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PRICE IN INDIA
HEDGE IN INDIA

India's Strategic Need



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Executive Summary

India participates in the world's commodity markets at continental scale. It is one of the two largest consumers of gold[1] and silver[2], the third-largest consumer of crude oil[3], among the largest producers of cotton, and a significant producer and consumer of the base metals on which its energy transition depends. Yet across most of these markets, the prices that govern Indian royalties, tariffs, procurement tenders and commercial contracts are determined elsewhere – mostly in international market platforms, and against a range of other offshore references for energy, metals and agricultural commodities. The Government of India is cognizant of the need to develop domestic markets and strengthen or create domestic institutions that can discover and disseminate fair prices useful as references for all stakeholders. The proposed Minerals Exchange is an example of such an intention of the Government.

This report provides a diagnostic on the reasons for continued adoption of global benchmarks in some instances. It assesses what a transition toward domestic reference prices could look like - across the two interlinked dimensions of pricing and hedging.

The diagnostic has catalogued more than fifty key benchmarks in active use across fourteen commodities spanning four major categories - metals, bullion, energy and agriculture. Its central finding is structural and also behavioural: offshore references are not merely a market habit that Indian participants happen to adopt; they are also embedded in many of the procedural fabric of Indian commerce. Standard tender documents and legacy contracts often carry offshore references as a matter of template continuity; and settled conventions - formal or informal – often do not point participants toward a credible Indian reference where one is available. Price-taking, in other words, is largely an outcome of inherited architecture rather than a deliberate market verdict. The corollary is that this architecture can evolve over time, relacing offshore prices with Indian ones.

Evidence that such evolution is feasible already exists. MCX bullion spot prices underpin gold and silver exchange-traded funds; the Reserve Bank of India uses India Bullion and Jewellers Association assessments for Sovereign Gold Bonds[5]. Other attempts at developing and using Indian prices include NMDC's internal index-based pricing for iron ore[6]; and the National Coal Index initiative, developed with the Indian Statistical Institute, Kolkata, as a domestic coal reference[7]. These early attempts require a credible compiler, a willing first user, and a use-case in which the user is convinced that domestic price can be better suited than an imported one. The task ahead is to systematise that template - to move from incidental adoption to deliberate architecture. India already has deep and liquid exchange-traded commodity derivatives contracts, whose prices readily qualify for adoption as reference prices.

On hedging, the diagnostic finds a market that is underpenetrated relative to both need and capacity. There is considerable room for hedging commodity price risks in onshore markets. The constraint is not the absence of need; besides domestic contracts in energy, base metals and bullion already offer meaningful depth. The constraint is a lack of deeper understanding of the benefits of cash-flow stability and compliance, as well as institutional capacity for undertaking hedging over a period. While education and capacity creation can go a long way in making industry consider domestic markets for hedging, the markets themselves can be further deepened by injecting liquidity through greater institutional participation. Most importantly, wider adoption and use of Indian prices for referencing can go a long way in use of domestic markets for hedging.



PART I
CONTEXT AND APPROACH



PRICE IN INDIA HEDGE IN INDIA: INDIA'S STRATEGIC NEED

1. Introduction and Background

1.1 CONTEXT FOR THIS ENGAGEMENT

This report examines how domestic pricing and domestic hedging of commodities could be promoted in India, and what role different stakeholders could constructively play in that evolution. The work spans two connected dimensions. The first, Price in India, examines how reference prices for commodities consumed, produced and financed in India are currently determined, why offshore benchmarks dominate, and what a credible path toward Indian reference prices could involve. The second, Hedge in India, examines why domestic hedging adoption remains thin despite evident need and available market depth, and what would build the confidence, capability and economics required for adoption at scale.

The two dimensions are treated together because they are, in practice, two halves of one architecture. Credible domestic benchmarks make onshore hedging rational, because they collapse the basis risk that arises when an Indian exposure is hedged against a foreign reference. Onshore hedging, in turn, deepens the liquidity and participation on which benchmark credibility rests. Progress on either dimension strengthens the case for the other; stagnation on either constrains both. This interdependence shapes the structure of the report and the sequencing logic of the initiatives it describes.

1.2 WHY THE QUESTION IS TIMELY

Several developments make the present moment a natural one for this examination. Domestic market

infrastructure has matured considerably: liquid, rupee-denominated exchange-traded contracts now exist across bullion, base metals and energy, with transparent, continuous and audited price formation. Early institutional adoption of a few domestic references has occurred organically - in exchange-traded funds, in sovereign instruments, and in the pricing practices of public-sector producers - demonstrating that domestic anchoring is viable where the conditions are right.. A considered programme that works with these realities, rather than against them, has a reasonable prospect of compounding progress over the coming years.

1.3 STRUCTURE OF THIS REPORT

The report is organised in four parts. Part I sets out the context, objectives and approach. Part II presents the Price in India workstream: the current pricing landscape, the key insights and structural barriers identified, the benefits associated with a transition toward domestic references and some early initiatives in this direction. Part III presents the Hedge in India workstream in parallel structure: the current state of domestic hedging and key insights. Part IV draws the two workstreams together: the interdependence of pricing and hedging, relevant international reference points and concluding observations. Appendices provide the supporting reference material, the benchmark landscape and commodity-level usage tables, a glossary of abbreviations, and the consolidated list of references.



2. Objectives and Approach

2.1 OBJECTIVES

The initiative leading to this report pursued some clear objectives. First, to establish a factual baseline: which reference prices govern Indian commodity commerce today, where they enter the value chain, and through which instruments - statutes, rules, tenders, contracts - they are transmitted. Second, to explain persistence: to identify the structural characteristics that keep offshore references in place even where domestic alternatives exist, and to do so in a manner that is descriptive rather than evaluative. Third, to define a practical agenda: a set of initiatives, each with a clear objective, significance, indicative rollout horizon and detailed action plan, framed suggestively so that every stakeholder can engage with the analysis on its merits.

2.2 APPROACH AND EVIDENCE BASE

The diagnostic proceeds in three stages. The first stage catalogues the benchmark landscape: more than fifty key benchmarks are identified and documented across fourteen commodities in four major categories - metals, bullion, energy and agriculture - with attention to where each benchmark enters the value chain and through which instrument it is applied. The second stage analyses the mechanisms of persistence, drawing on the catalogued evidence to distinguish convention-driven, liquidity-driven and trust-driven factors, and examines the counter-examples - the green shoots – early attempts at creating benchmarks. The third stage translates the analysis into step-wise actionable plans.



PART II
PRICE IN INDIA

3. The Current Pricing Landscape

3.1 A DEPENDENCE OF UNUSUAL BREADTH

Walk the value chain of almost any commodity that matters to India - gold moving through the bullion trade, copper into the transmission grid, crude oil into a refinery, cotton out of the growing belts - and a consistent pattern appears. The material is Indian, or destined for Indian use. The buyer and the seller are Indian. The logistics, the taxes and the risks are Indian. The price, in many cases, is not. It is often determined offshore - on an international marketplace - and then transmitted into Indian commerce through the instruments that govern how value is calculated and exchanged.

The diagnostic underlying this report has catalogued more than fifty key benchmarks in active use across fourteen commodities, organised in four major categories: metals, bullion, energy and agriculture. These are, notably, the very segments in which India's own exchanges - MCX foremost among them[15] - already operate deep and liquid markets. The breadth of the finding matters as much as its depth: the usage of international benchmarks is not confined only to import-linked commodities where an offshore reference might be expected, but extends to commodities whose supply chains are wholly or substantially domestic.

3.2 WHERE OFFSHORE REFERENCES ENTER THE VALUE CHAIN

Three points of entry account for most of the transmission. First is tariff and customs valuation, where offshore assessments serve as the default reference for computing applicable values. The second is public and institutional procurement, where standard tender documents often specify offshore indices in their price-adjustment and escalation clauses. The third is commercial sales contracts, where long-standing templates reference international benchmarks and each new contract tends to follow the text of the one before it. The cumulative effect is that an offshore reference touches Indian value at every point where it is priced - often several times over the life of a single transaction.

3.3 AN ILLUSTRATIVE VIEW OF THE LANDSCAPE

Table 3.1 presents an illustrative view of four commodity segments, the offshore references observed within them, and the domestic reference points that exist in each. The table is indicative rather than exhaustive - but it conveys the pattern that recurs across the landscape: mature offshore references embedded in formal instruments, alongside younger domestic alternatives that have achieved adoption in specific, well-chosen use-cases. A more detailed presentation of the catalogue's structure, together with the commodity-level usage tables, is provided in Appendix B.

3.4 THE CHARACTER OF THE FINDING

Two observations frame everything that follows. The first is that price-taking in India is largely an outcome of inherited architecture rather than a deliberate market verdict. The reliance developed gradually, instrument by instrument, as templates were reused and conventions carried forward. The second is that the same instruments that transmit offshore references are equally capable of transmitting domestic ones. A tender clause or a contract template is agnostic as to which reference it names. The question the remainder of Part II addresses is therefore not whether a transition is mechanically possible - it is - but what would make it credible, orderly and practical for each participant.

Table 3.1 - The benchmark landscape by category (illustrative)

Category	Representative commodities	Dominant offshore references	Domestic reference points
Metals	Copper, aluminium, zinc and other base metals; iron ore	International exchange prices, referenced in tenders and contracts	Liquid rupee -denominated exchange futures; potentially a future minerals exchange
Bullion	Gold, silver	International marketplace price referenced in valuation and trade	MCX bullion spot prices (used by gold and silver ETFs); IBJA assessments (used by Sovereign Gold Bonds)
Energy	Crude oil, natural gas, coal	International crude and gas markers;	National Coal Index (developed with ISI Kolkata) as an early attempt
Agriculture	Cotton and other traded agri commodities	International exchange and assessment references	Domestic exchange contracts and polled price series in select commodities

4. Key Insights and Structural Barriers

4.1 THREE INSIGHTS FROM THE DIAGNOSTIC

The diagnostic distilled its findings into four insights. Insight A: offshore benchmarks are often hardwired across the value chain. Global references sit at the core of tariffs, procurement tenders and sales contracts, making Indian industries benchmark-dependent even where supply chains are domestic. Insight B: structural barriers reinforce offshore anchoring. Convention embedded in templates, the liquidity and participation depth that domestic references are still building, and the trust that accrues to long-established governance records interact to keep contracts and indices internationally referenced. Insight C: domestic green shoots exist and can be scaled. Institutional adoption of domestic references has already occurred in bullion - demonstrating that the conditions for adoption are achievable, not hypothetical. The proposed regulated spot exchanges for coal and minerals are loaded with possibilities to make this happen.

4.2 THE THREE BARRIERS IN DETAIL

The first barrier relates to established convention. Tariff formulas, tender documents and long-standing contracts have long referenced international benchmarks, and each new document tends to follow the template that came before it - often a matter of continuity rather than a fresh decision. Convention of this kind is neither irrational nor careless; it economises on drafting effort and reduces negotiation friction. But it also means that the reference price question is rarely opened at all, so that even a demonstrably suitable domestic alternative may go unconsidered simply because no process exists in which its consideration would occur.

The second barrier relates to liquidity and participation depth. Where domestic reference prices exist, some are still building the trading volumes and breadth of contributors that their offshore counterparts have accumulated over decades. A treasurer weighing a large contract will naturally ask whether a reference price can comfortably absorb size without distortion, and whether the population of contributors and participants behind it is broad enough to be representative. These are legitimate questions, and they resolve only as usage grows - which is precisely why the sequencing of early use-cases matters so much: each successful adoption deepens the base on which the next depends.

The third barrier relates to trust, governance and basis risk. An established offshore benchmark carries a long record of methodology, audit and practice; a domestic alternative builds comparable familiarity over time, and until that familiarity accrues, the established reference often remains the more convenient default. Basis risk compounds the effect: where physical realities diverge from the offshore reference - freight, duties, local supply-demand - participants have historically absorbed or managed the gap rather than switching references, because switching carried its own uncertainties. Table 4.1 summarises the three barriers, their principal manifestations, and the conditions under which each relaxes.

Table 4.1 - Structural barriers and the conditions under which they relax

Barrier	Principal manifestation	Condition under which it relaxes
Established convention	Templates, schedules and contracts carry offshore references forward as a matter of continuity rather th an active selection	Availability of well -drafted alternative language, worked transition illustrations, and visible early adopters that make reconsideration low-effort
Liquidity and participation depth	Treasurers weigh whether a domestic price can absorb large contracts; contributor bases in some commodities are still broadening	Growth in usage itself - anchored initially in use -cases where existing depth is already sufficient (bullion, energy, base metals)
Trust, governance and basis risk	Long offshore governance records versus domestic references still accumulating familiarity; managed basis gaps preferred to switching uncertainty	Published methodologies, contributor controls, audit trails aligned with globally recognised principles (IOSCO)

4.3 WHAT WOULD TIP THE BALANCE

It is worth asking what would tip the balance. In the absence of a settled method - formal or informal - of reaching for a credible Indian reference when one is available, the existing default simply carries on. Convention is self-reinforcing in this way. But the same quality cuts both ways: once a few credible examples take hold, they too begin to set the norm. The design implication is that a transition succeeds not by confronting the barriers frontally but by working with the grain of each - supplying the templates that make reconsideration easy, sequencing early adoption where depth already suffices, and investing in the governance architecture through which trust develops over time.

5. What India Stands to Gain

5.1 THE CASE IN OUTLINE

The case for a gradual transition toward credible domestic references rests on financial, fiscal and strategic considerations. Five distinct benefits can be identified, each accruing to a different constituency, and each reinforcing the others.

5.2 FOR PRODUCERS AND CONSUMERS: PRICES THAT REFLECT INDIAN FUNDAMENTALS

A domestic reference price reflects domestic fundamentals - monsoon-driven demand cycles, freight differentials, duty structures, the actual clearing price of Indian supply and demand - rather than conditions on the other side of the planet. For a producer, this means realisations that track the market it actually serves; for a consumer, procurement costs that track the market it actually buys in. The gap between an offshore print and Indian reality is not hypothetical: it is the day-to-day experience of every participant who reconciles a contract priced abroad against a physical transaction completed at home.

5.3 FOR HEDGERS: THE COLLAPSE OF BASIS RISK

An Indian corporate hedging against an offshore benchmark carries the gap between the reference price and its own realised price, with a currency overlay on top. That basis risk dilutes hedge effectiveness, complicates accounting treatment and weakens the internal case for hedging at all. It is one reason domestic hedging adoption remains low - barely 2 per cent of the roughly ₹1.1 lakh crore of commodity exposure carried by India's top seven commodity-exposed firms is hedged domestically[8-14], even though domestic contracts in bullion and energy already offer meaningful depth. Credible domestic references would allow hedges that track the exposure they protect, making the instrument work as boards and auditors expect it to. Pricing and hedging are, in this sense, two halves of one architecture: each depends on and deepens the other. This interdependence is examined fully in Part III.

5.4 FOR THE EXCHEQUER AND FOR MARKETS

For the exchequer, royalties and tariffs that track domestic conditions move with India's own supply and demand rather than with distant markets that may have little to do with them - making receipts more explicable and their planning less exposed to unrelated volatility. For markets, benchmarks tend to be self-reinforcing: a reference price supports contracts, contracts build liquidity, and liquidity strengthens the reference. The effect runs in both directions, which is why early, well-chosen adoption is important: each instance of adoption strengthens the credibility on which the next depends.

5.5 FOR POLICY AND FOR THE LONGER TERM

A set of reference prices administered in India is valuable infrastructure - a data asset for managing inflation, guiding procurement and negotiating trade that an imported index can rarely match. There is also an institutional benefit: benchmark administration is itself a substantial activity, in which the assessments, data services and settlement infrastructure surrounding a trusted reference generate fees, capability and standing over long periods. Reference prices, the evidence suggests, are built rather than inherited: Brent became an anchor because the architecture around it - contracts, participants, assessment standards - was deliberately constructed, and newer benchmarks such as JKM have shown that a consuming region can establish the reference against which its own trade is priced. There is no structural reason a credible Indian bullion, metals or energy reference could not, in time, come to serve a similar role across South Asia and beyond.

6. Green Shoots: Domestic Anchoring in Practice

6.1 THE EVIDENCE THAT ADOPTION IS ACHIEVABLE

The most encouraging finding of the diagnostic is that domestic anchoring is not a hypothesis. It is already happening - and the most developed examples sit squarely in the exchange-traded universe. MCX bullion spot prices already underpin gold and silver exchange-traded funds: domestic, regulated investment products marking to a domestic, regulated price. The Reserve Bank of India uses IBJA assessments for Sovereign Gold Bonds[5] - an instance of a domestic benchmark serving a sovereign instrument. In base metals and energy, liquid rupee-denominated futures on MCX provide the raw material - transparent, continuous, audited price formation - from which credible reference prices are built. And the instinct is spreading in the wider economy: NMDC has developed an internal index-based pricing for iron ore[6], and the National Coal Index, developed with the Indian Statistical Institute, Kolkata, is intended to serve as a domestic reference for coal[7]. Though the last two are early attempts and have had limited adoption so far, they indicate the possibilities of institutional development of benchmarks which can then be popularised among large user groups.

6.2 THE COMMON TEMPLATE

Each green shoot carries the same lesson. None required a mandate. Each required three things: a credible compiler, a willing first user, and a use-case in which the domestic price could be better suited than the imported one. The ETF use-case worked because a rupee-denominated product marking to a rupee-denominated price eliminates translation noise. The Sovereign Gold Bond use-case worked because a domestic instrument serving domestic savers is most naturally priced against domestic trade. In every instance, adoption followed suitability - the domestic reference was not adopted despite the alternatives but because, for that use-case, it was the better tool.

6.3 FROM INCIDENTAL ADOPTION TO DELIBERATE ARCHITECTURE

Set against the fifty-plus offshore-referenced benchmarks the diagnostic catalogued, a handful of green shoots may look modest. Benchmark adoption typically progresses commodity by commodity and use-case by use-case, and established reference prices have generally begun with a small number of working examples. The task now is not to invent the model but to systematise it: to identify, deliberately and in order of readiness, the next use-cases in which a domestic reference is the better tool, and to ensure that the compiler credibility and governance architecture are in place when each opportunity arrives. That systematisation is the subject of the four initiatives presented in Chapter 7.

Table 6.1 - Green shoots of domestic benchmark adoption

Green shoot	Institution(s) involved	Use -case	What it demonstrates
MCX bullion spot pricing	MCX; asset managers	Reference price for gold and silver exchange-traded funds	A regulated domestic spot price can anchor regulated investment products at scale
IBJA assessments for SGBs	RBI; IBJA	Issue and redemption pricing for Sovereign Gold Bonds	The sovereign itself is willing to reference a domestic benchmark in its own instrument
NMDC index -based iron ore pricing	NMDC	Producer's internal, index-based sales pricing	A major public -sector producer can attempt to shift its pricing basis toward a domestic index
National Coal Index	ISI Kolkata; coal sector	Domestic coal reference pricing	A methodologically governed national index can serve as a sector-wide reference

7. Benchmarking Initiatives: The Four-Move Agenda

7.1 OVERVIEW

What might a deliberate architecture to develop Indian price benchmarks look like? Four initiatives suggest themselves, each building on the last: prioritising the green shoots where foundations already exist; reflecting Indian benchmarks in the formal pricing formulas where dependence actually lives; investing in the credibility architecture from which trust is built; and converting benchmarks into market standards through sustained adoption. Table 7.1 summarises the four initiatives with their objectives, significance, the stakeholder best placed to enable each, and the indicative rollout horizon identified in the diagnostic. The subsections that follow elaborate each initiative into its step-wise action plan.

7.3 INITIATIVE P2 - EMBED INDIAN BENCHMARKS INTO FORMAL PRICING FORMULAS

The second initiative addresses the instruments in which offshore references are most directly embedded: procurement formulas and standard tender language. It is the most direct structural route to change, because it operates on the same documents through which the offshore default was transmitted in the first place. Public procurement, in particular, is the fastest demand-side adoption lever available. The gentlest transitions are also possible here. A weighted-average glide path is one option worth examining: for illustration, 90 per cent offshore and 10 per cent domestic in year one, 80/20 in year two, and 70/30 in year three, with weights adjusted

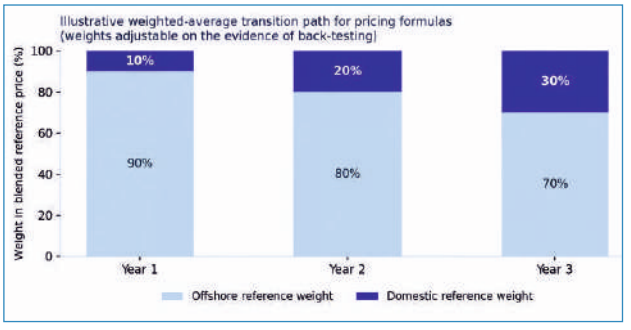
Table 7.1 - Benchmarking initiatives at a glance

Initiative	Objective	Significance	Indicative horizon
P1 - Prioritise green-shoots	Begin using domestic pricing in commodities where Indian benchmark foundations already exist . Prices emerging from the proposed coal and minerals exchange also have the potential	Creates early wins and avoids spreading effort across too many markets at once	Short-term
P2 - Embed Indian benchmarks into formal pricing formulas	Move the benchmark choice from offshore default to domestic standard across procurement and contracts	Most direct structural route to reducing dependence; public procurement is the fastest demand-side adoption lever	Moderate-term
P3 - Establish and publish credible domestic benchmark architecture	Build methodology, governance, publication discipline and transparency for Indian benchmarks	Without benchmark trust and repeatability, adoption will not scale beyond rhetoric	Moderate-term
P4 - Institutionalise and scale benchmark adoption	Make Indian benchmarks standard across procurement, contracts and market products	Creation alone is insufficient; commercial, OTC and exchange usage converts benchmarks into market standards	Long-term

7.2 INITIATIVE P1 - PRIORITISE GREEN-SHOOTS

The first initiative concentrates effort where Indian benchmarks and liquid domestic markets already exist. Bullion offers the most developed foundation - MCX-linked spot pricing already serving gold and silver ETFs, and IBJA assessments already serving Sovereign Gold Bonds - followed by the energy and base-metal contracts where exchange depth is greatest. Exchange-traded futures in commodities like Aluminum, Copper and Zinc have sufficient depth and wide participation to qualify for adoption. Early wins matter because they create the confidence, the documented lessons and the demonstration effects on which every subsequent step depends.

on the evidence of back-testing. Such an approach would give treasurers operational clarity and auditors a defensible formula, without an abrupt transition for any participant, the illustrative glide path shown in Exhibit 7.1.



7.4 INITIATIVE P3 - ESTABLISH AND PUBLISH CREDIBLE DOMESTIC BENCHMARK ARCHITECTURE

The third initiative invests in benchmark credibility itself. Trust and repeatability are central to any reference price, and they are supported by architecture: a governance framework covering methodology, ownership, contributor policy, fallback logic and publication frequency, aligned with the IOSCO principles that govern benchmarks globally; a published methodology paper for each pilot commodity; defined contributor networks with data-submission controls; and the publication, audit-trail and exception-handling processes that allow a benchmark to be used confidently in contracts and governance-sensitive contexts. Over time, a commonly accepted Indian benchmark code - shaped through open consultation among market institutions, users and authorities - could give every participant a shared standard to reference.

7.5 INITIATIVE P4 - INSTITUTIONALISE AND SCALE BENCHMARK ADOPTION

The fourth initiative converts benchmarks into market standards. Creation alone is insufficient; commercial, OTC and exchange usage is what makes a reference price real. The pathway runs from public procurement - where adoption is most visible and most repeatable - to large contracts, then OTC products, then broader market products, with contract templates and benchmark-linked instruments developed to make each step practical, and with transparent tracking maintained throughout: the share of contracts, procurement flows and market products referencing Indian benchmarks, published so that progress is measured in actual adoption.



8. Classifying the Pricing Agenda: Mandate-Linked and Market-Led Tracks

8.1 THE CLASSIFICATION FRAMEWORK

A useful discipline, applied across the agenda, is to sort initiatives by what their full effect truly requires. Some initiatives are mandate-linked: their complete impact arrives with a formal instrument - a revised formula, an updated rule, a recognised standard - and would therefore naturally mature through consultation and policy evolution over the years ahead. Others are market-led: they can proceed immediately through the initiative of market participants and institutions, with no new instrument required. The distinction is presented not to assign tasks but to inform sequencing: it shows that meaningful progress need not wait on any single instrument, because the two tracks are complementary rather than sequential, and progress on either reliably strengthens the case for the other.



8.2 APPLICATION TO THE PRICING INITIATIVES

Applied to the four benchmarking initiatives, the framework classifies P2 (embedding Indian benchmarks in formal pricing formulas) and P3 (credible benchmark architecture) as mandate-linked - their full effect arrives with revised formulas, updated tender standards and a commonly accepted benchmark code, all of which mature through consultation. P1 (prioritising green-shoots) and P4 (institutionalising and scaling adoption) are market-led in character - the screening, piloting, documentation, template development and adoption tracking they involve can begin at once.

Table 8.1 - Classification of the pricing initiatives

Initiative	Classification	Basis of classification
P1 - Prioritise green -shoots	Market -led	Screening, ranking, piloting and documentation can proceed immediately; the green shoots themselves arose without any new instrument
P2 - Embed in formal pricing formulas	Mandate -linked	Full effect arrives with revised formulas, rules and tender standards, which mature through consultation and policy evolution
P3 - Credible benchmark architecture	Mandate -linked	Governance investment can begin at once, but a commonly accepted benchmark code - the capstone - is shaped through open consultation
P4 - Institutionalise and scale adoption	Market -led	Template development, product rollout and adoption tracking proceed through market initiative, compounding wherever the mandate-linked track advances

PART III
HEDGE IN INDIA

9. The Current State of Domestic Hedging

9.1 A MARKET UNDERPENETRATED RELATIVE TO NEED AND CAPACITY

India's commodity hedging market is significantly underpenetrated. As per a back-of-the-envelop estimates using information on disclosures made by listed companies, of the roughly ₹1.1 lakh crore of commodity exposure carried by India's top seven commodity-exposed firms, just 2 per cent is hedged domestically[8-14]; the balance is either managed offshore or left unhedged altogether. The figure does not reflect an absence of need, instruments or market depth. The benefits of hedging - risk mitigation, cash-flow stability and compliance - are well understood at board level; rupee-denominated exchange-traded contracts exist across the relevant commodities; and domestic contracts in energy, many metals and bullion already offer meaningful depth. The gap between exposure and domestic hedging is, in other words, a gap of adoption rather than of availability - which makes it addressable.

9.2 WHERE THE UNHEDGED AND OFFSHORE-MANAGED EXPOSURE SITS

The exposure that is not hedged domestically divides into two distinct pools. The first pool is managed offshore, predominantly by the largest and most sophisticated corporates, for whom offshore venues have historically offered familiar references, established documentation and, in some structures, a more favourable cost stack. For this pool, the question is comparative economics: what would make the onshore route the natural default for exposures that originate in India. The second pool is left unhedged, disproportionately among mid-sized firms, MSMEs, regional traders and producer groups, for whom the barriers are more basic: uncertainty about what a compliant hedge involves, the absence of a board-approved policy, limited broker support, apprehension about margin calls, and in many cases no practical ability to execute directly at all. For this pool, the question is capability and access.

9.3 THE PERCEPTION GAP AROUND BONA-FIDE HEDGING

One finding deserves particular emphasis because it reframes the problem. The key barrier to domestic hedging today is not law, but perception. Many market participants operate as if hedging may be treated - and taxed - like speculation. The gap is not one of statute but of ecosystem communication: guideline notes from professional bodies such as ICAI in their study materials, the practice of auditors, and the advice of tax advisors together shape what treasurers believe is safe. Closing the gap therefore involves not only regulatory clarity but sustained, credible communication - so that the market clearly understands what bona-fide hedging is, what documentation is needed, and why eligible domestic hedging is not taxed as speculative activity by default.



10. Key Insights on the Hedging Ecosystem

10.1 THREE INSIGHTS FROM THE DIAGNOSTIC

The hedging diagnostic is distilled into three insights. Insight A: India's commodity hedging market is underpenetrated. A significant gap exists in India's onshore hedging ecosystem, with most exposure still managed offshore or left unhedged. Insight B: the core challenge is not need, but market confidence. Hedging in India offers clear benefits in risk mitigation, cash-flow stability and compliance, and energy and bullion already show meaningful domestic depth; yet adoption remains constrained by lack of confidence. Insight C: three proven levers build a strong hedging ecosystem. International case studies show that successful hedging markets are built through three coordinated levers - market structure reform, financial support and sovereign participation, and capability building - which together deepen liquidity, improve trust and accelerate adoption.

10.2 READING THE INSIGHTS TOGETHER

Read together, the three insights carry a clear design implication. Because the constraint is confidence rather than need, the agenda concentrates on the conditions of confidence: clarity about what constitutes a bona-fide hedge and how it is treated; capability and access for the user segments currently excluded; economics that make the onshore route comparatively rational; and visible anchor participation that de-risks adoption for everyone watching. And because the international evidence indicates that successful ecosystems are built through coordinated levers rather than any single intervention, the four initiatives that follow are designed to operate in parallel and to reinforce one another.



11. Hedging Initiatives: The Four-Move Agenda

11.1 OVERVIEW

Four initiatives address the adoption gap: clarifying and institutionalising bona-fide hedging; expanding user capability and access channels; improving the comparative economics of domestic hedging; and using public-sector anchoring to seed liquidity and create proof points. Table 11.1 summarises the four with their objectives, significance, key enabling stakeholder and indicative horizon; the subsections that follow present each action plan in detail.

11.2 INITIATIVE H1-CLARIFY AND INSTITUTIONALISE BONA-FIDE HEDGING

The first initiative converts the existing legal clarity into operational confidence. Its centre of gravity is documentation and treatment: translating the definition of bona-fide hedging into documentation standards a treasurer can follow; supplying model hedge-policy templates that boards can approve; aligning reporting and surveillance treatment so that hedgers are not operationally treated like speculative traders; and communicating all of this credibly across the ecosystem of auditors, tax advisors and professional bodies whose guidance shapes behaviour. Adoption is then tracked where it becomes visible: approved hedge policies, hedger accounts and repeat hedging behaviour.

11.3 INITIATIVE H2 - EXPAND USER CAPABILITY AND ACCESS CHANNELS

The second initiative widens the addressable base. The addressable user base extends well beyond large, sophisticated corporates - to MSMEs, regional traders, producer groups and procurement-heavy users - but each segment faces distinct barriers: lack of knowledge, lack of a board-approved policy, lack of broker support, margin apprehension, or the inability to execute directly at all. The initiative therefore proceeds segment by segment: mapping the barriers precisely; designing segment-specific learning and access solutions - treasury workshops for corporates, simplified access models for MSMEs, intermediary-led execution for smaller users; formalising the bank and intermediary-led models, including client suitability and execution responsibility; concentrating onboarding effort on the twenty to thirty highest-priority institutions per pilot commodity; and tracking conversion from training through first trade to repeat usage and hedge-policy adoption. Table 11.2 summarises the segment-barrier mapping on which the design rests.

Table 11.1 - Hedging initiatives at a glance

Initiative	Objective	Significance	Indicative horizon
H1 - Clarify and institutionalise bona-fide hedging	Issue clarifications separating hedging from speculation activities using derivatives	Fastest route to removing trust barriers and unlocking repeatable, board -approved hedging programmes	Short-term
H2 - Expand user capability and access channels	Build user capability and widen access through banks, intermediaries and structured onboarding	Expands the addressable user base beyond large corporates; supports real market deepening	Short-term
H3 - Improve the economics of domestic hedging	Reduce the tax, margin and execution frictions that push hedgers offshore	Improves onshore competitiveness; makes domestic hedging usable at scale, including for smaller firms	Moderate-term
H4 - PSU anchoring to accelerate adoption	Use PSU participation to seed early liquidity and create credible proof points	Visible anchor flow de -risks market development and accelerates private -sector adoption	Moderate- term

Table 11.2 - User segments and their principal access barriers

User segment	Principal barriers observed	Solution direction
Large corporates	Absence of board -approved hedge policy; internal clarity on treatment and documentation	Treasury workshops; model policy templates; documentation standards
MSMEs	Knowledge gaps; margin apprehension; limited broker support	Simplified access models; margin transparency tools; guided onboarding
Regional traders	Execution capability; intermediary coverage	Intermediary -led execution with defined suitability and responsibility
Producer groups	Aggregation, knowledge and channel gaps	Intermediary -led models; targeted capability programmes
Procurement -heavy users	Policy approval; linkage between procurement exposure and hedging practice	Hedge -policy templates aligned to procurement cycles; focused onboarding

11.4 INITIATIVE H3 - IMPROVE THE ECONOMICS OF DOMESTIC HEDGING

The third initiative addresses the comparative cost of hedging onshore. The approach is diagnostic before prescriptive: first map the total onshore cost stack - taxes, brokerage, margin, clearing and funding - against offshore alternatives for the top user segments; then classify each friction by where it originates - policy-led (transaction taxes and tax treatment), regulatory-led (margin and classification) or exchange-led (product design and fees) - so that any recommendations rest on evidence about which lever actually moves the economics. Targeted recommendations for bona-fide domestic hedges follow from that classification. In parallel, user-facing economic tools - cost-comparison calculators, margin simulators and hedge-structure templates - make the onshore value proposition explicit to the users weighing it. Progress is tracked in the measures that matter: movement in the cost-to-hedge, hedger participation, and offshore-to-onshore migration in target cohorts.

11.5 INITIATIVE H4 - PSU ANCHORING TO ACCELERATE ADOPTION

The fourth initiative focuses on demonstration. Visible anchor flow from public-sector enterprises can de-risk market development for every private participant watching: it seeds early liquidity, produces governed and measurable examples of well-governed hedging, and provides observable market practice. The initiative proceeds from identification to demonstration: identifying PSU exposures that are large, recurring and operationally hedgeable in domestic markets; selecting one or two pilot anchor programmes with a defined commodity, volume band and governance rules; establishing the operating governance - who approves the hedge, who executes, what limits apply, how exceptions are handled and how outcomes are reported; preparing exchange execution support, clearing readiness and reporting templates tailored to anchor users; running the pilots against a clearly defined measurement framework covering hedge ratio, cost and governance compliance; and then using the pilot evidence to expand to additional users or commodities and to communicate a credible market signal to private participants.

PART IV
INTEGRATION AND THE ROAD AHEAD

12. The Interdependence of Pricing and Hedging

12.1 TWO CONNECTED WORKSTREAMS

Throughout this report, the pricing and hedging workstreams have been presented in parallel; this chapter makes their interdependence explicit. Credible domestic benchmarks make onshore hedging rational: when the reference price tracks the exposure it protects, basis risk reduces substantially, hedge effectiveness improves, accounting treatment simplifies, and the internal case for hedging strengthens at board level. Onshore hedging, in turn, deepens the very liquidity on which benchmark credibility rests: every hedger added broadens participation, every contract traded adds to the price-formation record, and every basis dashboard consulted increases the population for whom the domestic reference is the natural one. The relationship runs in both directions - which is why the two agendas are best pursued together, and why progress on either reliably strengthens the case for the other.

12.2 PRACTICAL POINTS OF CONNECTION

The connection is visible at the level of individual initiatives. The green-shoot prioritisation of Initiative P1 concentrates on bullion, energy and base metals - precisely the segments in which hedging depth already exists, so that early benchmark adoption and early hedging adoption compound in the same commodities. The benchmark architecture of Initiative P3 supplies the trusted reference against which the hedge-effectiveness of Initiative H1's documented hedges is assessed. The PSU anchoring of Initiative H4 seeds the liquidity that strengthens the domestic references Initiative P2 would embed in formulas. And the adoption scoreboards of Initiatives P4 and H2 measure two views of the same underlying phenomenon: the share of Indian commerce conducted, priced and protected against Indian references. In design terms, the two agendas function as a single, connected programme.



13. Implementation Considerations

13.1 RECOMMENDATIONS IMPLEMENTATION BY ROLLOUT HORIZON

Table 13.1 organises the implementation programme by the usual indicative rollout horizons - short-term, moderate-term and long-term - identified in the diagnostic. The horizons are presented as a planning aid rather than a schedule: actual timing would follow from consultation outcomes, pilot evidence and the readiness of individual commodities.

13.2 RISKS AND MITIGATIONS

A programme of this breadth carries identifiable risks, most of which are best mitigated through design choices already embedded in the initiatives. Table 13.2 sets out the principal risks and the corresponding mitigations. The common design principle is gradual, evidence-based progression: phased transitions rather than abrupt shifts, pilots before extensions, published methodologies before broad reliance, and transparent adoption tracking so that course corrections rest on data.

Table 13.1 - Indicative view of the programme by rollout horizon

Indicative horizon	Programme emphasis
Short-term	Green-shoot screening and pilot selection; documentation standards and model hedge policies; segment barrier mapping; early onboarding in pilot commodities
Moderate-term	Transition-logic design and consultation on formulas and tender standards; benchmark methodology papers and contributor networks; economics diagnostics and recommendations; PSU pilot anchor programmes
Long-term	Progressive extension of formula coverage; publication and dashboard scale-up; expansion of anchor programmes; template and product rollout; adoption tracking as the programme's scoreboard

Table 13.2 - Principal risks and mitigations

Risk	Description	Mitigation embedded in the programme design
Credibility shortfall in early benchmarks	Early domestic references could face scepticism if methodology or contributor depth is questioned	IOSCO-aligned governance built before broad reliance; published methodology papers; contributor controls, audit trails and exception handling (Initiative P3)
Transition disruption	Participants could face operational or accounting discontinuities if refere nces change abruptly	Weighted-average glide paths with back-tested, adjustable weights; offshore references retained where temporarily necessary (Initiative P2)
Thin early adoption	Benchmarks or hedging programmes could stall if first users are too few or too hesitant	Deliberate green-shoot sequencing where depth already suffices; named demonstrations; anchor programmes designed for visibility (Initiatives P1, H1, H4)
Perception gap persisting	Treasurers could continue to assume hedging is treated as speculation despite available clarity	Sustained ecosystem communication through professional bodies, auditors and advisors; documentation standards; public case studies (Initiative H1)
Effort dispersion	Attempting all commodities and segments a t once could dilute impact	Screening and ranking frameworks; pilots with documented lessons before expansion; impact-per-rupee sequencing of interventions (Initiatives P1, H2)
Positioning misread	Exchange contributions could be read as commercial advocacy rather than ecosystem input	Broad eligibility in recognition programmes; discussion-draft framing of public submissions; public-interest framing throughout

14. International Reference Points

14.1 REFERENCE PRICES ARE BUILT RATHER THAN INHERITED

The international record offers a consistent lesson: the world's anchor reference prices did not emerge automatically from production or consumption weight; they were developed deliberately, through the architecture that surrounds a price - contracts, participants, assessment standards and governance. Brent became the world's crude anchor because that architecture was progressively built and maintained around a North Sea stream whose physical volumes were modest relative to its contractual use. JKM, a more recently established benchmark for liquefied natural gas delivered into North Asia, has become the reference against which the region's spot LNG trades - demonstrating that a consuming region can establish the benchmark for its own demand. Shanghai's exchanges have grown domestic contracts in gold, copper and crude into references that their region increasingly watches[17,18]. Table 14.1 summarises the cases and the feature of each most relevant to the Indian context.

14.2 THE LESSONS IN COMMON

Three lessons recur across the cases. First, the sequence matters: each reference began with a use-case in which it was the better tool, and expanded on the basis of demonstrated suitability - the same pattern already visible in India's green shoots. Second, governance precedes scale: in each case, methodology, assessment standards and participant confidence were established before the reference carried significant contractual weight. Third, benchmark development takes time: each anchor accumulated its position over years of consistent publication, deepening participation and steady institutional adoption. The Indian programme described in this report is consistent with all three lessons - it sequences from suitability, invests in governance early, and measures itself in adoption over time.

Table 14.1 - International reference points and their relevance

Reference	What was built	Defining feature	Relevance to the Indian context
Brent	A crude oil complex of physical assessment, futures and derivatives around a North Sea stream	Architecture -contracts, participants, standards - deliberately constructed and maintained over decades	Anchor status follows from built architecture, not from production weight alone
JKM	An assessed benchmark for spot LNG delivered into North Asia	A consuming region establishing the reference for its own demand within a comparatively short period	India's consumption weight in bullion and energy is a foundation on which a demand -side reference can be built
Shanghai exchange contracts	Domestic exchange-traded contracts in gold, copper and crude achieving regional reference status	An emerging market growing exchange -traded domestic references within a single generation	Liquid, rupee -denominated exchange contracts are the comparable raw material in India's case



15. Concluding Observations

Reference prices are foundational market infrastructure, and their influence is often most visible when they diverge from underlying market realities. That is why the agenda described in this report matters. India's commodity economy has the scale, the participants and the ambition. What has been less developed is the domestic determination of its reference prices - and, on the hedging side, the settled confidence that would support routine domestic hedging of Indian exposures.

The body of work consolidated here suggests that both gaps are addressable, and addressable in parallel. The green shoots demonstrate that domestic anchoring is possible, and that the exchange-traded markets in bullion, metals and energy are where it has advanced furthest. The eight initiatives suggest that it is plannable, each elaborated to the level of step-wise actions, indicative horizons and measurable outcomes. The classification framework shows that it can begin immediately: market-led work proceeds continuously while mandate-linked elements mature through consultation, and the two tracks reinforce one another.

The remaining consideration is timing. The international record suggests that reference prices and hedging ecosystems develop through sustained, consistent effort - publication, demonstration and steady institutional adoption over a period of years. The analysis in this report suggests that the early steps are modest, carry limited downside, and can proceed in parallel - and that the case for them strengthens as evidence accumulates.



APPENDICES

Appendix A - MMDR Act, 1957: Second Schedule Royalty Rates for Relevant Minerals

Table A.1 reproduces, for the minerals relevant to this report, the rates of royalty specified in the Second Schedule to the Mines and Minerals (Development and Regulation) Act, 19574.[4] Each rate is expressed as a percentage of prices discovered in international marketplaces.

Table A.1 - Rates of royalty in the Second Schedule to the MMDR Act, 1957 (relevant minerals)[4]

Mineral / Metal	Rate of royalty as mentioned in the Second Schedule to the MMDR Act
Bauxite and Laterite (metallurgical grade)	Zero point six zero per cent of London Metal Exchange Aluminium metal price chargeable on the contained aluminium metal in ore produced, for those dispatched for use in alumina and aluminium metal extraction.
Copper	Four point six two per cent of London Metal Exchange Copper metal price chargeable on the contained copper metal in ore produced.
Lead	(a) Eight point five per cent of London Metal Exchange Lead metal price chargeable on the contained lead metal in ore produced. (b) Fourteen point five per cent of London Metal Exchange Lead metal price chargeable on the contained lead metal in the concentrate produced.
Zinc	(a) Nine point five per cent of London Metal Exchange Zinc metal price on ad valorem basis chargeable on contained zinc metal in ore produced. (b) Ten per cent of London Metal Exchange Zinc metal price on ad valorem basis chargeable on contained zinc metal in concentrate produced.
Nickel	Zero point one two per cent of London Metal Exchange Nickel metal price chargeable on the contained nickel metal in ore produced.
Tin	Seven point five per cent of London Metal Exchange Tin metal price chargeable on the contained tin metal in ore produced.
Gold (primary)	Four per cent of London Bullion Market Association Price (commonly referred to as London Price) chargeable on the gold metal in ore produced.
Gold (by -product)	Three point three per cent of London Bullion Market Association Price (commonly referred to as London Price) chargeable on the by-product gold metal actually produced.
Silver (primary)	Five per cent of London Metal Exchange Silver metal price chargeable on the contained silver metal in ore produced.
Silver (by -product)	Seven per cent of London Metal Exchange price chargeable on by-product silver metal actually produced.

Appendix B - The Benchmark Landscape: Structure of the Catalogue and Commodity Tables

The diagnostic catalogued more than fifty key benchmarks across fourteen commodities in four categories. The catalogue documents, for each benchmark, the fields summarised in Table B.1; Table B.2 presents the category structure with the transmission instruments observed in each. Tables B.3 to B.15 then reproduce the commodity-level benchmark-usage tables from the project's landscape assessment.

Table B.1 - Fields documented per catalogued benchmark

Field	Description
Commodity and category	The commodity to which the benchmark applies and its category (metals, bullion, energy, agriculture)
Benchmark and administrator	The reference price and the institution responsible for its determination
Point of entry	Where the benchmark enters the Indian value chain: royalty formula, tariff or customs valuation, procurement tender, or commercial contract
Transmission instrument	The specific instrument through which the reference is applied: statute or schedule, rule, standard tender text, or contract template
Domestic alternative status	Whether a domestic reference exists for the commodity, and its current stage: established green shoot, exchange contract available, or not yet devel oped

Table B.2 - Category structure and observed transmission instruments

Category	Commodity coverage in the catalogue	Dominant offshore administration	Transmission instruments observed
Metals	Base metals and ferrous inputs	LME price complex	Royalty formulas under the MMDR framework; tender escalation clauses; long-term contract templates
Bullion	Gold and silver	LBMA assessments	Royalty and valuation references; trade and financing documentation
Energy	Crude oil, natural gas, coal	International crude, gas and coal markers	Procurement and supply contracts; valuation references; escalation formulas
Agriculture	Traded agricultural commodities including cotton	International exchange and assessment references	Trade contracts and procurement documentation

Commodity-level benchmark usage: the landscape tables

Tables B.3 to B.15 reproduce the commodity-level benchmark-usage tables from the project's landscape assessment. Sources for each table are cited against the table title and listed in Appendix E. For each commodity, the tables document the entities observed referencing a benchmark, the entity type, the commodity or product concerned, the pricing use-case, and the benchmark used.

Table B.3 - Aluminium: key benchmarks used [4,19-23]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (GoI) - MMDR Act (2nd Sch)	Government	Bauxite (metallurgical grade)	Royalty (ad valorem)	LME Aluminium Cash Price
Indian Railways (GCC - Signalling & Telecom works)	Government (Ministry of Railways)	Aluminium power cable input (EC grade aluminium rods)	Contract price variation / escalation (PVC) for cables	LME Aluminium (EC grade, Properzi rods) - price in Rs/MT
South Central Railway (Vijayawada Division) - EPC Agreement	Government / Zonal Railway	Aluminium power cable input (EC grade aluminium rods)	EPC contract price variation clause for cables	LME Aluminium (EC grade, Properzi rods)
IEEMA (Indian Electrical & Electronics Manufacturers' Association)	Industry association / index publisher	Aluminium & copper (raw materials used in equipment clauses)	Price variation clause templates used by equipment suppliers	IEEMA indices linked to LME
NALCO	PSU	Aluminium ingots & products	Sales price (domestic)	LME Aluminium (3-month futures)

Table B.4 - Copper: key benchmarks used [4,24-27]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (GoI) - MMDR Act (2nd Sch)	Government	Copper (ore)	Royalty (ad valorem)	LME Copper Cash Price
Ministry of Mines (India)	Government	Copper (cathode)	Domestic price basis	LME Copper
Ministry of Mines (India)	Government	Copper (ore)	Royalty calculation	LME Copper
Bhilai Steel Plant (SAIL)	PSU	Copper (conductors/cables)	Procurement (tender pricing)	LME Copper
Hindustan Copper Ltd.	PSU	Copper cathodes & CC rods	Sales price (domestic)	LME Copper Cash Price
Maharashtra State Electricity Transmission Co. (MAHATRANSCO)	PSU	Copper wire bars (transformer raw material input)	Procurement PVC in transformer tender	LME Copper Wire Bars (avg. settlement, converted to INR)
RITES Ltd.	PSU	Copper wire bars (transformer raw material input)	Tender price variation / escalation	LME Copper Wire Bars (avg. settlement, converted to INR)

Table B.5 - Zinc: key benchmarks used [4,12]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (GoI) - MMDR Act (2nd Sch)	Government	Zinc (ore/concentrate)	Royalty (ad valorem)	LME Zinc Cash Price
Ministry of Mines (India)	Government	Zinc (ore)	Royalty calculation	LME Zinc
Ministry of Mines (India)	Government	Zinc (concentrate)	Royalty calculation	LME Zinc
Hindustan Zinc Ltd.	Private	Zinc (refined metal and value-added products)	Sales realisation (LME-linked price cycles)	LME Zinc (SHG)

Table B.6 - Lead: key benchmarks used [4,28,29]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (GoI) - MMDR Act (2nd Sch)	Government	Lead (ore / concentrate)	Royalty (ad valorem)	LME Lead Cash Price
Exide Industries Ltd	Private (battery manufacturer)	Lead & lead alloys (batteries)	Procurement pricing (import parity)	LME Lead
Gravita India Ltd	Private (recycling company)	Lead (battery scrap)	Inventory / price hedging	LME Lead

Table B.7 - Nickel: key benchmarks used [4,30,31]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (GoI) - MMDR Act (2nd Sch)	Government / Ministry	Nickel (ore)	Royalty (ad valorem)	LME Nickel Cash Price
MIDHANI (Mishra Dhatu Nigam Ltd.)	PSU	Nickel metal 99.90% (aero grade)	Procurement (import tender price)	LME Nickel Cash Price
India Government Mint, Mumbai (SPMCIL)	PSU (Government Mint)	Nickel-brass coils (coinage)	Procurement tender (price variation on metal content)	LME Nickel cash seller & settlement price (monthly average)

Table B.8 - Tin: key benchmarks used [4]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (GoI) - MMDR Act (2nd Sch)	Government	Tin (ore)	Royalty (ad valorem)	LME Tin Cash Price

Table B.9 - Iron ore: key benchmarks used [6,32,33]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Mines (Govt. of India)	Government (Ministry)	Iron ore fines (60-62% Fe)	Royalty / average sale price (ASP)	S&P Global Platts - Iron Ore (62% Fe fines) index
Indian Bureau of Mines (Ministry of Mines)	Government / Regulator	Iron ore (60-<62% Fe) fines	Royalty calculation / price reporting	S&P Global Platts Iron Ore Fines (60-62% Fe)
NMDC Ltd (National Mineral Development Corp.)	PSU	Iron ore (lumps, fines)	Domestic ore pricing	Internal index

Table B.10 - Gold: key benchmarks used [5,34-38]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
CBIC (Customs)	Government department	Gold (doré)	Import valuation (tariff)	LBMA Gold Price
SBI Gold Fund	Mutual fund	Gold (ETF units)	Fund benchmark (NAV performance)	LBMA Gold Price (USD)
MMTC Limited	PSU	Gold (MLTGD bars under GMS)	Auction sale of gold	LBMA Gold Price (USD)
BHEL (Project Engg. Mgmt)	PSU	Gold coins (10g, 999 fineness)	Tender procurement	LBMA Gold Price (USD)
BPCL (Marketing)	PSU	Gold medallions (995 fineness)	Tender procurement	LBMA Gold Price (USD)
RBI	Regulatory body	Sovereign Gold Bonds	Redemption value of Sovereign Gold Bonds	IBJA (India Bullion and Jewellers Association)

Table B.11 - Crude oil and related products: key benchmarks used [39-44]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
PPAC (MoPNG)	Govt. agency	Crude oil (Indian Basket)	Reference pricing / published price series	Indian Basket crude oil price (FOB)
PPAC (MoPNG)	Govt. agency	Gasoil 10 PPM Arab Gulf	Reference pricing / published price series	Arab Gulf Gasoil 10 PPM (FOB)
PPAC (MoPNG)	Govt. agency	Regulated petroleum product pricing reference	Pricing methodology / contract escalation	Trade Parity Price (TPP) = 80% IPP + 20% EPP
PPAC (MoPNG)	Govt. agency	Diesel pricing inputs	Pricing methodology (input benchmark evidence)	Platts assessments (FOB quotes)
PPAC (MoPNG)	Govt. agency	Diesel (Western India reference series)	Pricing methodology / benchmark series in administered pricing context	Platts MOPWIN (Mean of Platts West India Netbacks)
Indian Oil Corporation (IOCL)	PSU	Crude oil (WTI)	Crude procurement via tender	Dated Brent

Table B.11 - Crude oil and related products: key benchmarks used[39-44]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Bharat Petroleum Corporation Ltd (BPCL)	PSU	Refined products crack spread (linked to crude)	Hedging / commodity derivatives valuation and settlement	Platts Singapore end-month close (monthly average) + Dubai crude premium/discount
Hindustan Petroleum Corp Ltd (HPCL)	PSU	Marine fuel (FO 380 cSt)	Pricing (daily pricing)	MOPS (Mean of Platts Singapore)
Reliance Industries Ltd (RIL)	Private	Crude oil (WTI Midland; Brent complex)	Trading / procurement pricing reference (global crude benchmark setting)	Platts Market on Close (MOC) process; Dated Brent (incl. WTI Midland)

Table B.12 - Natural gas: key benchmarks used [45-55]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Directorate General of Hydrocarbons (DGH)	Regulator	Domestic gas e-auctions (framework and platform)	E-auction reference pricing for domestically produced gas	Platts WIM / JKM; Brent-linked reserve prices
Indian Oil Corporation Ltd (IOC)	PSU	LNG (spot cargoes; long-term supply)	LNG procurement tenders and term contracts	Platts WIM; Dated Brent (slope)
GAIL (India) Ltd	PSU	Domestic natural gas (KG-basin purchases)	Gas purchase pricing	Platts WIM (three-month average); Platts JKM
GAIL (India) Ltd	PSU	LNG (term imports)	LNG procurement pricing	Brent crude (slope index)
Petronet LNG Ltd	PSU	LNG (spot cargo)	LNG procurement pricing	Platts WIM
GSPC Energy Ltd	State-linked	Domestic natural gas (Rajasthan block purchase)	Gas procurement via producer e-auction	Platts WIM (awarded at WIM minus US$0.20/MMBtu)
Indian Gas Exchange (IGX)	Exchange	Natural gas (long-duration contracts)	Exchange contract price linkage	GIXI; Platts JKM; Platts WIM; Platts Dated Brent
Vedanta Ltd (Cairn)	Private	Domestic natural gas (Rajasthan RJ-ON-90/1)	Gas sale e-auctions	Platts WIM (DES West India); Brent (14% of average)
Shell Energy India Pvt Ltd	Private	Domestic natural gas (KG-D6 purchase)	Gas purchase via producer tender	Platts JKM (JKM-linked award)
Adani Total Gas Ltd	Private	Domestic natural gas (KG-D6 and Reliance-BP purchases)	Gas purchase via producer tender	Platts JKM; Dated Brent (slope)

Table B.13 - Coal: key benchmarks used [7,56-60]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Ministry of Coal	Ministry	Coal	Auction / contract reference pricing	National Coal Index (design: ISI Kolkata)
CERC	Regulator	Coal price index (power sector)	Published index used in escalation	Weighted average of Indonesian, Australian and South African coal prices
RINL (Vizag Steel)	PSU	Coking coal - hard and soft (imports)	Procurement (global import tenders, FOB)	Average of the Argus and Platts premium low-volatile coking coal indices
NMDC Steel Ltd / NMDC Ltd (Nagarnar)	PSU	Low-volatile (LVHR) coking coal (imported)	Procurement (EOI; long-term supply contract)	Argus / Platts premium low-vol coking coal assessments
NMDC Steel Ltd / NMDC Ltd (Nagarnar)	PSU	Hard coking coal (imported)	Procurement (EOI; import contract pricing)	Argus / Platts premium low-vol coking coal assessments

Table B.14 - Electricity: key benchmarks used [61]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Central Electricity Regulatory Commission (CERC)	Regulator	Electricity (power exchange transactions - Day-Ahead Market)	Benchmarking reference for power exchange transactions	Uniform Market Clearing Price (UMCP)

Table B.15 - Cardamom: key benchmarks used [62]

Entity Name	Type	Commodity/Product	Pricing Use-Case	Benchmark Used
Spices Board India	Government body	Cardamom (small)	Benchmark for domestic transactions	Daily Auction Price of Small Cardamom (Avg. Price Rs/kg), discovered in the Spices Board e-auction



Appendix C - Glossary of Abbreviations

ABBREVIATIONS USED IN THIS REPORT

Abbreviation	Expansion
ASP	Average Sale Price (mineral pricing under the MMDR framework)
CDMRD	Commodity Derivatives Market Regulation Department (SEBI)
CERC	Central Electricity Regulatory Commission
CPSE	Central Public Sector Enterprise
CTT	Commodities Transaction Tax
DEA	Department of Economic Affairs, Ministry of Finance
DGH	Directorate General of Hydrocarbons
DoE	Department of Expenditure, Ministry of Finance
DPE	Department of Public Enterprises
ETF	Exchange-Traded Fund
FICCI	Federation of Indian Chambers of Commerce and Industry
IBJA	India Bullion and Jewellers Association
IBM	Indian Bureau of Mines
ICAI	Institute of Chartered Accountants of India
IIM	Indian Institute of Management
IGX	Indian Gas Exchange
IOSCO	International Organization of Securities Commissions
ISI	Indian Statistical Institute
JKM	Japan Korea Marker (spot LNG benchmark for North Asia)
LBMA	London Bullion Market Association
LME	London Metal Exchange
LNG	Liquefied Natural Gas
MCX	Multi Commodity Exchange of India Limited
MMDR	Mines and Minerals (Development and Regulation) Act, 1957
MoF	Ministry of Finance
MoPNG	Ministry of Petroleum and Natural Gas
MSME	Micro, Small and Medium Enterprise
NCAER	National Council of Applied Economic Research
NCI	National Coal Index
NMDC	NMDC Limited (formerly National Mineral Development Corporation)
OTC	Over-the-Counter
PPAC	Petroleum Planning and Analysis Cell
PPD	Procurement Policy Division, Department of Expenditure
PSU	Public Sector Undertaking
RBI	Reserve Bank of India
SCOPE	Standing Conference of Public Enterprises
SEBI	Securities and Exchange Board of India
SGB	Sovereign Gold Bond
UMCP	Uniform Market Clearing Price

Appendix D - References

References are numbered in the order of first appearance in the report (Vancouver style) and cited in superscript in the text and against table titles.

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