

## **SINGLE NUMBER BIDDING PARAMETER: A TRANSPARENT AND COMPETITIVE APPROACH TO PPP**

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*Access to physical and social infrastructure is a pre-requisite for poverty alleviation and governments in developing countries grapple with the competing demands for allocation of budgetary resources for physical infrastructure and social spending. PPP has emerged as a viable alternative for mobilization of private investments in physical infrastructure, thus releasing scarce budgetary resources for social spending. In this context, the extensive standardization of documents and processes that has been undertaken in India has established several sound practices and concepts that have helped deliver an impressive volume of private investment across several sectors. As a part of this initiative, Mr. Gajendra Haldea, an authority on PPP, has devised a uniquely innovative single value bid parameter, encompassing all risks and rewards inherent in a complex long-term agreement of this nature, for a transparent and competitive selection of concessionaires, at prices much lower than anticipated, for PPP projects in highways, ports, airports and other sectors in India. This case study is about adoption of a single value bid parameter for selection of a PPP concessionaire to set up a manufacturing unit for supply of locomotives to Indian Railways. The author was part of the Indian Railways team involved in the evolution of this PPP model.*

### **1. Context**

1.1 Logistics infrastructure is regarded as a critical constraint in making the Indian economy more competitive in order to accelerate inclusive growth aimed at poverty alleviation. Within the logistics sector, Indian Railways is regarded as the lifeline of the Indian economy where large-scale expansion of railways' haulage capacity has emerged as one of the key imperatives for realizing its growth potential. In this context, the Government of India decided to seek participation of the private sector in construction and operation of manufacturing facilities for rolling stock, especially locomotives and train-sets, within the country.

## **2. CHALLENGES IN PRIVATE PARTICIPATION FOR PRODUCTION OF ROLLING STOCK**

2.1 Prior to 2008, officials of the Indian Railways were not entirely convinced about the prospects of procuring rolling stock from private entities. They were apprehensive of the reliability and safety of rolling stock produced by private manufacturers, especially in view of the fact that Indian Railways operates freight and passenger trains on the same tracks and poor reliability and safety of the rolling stock might affect the operations and safety of train operations. Railway officials were also concerned about the availability of spares at reasonable prices, continuous technical support for operation and maintenance of the rolling stock, management of technological obsolescence and setting up and operation of maintenance facilities for the rolling stock supplied by private entities.

2.2 On the other hand, private sector manufacturers were apprehensive that their investments in setting up the manufacturing facilities may not yield any returns as Indian Railways would always favour its own manufacturing units for procurement of rolling stock. They were also apprehensive about the price setting power of Indian Railways' own production units in a monopsony market. They also felt that the banks might not be willing to finance such a venture due to the business risks associated with production in a monopsony market.

## **3. PPP FRAMEWORK FOR RAILWAY ROLLING STOCK INDUSTRY**

3.1 Considering the complexity of conflicting objectives in evolving a viable and bankable framework, the Ministry of Railways approached Mr. Gajendra Haldea, an authority on PPP frameworks, to develop a strategy and framework for participation of the private sector in setting up rolling stock manufacturing facilities in India through public private partnership arrangements.

3.2 During interactions of Railway officials with Mr. Haldea at the Planning Commission, where he functioned as an Advisor, it emerged that the apprehensions of the private sector in respect of the risks associated with a

buyer, who had a dominant market position as the sole manufacturer of rolling stock, could only be addressed by evolving a unique variant of the typical PPP transaction where the best practices of risk allocation are built into a long-term procurement-cum-maintenance contract for rolling stock.

3.3 Given the fact that Indian Railways were only accustomed to operating the rolling stock produced in its own factories, its officials were not very enthusiastic about the prospect of dealing with private manufacturers. Their concern arose from potential breakdowns of rolling stock leading to enormous consequential damages to the entire system, including significant financial and reputational losses to Indian Railways. Moreover, unsafe operation of rolling stock has the potential of causing significant loss of life and property not only on the affected train but also on other trains in the vicinity. Railway officials were also concerned about the higher costs associated with the rolling stock sourced from private manufacturing units, besides the risk of non-availability of maintenance spares at reasonable costs. Management of technological obsolescence over the life span of such rolling stock also posed a significant risk for Indian Railways.

3.4 Subsequent to internal discussions, the Planning Commission and Indian Railways held several rounds of consultations with prospective private sector manufacturers in order to gain insights relating to private sector motivations and constraints in setting up rolling stock manufacturing units. It emerged that the private sector was not enthusiastically inclined owing to significant business risks arising out of a monopsony market where Indian Railways was and would continue to be the sole purchaser of railway rolling stock. Private investors were also apprehensive of the possibility that Indian Railways can alter the product specifications making their investments unviable. Given the Indian Railways' conflict of interest as a competitor in the rolling stock market on the one hand and as a monopoly operator as well as technical and safety regulator on the other hand, private sector investors appeared to be shying away from participation.

3.5 Following the aforesaid consultations, Planning Commission concluded that private sector investment in manufacturing units for rolling stock would not be viable if they were asked to produce for sale in the market where Indian Railways could participate both as a seller and as a buyer. On the contrary, it would be necessary to stipulate a firm off-take of the rolling stock by Indian Railways for an agreed period. It was also agreed that the apprehensions of Indian Railways as well as the prospective investors could be allayed only by evolving a unique PPP framework for allocating risks and rewards in a manner that incentivizes the private sector to invest on a long-term basis while the Indian Railways is incentivized to leverage private sector efficiencies to its own operational and economic advantage.

3.6 Planning Commission was of the view that Indian Railways' apprehensions vis-à-vis the performance risks associated with availability, reliability, safety and efficiency of the rolling stock supplied by private manufacturers could be addressed within the PPP framework for long-term contracts with explicit performance warranties and consequential bonus and malus attached to superior or inferior delivery respectively vis-à-vis the specified performance standards. Private sector would also be assigned the responsibility for long-term maintenance of the rolling stock supplied by it, especially to assure the Railways that the consequences of any compromise in the quality of design and manufacturing will be borne by the manufacturer itself. This would also help address the issues associated with technological obsolescence as well as the availability of spares in time and at reasonable prices. Apprehensions relating to operating and maintenance costs would also be addressed by a competitive discovery of life cycle costs spanning over a long period of say 25 years.

3.7 Private sector apprehensions relating to the monopsony market as well as conflicts of interest emanating from the role of Indian Railways could be addressed by entering into a long-term procurement-cum-maintenance contract with the successful bidder who would set up a manufacturing unit to produce and supply pre-determined quantities of rolling stock over a specified supply

period and also undertake maintenance of such rolling stock for a specified maintenance period. Pursuant to extensive consultations, it was agreed that the procurement-cum-maintenance contract should include production and supply for a period of at least ten years along with maintenance obligations that would extend a few years beyond the milestone specified for major overhaul of the respective rolling stock. In effect, this implied a contract period of twenty-five years considering ten years of supply followed by fifteen years of maintenance.

3.8 A long-term procurement-cum-maintenance contract, based on specified outcomes and performance warranties, would also help in addressing the private investors' apprehensions relating to change in product specifications, as the contract would be predicated on outcomes and performance, and not so much on input specification.

#### **4. PRICING FRAMEWORK**

4.1 While both Indian Railways as well as the prospective investors agreed that the proposed PPP framework would address most of the risks perceived by either party, an appropriate pricing framework for such a complex array of risks and rewards warranted a comprehensive discussion. Among other things, the pricing framework would also have to address inflation as well as the risks associated with any changes in law or in tax rates over the contract period. It would also need to address the pricing of maintenance obligations, performance warranties, and supply of spares and provision of repair services arising out of any act of mal-operation or accident during the operation of rolling stock by Indian Railways.

4.2 To address concerns relating to payment of fixed charges for the capacities created, it was agreed that the contract would have to specify the compensation to be paid by Indian Railways in the event of a downward adjustment in the supply quantity for catering to the cyclical nature of demand for railway rolling stock. The pricing framework also needed to specify the

damages payable by the supplier in the event of failure or delay in supply of rolling stock, as compared to the specified supply schedule.

## **5. COMPETITIVE DISCOVERY OF PRICE**

5.1 In normal course, a competitive discovery of price encompassing such a comprehensive framework of rights and obligations extending over a long period would not only be complex but also susceptible to manipulation or gaming by the bidders. Conducting a bidding process to select a bidder, who will not only make substantial investments in setting up manufacturing facilities but also commit to performance warranties over a contract period of twenty five years while also enabling the procurer to ensure the highest standards of transparency and fairness essential for such a large and complex procurement envisaging a financial transaction exceeding \$5 billion would normally have been considered as next to impossible.

5.2 However, the Planning Commission, which had successfully designed several high value PPP procurements for highways, power plants, ports, airports and mass transit systems, proposed a single price bid parameter encompassing all the long term rights and obligations envisaged in the PPP contract. Planning Commission had successfully structured and overseen the procurement of PPP concessions for all the above-referred sectors on the basis of a single bid parameter requiring bidders to quote a single number that would comprise the bidding and evaluation parameter. The bidders were required to factor in all the cash flows and other obligations during the construction and operation period after arriving at the net present value of the entire transaction while using a discount rate that would represent their own cost of capital as also the risk premium to be assessed and monetized by them in order to arrive at their respective bid. The bidders were expected to offer only a single bid number that would decide who the successful bidder is.

5.3 The entire bid process was demystified and simplified to such an extent that the first stage of the bidding process only required the bidders to submit

their credentials for prequalification vis-à-vis the specified technical and financial eligibility criteria. In the second stage of bidding, the prequalified bidders were required to quote the bid price in response of the rights and obligations specified in the Project Agreement and the Manual of Specifications and Standards. The bidders were not required to submit any technical offer as the Project Agreement and the Manual of Specifications and Standards specified the minimum performance obligations while providing sufficient choice of technical solutions and innovation to the bidders in order to fulfill their performance obligations under the contract. Several billions of US Dollars worth of procurements had already been successfully transacted using this simplified, transparent and competitive bidding process across sectors.

5.4 The most extraordinary feature of the single bidding parameter was its simplicity and transparency that enabled and ensured keen competition that delivered the most economic prices to the advantage of the user and the public exchequer. There were several examples and case studies that demonstrated how this arrangement, applied in the context of a comprehensive concession agreement, had delivered lower than anticipated bids.

5.5 In the present case, the Planning Commission proposed that for procurement of locomotives, the bidding parameter should be the unit price for supply of a locomotive. Maintenance prices were to be a derivative of the quoted unit price as these were to be paid as a percentage of the quoted supply price with the specified percentages varying over the maintenance period to match with the cash flow required for undertaking periodic overhauls in some years and routine maintenance in others.

5.6 For the pricing of spares required for the repair and rectification arising out of mal-operation or accident during operation by the Indian Railways, it was stipulated that the successful bidder shall furnish a breakup of the prices of all the components of the rolling stock as a percentage of the quoted unit supply price with the aggregate value of all the components being equal to the quoted unit price. To account for inventory management and manpower costs

associated with supply of such components, the supplier would be entitled to a thirty percent mark up on the price of a spare so determined.

5.7 Incentives and penalties related to superior or inferior performance vis-à-vis performance warranties were also to be specified as percentages of the unit price. All other incentives and penalties were also to be specified as a percentage of the unit price. Similarly, liquidated damages in case of delayed supplies by the contractor or reduction in quantities by the Indian Railways were also specified as a percentage of unit price.

5.8 Since the costs associated with inflation, change in law and change in tax rates were beyond the control of the supplier, these were to be reimbursed at actuals, based on the formulations contained in the contract. Inflation impact was to be mitigated by linking the prices of rolling stock components to relevant commodity/labour indices.

5.9 In view of the above pricing framework, the bidders were required to undertake comprehensive due diligence with respect to the pricing of the product as well as the specified performance warranties over the contract period and arrive at the unit price which would enable them to recover their costs and overheads along with a return on capital, to be determined by them. The bidders were required to quote only this unit supply price in their bids and the bidder who would quote the lowest price would be the selected bidder.

5.10 For production and supply of locomotives under the aforesaid framework, all the top international manufacturers viz. General Electric, Siemens, Alstom and Bombardier have joined the bidding process while accepting the detailed terms of the draft contract as well as the proposed pricing and evaluation framework. This is a clear endorsement that some of the top international companies have found this approach to be fair, transparent and competitive.



5.11 There are no known parallels elsewhere that have relied on a single number bid price for an array of costs and performance obligations including the management of risks over a long period. This pricing framework is amenable to adoption for long-term procurement of any capital machinery, plant or equipment where discovery of the optimum life cycle cost for procuring complex services is to be ensured by the procuring entity. The approach has successfully been adopted in a few hundred PPP projects that have been procured in India over the past decade. However, it has been adopted for the first time in a PPP framework for procurement and maintenance of railway rolling stock. It is, therefore, a case study for researchers as well as practitioners who can study and replicate this model elsewhere.

*(Views expressed in this case study are personal.)*