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Energy Price Risk Management In Dynamic Market

Harnessing Volatility Using MCX Crude Oil, Natural Gas & Electricity Futures In A Geopolitical Evolving World

India's strong economic growth is underpinned by its ability to navigate a high degree of dependence on imported crude oil, with nearly 89% of its crude oil requirements sourced internationally, while demonstrating resilience and adaptability amid unprecedented shifts in global energy markets. The

joint US-Israel military strikes on Iran (Operation Epic Fury, February 28, 2026) and Iran's consequent closure of the Strait of Hormuz drove energy commodity prices and slashed OMC earnings estimates. Against this backdrop, Multi Commodity Exchange of India Limited's (MCX) complete energy hedging suite – crude oil futures and options, natural gas futures, and India's first electricity futures contract – offers India's energy value chain participants a transparent, liquid, INR-denominated toolkit to manage price risk. This article examines the geopolitical drivers reshaping global energy trade through 2026, the resulting price volatility across crude, gas and power markets, and how systematic hedging by India's energy value chain, OMCs, fertiliser producers, generators, DISCOMs and energy-intensive industries can materially protect margins and strengthen national energy security.

The Geopolitical Reshaping of Global Energy Markets: 2022-2026

India's energy security landscape has been shattered and remade twice in four years. The Russia-Ukraine war India's energy sector has shown remarkable resilience through four years of unprecedented global disruption, adapting twice over to reshape its energy security strategy. The Russia-Ukraine war restructured global crude supply chains from 2022. Now, the conflict triggered by joint US-Israel strikes on Iran, launched on February 28 under Operation Epic Fury, has evolved into a prolonged and repeatedly escalating crisis rather than a contained shock. Iran's initial closure of the Strait of Hormuz gave way to a fragile ceasefire and memorandum of understanding in June, but the truce

collapsed within weeks after Iran struck commercial vessels that had bypassed its preapproved shipping corridor. A drone strike on a cargo ship on June 25 set off a chain of hostilities that put the US and Iran back on a path toward all-out war less than a month after they had agreed to stop fighting.

By mid-July the conflict had resumed in full, with US forces reporting strikes on roughly 140 Iranian military targets in a single week and the US disabling an empty oil tanker sailing toward Kharg Island, effectively blockading Iran's key export terminal. For India, caught in both shocks simultaneously and now navigating a conflict that has already outlasted several predicted end-dates, the case for systematic energy price risk management has moved from prudent to essential.

The initial post-February price spike has since given way to a second, sharper leg up rather than the gradual normalisation many analysts had expected. Crude oil prices have risen more than 14% over the past month and are up nearly 29% year-on-year, with WTI rallying to a five-week high as escalating hostilities kept the Strait of Hormuz closed and tightened global supplies. The volatility is being compounded by contagion beyond the Gulf itself: Houthis militants have threatened to block Saudi maritime traffic in the Red Sea, prompting at least one Saudi tanker to reverse course, while attacks on the Caspian Pipeline Consortium terminal on Russia's Black Sea coast have disrupted Kazakh exports as well. Markets have been whipsawed between escalation and diplomacy throughout July,

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rallying on fresh strikes and pulling back on reports of proposed truces, including a floated 10-day ceasefire late in the month.

Amid this, rather than retreating from Russian barrels because of Gulf risk, Indian refiners have leaned further into them. Russian crude has continued to account for roughly half of India’s oil imports through July, averaging around 2.5 million barrels per day, with Kpler describing it as India’s strongest energy-security hedge, particularly since the Strait of Hormuz disruptions began.

India’s Russian crude purchases hit an all-time high in June 2026, worth an estimated €4.5 billion, a 34% increase over May. At the same time, refiners are visibly rebuilding Gulf supply lines as a hedge against sanctions risk: Saudi crude purchases jumped more than 150% month-on-month in July even as Russia held its share above half of the basket, while imports

from the United States dropped sharply as refiners continued to favour discounted Russian barrels over long-haul Atlantic cargoes. This dual-track strategy of record Russian intake alongside a simultaneous Gulf-supply rebuilds functions as a hedge against two distinct tail risks: a Hormuz-driven Gulf supply stops and a US-driven sanctions or tariff clampdown on buyers of Russian oil, a risk sharpened by Washington’s proposal to impose 100% tariffs on such buyers.

Indian refiners have, so far, converted this disruption into margin. India’s fuel exports are on track to hit a 10-month high of about 1.4 million barrels a day in July, roughly a fifth higher than a year earlier and nearly 50% above May’s volumes, as war-driven shortages elsewhere lift refining margins.

Lower export taxes and domestic inventories sufficient for 75–80 days have supported this run, though any disruption to Hormuz flows could quickly alter the picture. That, in essence, is the crux of the risk-management argument for India’s energy ecosystem: the same geopolitical premium currently boosting refiners’ margins is a two-sided exposure, and a sudden Hormuz closure or a Russian-sanctions shock could reverse it just as quickly as it arrived. Financial risk management, in other words, is no longer a hedge against a single crisis, it is now the operating condition for participating in Indian energy markets at all.

In this evolving environment, the role of energy derivatives traded on the MCX has gained strategic importance. MCX crude oil, natural gas, and electricity futures are increasingly emerging as essential instruments for managing volatility, stabilising procurement costs, protecting margins, and improving financial resilience across India’s energy value chain.

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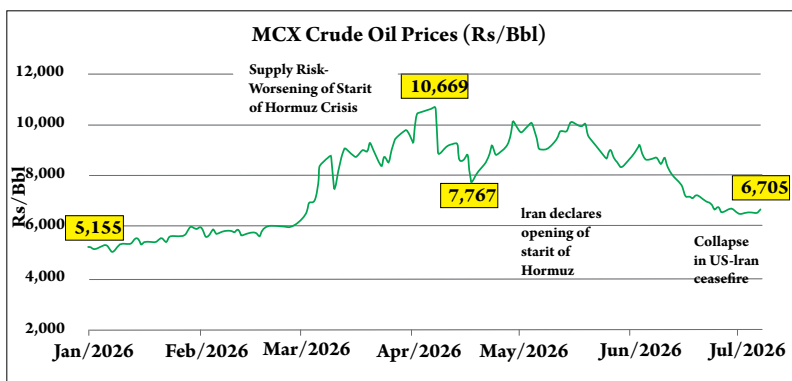
Why Energy Price Risk has Become Structural

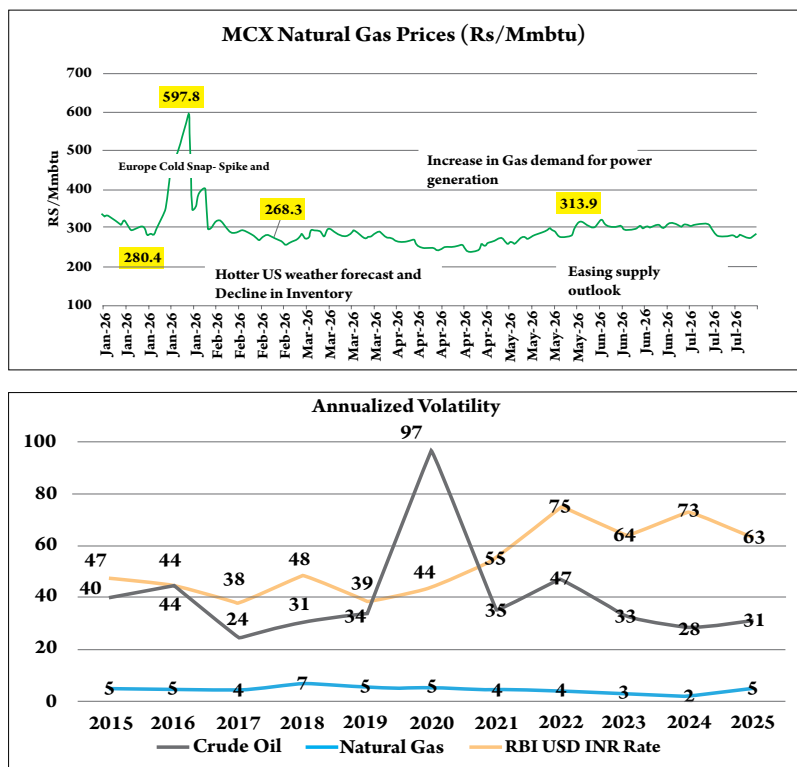
Historically, energy price volatility was often viewed as cyclical and temporary. However, the events of the last few years suggest that volatility has become structural.

Several long-term factors are driving this transformation:

- Geopolitical fragmentation and sanctions
- Military conflicts in energy-producing regions
- Climate-driven weather disruptions
- Supply-chain vulnerabilities
- Renewable energy intermittency
- Shipping bottlenecks
- Currency fluctuations
- Rapid changes in global demand patterns

The Iran conflict of 2026 has intensified all these pressures simultaneously. According to the IEA, crude and oil-product flows through the Strait of Hormuz plunged from nearly 20 million barrels per day to just above 2 million barrels per day during the peak disruption period. Gulf producers were forced to reduce production while global inventories declined rapidly. The impact has extended beyond oil





markets. LNG cargo availability has tightened, bunker fuel prices have surged, freight costs have increased sharply and electricity markets across Asia have become increasingly volatile.

For India, these developments have direct economic implications because energy imports influence the following:

- Inflation
- Industrial competitiveness
- Fiscal balances
- Transportation costs
- Manufacturing economics
- Electricity tariffs

This is why energy price risk management is now becoming a strategic necessity rather than a financial option.

MCX Crude Oil Futures and India's Refining Sector

Crude oil remains India's largest energy import exposure. With nearly 85% dependence on imported

crude, India's economy remains highly sensitive to global oil price movements. The ongoing geopolitical crisis has demonstrated how quickly procurement economics can change. Refiners have faced rising feedstock costs due to:

- Higher WTI crude prices
- Elevated tanker freight rates
- Increased marine insurance premiums
- Delays in cargo movement
- Market uncertainty regarding Gulf supplies

Refining margins have become increasingly volatile because downstream product prices often adjust with a lag while feedstock costs rise immediately. In this environment, MCX crude oil futures linked to WTI benchmarks provide an important hedging mechanism for refiners and downstream companies.

By hedging a portion of future crude procurement through futures contracts, refiners can partially reduce

exposure to sudden price spikes and improve visibility regarding procurement costs. Hedging cannot eliminate all market risk, but it allows companies to stabilise cash flow and improve financial planning.

The strategic value of such hedging becomes particularly important during geopolitical crises. During the 2026 Iran conflict, crude oil prices reacted sharply to every military escalation, ceasefire rumour, or disruption in shipping activity. For Indian refiners, the ability to manage this volatility through domestic exchange-traded contracts has become increasingly valuable. The aviation sector faces similar challenges. Aviation turbine fuel prices are closely linked to crude oil markets, and rising fuel costs have placed enormous pressure on airline profitability globally. Analysts have noted that refined products such as jet fuel and diesel have risen even faster than crude itself due to downstream supply constraints.

MCX crude oil futures, therefore, provide aviation and logistics companies with a mechanism to partially stabilise fuel costs and improve budgeting certainty.

Natural Gas Volatility and The Growing Importance of Gas Hedging

India has actively promoted natural gas as a transition fuel capable of supporting industrial growth while reducing emissions relative to coal and oil. LNG import infrastructure has expanded significantly, city gas distribution networks have grown rapidly, and industrial gas consumption continues to rise. However, the current geopolitical crisis has exposed the vulnerability of global LNG supply chains.

Qatar remains one of the world's largest LNG exporters, and disruptions in the Strait of Hormuz have created serious concerns regarding LNG availability across Asia. Reports suggest that LNG spot prices in Asia surged dramatically

after fears emerged regarding interruptions to Gulf exports.

For Indian LNG importers and city gas distribution companies, procurement has become significantly more uncertain. Industrial consumers such as fertiliser manufacturers, ceramics producers, petrochemical companies, and glass manufacturers remain heavily dependent on natural gas as a feedstock or fuel source. Sharp increases in LNG prices directly affect profitability and production economics. MCX natural gas futures, therefore, play an increasingly important role in India's energy risk management ecosystem.

Natural gas futures allow companies to hedge future procurement exposure and partially protect themselves against sudden spikes in imported gas prices. Fertiliser companies can stabilise feedstock costs. Industrial users can improve fuel budgeting. City gas distribution companies can better manage procurement planning and tariff decisions.

The importance of these contracts increases significantly during periods of geopolitical uncertainty when LNG prices respond immediately to shipping disruptions, sanctions, or military developments. The 2026 crisis has reinforced the reality that gas procurement is no longer merely a sourcing issue. It has become a financial risk management function.

Electricity Futures and The Transformation of India's Power Markets

Electricity markets are undergoing profound transformation globally, and India is no exception.

Unlike crude oil or natural gas, electricity cannot easily be stored economically on a scale. Supply and demand must remain balanced in real time, making electricity markets inherently volatile.

India's power sector is becoming increasingly complex due to:

- Rapid growth in renewable energy
- Rising electricity demand
- Climate-driven heatwaves
- Renewable intermittency
- Transmission bottlenecks
- Thermal fuel uncertainties

During the summer of 2026, heatwaves pushed electricity demand to record highs across India. At the same time, uncertainty in global fuel markets increased pressure on thermal power generation economics.

Against this backdrop, the launch of electricity futures on MCX in 2025 represents a major milestone in India's evolving energy architecture. The contracts are linked to Day Ahead Market (DAM) prices and provide a transparent mechanism for managing electricity price risk. Their strategic relevance has become particularly clear during the current geopolitical and climatic environment.

Power-intensive industries such as steel, cement, aluminium, fertilisers, chemicals, and data centres now face significant uncertainty regarding future electricity costs. Electricity futures provide these industries with a mechanism to hedge future procurement prices and improve financial planning. Distribution companies (DISCOMs) may derive even greater long-term benefits. Indian DISCOMs have historically struggled with fluctuating procurement costs and dependence on expensive short-term power purchases during peak demand periods. Electricity derivatives create the possibility of more structured procurement strategies.

By locking in future electricity prices through exchange-traded contracts, DISCOMs can potentially reduce exposure to spot market volatility and improve procurement discipline.

Globally, mature electricity markets in Europe and North America rely extensively on derivatives for risk management and price discovery. India's

move toward electricity futures therefore aligns its market structure more closely with international practices.

Energy Derivatives and Industrial Competitiveness

The strategic importance of energy derivatives extends beyond energy companies themselves. For many industrial sectors, energy now represents one of the largest and most volatile components of operating expenditure. Steel plants, cement manufacturers, data centres, petrochemical facilities, fertiliser companies, and manufacturing industries all face increasing exposure to fluctuations in fuel and electricity costs.

The current geopolitical crisis has highlighted how rapidly energy volatility can affect industrial competitiveness. Rising oil and LNG prices have increased freight costs, manufacturing expenses, transportation charges, and inflationary pressures globally.

Modern treasury management therefore increasingly treats energy exposure similarly to currency or interest-rate risk. Companies capable of managing energy price risk effectively are likely to gain significant competitive advantages through:

- Stable operating costs
- Better financial planning
- Improved pricing visibility
- Reduced earnings volatility
- Greater resilience during market disruptions

In this context, energy derivatives are no longer speculative tools. They are strategic financial instruments that support long-term business stability.

Challenges in India's Energy Derivatives Ecosystem

Despite growing importance, India's energy derivatives market still faces several structural challenges. Liquidity in newer products such as electricity futures will require sustained participation from

utilities, industrial consumers, financial institutions, and traders.

Many Indian corporates still lack commodity risk management frameworks and internal expertise related to derivatives pricing, hedging strategies, and margin management.

Awareness regarding structured hedging remains uneven across industries. Some corporates continue to associate derivatives primarily with speculative trading rather than risk management. However, the current geopolitical crisis is gradually changing these perceptions.

Regulatory bodies in India have also pushed several initiatives aimed at strengthening corporate governance and transparency, holding listed entities to defined disclosure standards. A key example is the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015, under which listed companies must disclose commodity price risk exposure as a mandatory part of their Corporate Governance Report, per Schedule V, clauses C(9)(n) and C(10)(g). In June 2017, SEBI also constituted the Kotak Committee on Corporate Governance to raise governance benchmarks among listed entities. Among its recommendations, the committee urged boards and management to treat disclosure and transparency not as compliance formalities but as tools for building stakeholder trust — encouraging proactive sharing of material information that could influence decision-making.

A further significant development has been India's move toward aligning domestic accounting standards with IFRS through the phased rollout of Ind AS. In this context, Ind AS 107 (Financial Instruments: Disclosures) mandates that entities provide detailed quantitative and qualitative disclosures on financial instruments in their financial statements — including exposure to commodity price risk arising from derivative and hedging positions.

Specifically, Ind AS 107 requires entities to disclose the nature and extent of risks arising from financial instruments, along with how those risks are managed. For commodity price risk, this translates into several concrete disclosure obligations. Entities must present a sensitivity analysis showing how profit or loss and equity would be affected by reasonably possible changes in relevant commodity prices, along with the methods and assumptions used to arrive at those figures. Where an entity uses derivative contracts — such as futures or options on crude oil, natural gas, or other commodities — to hedge price exposure, it must disclose the hedging relationship, the risk management strategy behind it, and how hedge effectiveness is assessed and measured.

The standard also requires disclosure of the carrying amounts of financial assets and liabilities by category, information on fair value measurement (including the valuation techniques and inputs used, categorized under the fair value hierarchy), and details of any hedge accounting applied under Ind AS 109. For companies with material commodity exposure — such as those in energy, metals, or agri-commodities — these disclosures are intended to give stakeholders a clearer picture of how price volatility could affect financial performance, and what risk mitigation measures, including exchange-traded derivatives, the entity has put in place.

Taken together, these requirements push companies beyond narrative statements about risk and toward quantified, comparable disclosures — reinforcing the broader governance push toward transparency.

For companies with commodity price exposure, exchange-traded derivatives — such as those available on MCX for crude oil, natural gas, and other commodities — offer a transparent, regulated route to hedge this risk while also generating the price and valuation data needed to meet Ind AS 107's disclosure requirements. By hedging

through standardized, exchange-traded contracts, companies can demonstrate defined risk management strategies and objectively measurable hedge effectiveness — helping translate the regulatory push for transparency into practical, auditable risk management on the ground.

The Future of Energy Security includes Financial Resilience

The events of 2026 have fundamentally altered how governments, companies, and investors think about energy security. The Iran conflict and repeated disruptions in the Strait of Hormuz demonstrated that energy markets can no longer be viewed solely through the lens of physical supply. Financial exposure to price volatility has become equally important.

For India, this shift carries profound implications. As the country moves toward becoming one of the world's largest energy consumers and fastest-growing economies, energy price risk management will become increasingly critical for protecting industrial competitiveness, financial stability, and economic resilience.

MCX crude oil, natural gas, and electricity futures are emerging as important instruments within this evolving framework. These contracts allow value chain participants, refiners, LNG importers, airlines, industrial consumers, DISCOMs, and other participants across the energy value chain to manage uncertainty more effectively and improve operational resilience.

India imports about two-thirds of its natural gas demand. Because of its peculiar nature and lack of enough cross-country pipelines for gas transportation, natural gas is largely imported in liquefied form, that is, LNG, and majorly from Qatar.

The MCX crude oil futures contract mirrors the NYMEX WTI crude oil price. Based on the authors' own analysis (see Methodology

Note below), Brent and WTI crude oil prices show more than 96% correlation. The figure clearly brings out the correlation between MCX crude oil and NYMEX WTI crude oil, which is 99.50%.

Methodology Note

The correlation coefficients cited in Fig. 1 (99.50% for MCX crude oil–CME WTI) reflect the authors' own calculations of running series of closing prices of the MCX WTI contract and the CME WTI contract. (From Jan 2023–July 2026).

The correlation coefficients cited in Fig. 2 (99.50% for MCX Natural Gas – CME Nymex Henry Hub Natural Gas) reflect the authors' own calculations of running series of closing prices of MCX Natural Gas contract and CME Nymex Henry Hub Natural Gas. (From Jan 2023 to July 2026).

Benefits of Hedging on Commodity Derivatives Exchanges

- Trading unit & trade timing in lieu of domestic requirements

MCX Commodity Hedging Examples

Example A1 — Crude oil refinery

Who Uses It: Oil Refinery Wanting To Lock In Purchase Price

	Detail
Situation	The refinery expects to buy 1,000 barrels in 30 days. Current MCX price: ₹6,800/bbl. Fear: price may rise
Hedge Action	BUY 10 MCX crude futures contracts @ ₹6,800/bbl today (long position).
Lots Required	10 lots × 100 bbl = 1,000 bbl
Price at Expiry	The spot price rises to ₹7,000/bbl.
Physical Buy	Buy 1,000 bbl in the spot market @ ₹7,000 = ₹7,000,000
Futures Gain	Sell 10 lots @ ₹7,000 → Profit = ₹200 × 1,000 = ₹200,000
Net Cost	₹6,800,000 - ₹200,000 = ₹6,600,000 ≈ ₹6,600/bbl ₹
Outcome	The refinery is protected from price rises.

Fig. 1: Correlation between MCX Crude oil price and NYMEX WTI Crude oil price

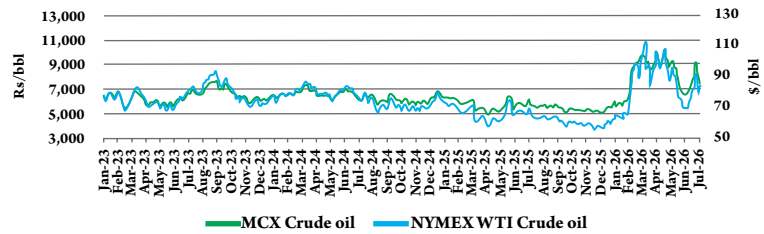
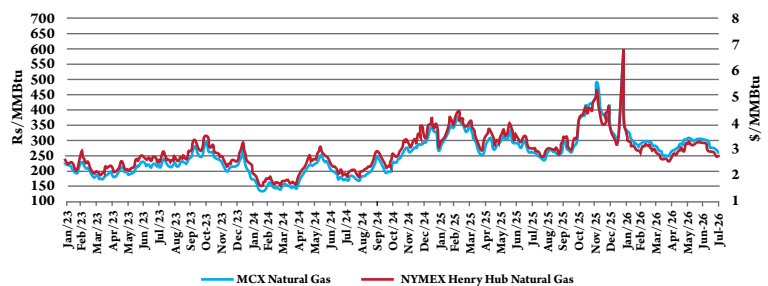


Fig. 2: Correlation between MCX Natural Gas price and NYMEX Henry Natural Gas price



- No counterparty risk involved & cash-settled INR-denominated contracts.
- Fixed daily price limits

Hedging by means of exchange-traded hedging instruments also has the advantage of avoiding the need to negotiate prices bilaterally in the future and giving both procuring and selling companies greater planning certainty.

Concerns have been voiced about how industry can cope with the high energy prices – will they wipe out the profitability of industrial companies? The answer is no. Hedging is a widely used and very convenient way for businesses to protect themselves against energy price volatility and manage their energy price risks.

Businesses typically love predictability – also when it comes to energy pricing. Industrial companies that manufacture goods use large amounts of energy, and price volatility makes it increasingly difficult to predict operational costs. This naturally affects business planning. Hedging helps companies reduce risks and maintain a clearer, more accurate outlook.

Example B1 — Natural Gas Producer

Who Uses It: A Natural Gas Production Company Wanting To Lock In A Selling Price

	Detail
Situation	The gas producer expects to deliver 1,250 MMBtu in 60 days. MCX price: ₹250/MMBtu. Fear: post-monsoon softening.
Hedge Action	SELL MCX natural gas futures lot @ ₹255/MMBtu today (short position)
Lots Required	1 lot × 1,250 MMBtu = 1,250 MMBtu
Price at Expiry	Spot falls to ₹220/MMBtu.
Physical Sale	Sell 1,250 MMBtu in the spot market @ ₹220 = ₹275,000
Futures Gain	Buy back 1 lot @ ₹220 → Profit = ₹35 × 1,250 = ₹43,750
Net Realisation	₹275,000 + ₹43,750 = ₹318,750 ≈ ₹255/MMBtu ✓
Outcome	The producer secured the target price despite the spot price fall.

Example B2 — Natural Gas Consumer

Who uses it: Gas-based power plant/fertiliser unit needing gas as fuel/feedstock

Field	Detail
Situation	The power plant needs 5,000 MMBtu next month. MCX price: ₹250/MMBtu. Fear: summer demand surge.
Hedge Action	BUY 4 MCX natural gas futures lots @ ₹253/MMBtu today (long position).
Lots Required	4 lots × 1,250 MMBtu = 5,000 MMBtu
Price at Expiry	The spot price rises to ₹310/MMBtu.
Physical Purchase	Buy 5,000 MMBtu in spot @ ₹310 = ₹1,550,000
Futures Gain	Sell 4 lots @ ₹310 → Profit = ₹57 × 5,000 = ₹285,000
Net Effective Cost	₹1,550,000 – ₹285,000 = ₹1,265,000 ≈ ₹253/MMBtu ✓
Outcome	Power plant capped fuel cost despite ₹60/MMBtu price surge.

The future of India's energy markets will depend not only on securing a reliable energy supply but also on building robust financial mechanisms capable of navigating persistent volatility. In an increasingly uncertain geopolitical environment, companies that manage energy risk intelligently may ultimately prove more resilient, competitive, and strategically

prepared for the energy economy of the future.

India's energy value chain managers who did not hedge before the Hormuz crisis bore losses that disciplined hedging would have prevented. The only rational response to the 2026 shock is to build the frameworks, governance, and expertise that ensure it never happens unprotected again.

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