
- Off-gas recycling loops lose efficiency when NG flow is cut.

Expected disruption intensity

- Reduced DRI production due to lower gas availability.
- Shift toward coal-based DRI or alternative processes where feasible.
- Higher production costs and potential decline in efficiency.

Analytical Approach

The analysis examines four disruption scenarios—10%, 20%, 30%, and 40% reductions in natural gas supply. Gas-based DRI units are assumed to have 100% dependency on natural gas, as gas is the core reducing agent in the process.

Production impact is therefore directly proportional to the level of gas supply disruption. Any reduction in gas supply translates into an equivalent reduction in the operational capacity of gas-based DRI units.

The baseline revenue for the DRI segment used in this assessment is ₹6,74,10,73,954.24, which serves as the reference point for estimating revenue losses under different disruption scenarios.

Scenario Analysis

Under a 10% gas supply disruption, gas-based DRI units would experience an estimated 10% reduction in production, resulting in revenue losses of approximately ₹67.41 crore. At this level, steel producers may continue operations with reduced plant utilization.

If gas supply declines by 20%, the production impact increases to 20%, leading to estimated revenue losses of approximately ₹134.82 crore. At this stage, several DRI plants may reduce operating capacity or temporarily suspend certain production lines.

Under a 30% supply disruption, production impact rises to 30%, translating into estimated losses of approximately ₹202.23 crore. Such disruptions could significantly affect sponge iron production and reduce raw material availability for electric arc furnace-based steelmaking.

In a severe disruption scenario of 40%, production could decline by 40%, resulting in estimated revenue losses of approximately ₹269.64 crore. This level of disruption could lead to widespread operational shutdowns of gas-based DRI units and significantly affect steel supply chains.

Scenario	Gas Supply Cut	Gas Dependency	Production Impact	Revenue (₹)	Estimated Revenue Loss (₹)
Scenario 1	10%	100%	10%	674.10 crores	67.41 crores
Scenario 2	20%		20%		134.82 crores
Scenario 3	30%		30%		202.23 crores
Scenario 4	40%		40%		269.64 crores

Strategic Implications

The analysis shows that gas-based DRI steel production is extremely sensitive to natural gas supply disruptions due to its complete dependency on natural gas as a reducing agent. Unlike other industrial sectors where gas is primarily used as fuel, DRI production requires gas as a core process input, limiting short-term substitution options.

Disruptions in DRI production could also have downstream impacts on electric arc furnace steel production, affecting availability of sponge iron and increasing reliance on scrap or alternative inputs.

Conclusions

A structured impact assessment reveals the following insights:

- Gas-based DRI steel, with 100% dependency, is the most sensitive segment. Production falls linearly with supply cuts, leading to revenue losses between ₹67 crore and ₹270 crore. Such disruptions could also tighten sponge iron availability and affect downstream steelmaking routes.

MFS Offerings

Following our sectoral engagements, we invite industry leaders to connect with MFS for a customised impact assessment report tailored to their specific operations. Our assessment provides clear, actionable intelligence to support urgent decision-making during the ongoing gas supply constraints. Your customised report will answer:

- **What proportion of your production is at risk?** Quantified impact based on your plant configuration, dependency levels, and process sensitivity.
- **What is the estimated revenue loss?** Data-driven financial analysis under multiple supply-cut scenarios.
- **What is the potential loss in export value?** Insight into downstream trade implications and implications for global commitments.

MFS Core Services

Export/Import Assessment | Market Potential Assessment | Operational Cost Analysis

Benefits For Companies

- Global Trade Intelligence
- Market sizing reflecting domestic and global demand-supply landscape
- Product-market fitment from a global trade perspective
- Diversification/investment opportunities

Our Knowledge Base

20⁺ Countries

15⁺ Sectors

50⁺ Products

Would you like to
EXPLORE more?

Write to:
mfs@cii.in

Meet us:
CII Market Facilitation Services
Plot No. 249-F, Phase IV, Udyog Vihar,
Sector 18, Gurugram, Haryana — 122 015

Disclaimer: Without limiting the rights under the copyright reserved, this electronic newsletter or any part of it may not be translated, reproduced, stored, transmitted in any form (electronic, mechanical, photocopying, audio recording or otherwise) or circulated in any design other than the design in which it is currently published, without the prior written permission of CII. CII has sourced the views, opinions, information, estimates etc. contained in this newsletter from different sources and/or authors and the ownership and copyright of the same vests with the respective authors. CII does not represent this information to be accurate or reliable. The views and opinions are not to be understood as professional advice in any manner or interpreted as policies, objectives, opinions or suggestions of CII. CII does not assume any responsibility and disclaims any liability for any loss, damages, caused due to any reason whatsoever, towards any person (natural or legal) who uses this electronic newsletter. This electronic newsletter cannot be sold for consideration, within or outside India, without express written permission of CII. Violation of this condition will lead to criminal and civil prosecution. Distributed by Confederation of Indian Industry (CII), The Mantosh Sondhi Centre; 23, Institutional Area, Lodi Road, New Delhi 110003, India, Tel: +91-11-24629994-7, Fax: +91-11-24626149; Email: info@cii.in; Web: www.cii.in