



The Role of Tendering and Estimate Preparation in Executing Capital Expenditure Projects at Indian Oil Corporation Limited (IOCL)

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Abstract:

Capital expenditure execution in large public-sector energy enterprises depends not only on financial appraisal and budget sanction but also on the operational processes of cost estimation and procurement through which an approved outlay is converted into an executed project. This paper examines the role of tendering and estimate preparation in capital project execution at Indian Oil Corporation Limited (IOCL), with specific reference to practices observed at the Guwahati Refinery. Based on internship-based observation, the study documents the structured format used for estimate preparation, the application of a centrally maintained Schedule of Rates (SOR), and the use of budgetary offers where standard rates are unavailable. It further examines the three-tier tendering framework — Open, Limited and Single Tender — and the role of the Earnest Money Deposit (EMD) as a procedural safeguard. The paper argues that the key managerial challenge for an integrated energy company such as IOCL is not the availability of capital but the prioritisation and allocation of capital among competing investment requirements, and that structured estimation and tendering procedures are central to transparency, cost control and accountability in public-sector capital expenditure management. The study concludes with recommendations on e-tendering adoption, periodic digitisation of the Schedule of Rates, and closer integration between estimate preparation and financial concurrence.

Keywords: Capital Expenditure, Tendering, Estimate Preparation, Schedule of Rates, Earnest Money Deposit, IOCL, Public Sector Procurement

1. Introduction

The oil and gas industry occupies a central position in national economic activity, underpinning transportation, manufacturing, infrastructure development and broader economic growth. The sector spans crude oil refining, marketing of petroleum products, pipeline transportation, natural gas distribution, petrochemical manufacturing and, increasingly, emerging energy businesses. Refining companies operate under conditions of high capital intensity, volatile crude oil prices, shifting consumption patterns and stringent environmental regulation. Sustained capital expenditure is required for capacity expansion, equipment modernisation, energy efficiency, safety enhancement and environmental compliance, while the transition toward cleaner energy is simultaneously generating new capital requirements in biofuels, hydrogen, renewable power and electric mobility infrastructure.

Regulatory and environmental pressures constitute a further dimension of capital expenditure planning in this industry. Stricter emission and environmental norms often necessitate projects that do not generate direct financial returns but are undertaken to ensure statutory compliance and risk mitigation. Combined with competitive pressure from both private and state-owned players, this makes efficient asset utilisation and cost control a managerial priority. Capital

expenditure decisions in the refining sector therefore require a balance between profitability, safety, environmental responsibility, regulatory compliance and long-term strategic positioning.

2. Company Profile: Indian Oil Corporation Limited

Indian Oil Corporation Limited (IOCL) is one of India's integrated energy companies, with operations spanning refining, pipelines, marketing, petrochemicals and other energy businesses. The company operates an extensive refining network supported by pipeline and marketing infrastructure, and maintains ongoing investment in energy efficiency, digital transformation, renewable energy, green hydrogen, biofuels and other emerging energy initiatives. IOCL therefore manages both the operational requirements of its core energy business and the strategic imperative of long-term diversification, both of which require sustained capital investment in asset reliability, capacity, safety, efficiency and new business development.

For an integrated energy company of this scale, capital allocation represents a significant managerial challenge. Investment needs arise simultaneously across refinery expansion and modernisation, safety and statutory compliance projects that do not yield direct financial returns, and emerging opportunities in petrochemicals, renewable energy and green hydrogen. These requirements, combined with dependence on imported crude oil, regulatory constraints and evolving energy preferences, make investment appraisal a critical management function. Consistent with this, the central managerial issue for IOCL is understood not as the availability of capital but as the prioritisation and allocation of capital among competing investment requirements.

3. Objectives of the Study

- To examine the process of estimate preparation followed for capital expenditure projects at IOCL's Guwahati Refinery.
- To study the tendering methods employed for procurement execution and the conditions under which each is applied.
- To understand the role of procedural safeguards, particularly the Earnest Money Deposit, in ensuring bidder accountability.
- To identify strategies that could further improve the efficiency, transparency and accuracy of capital project execution.

4. Research Methodology

This paper adopts a case-study approach based on direct observation during an internship placement at IOCL's Guwahati Refinery. The study is descriptive and qualitative in nature, drawing on first-hand exposure to the estimate-preparation process, review of internal documentation practices, and observation of the tendering procedures applied to capital expenditure projects. As the study is based on a single organisational unit, its findings are context-specific and intended to illustrate practice rather than to support statistical generalisation across the industry.

5. Findings: Estimate Preparation and Tendering Practice

5.1 Estimate Preparation

Estimate preparation at the Guwahati Refinery follows a structured format requiring documentation of the nature of work, justification for the expenditure, budget provision, and the total estimated amount. Where a Schedule of Rates (SOR) is available, rates already validated within the organisation — valid for a three-year cycle — are applied directly, which reduces estimation time. Where SOR rates are not applicable, a rate analysis is conducted, or budgetary offers are invited from three vendors to establish a reasonable cost basis.

5.2 Tendering Methods

- Open Tender — used for larger-value or routine procurement requiring wide competition.

- Limited Tender — used where a pre-qualified or restricted set of vendors is invited.
- Single Tender — used for specialised or proprietary requirements with limited sourcing options.

5.3 Earnest Money Deposit (EMD)

The Earnest Money Deposit was identified as a standard safeguard applied across tender types, requiring bidders to deposit a specified sum to demonstrate genuine intent to participate. This amount is forfeited in the event of default or withdrawal, which discourages non-serious participation in the bidding process.

6. Discussion: Strategies and Implications

The findings suggest that IOCL addresses the challenges of capital expenditure execution through a combination of standardisation and procedural safeguards. The use of a centrally maintained Schedule of Rates, valid for three years, reduces the need for repeated cost estimation and brings consistency across projects. Where SOR rates are unavailable, the practice of obtaining budgetary offers from at least three vendors ensures a reasonably competitive and defensible cost estimate even in the absence of standard reference rates.

The tiered tendering approach — open, limited and single tender — allows the organisation to match the procurement method to the scale and nature of each project, balancing transparency with procedural efficiency. The continued use of the Earnest Money Deposit further strengthens bidder accountability. Going forward, wider adoption of e-tendering platforms, periodic review and digitisation of the Schedule of Rates, and closer integration between the estimate-preparation and financial-concurrence stages could further reduce delays and improve accuracy in capital project execution.

7. Conclusion

The case of tendering and estimate preparation at IOCL's Guwahati Refinery illustrates that capital expenditure execution extends well beyond financial appraisal and approval. Accurate cost estimation — whether through the Schedule of Rates or budgetary offers — combined with an appropriately selected tendering method and safeguards such as the Earnest Money Deposit, is essential to translating an approved capital budget into an efficiently executed project. This study highlights that structured estimation practices and well-defined tendering procedures are critical to maintaining transparency, cost control and accountability in public-sector capital expenditure management.

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