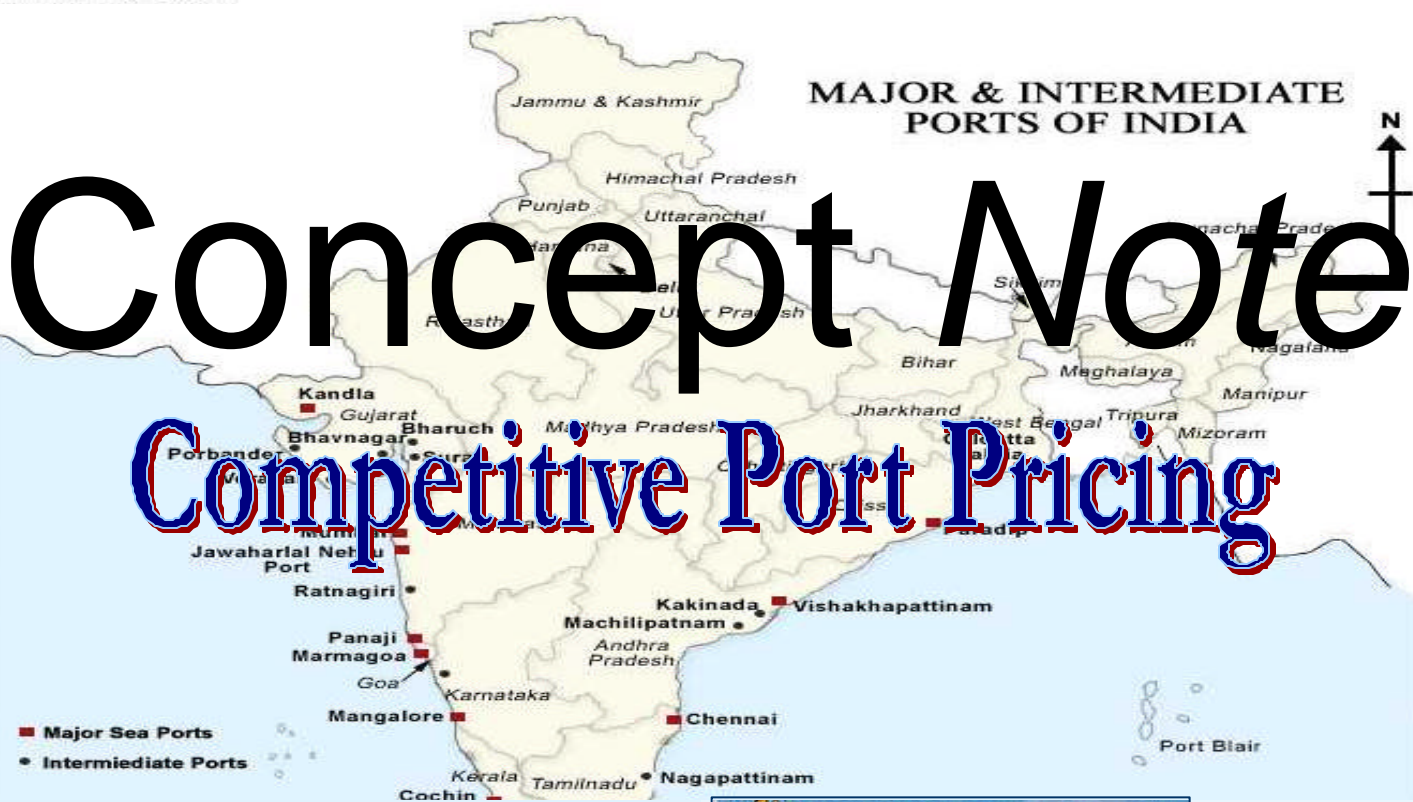


# Concept Note

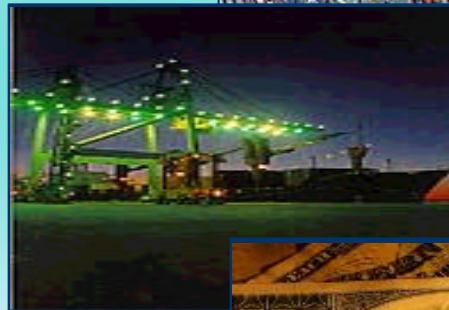
## Competitive Port Pricing



*Efficient and cost-effective infrastructure is a critical determinant of a nation's competitive advantage. Featuring pre-eminently on the Indian reform agenda today, is the development of infrastructure and the private participation imperative, needed to make this happen. As pilot projects in each sector near successful completion, another interesting challenge comes to fore - competitive pressures on infrastructure pricing in erstwhile Government monopoly sectors. The recognition of pricing as a strategic business tool to achieve competitive advantage is slowly gaining currency. Strategic pricing to achieve important business objectives on the marketing finance and operational fronts is a tool specifically being explored by the private sector. Cost leadership and service differentiation are among the new watchwords as competition sets in.*

*In the ports sector, "greenfield" Minor Ports under B-O-O-T concession from the maritime states are charged with complete tariff flexibility and are leveraging the same to market and enhance competitive advantage. The Major Ports are required to file their proposals for tariff revision with the Tariff Authority for Major Ports. With the initiation of corporatisation proceedings, there is also expected to be a heightened sensitivity on the part of the Major Ports to pursue aggressive business strategies and rationalise tariffs to reflect current market realities.*

*This Case Note highlights the approach to Competitive Port Pricing developed by CRISIL Infrastructure Advisory and successfully implemented in the design of tariffs for several projects in India.*



# COMPETITIVE PORT PRICING

## THE PRICING DECISION : WHAT DRIVES IT?

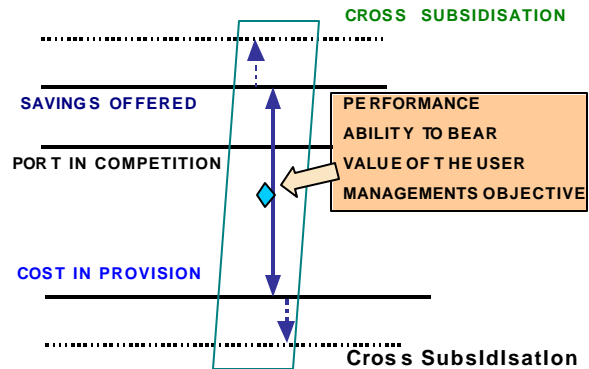
Port tariff in a competitive scenario is a complex function of a number of factors:

1. Cost-in-provision (of facilities and services) at the port
2. Tariffs charged by the competing ports
3. Benefits (both tangible and intangible) offered by the port in question over the competing options
4. Bargaining power of users
5. Users' ability to bear and value perception at the port in question
6. Optimum utilisation of port resources
7. Financial objectives and required returns
8. Management's objectives and strategic considerations :
  - ❑ Port positioning
  - ❑ Entry strategy, short term vs. long term considerations
  - ❑ Larger economic development considerations (in case of Government ports)

The conventional **Cost Plus** approach -- where all or part of the total costs *plus* expected returns are recovered, works well in a monopoly/ near-monopoly situation where there is no/ negligible competition or where competitors' costs of service are higher.

However, as competition intensifies and the sector matures, "**Market Competitiveness**" becomes the single most critical driver of the pricing decision. Pricing then becomes a powerful strategic tool for maintaining market share, attracting potential users to the port and at the same time ensuring that the port is actually realising the full monetary value of the service being offered to its users.

The schematic below illustrates this in greater detail.



Port charges, in general, are subject to a **floor** defined by the cost in providing the service and a **ceiling** defined by the cost incurred by the user (in routing his cargo) through a competing port. The port can charge a tariff premium if certain **savings** accrue to the user in using the port-in-question rather than the competing port. In practice, the actual "**premium**" chargeable would be further influenced by the users' value perception, ability to bear and other **strategic / management objectives**. For e.g. penal tariffs may be levied in instances where the port consciously wants to discourage certain (for e.g. dirty) cargo from calling at the port. Likewise, the inability of a particular class of users to bear regular tariffs (e.g. salt) and/or a conscious decision by management to underprice services/ incentivise a certain user group (e.g. coastal cargo) may result in a **cross-subsidisation** of tariffs that breach the above determined floor and ceiling thresholds.

*At a very fundamental level, however, the key determinant of the tariff setting process is the **quantum of savings** offered over the most competitive competing port and the **proportion** of this saving that can be retained and built into the tariff.*

This **competitive pricing approach** is central to the tariff design and review process in assessing the adequacy or otherwise of the present rates and the need for a correction.

## THE LOGISTICS EQUIVALENCE EQUATION

Broadly, the leviable tariff at a port is governed by the following Logistics Equivalence Equation:

$$\begin{aligned} &\text{TOTAL logistics cost at the port-in-question} \\ &= \text{TOTAL logistics cost at the competing port} \\ &\text{i.e. } OF_1 + PC_1 + IC_1 = OF_2 + PC_2 + IC_2 \end{aligned}$$

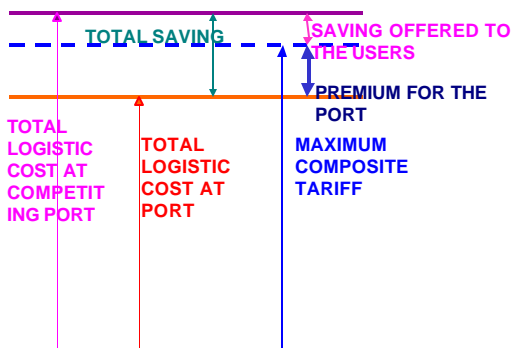
where,

*OF* = Ocean freight, *PC* = Port Charge, *IC* = Inland Transport Freight

Subscripts 1 and 2 refer to the competing port and the port-in-question respectively.

The underlying principle is to make the user cost neutral in terms of the landed cost of the commodity from / at his source / destination irrespective of whether he uses the competing port or the port-in-question. If the port-in-question offers cost savings by way of say, closer inland distance, lesser pre-berthing delay, faster turnaround, better draft (hence, larger vessels and more competitive ocean freight), etc., then a tariff premium at the port-in-question would arise and the same would offer scope for a revision in current tariff.

$$\text{i.e. } PC_2 = PC_1 + \Delta OF + \Delta IC$$



## SOLVING THE EQUIVALENCE EQUATION

### The Hinterland Map

The first definitive milestone of the exercise is an identification of the hinterland being targetted and the competing ports serving the same. Cognizance of a “competitor” is

shaped by geographical and logistic determinants and equally important, the specific cargo service strategy being proposed by the Port.

A business analysis and cargo profiling of each competing port defines the cargo basket and service standards currently prevalent. A hinterland mapping of the key cargo origin/ destination clusters and volumes thereof, helps zero in on the specific **user categories/ locations being targeted**. These target clusters are taken through an ABC analysis and then form the basis for the subsequent user survey exercise to establish **current logistics system costs**.

### Determining the current logistics system of each target user for each cargo

The first step in assessing costs is to establish the current logistics system being used by users. The logistics system of each “A” category target user, for each target cargo, is mapped based on the data compiled through personal interviews with users, intermediaries, port publications and customs data. For e.g. the logistics system for a fertiliser manufacturer would entail a determination of the raw material to be imported (dry FRM: rock phosphate, sulphur), the foreign port of import (UAE / Iran), the Indian ports through which imported, the inland plant location(s) to which destined and mode of transport (road, rail) thereto.

### Computation of Logistics Cost and Determination of Competing port

As highlighted in the Logistics Equivalence Equation, the various cost elements characterising the logistics system are:

1. Ocean Freight
2. Port Charges :
  - (i) Vessel Related Charges (VRC)
  - (ii) Cargo Related Charges (CRC)
3. Inland Transportation Charges

Presented below is a snapshot of the various sub-elements underlying these costs.

	<b>Cost Elements</b>
<b>Ocean Transport</b>	This would mean all charges that the cargo-interest pays to the vessel interest : <ol style="list-style-type: none"> <li>1. Freight for ocean / coastal transportation (as the case may be) – Vessel related charges levied by the port on the vessel interest are implicitly included in the freight.</li> <li>2. Demurrage on vessel</li> <li>3. Marine insurance</li> </ol>
<b>Statutory Port Charges</b>	<p><b>Cargo related port charges</b></p> <ol style="list-style-type: none"> <li>1. Wharfage</li> <li>2. Demurrage on cargo</li> <li>3. Cargo related portion of the berth-hire charge</li> <li>4. Hiring of wharf crane</li> <li>5. Hiring of other equipment for on-shore handling</li> <li>6. Labour charges</li> <li>7. Intra-port transportation charges</li> <li>8. Weighment charges</li> <li>9. Documentation charges</li> </ol> <p><b>Vessel related port charges</b></p> <ol style="list-style-type: none"> <li>1. Port Dues</li> <li>2. Pilotage and towage</li> <li>3. Berth-hire charges</li> </ol>
<b>Non Statutory Port Charges</b>	An indicative list is presented below: <ol style="list-style-type: none"> <li>1. Stevedoring charges</li> <li>2. Intra-port transportation charges</li> <li>3. Cargo handling charges which would include labour and equipment charges</li> <li>4. Bagging charges</li> <li>5. Storage charge</li> <li>6. Supervision charges</li> <li>7. Customs clearance charges</li> <li>8. Spillage</li> <li>9. Cargo safety and pilferage</li> </ol> <p><b>Others</b></p> <ol style="list-style-type: none"> <li>1. Working capital financing charges</li> </ol>
<b>Inland transportation</b>	Cost of transportation from origin/ destination to/from the port. The mode of transportation could be one or a combination of the following: <ol style="list-style-type: none"> <li>1. Road</li> <li>2. Railway</li> <li>3. Others</li> </ol> <p>Spillage during inland transportation is also an issue.</p>

The per-ton logistics cost for every target user and cargo is determined by aggregating the ocean freight, port charges (VRC and CRC) and inland transportation costs. The exercise is done for all ports in the hinterland (except the port-in-question). Of these, the port offering the lowest logistics cost is in effect, the “competing” port to be benchmarked. The Logistics Equivalence Equation is then solved for the port-in-

question to arrive at the maximum leviable tariff.

### CUSTOMISATION FOR DIFFERENT USER CATEGORIES

The generic approach to port pricing outlined above is further customised for application to different user categories like

- (i) large, multi-location users
- (ii) geographically clustered users
- (iii) locked/ captive cargo users
- (iv) fragmented, general cargo users

#### Large, Multi-location Users

Large, multilocation users normally have more than one source and destination that is served by multiple ports and multiple modes of transport. Hence, their logistics system requires careful balancing. The port-in-question may not just replace an existing port of use, but may define an altogether different logistics system with new sourcing options, new modes of transport and new ports may emerge. The Logistics Equivalence Equation is accordingly modified to capture the overall “system” costs and the savings the port-in-question brings in. Leviable tariff so computed then forms the basis for negotiated service contracts with such users.

#### Geographically Clustered Users

The approach lends itself to tariff computation for clustered users on representative sampling basis. Price-volume curves and physical port parameters like available capacity additionally shape tariffs, costs incurred, contribution and margins from different cargo etc.

### Locked / Captive Cargo

For units located very close to the port, leviable tariff is driven more by the cost incurred by the port in servicing such users and port facility and handling efficiencies rather than inland logistics advantage. The approach in such cases is accordingly modified to reflect the same.

### Fragmented, General Cargo Users

For, fragmented, general cargo users, tariffs are again directly driven by port handling efficiency parameters of the benchmark port.

## SENSITIVITY TO DIFFERENT SCENARIOS

The above approach also lends itself to a sensitivity assessment to changes in key variables and their impact on tariffs.

For instance, the impact of a change in proposed connectivity to the port-in-question or a competing port can be modelled or the impact of a change in balance of bargaining power or additional capacity / enhanced service standards at a competing port can be assessed etc.

## THE COST SIDE

Having established the ceiling tariff that can be levied as per the market, it is equally important to establish a clear interface between costs incurred and revenues earned against the main tariff items of the port-in-question.

This entails an assessment of the following:

- (i) specific direct cost items for facilities and services underlying each tariff item.
- (ii) apportionment of *common* cost items across various tariff items. For e.g. tugs are part of both pilotage and hiring, dredging is similarly

common to port dues, pilotage and berth-hire. allocation and apportionment of *overheads* across various tariff items.

The total cost so arrived at sets the floor to the tariff that ought to be charged.

## STRIKING THE RIGHT BALANCE

Further to the cost and ceiling tariffs identified, iterations then ensue based on the cash flow projections of the entity over the target business horizon. Other elements like treatment of capital charge (depreciation, interest, insurance etc.) and lifecycle strategy regarding how and over what period capital costs and expected returns are to be recovered also come into play.

The final objective then is to arrive at the most optimum tariff that meets financial return objectives as also retains and reinforces market competitiveness. Indeed, the latter in fact, takes precedence over the former, as less than adequate returns signal more of an imperative for cost control rather than a wanton increase in tariff.

## IN SUMMARY . . .

*Competitive port pricing is increasingly the new paradigm set to shape markets and market leadership in the ports sector.*

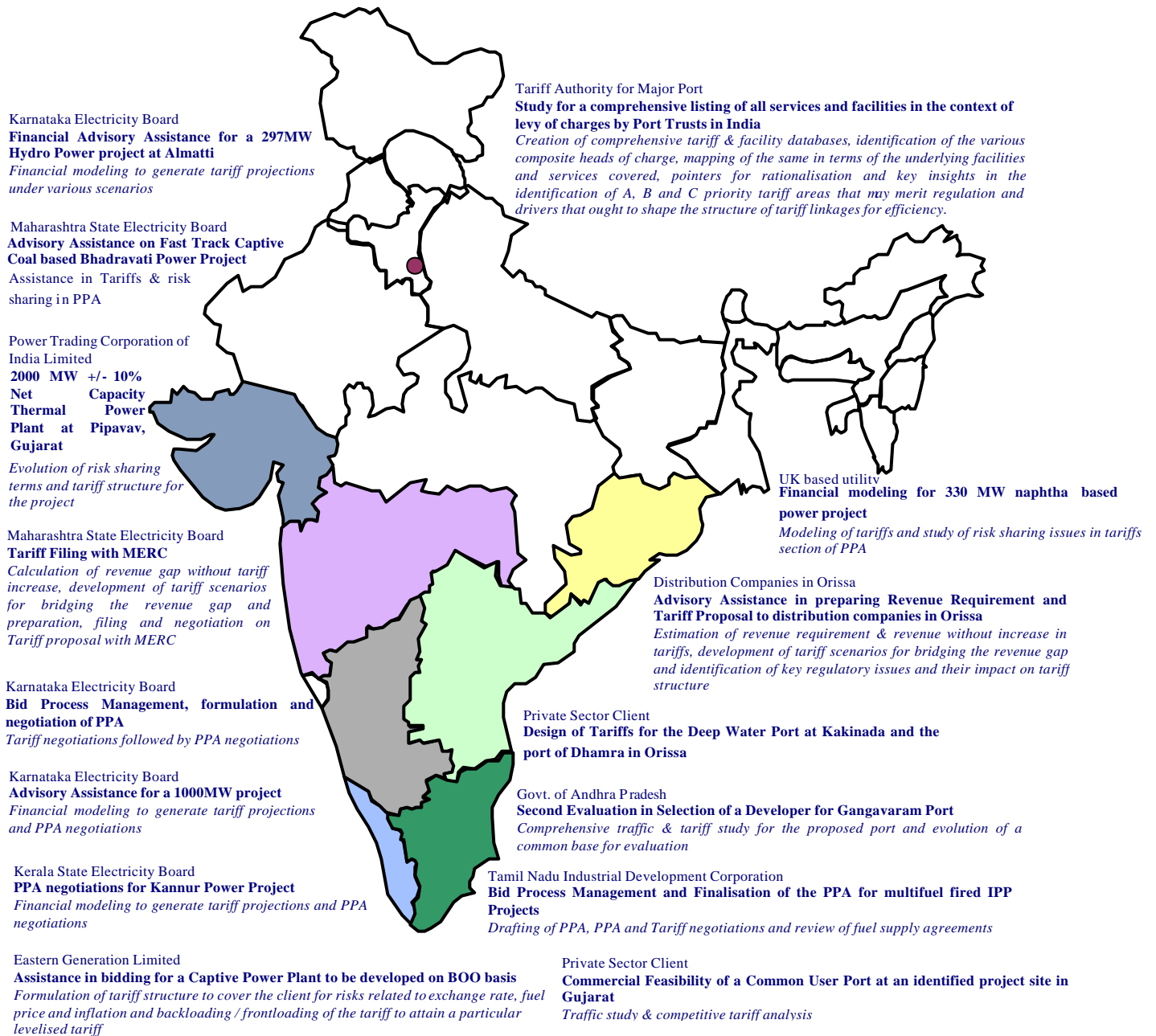
*Cost-side constraints exist. But the challenge is to transcend cost-plus markups and increasingly play by what the market has to offer.*

*A port can charge more than its competitors only if it offers superior benefits to the user such as larger draft, higher handling productivity, faster turnaround, lesser back-up transportation etc. or some other value proposition that tilts the balance of bargaining power with the port.*

*Competitive pricing in tandem with a scientific tariff structure also incentivises efficient use of port resources.*

*The shift to the new paradigm is thus, compelling.*

## CRISIL Infrastructure Advisory : Snapshot of Tariff Expertise



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