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**Tariff Authority for Major Ports**

**G No. 105** **New Delhi,** **9 April 2013**

# NOTIFICATION

In exercise of the powers conferred by Sections 48, 49 and 50 of the Major Port Trusts Act, 1963 (38 of 1963), the Tariff Authority for Major Ports hereby disposes of the proposal received from the Cochin Port Trust for setting upfront tariff for the development of general cargo terminal to handle coal and finished fertilizer at Cochin Port Trust in pursuance of the guidelines for upfront tariff setting at Major Ports which was notified vide Notification No.TAMP/52/2007-Misc. dated 26 February 2008, as in the Order appended hereto.

**(T.S. Balasubramanian)**
Member (Finance)

# Tariff Authority for Major Ports

**Case No. TAMP/74/2012-COPT**

**Cochin Port Trust** **- - - - -** **Applicant**

**QUORUM:**

(i). Smt. Rani Jadhav, Chairperson
(ii). Shri. T.S. Balasubramanian, Member (Finance)

## O R D E R

(Passed on this 15th day of February 2013)

This case relates to a proposal filed by the Cochin Port Trust (COPT) for fixation of upfront tariff for a General Cargo Terminal at Q8-Q9 berths of Cochin Port.

2. The COPT has submitted a proposal under cover of its letter dated 22 November 2012. The highlights of the COPT proposal are given below:

(i). **General**:

(a). The proposal of the COPT is to develop a General Cargo Terminal at Berths Q8 and Q9 which formed the Rajiv Gandhi Container Terminal at Cochin Port Trust and which were used to handle containers prior to commissioning of Vallarpadam container terminal.

(b). The berths Q8 and Q9 have a total length of 300 m. and a draft of 12.5 m. It is possible to handle a small panamax vessel (LOA 225m and 60,000 - 70,000 DWT) and Handymax vessels (LOA 180m and 45,000 DWT).

(c). Coal and finished fertilizer are expected to be the major commodities that would be handled at the berth. However, the major traffic is expected only from coal.

(ii). **Optimal capacity**:

(a). Optimal quay capacity:

- Coal Handling Capacity:

| Parameters | Value |
|---|---|
| Parcel size per Panamax vessel | 56,000 tons |
| Parcel size per Handymax vessel | 30,000 tons |
| Percentage share of Panamax vessels bringing Coal at the berth | 90% |
| Percentage share of Handymax vessels bringing Coal at the berth | 10% |
| Average cargo capacity of vessel | (90%*56,000)+(10%*30,000) = 53,400 tons |
| Unloading rate considered for coal | 42,000 tons/day |
| Average loading/unloading time | 53,400/42,000=1.27 days |
| Berthing/de-berthing time | 0.125 days |
| Turnaround time | 1.27+0.125=1.40 |
| Unloading rate per day | 53400/1.40=38142.86 |
| Operational Efficiency | 70% |
| Share of coal traffic (as per feasibility report) | 85% |
| **Coal handling capacity at berth (0.7 * 0.85 * 38142.86 * 365)** | **8.28 MTPA** |

- Finished Fertilizer Handling Capacity:

| Parameters | Value |
|---|---|
| Parcel size per vessel | 28,000 tons |
| Unloading rate considered for finished fertilizer | 14,000 tons/day |
| Average loading/unloading time | 28,000/14,000=2 days |
| Berthing/de-berthing time | 0.125 days |
| Turnaround time | 2.00+0.125=2.125 |
| Unloading rate per day | 28,000/2.125 = 13176.47 |
| Operational Efficiency | 70% |
| Share of finished fertilizer traffic (as per feasibility report) | 15% |
| **Finished fertilizer handling capacity at berth (0.7 * 0.15 * 13176.47 * 365)** | **0.50 MTPA** |

- Therefore, the Optimal Quay Capacity of the terminal is worked out to 8.78 MTPA (8.28 MTPA + 0.50 MTPA).

(b). Optimal yard capacity:

The optimum yard capacity is assessed at 9.36 MTPA for the proposed terminal adopting the following parameters:

| Parameters | For Coal | For Finished Fertilizer |
|---|---|---|
| A | 152000 sq.m. | 23800 sq.m. |
| U | 70% | 70% |
| Q | 5 Tons/Sq.m. | 3 Tons/Sq.m. |
| T | 24 | 12 |
| Capacity of Yard | 8.94 MTPA | 0.42 MTPA |
| **Optimal Yard Capacity** | **9.36 MTPA** | |

(c). The optimal capacity of the terminal is assessed at 8.70 Million Tonnes Per Annum, being the lower of quay capacity and yard capacity, as given below:

| Parameters | For Coal | For Finished Fertilizer |
|---|---|---|
| Quay Capacity | 8.28 MTPA | 0.50 MTPA |
| Yard Capacity | 8.94 MTPA | 0.42 MTPA |
| **Total Optimal Capacity** | 8.28 MTPA | 0.42 MTPA |
| | **8.70 MTPA** (8.28 MTPA + 0.42 MTPA) | |

(iii). **Capital Cost:**

The total capital cost is estimated at ₹221.30 crores. The breakup of the capital cost furnished by the port is summarized in the table as given below:

(Estimated capital cost – ₹ in crores)

| Sl. No. | Particulars | | Total |
|---|---|---|---|
| (i). | **Civil Construction Cost:** | | |
| | **A. For Coal** | | |
| | (a). Wind Shield Construction | 5.00 | |
| | (b). Conveyor Foundation | 1.30 | |
| | (c). Stack yard Development | 17.20 | |
| | (d). Buildings, ETP and Utility Blocks | 3.90 | |
| | (e). Utilities (Water Supply & Fire Fighting) | 2.00 | |

| Sl. No. | Particulars | | Total |
|---|---|---|---|
| | (f). Miscellaneous Costs (Dedicated rail line, rail track shifting, tracks for mobile hopper & retrofitting works) | 3.00 | |
| | **Total for coal** | **32.40** | |
| | **B. For Finished Fertilizers** | | |
| | (a). Stack yard Development | 1.00 | |
| | (b). Warehouses in Fertilizer Yards | 10.50 | |
| | (c). Roads | 0.64 | |
| | (d). Miscellaneous (Additional dedicated rail siding) | 1.00 | |
| | **Total for Finished Fertilizer** | **13.14** | |
| | | | |
| | **Total Civil cost (A + B)** | | **45.54** |
| | | | |
| (ii). | **Cargo Handling Equipment Costs:** | | |
| | **A. For Coal** | | |
| | (a). Ship Unloader (1500 TPH) (2 nos.) | 56.00 | |
| | (b). Conveyor (2000 m length) (3000 TPH) | 30.00 | |
| | (c). Rail Mounted Hoppers (2 nos.) | 2.00 | |
| | (d). Stacker Reclaimer (3000 TPH) (2 nos.) | 48.00 | |
| | (e). Hydraulic Excavator (10 Nos.) | 3.50 | |
| | (f). Wagon Loader (2 nos.) | 18.00 | |
| | (g). Utilities –Electrical | 1.00 | |
| | **Total for Mechanical costs (Coal)** | **158.50** | |
| | **B. For Finished Fertilizers** | | |
| | (a). Dumper (12 nos.) | 1.80 | |
| | (b). Bagging machine (2 nos.) | 0.50 | |
| | (c). Pay loaders (5MT) (4 nos.) | 1.00 | |
| | (d). Telescopic fertilizer loading arm (6 nos.) | 2.22 | |
| | (e). Mobile Hopper at Fertilizer Jetty (4 nos.) | 1.20 | |
| | Total Mechanical Costs (Finished Fertilizer) | **6.72** | |
| | | | |
| | **Total Effective Mechanical Costs (A + B)** | | **165.22** |
| | | | |
| | **Total Cost [(i) + (ii)]** | | **210.76** |
| | | | |
| (iii). | **Miscellaneous Costs** | | |
| | Contingency (@ 5%) | | 10.54 |
| | **TOTAL CAPITAL COSTS** | | **221.30** |

(iv). **Operating cost**:

The operating cost for coal handling and finished fertilizer handling is estimated at ₹55.53 crores and ₹4.56 crores respectively aggregating to ₹60.09 crores as given below:

| Sl. No. | Particulars | | ₹ in crores |
|---|---|---|---|
| **A.** | **For Coal handling:** | | |
| (i). | Power & Fuel Cost | | |
| | (a). Power Costs: | | |
| | - Consumption per ton | 1.4 unit / ton | |
| | - Cost per Unit (KWH) | 6.5 | |
| | - Optimal Capacity | 8.28 MTPA | |
| | **Cost of Electrical energy (1.4 * 6.5 * 8.28)** | | **7.53** |
| | (b). Fuel Costs: | | |
| | - Excavators Capacity | 450 TPH | |
| | - No of Excavators | 10 Nos. | |
| | - Optimal Capacity of coal | 8.28 MTPA | |

| Sl. No. | Particulars | | ₹ in crores |
|---|---|---|---|
| | - Efficiency considered | 70% | |
| | - Total Hours of Operation of excavators Required | 26286 hrs. | |
| | - Consumption of fuel by excavator (as per feasibility report) | 32 Ltr/ hour | |
| | - Fuel Cost (as per feasibility report) | 44.5 / Ltr | |
| | **Total Fuel Cost for excavators (26286 * 32 *44.5 / 10^7)** | | **3.74** |
| | **Total Power & Fuel Cost (a + b)** | | 11.28 |
| | | | |
| (ii). | Repair & Maintenance: | | |
| | (a). Civil assets (1% of civil costs – ₹32.40 crores) | | 0.32 |
| | (b). Mechanical and Electrical equipments including spares (7% of cost of all mechanical and electrical equipments – ₹158.5 crores) | | 11.10 |
| | | | |
| (iii). | Insurance (1% of Gross Fixed Asset – ₹190.9 crores) | | 1.91 |
| | | | |
| (iv). | Depreciation (@ 3.34% on civil assets and @ 10.34% on Mech & Elec. Assets) | | 17.47 |
| | | | |
| (v). | Lease Rentals (170000 sq.m. @ ₹230/ sq.m./ year) | | 3.91 |
| | | | |
| (vi). | Other expenses (5% of Gross Fixed Asset Value – ₹190.9 crores) | | 9.55 |
| | | | |
| | **Total Operating cost for coal handling (A)** | | **55.53** |
| | | | |
| **B.** | **For Finished Fertilizers handling:** | | |
| (i). | Power & Fuel Cost | | |
| | (a). Power Costs: | | |
| | - Optimal Capacity | 0.42 MTPA | |
| | - Capacity of Cranes (4 no. of cranes proposed) | 250 TPH | |
| | - Efficiency considered | 70% | |
| | - Total Hours required | 2400 hrs. | |
| | - Norm for consumption of power | 100 units/ hour/ crane | |
| | **Total Power charges (2400 * 100 *6.5/ 10^7)** | | **0.16** |
| | | | |
| | (b). Fuel Costs: | | |
| | Fuel Costs for Trucks | | |
| | - Capacity of trucks (12 trucks proposed) | 16 Tons | |
| | - Total Hours required for a truck to handle 16 tons. | 20 Minutes | |
| | - Total time of truck operations for handling optimal cap | 8750 hrs. | |
| | - Consumption of fuel | 13 ltrs/ hour | |
| | - Unit Cost of Fuel | 44.5/ ltr. | |
| | **Total Fuel Cost for trucks (8750 * 13 * 44.5/ 10^7)** | | **0.51** |
| | Fuel Costs for Pay Loaders | | |
| | - Capacity of Pay-loaders | 5 Tons | |
| | - Time required for a pay loader to handle 16 tons | 10 Minutes | |
| | - Time of pay-loader operations for handling optimal cap. | 14000 hrs. | |
| | - Consumption of fuel (Assumed based on norm available for 10 Tons capacity pay loaders) | 9 ltrs/ hour | |
| | - Unit Cost of Fuel | 44.5/ ltr | |
| | **Total Fuel Cost for Pay-loaders (14000 * 9 * 44.5/ 10^7)** | | **0.56** |
| | **Total Power & Fuel Cost (a + b)** | | 1.22 |
| | | | |

| Sl. No. | Particulars | ₹ in crores |
|---|---|---|
| (ii). | Repair & Maintenance: | |
| | (a). Civil assets (1% of civil costs – ₹13.14 crores) | 0.13 |
| | (b). Mechanical and Electrical equipments including spares (5% of cost of all mechanical and electrical equipments – ₹6.7 crores) | 0.34 |
| | | |
| (iii). | Insurance (1% of Gross Fixed Asset – ₹19.9 crores) | 0.20 |
| | | |
| (iv). | Depreciation (@ 3.34% on civil assets and @ 10.34% on Mech & Elec. Assets) | 1.13 |
| | | |
| (v). | Lease Rentals (23800 sq.m. @ ₹230/ sq.m./ year) | 0.55 |
| | | |
| (vi). | Other expenses (5% of Gross Fixed Asset Value – ₹19.9 crores) | 0.99 |
| | | |
| | **Total Operating cost for finished fertilizers handling (B)** | **4.56** |
| | | |
| | **Total Operating cost (A+ B)** | **60.09** |

(v). The revenue requirement estimated by COPT is as follows:

**(₹ in crores)**

| Sl. No. | Particulars | Coal handling | Finished Fertilizers handling |
|---|---|---|---|
| (i). | Total annual operating cost | 55.53 | 4.56 |
| (ii). | Return on capital employed | 32.07 | 3.34 |
| (iii). | Total Revenue Requirement | **87.60** | **7.90** |

(vi). Tariff cap per tonne of cargo handled:

| Tariff Group | For Coal handling | For Finished Fertilizers handling |
|---|---|---|
| Total Revenue Requirement | ₹87.60 crores | ₹7.90 crores |
| Total Capacity | 8.28 MTPA | 0.42 MTPA |
| **Tariff cap per tonne of cargo handled** | **105.80** | **188.08** |
| **Tariff cap per tonne for cargo handling charges** | **103.68** (calculated at 98% of revenues) | **169.27** (calculated at 90% of revenues) |
| **Miscellaneous charges per ton** | **1.06** (calculated at 1% of revenues) | **9.40** (calculated at 5% of revenues) |

(vii). Estimation of storage charges per tonne:

(a). <u>For Coal</u>:

Revenue Requirement from cargo storage = 1% * 87.60 = 0.876 crores

| Time Period | % of Cargo to be evacuated | Proposed Rate INR per ton per day | Revenue in INR Crores |
|---|---|---|---|
| Free period of 5 days | 75% | 0.000 | 0.000 |
| Next 5 days starting after free period | 10% | 0.682 | 0.282 |
| 6th to 10th day after free period | 10% | 1.023 | 0.424 |
| 11th day onwards after free period (Average number of days for cargo evacuation post 11th day is assumed to be 3 days) | 5% | 1.364 | 0.169 |
| **Total** | 100% | - | 0.875 |

(b). For Finished Fertilizer:
Revenue Requirement from cargo storage = 5% * 7.90 = 0.395 crores.

| Time Period | % of Cargo to be evacuated | Proposed Rate INR per ton per day | Revenue in INR Crores |
|---|---|---|---|
| Free period of 5 days | 0% | 0.000 | 0.000 |
| Next 5 days starting after free period | 40% | 1.518 | 0.128 |
| 6th to 10th day after free period | 40% | 2.277 | 0.191 |
| 11th day onwards after free period (Average number of days for cargo evacuation post 11th day is assumed to be 3 days) | 20% | 3.036 | 0.077 |
| **Total** | 100% | - | 0.396 |

(viii). The COPT has proposed the following upfront tariff to meet the estimated revenue requirement:

(a). Cargo handling charges:

| Particulars | Unit | Rate in ₹ |
|---|---|---|
| Coal handling charges | Per metric ton | 103.68 |
| Finished Fertilizer handling charges | Per metric ton | 169.27 |

(b). Storage charges:

| Description | Rate in Rupees per MT per day or part thereof | |
|---|---|---|
| | Coal | Finished Fertilizer |
| Free period | 5 days | 5 days |
| First five days after expiry of free period | 0.682 | 1.518 |
| 6th day to 10th day after expiry of free period | 1.023 | 2.277 |
| From 11$^{th}$ day onwards | 1.364 | 3.036 |

(c). Miscellaneous charges:

| Particulars | Unit | Rate in ₹ |
|---|---|---|
| Coal | Per metric ton | 1.06 |
| Finished Fertilizer | Per metric ton | 9.40 |

(ix). The COPT has stated that berth hire charges are not calculated for the proposed project since COPT has invested for the berths in the past and no capital investment is envisaged in the proposed project. COPT would collect the berth hire charges in line with existing practice and at similar rates to other berths of COPT. The berth hire charges collected by COPT would not be shared with private developer.

3. In accordance with the consultation procedure prescribed, a copy of the proposal of the COPT dated 22 November 2012 was circulated to the concerned users/ user organisations and RFQ Applicants (as forwarded by COPT) seeking their comments. None of the users/ prospective bidders furnished their comments.

4. Based on the preliminary scrutiny of the proposal, the COPT was requested vide our letter dated 21 January 2013 to furnish additional information/ clarifications on a few points. The COPT vide its letter dated 31 January 2013 has responded to the queries. The summary of queries raised by us and the response of the COPT thereon is brought out in the subsequent part of the Order.

5. A joint hearing on the case in reference was held on 29 January 2013 at the Cochin Port Trust (COPT) premises. The COPT made a brief power point presentation of its proposal. At the joint hearing, COPT and the concerned users/ organisation bodies have made their submissions.

6.1. Since none of the users/ prospective bidders had furnished their comments on the proposal of COPT, as decided at the joint hearing, one more opportunity was given to user organizations/ prospective bidders to furnish their comments, if any, on the subject proposal. The users/ prospective bidders were requested vide our letter dated 30 January 2013 to furnish their comments to this Authority and COPT simultaneously. In this regard, only one of the prospective applicants viz., M/s. Adani Ports and Special Economic Zone Ltd. (APSEZL) have furnished their comments. A copy of the comments received from APSEZL was forwarded to COPT as feedback information. The COPT vide its letter dated 6 February 2013 has responded to the comments of APSEZL.

6.2. As agreed at the joint hearing, the COPT was requested to furnish a copy of the comments received by it directly from M/s. Adani Ports and Special Economic Zone Ltd. (APSEZL) and to furnish its comments on the comments received from APSEZL. From the copy of the comments of APSEZL furnished by the COPT, it is seen that the comments are with reference to the queries raised by the APSEZL in the pre-bid meeting held by the COPT at their level with the prospective applicants. The queries are seen to be with reference to the project parameters and not with reference to the fixation of upfront tariff. In any case, the COPT has not responded to us on the queries raised by the APSEZL.

6.3. As decided at the joint hearing, the COPT was also requested to respond to the queries raised by us under cover of our letter of even number dated 21 January 2013. The COPT under cover of its letter dated 31 January 2013 has responded to the queries raised by us vide our letter dated 21 January 2013. The queries raised by us and the reply furnished by the COPT are tabulated below:

| **Sl. No.** | **Queries raised by us** | **Reply furnished by COPT** |
|---|---|---|
| 1. | **General:** | |
| (i). | The COPT envisages handling of coal as well as finished fertilizer at the proposed facility. For the purpose of determination of upfront tariff for handling both the cargo, the COPT has adopted two different set of Guidelines (one set relating to Coal for handling coal and another set relating to multipurpose terminal for handling finished fertilizer). When the proposed facility envisages handling of two different commodities, the reason for not adopting the norms prescribed in the Upfront Guidelines for the multipurpose berth to be explained. | The General Cargo Terminal (GCT) of Cochin Port Trust envisages handling of both Coal and Finished Fertilizers (FF). However, the major cargo has been identified to be Coal, which is proposed to be handled through an automated Material Handling System. Therefore, the Guidelines relating to Coal Terminal, which has substantially high handling norms (35000 TPD for Panamax vessels) has been adopted for Coal vis-à-vis that of Multipurpose Terminal (10000 TPD). In fact, the handling norms have been fixed higher than the TAMP norms. For FF also, the handling norms have been fixed higher than the norm of 7500 TPD of the Multipurpose Terminal. |
| (ii). | COPT to certify that the operator of the facility would not be allowed to handle any other cargo other than coal and finished fertiliser at the said facility and may not be permitted to convert the said facility for partly or fully mechanised handling of coal alone. | It is confirmed that the operator would not be allowed to handle any cargo other than coal and finished fertilizer and the operator will not be permitted to convert FF handling facility to Coal handling facility. |
| (iii). | As per the workings furnished by the COPT, out of the total capacity of the facility, almost 94% of the capacity is seen to be of Coal and the balance around 6% is seen to be of Finished Fertiliser. When the major commodity proposed to be handled at the | Presently, there is no mechanized facility for handling, unitization and dispatch of FF at Cochin Port. The need for mechanization in FF is very urgent at Cochin Port due to serious scarcity of labor and the consequent delays in unitization and dispatch of FF. However, the low volumes do not |

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| | facility is coal, the reason for not envisaging the said facility as a coal terminal and instead envisaging handling of finished fertilizer also in the proposed facility to be justified. | permit a separate terminal for FF handling. Therefore, it is considered prudent to have both Coal and FF handled in one terminal. |
| 2. | **Optimal capacity:** | |
| (i). | Optimal quay capacity: | |
| (a). | Coal: | |
| | (i). COPT to justify consideration of the ratio of Panamax vessels and Handymax vessels at 90:10 with reference to actuals handled at COPT for the past three years i.e. 2009-10 to 2011-12 and upto December 2012. | The ratio of Panamax and Handymax vessels is considered at 90:10 due to the availability of 12.5 m draft from Feb 2011 after the transfer of Container Terminal operations to ICTT, which is adequate to handle lower end Panamax vessels. The past record of Coal vessels may not be very relevant because the maximum draft available before Feb 2011 was only 10 m, which cannot accommodate Panamax vessels. All the coal vessels handled till date have been Handymax. |
| | (ii). COPT to furnish the basis for considering the parcel size of Panamax vessel at 56000 tonnes and that of Handymax vessel at 30000 tonnes. | The parcel size of 56000 MT is the maximum size supported by 12.5 m draft. The parcel size of 30000 MT for Handymax vessels is adopted considering the smaller vessels using the GCT. |
| | (iii). COPT to furnish the actual parcel size of Panamax vessels and Handymax vessel handled at COPT for the past three years i.e. 2009-10 to 2011-12 and upto December 2012. | Cochin Port does not handle Coal in significant volumes. The total quantity of Coal handled was 148000 MT in 2009-10, 40000 MT in 2010-11, 34000 MT in 2011-12, and Nil in 2012-13 (up to 31.12.2012). All the vessels handled were Handymax, and the average parcel size of coal vessels in the above period was 24667 MT. |
| | (iv). The basis for considering average capacity of each unloader at 1500 tonnes per hour to be furnished. | As per the table-4 of the FR, traffic projected is of 8.3 MTPA (Constrained), hence 2 Ship Unloaders (1500 TPH each) has been provided to handle the projected traffic. |
| | (v). The unloading rate of 2 unloaders has been calculated by the COPT at 42000 tonnes per day i.e. (1500 tonnes per hour per unloader * 2 unloaders * 20 hours * 70% utilisation). In this connection, it is relevant to mention here that the formula prescribed in the Upfront Guidelines for determination of quay capacity prescribes consideration of utilisation factor of 70% in the overall quay capacity calculation. The said factor is not to be individually applied to each and every parameter considered in the calculation of the capacity. Based on the judgement of the port that the productivity of one payloader is 1500 tonnes per hour, the unloading rate of 2 unloaders ought to have been considered at 72000 tonnes per day (1500 tonnes per hour per unloader * 2 unloaders * 24 hours). The COPT, therefore, to revise its workings in this regard. | The unloading rate of 42000 TPD by the 2 un-loaders is adopted based on the FR. The factors of 20 hours of operation and 70% utilization are exclusively considered for the un-loaders based on the FR, which is the practical realizable capacity based on Efficiency Norms. The aforesaid factors are required to be considered exclusively for the un-loaders on account of their break down, repairs, etc. separately from the utilization factor of 70% in the over all quay capacity calculations as per the TAMP norms. The unloading rate is still above the TAMP norms, which at 90:10 ratio for Panamax and Handymax vessels, will be only 33000 TPD.<br>In this regard kind reference is also drawn to the order No. TAMP/45/2011-KPT dated 18.06.2011 for fixation of upfront tariff for up gradation of Barge Handling facility at Bunder Basin of Kandla Port trust. The KPT, while submitting the Tariff Proposal had applied the factor of 70% at three stages for determining the optimal capacity; first as the load factor for the excavator, second for the operational hours in a day and third in the overall capacity calculation as per the norms. Even though the TAMP did not agree to applying the discount factor of 70% at three stages in the discussion stage, the TAMP finally approved for applying the discount factor of 70% for the |

| | | |
|---|---|---|
| | | mechanical efficiency of the excavators in consideration of the mention to the same in the Feasibility Report. However, the TAMP did not agree to applying the discount factor of 70% on the number of hours in a day. Kind reference is also drawn to the Order No. TAMP/32/2010-VPT dt.29.11.2010 for fixation of upfront tariff for mechanical Iron Ore handling facilities at WQ1 of Vizag Port, where the TAMP had allowed the equipment efficiency factor of 60% for the single automatic loader for handling Iron Ore, over and above the general norm of 70% prescribed in the Guidelines. The Vizag Port while submitting the tariff proposal had represented that the handling rate of the single ship loader @ 3000 TPH for 365 days a year need to be discounted at 60%, which is reckoned as the efficiency factor, due to the time taken for operational requirements like hatch changing, draft survey, initial arrangements etc. The TAMP had also accepted the justification furnished by VPT that the productivity as per the loading rate of the proposed loader after discounting at 60% for efficiency factor was higher than the realised productivity at the Port in the past. The relevant portion of the TAMP order at 11, (iv), Optimal Terminal Capacity, (a), Optimal Quay Capacity, (iv) is quoted below.<br>*"The norms for loading iron ore is stipulated at 25000 tonnes per day for handy max vessel and the 55000 tonnes / day for handling panamax vessels which is based on two ship loaders. As against the above position, the VPT has considered the handling rate of 25,000 tonnes per day for handymax vessels for one ship loader at par with the norms which is applicable for two ship loaders. The port has confirmed that the existing ore berth operating with one ship loader has achieved the loading rate of 25000 tonnes per day and hence the port is confident that same output can be achieved at the proposed berth also. For panamax vessel, the handling rate is considered at 43200 tonnes per day based on the technical specification of the equipment. The port has assumed handling rate of ship loader @ 3000 tonnes per hour for 365 days and the efficiency factor is reckoned at 60% to factor the time taken for operational requirements like hatch changing, draft survey, initial arrangements, etc. It is relevant to state here that the actual loading rate highest achieved by the VPT in the past three years at the mechanised iron ore berth with deployment of one ship loader is reported at 35358 tonnes per day for panamax vessel. The loading rate of 43200 tonnes/ day for panamax vessel proposed by the port is higher than the best loading rate achieved by the port and the port has substantiated its proposal with the calculation. Relying on the clarification/ calculation furnished by the VPT, the handling rate for panamax vessel assumed by the VPT is accepted."* |

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| | | It may be noted that the GCT of Cochin Port Trust assumes two unloaders of combined capacity of 3000 TPH as per the Feasibility Report. While the efficiency factor is reckoned at 70%, a further discount is done by taking into account 20 hrs. of operation out of the available 24 hrs. The total discounting at both these stages will amount to 58% (70% * 20/24). Considering the fact that the discounting is as per the Feasibility Report, which has clearly established that the productivity after discounting is the maximum realisable output, and also since the realisable capacity is above the TAMP norms, the discounting of 70% and 20 hrs. out of 24 hrs. may kindly be accepted due to efficiency limitations exclusive to the unloaders. It may also be noted that the VPT in its discount factor of 60% had combined the mechanical efficiency of the loader and the time delays involved in operation such as hatch changing, draft survey, initial arrangements etc., which Cochin Port has discounted separately by applying 70% for efficiency and 20 out of 24 hrs. for operational time in a day.<br><br>In view of the above, the quay capacity calculations as originally submitted may kindly be permitted to be retained. |
| | (vi). (a). COPT to establish with actuals for the past three years i.e. 2009-10 to 2011-12 and upto December 2012, the factor of 0.125 days for berthing/ de-berthing time considered in the capacity calculation. | The average time for berthing coal vessels in the years 2010-11, 2011-12 and 2012-13 (upto 31/12/2012) was 0.104 days and for deberthing 0.080 days. The total time for berthing and deberthing was accordingly 0.184 days. |
| | (b). The breakup for 0.125 days for berthing/ de-berthing to be furnished, in terms of services rendered for berthing/ de-berthing. | Berthing has been considered from 'Pilot Boarding at the outer anchorage for inward movement' to 'First Line Ashore (FLA)' and to 'Pilot Disembarking Time' and Un-berthing from 'Pilot Boarding Time for outward movement' to 'Last Line Cast off (LLC)' and to 'Pilot disembarking at the outer anchorage (OA)'. The time taken for inward movement from the OA to FLA was 0.077 days and from FLA to pilot disembarking time was 0.027 days. The time taken for outward movement was 0.023 days from pilot boarding to LLC and 0.057 days from LLC to pilot disembarking at OA. |
| | (vii). As per the workings furnished by the COPT, out of the total quay capacity of 8.78 MTPA, 8.28 MTPA (around 94%) is seen to be of Coal and the balance 0.5 MTPA (around 6%) is seen to be of Finished Fertiliser. In this connection, the basis/ rationale for considering the share of coal traffic at 85% in the capacity calculation instead of 94% to be explained. | Even though the share of Coal and FF traffic is about 95% and 5% respectively of the optimal capacity of the GCT, the quay capacity calculations are based on 85% for Coal and 15% for FF since the productivity of Coal per day (42000 TPD) is 3 times that of FF (14000 TPD), and hence FF handling at berth would take 3 times longer than Coal. |
| (b). | Finished Fertiliser: | |
| | (i). COPT to furnish the basis for considering the parcel size of vessel carrying finished fertilizer at 28000 tonnes. | The parcel size of 28000 T for FF is adopted based on the standard size of Handymax FF carriers. The same is found close to the actual size of FF vessels handled at Cochin Port. |

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| | (ii). COPT to furnish the actual parcel size of vessel carrying finished fertilizer for the past three years i.e. 2009-10 to 2011-12 and upto December 2012. | Cochin Port does not handle FF in big volumes. The total quantity of FF handled was 135000 MT in 2009-10, 76000 MT in 2010-11, 115000 MT in 2011-12, and 22000 MT in 2012-13 (up to 31.12.2012). The average parcel size was 23200 MT in the above period. |
| | (iii). The basis for considering that vessels carrying finished fertilizer would have 4 ship cranes and the basis for considering average capacity of each ship crane at 250 tonnes per hour to be furnished. | Most of the handy size vessels have on-board gears such as derricks, or slewing-luffing cranes to load and discharge cargo. As these vessels are at the lower end of the size spectrum, these ships are able to visit a large number of ports – even those with severe draft restrictions. The on-board gear enables them to handle cargo at anchorage and at berths without shore-based mechanized facilities. Four ship gears with a rated capacity of 250 TPH each is a standard design in the Handymax vessel. |
| | (iv). The unloading rate of 4 cranes in the vessel has been calculated by the COPT at 14000 tonnes per day i.e. (250 tonnes per hour per crane * 4 cranes * 20 hours * 70% utilisation). In this connection, it is relevant to mention here that the formula prescribed in the Upfront Guidelines for determination of quay capacity prescribes consideration of utilisation factor of 70% in the overall quay capacity calculation. The said factor is not to be individually applied to each and every parameter considered in the calculation of the capacity. Based on the judgement of the port that the productivity of one ship crane is 250 tonnes per hour, the unloading rate of 4 ship cranes ought to have been considered at 24000 tonnes per day (250 tonnes per hour per ship crane * 4 ship cranes * 24 hours). The COPT, therefore, to revise its workings in this regard. | The unloading rate of 14000 TPD by the ship cranes is adopted based on the FR. The factors of 20 hours of operation and 70% utilization are exclusively considered for the ship cranes based on the FR, which is the practical realizable capacity. The aforesaid factors are required to be considered exclusively for the cranes on account of their break down, repairs, etc. separately from the utilization factor of 70% in the over all quay capacity calculations as per the TAMP norms. The unloading rate is still above the TAMP norms for Multipurpose berth, which is only 7500 TPD. Therefore, the quay capacity calculations may be permitted to be done on the basis of 14000 TPD.<br>The justifications for applying two stage discounts over and above the TAMP norms on account of efficiency factors has already been furnished at 2 (a) (v) for un-loaders for coal handling. The relevant TAMP Orders No.TAMP/45/2011-KPT dated 18.06.2012 and No.TAMP/32/2010-VPT dated 29.11.2010 have been referred to in the said reply.<br>It may be noted that the GCT of Cochin Port Trust assumes four ship cranes of combined capacity of 1000 TPH as per the Feasibility Report. While the efficiency factor is reckoned at 70%, a further discount is done by taking into account 20 hrs. of operation out of the available 24 hrs. The total discounting at both these stages will amount to 58% (70% * 20/24). Considering the fact that the discounting is as per the Feasibility Report, which has clearly established that the productivity after discounting is the maximum realisable capacity, and also since the realisable capacity is above the TAMP norms, the discounting of 70% and 20 hrs. out of 24 hrs. may kindly be accepted due to efficiency reasons exclusive to the ship cranes due to their being unavailable at four numbers, out of order, repairs etc. It may also be noted that the VPT in its discount of 60% had combined the mechanical efficiency of the loader and the time delays involved in operation such as hatch changing, draft survey, initial arrangements etc., |

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| | | which Cochin Port has discounted separately by applying 70% for efficiency and 20 out of 24 hrs. for operational time in a day. It may be noted that all the said kind of delays are equally applicable to ship cranes as in the case of shore based loaders. In view of the above, the quay capacity calculations as originally submitted may kindly be permitted to be retained. |
| | (v). (a). COPT to establish with actuals for the past three years i.e. 2009-10 to 2011-12 and upto December 2012, that it has taken 0.125 days towards berthing/ de-berthing of a finished fertiliser vessel. | The average time for berthing FF vessels in the years 2010-11, 2011-12 and 2012-13 (upto 31/12/2012) was 0.096 days and for deberthing 0.071 days. The total time for berthing and deberthing was accordingly 0.167 days. |
| | (b). The breakup for 0.125 days for berthing/ de-berthing to be furnished, in terms of services rendered for berthing/ de-berthing of fertilizer vessels. | Berthing has been considered from 'Pilot Boarding at the outer anchorage for inward movement' to 'First Line Ashore (FLA)' and to 'Pilot Disembarking Time' and Un-berthing from 'Pilot Boarding Time for outward movement' to 'Last Line Cast off (LLC)' and to 'Pilot disembarking at the outer anchorage (OA)'. The time taken for inward movement from the OA to FLA was 0.072 days and from FLA to pilot disembarking time was 0.024 days. The time taken for outward movement was 0.016 days from pilot boarding to LLC and 0.055 days from LLC to pilot disembarking at OA. |
| | (vi). As per the workings furnished by the COPT, out of the total quay capacity of 8.78 MTPA, 8.28 MTPA (around 94%) is seen to be of Coal and the balance 0.5 MTPA (around 6%) is seen to be of Finished Fertiliser. In this connection, the basis/ rationale of considering the share of finished fertilizer traffic at 15% in the capacity calculation instead of 6%, to be explained. | Refer reply to query No 2 (i) (a), Coal (vii) above. |
| (ii). | <u>Optimal yard capacity:</u> | |
| (a). | Coal: | |
| | (i). It is not clear from the proposal how much area of land is proposed to be allotted by the COPT, except that in the workings relating to determining the operating costs, the licence fee has been calculated for an area of 193000 sq.m (170000 sq.m for coal and 23800 sq.m for finished fertilizer). The COPT to furnish details of the actual area of land available for use and the distribution of available land in terms of storage facility and auxiliary facility at the proposed facility for each of the cargo separately. | Total area available for coal handling is 17 ha. The effective back up area for Coal Storage is 15.2 ha after deducting 0.2 Ha for dedicated railway siding and allowing a discounting of 10% due to the irregular shape of the yard.<br><br>For Finished Fertilizer, the total area is 2.38 Ha. |
| | (ii). The COPT to confirm that the proposed allotment is in line with the Land use plan of the Port. | Yes, proposed allotment is in line with the Land use plan of the Port. |
| | (iii). While fixing upfront tariff for coal terminal at VPT a stack height of 6 tonnes per Sq. metre was considered as against the norm of 3 tonnes per Sq. metre prescribed in the guidelines. The COPT to review its capacity by considering a stack height of 6 tonnes per Sq. metre instead of 5 tonnes per Sq. metre, considered by it. | Load bearing capacity of 5 t/sq.m is taken duly considering the soil conditions of the yard. The yard being on a reclaimed land, further increase in stack height is not possible. |

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| | (iv). The analysis made by the COPT due to which it anticipates reduction in dwell time of coal from the existing 30 days to 15 days to be furnished. | The volume of Coal handled at Cochin Port is rather small and the operations are completely manual and evacuation predominantly by road. The GCT envisages automated handling where evacuation is mainly through rail. The aforesaid factors are expected to reduce the average dwell time of Coal from the present 30 days to 15 days. Since the major hinterland is outside Kerala, at a distance of over 200 kms and the route to the hinterland is highly congested with several level crossings, further reduction in dwell time is not practical. Also, there would be restrictions in carrying the cargo in day time in these routes due to preference for passenger traffic. |
| (b). | Finished Fertiliser: | |
| | (i). COPT to furnish basis for considering stack height of 3 tonnes per Sq. metre. | Since the volume of FF is rather small, mechanical stacking is not envisaged. Only manual stacking using pay loaders is envisaged, whereby the stack density cannot be more than 3 T/sq.m. |
| | (ii). Since the COPT handles finished fertilizer, the actual stack height achieved by the port during the past three years i.e. 2009-10 to 2011-12 and upto December 2012 incase of finished fertiliser to be indicated. | Cochin Port handles FF in small volumes, which is stored at the sheds before they are manually unitized and delivered. The average stack density has been all along 1.5 to 2 T/Sq m. |
| | (iii). The analysis made by the COPT due to which it anticipates reduction in dwell time of finished fertiliser from the existing 60 days to 30 days to be furnished. | The present handling of FF involves fully manual unitization and loading for delivery. The process being very slow, results in an average dwell time of about 60 days. The GCT envisages automation in bagging as well as loading, which should result in the average dwell time to reduce to about 30 days. |
| (iii). | In view of the position brought out above, the COPT to review its optimal quay capacity and optimal yard capacity for each coal and finished fertilizer. Significantly, the COPT has reported to be located in a favourable position which may help in attracting substantial traffic at the port. Therefore, the non-availability of traffic may not be a constraint for estimation of capacity. | In view of the responses given to query Nos. 2 (i) (a) coal (v) and 2 (i) (b) Finished Fertiliser (iv) establishing the realisable outputs for the ship unloaders, ship cranes and considering the yard limitations due to the irregular configuration, restrictive soil conditions and the plot turn over ratio which cannot be improved due to the distant hinterland, the quay capacity and yard capacity as submitted in the original proposal may kindly be permitted to be retained. |
| 3. | **Capital Cost Estimation:** | |
| (i). | The COPT to furnish the basis for the quantum of each item of civil work considered by COPT to estimate the civil capital costs for both coal and finished fertilizer. | The quantum of civil works estimated is based on the actual quantity requirements for the civil infrastructure requirement as per the Feasibility Report. |
| (ii). | Though the COPT has furnished details of the capital civil cost estimates, it has not furnished the copy of the document substantiating the base rate considered in the calculation of civil costs. The COPT to furnish the same highlighting the rate so considered. | The relevant documents have been furnished. |
| (iii). | The equipping plan proposed for the facility does not seem to be in line either with the equipping plan for the multipurpose terminal or with the equipping plan for the coal import terminal, as prescribed in the Upfront Guidelines. In this regard, the COPT to furnish an analysis supported with workings to justify | The equipping plan proposed for the coal handling is in lines with TAMP norms applicable for coal terminal, except for the 2 cranes of item no-6 of Cl 4.3 of TAMP norms. With the ship unloaders and stacker/ reclaimer system there is no requirement of cranes. |

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| | the number of each type of equipment envisaged to be used at the facility to handle coal and finished fertilizer separately, to show that given the productivity of each type of the equipment, the quantity of different equipment commensurates with the quantity of cargo estimated to be handled. While doing so, the COPT to take into account the revision in the optimal capacity of the facility to be effected by COPT for the reasons brought out earlier. | |
| (iv). | Though the COPT has furnished documentary evidence in support of the cost of the equipment, in the absence of workings, we are not in a position to correlate the documentary evidence with the cost of each equipment. The COPT, therefore, to furnish detailed workings to arrive at the cost of each of the equipment, as considered by COPT in its proposal. | The working for the cost of each equipment has been furnished. |
| 4. | **Operating cost estimation:** | |
| (i). | Power cost: | |
| (a). | Though the COPT has furnished copy of the Electricity bill in support of the power cost, it is not clear from the bill, how the COPT has arrived at the unit power cost of ₹6.50. The COPT to furnish workings in this regard. | Energy charge of ₹6.5/Kwh for HT category has been considered in the proposal.<br>However, in the revised proposal, demand charges, duties and fuel surcharge also have been considered.<br>A revised working is shown below:<br>Average unit rate= Total Bill Amount/Actual unit consumption (Kwh)<br>= 11, 99,157 (Total Electric Bill amount) / [77592 (Normal) + 23964 (Peak) + 38340 (Off-peak)]<br>= ₹8.57/Kwh. Accordingly, operating cost of the proposal had been updated and the increased rate per unit will be incorporated in the revised proposal being submitted. |
| (b). | COPT to justify the power consumption of 100 units per hour per crane considered for the ship crane to be used for handling finished fertilizer. COPT to note that the norm of 100 units per hour per crane is with reference to a multipurpose berth with deployment of 3 ELL Cranes. | Unloading of fertilizer from the vessel is by ship cranes only and hence the calculations are revised so as to exclude any power costs on account of the ship crane operations. The power requirement for FF is now considered only for two bagging machines (3 units/hr/bagging machine), yard lighting, office building and other utilities (combined consumption of 120 units/hr). A total power requirement of 126 Kwh is envisaged for Handling Fertilizer. Total working hours are considered at 1200 hrs (60 days*20 hrs) for Fertilizer handling. The updated cost will be incorporated in the revised proposal being submitted. |
| (c). | The COPT has envisaged handling of coal by Conveyor. However, the COPT does not appear to have factored the cost of power to operate the Conveyor. COPT to revise the workings in this regard. | The power consumption considered in the proposal (1.4 unit/tonne) is in line with the TAMP norms. But, in the Feasibility Report, 3500 Kwh is considered for coal operation which includes conveyors also. The revised power cost as considered in the feasibility report is being incorporated in the revised tariff proposal. |
| (ii). | Fuel cost: | |
| (a). | Excavators used for handling Coal: | |
| | (i). It is not clear how the COPT has determined the 26286 hours of operation of | To handle 8.28 MTPA of cargo, excavators (10 Nos.) with rated capacity of 450 TPH with 70% of |

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| | excavator to determine the fuel cost of excavator. COPT to furnish detailed workings in this regard with justification for number of hours considered in the calculation. | working efficiency have been considered. Total time envisaged to handle the projected cargo is 26286 Hours [8.28*10^6/ (450*0.7)]. This time is distributed among 10 excavators. |
| | (ii). The fuel consumption of 32 litres per hour considered by COPT for excavators to be justified with documentary evidence. COPT to note that in the calculation of upfront tariff for the riverine jetty at Outer Terminal – I of Kolkata Port Trust, the fuel consumption of 12 litres per hour for excavators had been considered by KOPT. | The documentary evidence for consumption of fuel per excavator is furnished. |
| (b). | Trucks used for handling Finished Fertiliser: | |
| | (i). It is not clear how the COPT has determined the 8750 hours of operation of trucks to determine the fuel cost of trucks. COPT to furnish detailed workings in this regard with justification for number of hours considered in the calculation. | 16 T capacity trucks are envisaged for evacuation of Fertilizer from ship to storage yard. The total time considered for end to end handling is 20 min. To handle a capacity of 0.42 MTPA, the total Hours required for trucks is (0.42*10^6)*(20/60)/16=8750 Hrs. This 8750 hours has been shared/distributed among12 trucks for 20 hrs of operation in a day. |
| | (ii). The fuel consumption of 13 litres per hour considered by COPT for trucks to be justified with documentary evidence. COPT to note that at the time of fixation of upfront tariff of the riverine jetty at Outer Terminal – I of KOPT and with regard to the fuel consumption for the dumper trucks considered incase of the Multipurpose berths at Shalukkhali at KOPT in the calculation of upfront tariff for the riverine jetty at Outer Terminal – I of Kolkata Port Trust, the consumption of 4 litres per hour per dumper truck had been considered by KOPT. | The documentary evidence for consumption of fuel per truck is furnished. |
| (c). | 5 tonne Pay loaders used for handling Finished Fertiliser: | |
| | (i). It is not clear how the COPT has determined the 14000 hours of operation of pay loaders to determine the fuel cost of pay loaders. COPT to furnish detailed workings in this regard with justification for number of hours considered in the calculation. | 5 T capacity Payloaders are envisaged for handling of Finished Fertilizer in the Shed. The total time considered for end to end handling is 10 min. To handle a capacity of 0.42 MTPA, the total Hours required for Payloaders (0.42*10^6)*(10/60)/5=14000 Hrs. This 14000 has been shared/distributed among 4 Payloaders. |
| | (ii). The fuel consumption of 9 litres per hour considered by COPT for pay loaders to be justified with documentary evidence, in the context of the upfront guidelines for the multipurpose berth prescribing a norm of 7 litres per hour for a 5 tonne pay loader. | The documentary evidence for consumption of fuel per pay loader is furnished. |
| (iii). | Depreciation:<br><br>COPT to furnish workings in support of the amount of depreciation considered in respect of capital cost of coal and finished fertilizer. | The depreciation rate considered for civil assets is in line with the straight line depreciation indicated for factory building i.e. 3.34%. The depreciation rate considered for mechanical assets is in line with the straight line depreciation rate indicated for plant and machinery working in three shifts i.e. 10.34%. The working is indicated below.<br><br>Depreciation costs = 3.34%*32.4+10.34%*158.5 = ₹17.47 Crores |

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| (iv). | Licence Fee:<br><br>The COPT has indicated the licence fee as ₹230/- per sq.m and the area on which the licence fee is to be calculated. However, in the absence of an indication to the area as prescribed in Chapter - VII of the COPT Scale of Rates, whose licence fee after giving effect to the escalation factor has been considered, it is not found possible to check the licence fee amount. The COPT, therefore, to furnish the basis for considering the said rate by giving reference to its Scale of Rates and supported by necessary workings, incase of both coal and finished fertilizer. | It is clarified that the scale of rate considered for calculation is ₹230/- per sq. metre per year w.e.f. 01/04/2012. The base lease rent for Willingdon Island for commercial land category as on 11th July 2010 is ₹222.30 per sq. metre per year. The annual escalation is 2% as on 01/04/2012, the escalation @ 3.45% is applicable which amounts to ₹7.67. |
| 5. | **Cargo handling charges calculation:** | |
| (i). | The proposal of COPT is for fixation of upfront tariff for a facility to handle coal and finished fertilizer. The upfront tariff guidelines for a multipurpose berth prescribes norms for apportionment of total revenue requirement at 90%, 5% and 5% towards cargo handling charges, storage charges and miscellaneous charges respectively. The reason for considering a different apportionment norm of 98%, 1% and 1% prescribed for coal terminal to be explained. | As the major cargo envisaged to be handled at the berth is coal, the tariff for coal has been fixed in line with the guidelines for Coal Terminal. |
| (ii). | The COPT to furnish the ratio of foreign cargo and coastal cargo proposed to be handled at the terminal. Further, the COPT also to furnish year wise ratio of foreign and coastal cargo for coal and finished fertilisers handled at COPT during the past years 2009-10 to 2011-12 and upto December 2012. | Both Coal and FF proposed to be handled are entirely foreign. In the period from 2009-10 up to December 2012, 100% of the Coal and FF handled were Foreign. |
| 6. | **Storage charge calculation:** | |
| (i). | The actual average dwell time of import coal and finished fertilizer at COPT during the past years 2009-10 to 2011-12 and upto December 2012 to be furnished yearwise separately. | As already indicated, Cochin Port does not handle Coal and FF in any significant volumes. The average dwell time of Coal has been about 30 days, and that of FF 60 days in the period under reference. |
| (ii). | The upfront guidelines for the coal terminal prescribe a free period of 25 days. When the COPT has stated to have adopted upfront guidelines for the coal terminal to determine the upfront tariff for handling coal at the facility, the reason for prescribing only 5 days free period for coal to be justified. | The GCT envisages automated handling where evacuation is mainly through rail, unlike the present manual handling and evacuation by road, which is expected to reduce the average dwell time of Coal from the present 30 days to 15 days. A free period of 5 days has been prescribed to encourage faster evacuation, so that the GCT will have adequate capacity to cater to higher coal import demand. |
| (iii). | The actual free days availed by the cargo like coal and finished fertilizer at COPT during the past years 2009-10 to 2011-12 and upto December 2012 to be furnished year wise separately. | Coal and FF have been stored on licence basis at Cochin Port, without being allowed any free days, in the period under reference. |
| 7. | **Scale of Rates:** | |
| (i). | The COPT to propose conditionalities governing the levy of storage charges in the proposed Upfront tariff Schedule furnished by COPT. | The required terms and conditions will be indicated in the revised proposal. |

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| (ii). | A note prescribing the services that would be covered by the rate towards 'Miscellaneous charges' to be proposed. | The services that would be covered by the rate towards 'Miscellaneous charges' will be prescribed in the revised proposal. |
| (iii). | With reference to the proposed General note to Schedule 3 to 5 of the proposed upfront tariff Schedule, the COPT to confirm whether the capital cost and unit rate of operating cost considered by it in its proposal are as of the year 2012. | It is confirmed that the capital cost and unit rate of operating cost considered by it in its proposal are as of the year 2012. |

6.4. The utilisation factor of 70% prescribed in the guidelines is not to be individually applied to each and every parameter considered in the quay capacity calculations. It was pointed out to the COPT at the joint hearing that the calculation of COPT for unloading rate per day for Coal and Fertilizer takes into account only 20 hours per day. In addition, unloading rate of ship unloader (1500 TPH) and the unloading rate of ship's crane (250 TPH) are also discounted by 30%. As agreed at the joint hearing, the COPT was requested to review the quay capacity calculations and also to examine the dwell time considered for storage of coal and finished fertilizer and the plot turn over ratio considered in the yard capacity calculations. The COPT was also advised to revise its proposal based on review of the capacity calculation and forward the revised proposal.

6.5. In this regard, the COPT vide its e-mail dated 5 February 2013 has furnished the revised proposal for setting upfront tariff for the development of General Cargo Terminal. A comparative position between the initial proposal dated 22 November 2012 and the revised proposal dated 5 February 2013 are summarized below:

(i). There is no change in the revised proposal with regard to the optimal quay capacity and the yard capacity. In other words, the optimal quay capacity is maintained at 8.78 MMTPA and the optimal yard capacity is maintained at 9.36 MMTPA.

(ii). No change has been effected in the capital costs in the revised proposal as compared to the initial proposal.

(iii). **Operating cost**:

| **Initial proposal dated 22 November 2012** | | | | **Revised proposal dated 5 February 2013** | | | |
|---|---|---|---|---|---|---|---|
| **Sl. No.** | **Particulars** | | **₹ in crores** | **Sl. No.** | **Particulars** | | **₹ in crores** |
| **A.** | **For Coal handling:** | | | **A.** | **For Coal handling:** | | |
| (i). | Power & Fuel Cost | | | (i). | Power & Fuel Cost | | |
| | (a). Power Costs: | | | | (a). Power Costs: | | |
| | - Consumption per ton | 1.4 unit/ ton | | | (i). Except Conveyor operation: | | |
| | - Cost per Unit (KWH) | 6.5 | | | - Consumption per ton | 1.4 unit / ton | |
| | - Optimal Capacity | 8.28 MTPA | | | - Cost per Unit (KWH) | 8.57 | |
| | **Cost of Electrical energy (1.4 * 6.5 * 8.28)** | | 7.53 | | - Optimal Capacity | 8.28 MTPA | |
| | | | | | Cost of Electrical energy (1.4 * 8.57 * 8.28) | 9.94 | |
| | | | | | (ii). Conveyor System: | | |
| | | | | | - Conveyor Power Consumption level | 0.5 Unit per hour per meter run | |
| | | | | | - Total Conveyor length | 2000meters | |
| | | | | | - Unit Conveyor Power Consumption | 1000 Unit/ hour | |
| | | | | | - Total Hours of Operation for achieving maximum capacity (250 days and 20 hours per day) | 5000 Hours | |
| | | | | | Total Power cost for conveyor | 4.29 | |
| | | | | | **Total Power Cost** | | 14.23 |

| Initial proposal dated 22 November 2012 | | | | Revised proposal dated 5 February 2013 | | | |
|---|---|---|---|---|---|---|---|
| **Sl. No.** | **Particulars** | | **₹ in crores** | **Sl. No.** | **Particulars** | | **₹ in crores** |
| | (b). Fuel Costs: | | | | (b). Fuel Costs: | | |
| | - Excavators Capacity | 450 TPH | | | - Excavators Capacity | 450 TPH | |
| | - No of Excavators | 10 Nos. | | | - No of Excavators | 10 Nos. | |
| | - Optimal Capacity of coal | 8.28 MTPA | | | - Optimal Capacity of coal | 8.28 MTPA | |
| | - Efficiency considered | 70% | | | - Efficiency considered | 70% | |
| | - Total Hours of Operation of excavators Required | 26286 hrs. | | | - Total Hours of Operation of excavators Required | 26286 hrs. | |
| | - Consumption of fuel by excavator (as per feasibility report) | 32 Ltr/ hour | | | - Consumption of fuel by excavator (as per feasibility report) | 32 Ltr/ hour | |
| | - Fuel Cost (as per feasibility report) | 44.5 / Ltr | | | - Fuel Cost (as per feasibility report) | 44.5 / Ltr | |
| | **Total Fuel Cost for excavators (26286 * 32 *44.5 / 10^7)** | | 3.74 | | **Total Fuel Cost for excavators (26286 * 32 *44.5 / 10^7)** | | 3.74 |
| | **Total Power & Fuel Cost (a + b)** | | 11.28 | | **Total Power & Fuel Cost (a + b)** | | 17.97 |
| | | | | | | | |
| (ii). | Repair & Maintenance: | | | (ii). | Repair & Maintenance: | | |
| | (a). Civil assets (1% of civil costs – ₹32.40 crores) | | 0.32 | | (a). Civil assets (1% of civil costs – ₹32.40 crores) | | 0.32 |
| | (b). Mechanical and Electrical equipments including spares (7% of cost of all mechanical and electrical equipments – ₹158.5 crores) | | 11.10 | | (b). Mechanical and Electrical equipments including spares (7% of cost of all mechanical and electrical equipments – ₹158.5 crores) | | 11.10 |
| | | | | | | | |
| (iii). | Insurance (1% of Gross Fixed Asset – ₹190.9 crores) | | 1.91 | (iii). | Insurance (1% of Gross Fixed Asset – ₹190.9 crores) | | 1.91 |
| | | | | | | | |
| (iv). | Depreciation (@ 3.34% on civil assets and @ 10.34% on Mech & Elec. Assets) | | 17.47 | (iv). | Depreciation (@ 3.34% on civil assets and @ 10.34% on Mech & Elec. Assets) | | 17.47 |
| | | | | | | | |
| (v). | Lease Rentals (170000 sq.m. @ ₹230/ sq.m./ year) | | 3.91 | (v). | Lease Rentals (170000 sq.m. @ ₹230/ sq.m./ year) | | 3.91 |
| (vi). | Other expenses (5% of Gross Fixed Asset Value – ₹190.9 crores) | | 9.55 | (vi). | Other expenses (5% of Gross Fixed Asset Value – ₹190.9 crores) | | 9.55 |
| | **Total Operating cost for coal handling (A)** | | **55.53** | | **Total Operating cost for coal handling (A)** | | **62.22** |
| | | | | | | | |
| **B.** | **For Finished Fertilizers handling:** | | | **B.** | **For Finished Fertilizers handling:** | | |
| (i). | Power & Fuel Cost | | | (i). | Power & Fuel Cost | | |
| | (a). Power Costs: | | | | (a). Power Costs: | | |
| | - Optimal Capacity | 0.42 MTPA | | | - Optimal Capacity | 0.42 MTPA | |
| | - Capacity of Cranes (4 no. of cranes proposed) | 250 TPH | | | - Bagging Units | 2 Nos. | |
| | - Efficiency considered | 70% | | | - Capacity of each bagging unit | 80 TPH | |
| | - Total Hours required | 2400 hrs. | | | - Total hours of operation of both bagging units (Capacity 0.42*10^6 Tons/80 Tons per Hour/2 nos. = 2635 ) | 2635 Hours | |
| | - Norm for consumption of power | 100 units/ hour/ crane | | | - Power Consumption per Bagging Unit | 3 Units/Hr | |
| | **Total Power charges (2400 * 100 *6.5/ 10^7)** | | **0.16** | | Hours in a day for which illumination is needed in the unit | 10 Hours | |
| | | | | | Total Hours considered for illumination (2635 Hours of bagging machine operation/20 hours = 131.25 days, 131.25 days *10 hours = 1312.5) | 1312. Hours | |
| | | | | | Power Consumption for illumination of bagging unit | 120 Units/Hr | |
| | | | | | Cost per Unit (KWH) | 8.57 | |
| | | | | | **Total Power Charges** | | **0.15** |
| | (b). Fuel Costs: | | | | (b). Fuel Costs: | | |
| | Fuel Costs for Trucks | | | | Fuel Costs for Trucks | | |
| | - Capacity of trucks (12 trucks proposed) | 16 Tons | | | - Capacity of trucks (12 trucks proposed) | 16 Tons | |
| | - Total Hours required for a truck to handle 16 tons. | 20 Minutes | | | - Total Hours required for a truck to handle 16 tons. | 20 Minutes | |
| | - Total time of truck operations for handling optimal cap | 8750 hrs. | | | - Total time of truck operations for handling optimal cap | 8750 hrs. | |

| Initial proposal dated 22 November 2012 | | | | Revised proposal dated 5 February 2013 | | | |
|---|---|---|---|---|---|---|---|
| **Sl. No.** | **Particulars** | | **₹ in crores** | **Sl. No.** | **Particulars** | | **₹ in crores** |
| | - Consumption of fuel | 13 ltrs/ hour | | | - Consumption of fuel | 13 ltrs/ hour | |
| | - Unit Cost of Fuel | 44.5/ ltr. | | | - Unit Cost of Fuel | 44.5/ ltr. | |
| | **Total Fuel Cost for trucks (8750 * 13 * 44.5/ 10^7)** | | **0.51** | | **Total Fuel Cost for trucks (8750 * 13 * 44.5/ 10^7)** | | **0.51** |
| | Fuel Costs for Pay Loaders | | | | Fuel Costs for Pay Loaders | | |
| | - Capacity of Pay-loaders | 5 Tons | | | - Capacity of Pay-loaders | 5 Tons | |
| | - Time required for a pay loader to handle 16 tons | 10 Minutes | | | - Time required for a pay loader to handle 16 tons | 10 Minutes | |
| | - Time of pay-loader operations for handling optimal cap. | 14000 hrs. | | | - Time of pay-loader operations for handling optimal cap. | 14000 hrs. | |
| | - Consumption of fuel (Assumed based on norm available for 10 Tons capacity pay loaders) | 9 ltrs/ hour | | | - Consumption of fuel (Assumed based on norm available for 10 Tons capacity pay loaders) | 9 ltrs/ hour | |
| | - Unit Cost of Fuel | 44.5/ ltr | | | - Unit Cost of Fuel | 44.5/ ltr | |
| | **Total Fuel Cost for Pay-loaders (14000 * 9 * 44.5/ 10^7)** | | **0.56** | | **Total Fuel Cost for Pay-loaders (14000 * 9 * 44.5/ 10^7)** | | **0.56** |
| | **Total Power & Fuel Cost (a + b)** | | 1.22 | | **Total Power & Fuel Cost (a + b)** | | 1.22 |
| (ii). | Repair & Maintenance: | | | (ii). | Repair & Maintenance: | | |
| | (a). Civil assets (1% of civil costs – ₹13.14 crores) | | 0.13 | | (a). Civil assets (1% of civil costs – ₹13.14 crores) | | 0.13 |
| | (b). Mechanical and Electrical equipments including spares (5% of cost of all mechanical and electrical equipments – ₹6.7 crores) | | 0.34 | | (b). Mechanical and Electrical equipments including spares (5% of cost of all mechanical and electrical equipments – ₹6.7 crores) | | 0.34 |
| | | | | | | | |
| (iii). | Insurance (1% of Gross Fixed Asset – ₹19.9 crores) | | 0.20 | (iii). | Insurance (1% of Gross Fixed Asset – ₹19.9 crores) | | 0.20 |
| | | | | | | | |
| (iv). | Depreciation (@ 3.34% on civil assets and @ 10.34% on Mech & Elec. Assets) | | 1.13 | (iv). | Depreciation (@ 3.34% on civil assets and @ 10.34% on Mech & Elec. Assets) | | 1.13 |
| | | | | | | | |
| (v). | Lease Rentals (23800 sq.m. @ ₹230/ sq.m./ year) | | 0.55 | (v). | Lease Rentals (23800 sq.m. @ ₹230/ sq.m./ year) | | 0.55 |
| | | | | | | | |
| (vi). | Other expenses (5% of Gross Fixed Asset Value – ₹19.9 crores) | | 0.99 | (vi). | Other expenses (5% of Gross Fixed Asset Value – ₹19.9 crores) | | 0.99 |
| | | | | | | | |
| | **Total Operating cost for finished fertilizers handling (B)** | | **4.56** | | **Total Operating cost for finished fertilizers handling (B)** | | **4.56** |
| | | | | | | | |
| | **Total Operating cost (A+ B)** | | **60.09** | | **Total Operating cost (A+ B)** | | **66.78** |

(iv). The revenue requirement estimated by COPT is as follows:

**(₹ in crores)**

| **Sl. No.** | **Particulars** | **Initial proposal dated 22 November 2012** | | **Revised proposal dated 5 February 2013** | |
|---|---|---|---|---|---|
| | | **Coal handling** | **Finished Fertilizers handling** | **Coal handling** | **Finished Fertilizers handling** |
| (i). | Total annual operating cost | 55.53 | 4.56 | 62.22 | 4.56 |
| (ii). | Return on capital employed | 32.07 | 3.34 | 32.07 | 3.33 |
| (iii). | Total Revenue Requirement | **87.60** | **7.90** | **94.29** | **7.89** |

(v). Tariff cap per tonne of cargo handled:

| **Tariff Group** | **Initial proposal dated 22 November 2012** | | **Revised proposal dated 5 February 2013** | |
|---|---|---|---|---|
| | **For Coal handling** | **For Finished Fertilizers handling** | **For Coal handling** | **For Finished Fertilizers handling** |
| Total Revenue Requirement | ₹87.60 crores | ₹7.90 crores | ₹94.29 Crores | ₹7.89 Crores |
| Total Capacity | 8.28 MTPA | 0.42 MTPA | 8.28 MTPA | 0.42 MTPA |
| **Tariff cap per tonne of cargo handled** | **105.80** | **188.08** | **113.88** | **187.90** |
| **Tariff cap per tonne for cargo handling charges** | **103.68** (calculated at 98% of revenues) | **169.27** (calculated at 90% of revenues) | **111.60** (Calculated at 98% of revenues) | **169.11** (Calculated at 90% of revenues) |
| **Miscellaneous charges per ton** | **1.06** (calculated at 1% of revenues) | **9.40** (calculated at 5% of revenues) | **1.14** (Calculated at 1% of revenues) | **9.40** (Calculated at 5% of revenues) |

(vi). Estimation of storage charges per tonne for coal and finished fertilizer:

| Time Period | Initial proposal dated 22 November 2012 | | | Revised proposal dated 5 February 2013 | | |
|---|---|---|---|---|---|---|
| | % of Cargo to be evacuated | Proposed Rate INR per ton per day | Revenue in INR Crores | % of Cargo to be evacuated | Proposed Rate INR per ton per day | Revenue in INR Crores |
| **For Coal:** | | | | | | |
| Free period of 5 days | 75% | 0.000 | 0.000 | 75% | 0.000 | 0.000 |
| Next 5 days starting after free period | 10% | 0.682 | 0.282 | 10% | 0.735 | 0.304 |
| 6th to 10th day after free period | 10% | 1.023 | 0.424 | 10% | 1.103 | 0.456 |
| 11th day onwards after free period (Average number of days for cargo evacuation post 11th day is assumed to be 3 days) | 5% | 1.364 | 0.169 | 5% | 1.470 | 0.183 |
| **Total** | 100% | - | 0.875 | 100% | - | 0.943 |
| | | | | | | |
| **For Finished Fertilizer:** | | | | | | |
| Free period of 5 days | 0% | 0.000 | 0.000 | 0% | 0.000 | 0.000 |
| Next 5 days starting after free period | 40% | 1.518 | 0.128 | 40% | 1.518 | 0.128 |
| 6th to 10th day after free period | 40% | 2.277 | 0.191 | 40% | 2.277 | 0.191 |
| 11th day onwards after free period (Average number of days for cargo evacuation post 11th day is assumed to be 3 days) | 20% | 3.036 | 0.077 | 20% | 3.036 | 0.077 |
| **Total** | 100% | - | 0.396 | 100% | - | 0.395 |

6.6. In view of the above changes, the upfront tariff earlier proposed by the COPT has also undergone a change. A comparative position with regard to the upfront tariff proposed by the COPT in its initial proposal dated 22 November 2012 and revised proposal dated 5 February 2013 is given below:

(i). Cargo handling charges:

| Particulars | Unit | Initial proposal dated 22 November 2012 | Revised proposal dated 5 February 2013 |
|---|---|---|---|
| | | Rate in ₹ | |
| Coal | Per metric ton | 103.68 | 111.60 |
| Finished Fertilizer | Per metric ton | 169.27 | 169.11 |

(ii). Storage charges:

(**Rate in Rupees per MT per day or part thereof**)

| Description | Initial proposal dated 22 November 2012 | | Revised proposal dated 5 February 2013 | |
|---|---|---|---|---|
| | Coal | Finished Fertilizer | Coal | Finished Fertilizer |
| Free period | 5 days | 5 days | 5 days | 5 days |
| First five days after expiry of free period | 0.682 | 1.518 | 0.735 | 1.518 |
| 6th day to 10th day after expiry of free period | 1.023 | 2.277 | 1.103 | 2.277 |
| From 11$^{th}$ day onwards | 1.364 | 3.036 | 1.470 | 3.036 |

(iii). Miscellaneous charges:

| Particulars | Unit | Initial proposal dated 22 November 2012 | Revised proposal dated 5 February 2013 |
|---|---|---|---|
| | | Rate in ₹ | |
| Coal | Per metric ton | 1.06 | 1.14 |
| Finished Fertilizer | Per metric ton | 9.40 | 9.40 |

7. Subsequently, the COPT vide its e-mail dated 13 February 2013 has furnished the following clarification with regard to its revised proposal:

(i). The power consumption for Coal handling has been taken separately for conveyor operation in addition to other equipment in the Material Handling System as per the Feasibility Report Consultant's advice. This was discussed in detail with the consultant since the same was at variance with the Guidelines. However, the same was re-confirmed by the consultant. Therefore, the same may be retained.

(ii). Two Bagging units of 80 TPH is as per the revised inputs provided by the consultant of the Feasibility Report, who has revised the figure from 40 TPH to 80 TPH. The power consumption of 3 units per hour per bagging unit is also as provided by the consultant. The illumination of 10 hrs per day is taken on the basis of night operation for the number of hours required for Fertilizer handling.

8. The proceedings relating to consultation in this case are available on records at the office of this Authority. An excerpt of the comments received and arguments made by the concerned parties will be sent separately to the relevant parties. These details will also be made available at our website http://tariffauthority.gov.in.

9. With reference to totality of the information collected during the processing of this case, the following position emerges:

(i). The proposal is to fix upfront tariff for handling Coal and Finished Fertilizer envisaged to be handled at the General Cargo Terminal to be developed at the Cochin Port Trust (COPT) under Public Private Partnership (PPP) mode on Design, Build, Finance, Operate and Transfer (DBFOT) basis. The proposal is based on the Guidelines for upfront tariff fixation issued by the (then) Ministry of Shipping, Road Transport and Highways in February 2008.

It has already been clarified to COPT that as per clause 2.2. of the guidelines for upfront tariff setting for PPP projects of February 2008, the tariff caps to be prescribed now for various cargo/ services would not only be applicable to the proposed project but would also be applicable to all projects to be bid out subsequently for identical cargo / services at the COPT during the next five years.

The upfront tariff fixed now is for handling coal by use of shore based ship unloaders and Finished Fertiliser by use of ship’s cranes. In this regard, it is clarified to the COPT that if the method of handling the above mentioned cargoes undergoes a change, tariff may have to be reviewed to capture the change in the method, if any.

(ii). In the proposed general cargo terminal, COPT has considered handling of around 94% of Coal and the balance of around 6% being Finished Fertiliser. When the major commodity proposed to be handled at the facility is Coal, the COPT was requested to explain the reasoning for not envisaging the said facility as a coal terminal and instead envisaging handling of finished fertilizer also in the proposed facility. In this regard, the COPT has clarified that due to serious scarcity of labour and the consequent delays in handling the Finished Fertiliser, there is an urgent need for mechanised handling of Finished Fertiliser at COPT. However, since the low volumes of Finished Fertiliser do not permit a separate terminal for handling

Finished Fertiliser, the COPT feels it prudent to have handling of both Coal and Finished Fertiliser in one terminal. Further, the COPT has confirmed that the operator would not be allowed to handle any cargo other than coal and Finished Fertilizer at the proposed facility and also that the operator will not be permitted to convert the Finished Fertiliser handling facility to Coal handling facility.

(iii). The COPT has filed its proposal in November 2012. Subsequently, based on the information/ clarifications sought by us during the processing of the case and based on the decisions taken at the joint hearing on 29 January 2013, the COPT under cover of its letter dated 5 February 2013 has filed a revised proposal. The revision is only with reference to modification in the estimation of power cost forming part of the estimated operating costs. The other parameters like optimal capacity, capital costs remain unchanged. The revised proposal of the COPT dated 5 February 2013 along with the information/ clarifications furnished by COPT during the processing of the case in reference are considered in this analysis.

(iv). As brought out earlier, the proposed facility envisages handling of two different commodities i.e. Coal and Finished Fertilizer. Hence, the norms prescribed for a multipurpose berth may appear to be more relevant in the case under reference. However, the COPT has adopted two different set of norms (one set relating to Coal terminal for handling coal and another set relating to multipurpose berth for handling finished fertilizer) instead of the norms prescribed for the multipurpose berth. It is noteworthy that by following such an approach, the COPT has actually considered better handling rates for Coal and Finished Fertiliser than the handling norms for the same cargo prescribed in the norms relating to Multipurpose berth. It is also worthy of noting that since major cargo of Coal is proposed to be handled through an automated Material Handling System at the proposed facility, adoption of the norms prescribed in the Guidelines relating to mechanised Coal Terminal is found to be more appropriate.

(v). <u>Optimal Terminal Capacity:</u>

(a). Optimal Quay capacity:

(i). Coal:

(a). Considering the anticipated handling of coal vessels of the average parcel size of 53400 tonnes and considering the ship day output of 42000 tonnes per day by use of 2 ship unloaders, the COPT has arrived at the unloading time of 1.27 days. To this, the COPT has considered additional 0.125 days towards berthing/ de-berthing, thus translating into a ship day output of 38143 tonnes per day (42000 tonnes/ 1.4 days) with the deployment of 2 shore based ship unloaders. Considering the ship day output of 38143 tonnes per day for 365 days for 85% of cargo share of coal and at 70% utilisation, the COPT has calculated the optimal quay capacity of coal at 8.28 million metric tonnes per annum.

(b). The average parcel size of 53400 tonnes is based on the port's judgment that 90% of the vessels bringing coal would be panamax vessels with a parcel size of 56000 tonnes and 10% of the vessels bringing coal would be handymax vessels with a parcel size of 30000 tonnes.

(c). (i). Considering deployment of 2 shore based ship unloaders and each unloader with an unloading capacity of 1500 tonnes per day, the COPT has

calculated the per day output at 42000 tonnes per day (1500 tonnes per hour per unloader * 2 unloaders * 70% utilisation * 20 hours).

(ii). The formula prescribed in the Upfront Guidelines for determination of quay capacity stipulates consideration of utilisation factor of 70% in the overall quay capacity calculation. However, as seen above, the COPT has applied the factor of 70% to arrive at the per day output of ship unloaders (i.e. 1500 tonnes * 2 unloaders * 70%). The COPT is also seen to have discounted the operating hours by considering only 20 hours of operation. And in the end, the factor of 70% has been considered in the overall capacity calculation also as prescribed in the norms.

(iii). With reference to a specific query in this regard, the COPT has stated that the factor of 20 hours of operation and 70% utilization are the practical realizable capacity based on Efficiency as per the Feasibility Report. Further, the COPT has stated that the aforesaid factors are required to be considered exclusively for the unloaders on account of their break down, repairs, etc. separately from the utilization factor of 70% in the overall quay capacity calculation.

(iv). In this context, as brought out by COPT itself, it is relevant here to mention that at the time of fixing the upfront tariff for mechanised handling of iron ore at Visakhapatnam Port Trust (VPT) vide Order no.TAMP/32/2010-VPT dated 29 November 2010, the VPT had considered the handling rate of 43200 tonnes per day based on the assumed handling rate of ship loader at 3000 tonnes per hour for 24 hours and by reckoning the efficiency at 60% to factor the time taken for operational requirements like hatch changing, draft survey, initial arrangements, etc. over and above the general norm of 70% prescribed in the Guidelines. Infact, the VPT had stated that the said handling rate of 43200 tonnes per day was even higher than the actual highest loading rate achieved by the VPT in the past three years at the mechanised iron ore berth at 35358 tonnes per day. This position was relied upon in the said Order.

Considering that the aggregate capacity of two ship unloaders proposed to be deployed at the facility at COPT for handling coal is also 3000 tonnes per hour, it is found appropriate to consider the handling rate of 43200 tonnes per day as accepted in the case of VPT instead of 42000 tonnes per day as considered by the COPT. By doing this, the concern of COPT to account for discounting due to efficiency limitations is also taken care of. It is relevant here to mention that time taken for operational

requirements has been recognised and factored in the operational efficiency of the excavators at the KPT for the Barge Handling facility in June 2012.

(v). Thus, a per day output has been worked out at 43200 tonnes per day (1500 tonnes per hour per unloader * 2 unloaders * 60% utilisation * 24 hours). In this context, it is noteworthy that the upfront guidelines for the coal terminal for the unloading operation prescribes a norm of 35000 tonnes per day for panamax vessels and 15000 tonnes per day for handymax vessels. Given that the ratio of panamax vessels and handymax vessels is 90:10, as discussed earlier, the per ship day output works out to 33000 tonnes (35000 tonnes * 90% + 15000 tonnes * 10%), which is lower as compared with the handling rate of 43200 tonnes per day considered by us in the analysis.

(vi). This results in a very nominal reduction in the unloading time from 1.27 days estimated by the COPT to 1.24 days.

(d). The COPT has considered an additional time of 0.125 days i.e. 3 hours towards berthing/ de-berthing. According to COPT, the berthing takes into account the time from boarding of pilot for inward movement to his disembarking and de-berthing takes into account the time from boarding of pilot for outward movement and his disembarking at the outer anchorage. In this regard, it is relevant here to mention that at the time of fixation of upfront tariff for the riverine multipurpose jetty at Outer Terminal-I of Kolkata Port Trust, an additional 6 hours had been considered towards service time to cover berthing/ de-berthing, clearance etc. In this regard, it is to be noted that the said 6 hours additional time considered in the case of KOPT included the waiting time for tide, which is not relevant in the case of COPT.

(e). Considering an additional 0.125 days towards berthing/ de-berthing in addition to the time taken for unloading at 1.24 days, the ship day output works out to 39233 tonnes per day with the deployment of 2 ship unloaders as against the ship day output of 38143 tonnes per day, as assessed by the port.

(f). As stated earlier, Coal to the tune of around 94% is envisaged to be handled at the facility. However, the COPT is seen to have considered the share of coal traffic at 85% in the capacity calculation. In this regard, it is given to understand that handling of Finished fertilizer takes more time as compared to Coal. Therefore, the ratio of the time taken to handle coal and finished fertilizer at 85:15 is reported to have been considered by the COPT in the capacity calculation.

(g). Considering the ship day output at 39233 tonnes per day for 365 days for 24 hours at 70% utilisation, the optimal quay capacity for coal works out to 8.52 million metric tonnes per annum, instead of 8.28 million metric tonnes per annum assessed by the port.

(ii). Finished Fertiliser:

(a). Considering the anticipated handling of finished fertilizer vessels of the average parcel size of 28000 tonnes and considering the unloading rate of 14000 tonnes per day by use of ship's 4 cranes, the COPT has arrived at the unloading time of 2 days. To this, the COPT has considered additional 0.125 days towards berthing/ de-berthing, thus translating into a ship day output of 13176.47 tonnes per day Considering the ship day output of 13176.47 tonnes per day for 365 days for 15% of cargo share of finished fertilizer and at 70% utilisation, the COPT has calculated the optimal quay capacity of finished fertilizer at 0.50 million metric tonnes per annum.

(b). The average parcel size of 28000 tonnes is reported to be based on the standard size of Handymax Finished Fertilizer carriers and is also reported to be found closer to the actual size of Finished Fertilizer vessels handled at COPT in the past.

(c). (i). Considering deployment of 4 ship's cranes and each crane with an unloading capacity of 250 tonnes per day, the COPT has calculated the unloading rate at 14000 tonnes per day (250 tonnes per hour per crane * 4 cranes * 70% utilisation * 20 hours).

(ii). As reported by the COPT, four ship cranes with a rated capacity of 250 tonnes per hour each is a standard design in the Handymax vessel.

(iii). Here also, the COPT is seen to have applied the factor of 70% to arrive at the per day output of ship's cranes (i.e. 250 tonnes * 4 cranes * 70%). The COPT is also seen to have discounted the operating hours by considering only 20 hours of operation. And in the end, the factor of 70% has been also considered in the overall capacity calculation as prescribed in the norms.

(iv). Given that it may be necessary to factor the time taken for operational requirements like breakdown, repairs etc., and when all type of delays are equally applicable to ship's cranes and shore based cranes as reported by the COPT, a discounting factor of 60% is considered for the handling rate of ship cranes also, as considered incase of shore based ship unloaders for handling coal as discussed earlier, over and above the general norm of 70% prescribed in the Guidelines, following the approach adopted in the case of VPT.

(v). Thus, a per day output has been worked out at 14400 tonnes per day (250 tonnes per hour per crane * 4 cranes * 60% utilisation * 24 hours), as against the per day output of 14000 tonnes considered by the port.

(vi). This results in a very nominal reduction in the unloading time from 2 days as estimated by the COPT to 1.94 days.

(d). The COPT has considered an additional time of 0.125 days i.e. 3 hours towards berthing/ de-berthing. For the reasons mentioned earlier, the same has been factored in the capacity calculation.

(e). Considering an additional 0.125 days towards berthing/ de-berthing in addition to the time taken for unloading at 1.94 days, the ship day output works out to 13530 tonnes per day with the deployment of 4 ship's cranes as against the ship day output of 13176 tonnes per day, as assessed by the port.

(f). As stated earlier, Finished Fertiliser to the tune of around 6% is envisaged to be handled at the facility. However, the COPT is seen to have considered the share of Finished Fertilizer traffic at 15% in the capacity calculation reckoning with the more time involved in handling Finished Fertiliser cargo. For the reasons stated earlier, the ratio of the time taken to handle coal and finished fertilizer at 85:15 reported to have been considered by the COPT in the capacity calculation, is considered in the analysis.

(g). Considering the ship day output at 13530 tonnes per day for 365 days for 24 hours at 70% utilisation, the optimal quay capacity for Finished Fertilizer works out to 0.52 million metric tonnes per annum, as against 0.50 million metric tonnes per annum assessed by the port.

(iii). Thus, the total quay capacity of Coal and Finished Fertilizer put together works out to 9.04 million metric tonnes per annum as against the total quay capacity of 8.79 million metric tonnes per annum as assessed by the Port.

(b). Optimal yard capacity:

(i). Coal:

(a). The yard capacity is to be assessed for the area of the yard made available by the port for development. The COPT has stated that the total area available for coal handling is 17 hectares. Out of this, the effective back up area for Coal Storage is 15.2 hectares after deducting 0.2 hectares for dedicated railway siding and allowing a discounting of 10% due to the irregular shape of the yard. The COPT has also confirmed that the proposed allotment is in line with the Land use plan of the Port. The judgment of the port for the total area requirement for handling coal is relied upon in the analysis.

(b). The upfront guidelines for the coal terminal prescribe the stacking factor norm at 3 tonnes per square metre. The COPT has proposed the stacking factor at 5 tonnes per square metre. It is reported by the COPT that the yard being on a reclaimed land, further increase in stack height is not possible and that considering the soil conditions of the yard, the stacking factor at 5 tonnes per square metre is only possible. This position is accepted based on the reasoning given by the COPT though a stacking factor 6 tonnes per sq. metre was considered while fixing upfront tariff for coal terminal at VPT.

M/s. Adani Ports and Special Economic Zone Ltd. (APSEZL) is of the view that stack height of 5 tonnes per square metre cannot be practically achieved as it would require a stack height of beyond 16 meters, which would be impractical. However, the APSEZL has not furnished any analysis in support of its statement. Therefore, the stacking factor of 5 tonnes per square metre proposed by the port is considered in the analysis, which is also seen to be as per the Feasibility Report.

(c). The upfront guidelines for the coal terminal prescribe the plot turnover ratio at 12 considering an average dwell time of 30 days. However, according to COPT, since the proposed facility envisages automated handling of coal where evacuation would be mainly through rail, the average dwell time of Coal at the proposed facility is envisaged to be 15 days, as compared to the existing scenario of dwell time of 30 days where evacuation is mainly by roads. The APSEZL has stated that the Dwell Time of cargo at 15 days is on a lower side and that 20 days of dwell time would be more realistic. The 20 days of dwell time mentioned by APSEZL is not substantiated by any analysis. The COPT is of the view that the assumption of 15 days of dwell time is optimistic. Hence, the plot turnover ratio of 24 is relied upon in the analysis.

(d). The optimal yard capacity for coal, based on area of stack yard, the stacking factor and the turnover ratio as explained above and applying the formula prescribed in the upfront guidelines is assessed at 8.94 Million Metric Tonnes Per Annum.

(ii). Finished Fertiliser:

(a). The COPT has stated that the backup area for the Finished Fertiliser is 2.38 hectares. The judgment of the port for the backup area requirement for handling Finished Fertiliser is relied upon in the analysis.

(b). The upfront guidelines do not prescribe norm towards the stacking factor for the finished fertilizer. The COPT has considered the stacking factor at 3 tonnes per square metre on the ground that the volume of finished fertilizer is low due to which mechanical stacking is not envisaged and that in manual stacking using pay loaders, the stacking factor cannot exceed 3 Tonnes per square metre. Infact, the port has stated that in the past the

average stack density has been in the range of 1.5 to 2 Tonnes per square metre. The COPT is seen to have considered a higher stacking factor, which is relied upon in the analysis.

(c). The upfront guidelines do not prescribe norm towards the turnover ratio for the finished fertilizer. The COPT has considered the turnover ratio at 12 which translates to a dwell time of 30 days. According to COPT since the proposed facility envisages automation in bagging as well as loading, the average dwell time of Finished Fertiliser at the proposed facility is envisaged to be 30 days, as compared to the existing scenario of dwell time of 60 days where unitization and loading for delivery is fully manual. Therefore, the position reported by the COPT for the plot turnover ratio of 12 is considered.

(d). The optimal yard capacity for finished fertilizer, based on area of stack yard, the stacking factor and the turnover ratio as explained above and applying the formula prescribed in the upfront guidelines is assessed at 0.42 Million Metric Tonnes Per Annum.

(iii). Thus, the total yard capacity of coal and Finished Fertilizer put together works out to 9.36 million metric tonnes per annum as assessed by the Port.

(c). As per Clause 3 of the upfront guidelines of February 2008, the optimal capacity of the terminal is the lower of the optimum quay and yard capacities. Accordingly, the optimal capacity of the proposed terminal is considered at 8.94 Million Metric Tonnes Per Annum instead of 8.70 Million Metric Tonnes Per Annum as assessed by the COPT, as shown below:

(**Figures in metric tonnes**)

| **Particulars** | **As given by COPT** | | **As worked out by us** | |
|---|---|---|---|---|
| | **Coal** | **Finished Fertiliser** | **Coal** | **Finished Fertiliser** |
| Optimal Quay Capacity | 8283762 | 504988 | 8520351 | 518545 |
| Optimal Yard Capacity | 8937600 | 419832 | 8937600 | 419832 |
| Lower of the Quay and Yard Capacity | 8283762 | 419832 | 8520351 | 419832 |
| **Total Optimal Capacity** | **8703594** | | **8940183** | |

(vi). Capital Cost:

The capital cost for the handling activity as estimated by the COPT is ₹221.30 crores of which ₹45.54 crores is estimated towards civil capital costs and ₹165.22 crores is estimated for equipment capital costs.

(a). Civil Cost:

(i). Coal:

The upfront tariff guidelines broadly indicate the civil works involved for the coal terminal and require the port to estimate civil cost. The nature of the civil works proposed to be undertaken at the facility generally adheres to normative list of items stipulated in the guidelines for the coal terminal. The COPT has estimated the civil costs relating to handling of coal to the tune of ₹32.40 crores. This estimated cost pertains to Wind Shield Construction,

Conveyor Foundation, Stack yard Development, Buildings, ETP and Utility Blocks, Utilities (Water Supply & Fire Fighting) and Miscellaneous Costs relating to dedicated rail line, rail track shifting, tracks for mobile hopper & retrofitting works.

The COPT has furnished cost estimates in respect of some of the civil works. However, the entire estimated civil costs is seen to be as per the Feasibility Report and hence relied upon in the analysis.

(ii). Finished Fertiliser:

The upfront tariff guidelines broadly indicate the civil works involved for the multipurpose berth and require the port to estimate civil cost. The nature of the civil works proposed to be undertaken at the facility to handle the Finished Fertiliser generally adheres to normative list of items stipulated in the guidelines for the multipurpose berth. The COPT has estimated the civil costs relating to handling of Finished Fertiliser to the tune of ₹13.14 crores. This estimated cost pertains to Stack yard Development, Warehouses in Fertilizer Yards, Roads and Miscellaneous costs relating to additional dedicated rail siding.

The COPT has furnished cost estimates in respect of some of the civil works. However, the entire estimated civil costs is seen to be as per the Feasibility Report and hence relied upon in the analysis.

(b). Equipment Cost:

(i). Coal:

(a). For handling coal, the COPT has envisaged the deployment of 2 nos. of 1500 TPH Ship Unloaders, 2000 m. length of Conveyor, 2 nos. of Rail Mounted Hoppers, 2 nos. of 3000 TPH Stacker Reclaimer, 10 nos. of Hydraulic Excavator and 2 nos. of Wagon Loader. The list of equipment proposed to be deployed at the facility generally adheres to the normative list of equipment prescribed in the guidelines for the coal terminal except for the deployment of 2 Rail Mounted Hoppers and 10 Hydraulic Excavator.

Inspite of a specific request to furnish an analysis to justify the number of each type of equipment envisaged to handle coal to show that given the productivity of each type of the equipment, the quantity of different equipment commensurates with the quantity of cargo estimated to be handled, the COPT has not furnished such analysis except for stating that with the ship unloaders and stacker/ reclaimer system there is no requirement of cranes, as prescribed in the Guidelines.

Clause 3.2. of the guidelines for upfront tariff setting gives flexibility to this Authority to make necessary adjustment in the norms based on the justification furnished by the port in view of the port's specific conditions having impact on the norms prescribed in the guidelines. Since the deployment of the above mentioned equipment is as per the Feasibility Report and also since, none of the users/

prospective bidders have objected to the equipping plan envisaged by the COPT, this Authority is inclined to consider the equipping plan as envisaged by the COPT for handling Coal.

(b). The COPT has furnished documentary evidence in support of the cost of some of the equipment. Inspite of a specific request, the COPT has not furnished detailed workings to arrive at the cost of each of the equipment. The COPT has just furnished some basic details relating to the cost of some of the equipment. In the absence of workings, we are not in a position to correlate the documentary evidence with the cost of each of the equipment. However, from the cost estimates, it is seen that the COPT has factored in the customs duty, transportation, insurance etc. in the cost of equipment. The cost of each of the equipment as furnished by the port is relied upon in the analysis.

(c). The cost of electrical utilities at ₹1 crore has been considered at lump sum, as furnished by the Port.

(ii). Finished Fertiliser:

(a). For handling Finished Fertiliser, the COPT has envisaged the deployment of 12 nos. of Dumpers, 2 nos. of Bagging machines, 4 nos. of 5MT Pay loaders, 6 nos. of Telescopic fertilizer loading arm and 4 nos. of Mobile Hopper at Fertilizer Jetty.

Inspite of a specific request to furnish an analysis to justify the number of each type of equipment envisaged to handle to show that given the productivity of each type of the equipment, the quantity of different equipment commensurates with the quantity of cargo estimated to be handled, the COPT has not furnished such analysis

Since the deployment of the above mentioned equipment is as per the Feasibility Report and also since, none of the users/ prospective bidders have objected to the equipping plan envisaged by the COPT, this Authority is inclined to consider the equipping plan as envisaged by the COPT for handling Finished Fertiliser.

(b). The COPT has furnished documentary evidence in support of the cost of some of the equipment. Inspite of a specific request, the COPT has not furnished detailed workings to arrive at the cost of each of the equipment. The COPT has just furnished some basic details relating to the cost of some of the equipment. In the absence of workings, we are not in a position to correlate the documentary evidence with the cost of each of the equipment. However, from the cost estimates, it is seen that the COPT has factored in the customs duty, transportation, insurance etc in the cost of equipment. The cost of each of the equipment as furnished by the port is relied upon in the analysis.

(c). The miscellaneous capital cost is estimated at 5% on civil and equipment cost which is as per the norms prescribed in the guidelines for coal terminal as well as for the multipurpose berth.

(viii). Return on capital employed is calculated at 16% of the estimated revised capital cost as per the norms prescribed in the guidelines.

(ix). Operating Cost:

(a). Coal:

(i). Power cost:
The upfront guidelines for the coal terminal prescribe the norm for calculating the power cost at 1.4 units per tonne. The COPT had initially considered the power consumption of 1.4 units per tonne. Since it was not clear whether the power required to operate the Conveyor is factored in the power cost estimated and with reference to a query in this regard, the COPT has considered power consumption of 0.5 units per hour per meter run for the Conveyor system in addition to the power consumption of 1.4 units per tonne. Subsequently, the COPT has stated that though the same is at variance with the Guidelines, it is retained.

In this regard, it is relevant to mention here that the norm of consumption of power at 1.4 units per tonne prescribed in the guidelines is with reference to the mechanised handling of coal with the deployment of conveyors also. This norm has been considered while determining the upfront tariff for the mechanised handling of coal at Paradip Port Trust (PPT), Mormugao Port Trust (MOPT), V.O. Chidambaranar Port Trust (VOCPT) etc. The COPT has not furnished any specific justification to consider the additional power consumption for Conveyors. Hence, the consumption of power is considered at 1.4 units per tonne as prescribed in the guidelines.

The cost of power at ₹8.57 per unit is supported by documentary evidence and hence, relied upon in the analysis.

(ii). Fuel Cost:
The fuel cost has been estimated by the port for operation of the Excavators. The COPT has considered fuel consumption of 32 litres per hour per Excavator for operation of 10 numbers of Excavators for 26286 operating hours.

The COPT has produced document in support of the fuel consumption of 32 litres per hour per Excavator.

The operating hours of 26286 is based on the position of 10 Nos. of excavators each with rated capacity of 450 TPH with 70% of working efficiency to handle the projected cargo i.e. (8.28 MMTPA/ (450 tonnes per hour * 70%). Since the optimal capacity of coal is modified to 8.52 MMTPA, operating hours of 27049 is considered in the analysis.

The unit cost of fuel considered by COPT at ₹44.50 per litre is updated to ₹50.32 per litre to reflect the prevailing market rate.

(iii). As per the norms prescribed in the guidelines for coal terminal, the repairs and maintenance cost on civil work is estimated by COPT at 1% on the civil cost and 7% on mechanical equipment.

(iv). Insurance cost is estimated at 1% and other expenses are estimated at 5% of the gross fixed assets relevant for the coal handling activity, which is in line with the norms prescribed in the guidelines. However, while considering the gross fixed assets, the COPT has not considered the portion of the miscellaneous capital costs relevant for the coal. The same has been considered by us in our calculation.

(v). Depreciation is computed @ 3.34% on civil cost and 10.34% on equipment cost as per the rates prescribed in the Companies Act, 1956 under the Straight Line Method for the relevant group of assets and is in line with the guidelines for upfront tariff fixation.

The COPT has not calculated depreciation on the other miscellaneous assets. Hence, depreciation has been calculated on other assets duly considering the rate in proportion to the component of civil and equipment cost.

(vi). The guidelines for upfront tariff stipulate that lease rent for port land is to be estimated based on the rates prescribed in the Scale of Rates of the respective Major Port Trusts. Lease rental is estimated by the port for an area of 170000 square metres, relevant for coal handling.

This Authority vide its Order no.TAMP/33/2007-COPT dated 4 May 2010 has fixed lease rentals for the port land at various locations. The land proposed to be allotted by the COPT to the Operator is reported to be in the Willingdon Island. The COPT has considered the lease rent approved for Willingdon Island for Commercial/ office (other than warehouse purposes) as approved in May 2010 at ₹222.30 per sq.m as base. Considering 2% compounded escalation for two years, the lease rent works out to ₹231.28 per sq.m instead of ₹230/- per sq.m considered by the COPT. The escalation factor of 3.45% reported to be considered by the COPT to arrive at the rate of ₹230/- per sq.m considered in its calculation appears to be proportionate factor as of 1 April 2012. The basis for the cut off date of 1 April 2012 remains unexplained. The expenditure towards licence fee is, therefore, determined for an area of 170000 sq.m at the rate of ₹231.28 per sq.m and considered at ₹3.93 crores in the analysis.

(b). Finished Fertiliser:

(i). Power cost:
The COPT has calculated Power costs based on the consumption of power for bagging unit and for illumination.

In this regard, it is relevant to mention here that the COPT had in its initial proposal of November 2012 estimated power costs for the ship's crane to be used for handling finished fertilizer. With reference to a query to justify the power consumption of 100 units per hour per crane, the COPT in its revised proposal of February 2013 has excluded the power costs for the ship's crane operations since the unloading operation is to be carried out by the ship's crane and has, instead, now considered the power for two bagging machines and illumination.

Considering 2 nos. of bagging units and each bagging unit with a capacity of 80 tonnes per hour and a power consumption of 3 units per hour per bagging unit, the COPT has worked out the

operating hours of the bagging units at 2625 to handle 0.42 million metric tonnes per annum. However, the capacity of the bagging unit at 80 tonnes per hour was found to be at variance with the position contained in the Feasibility Report which states capacity of the bagging unit as 40 tonnes per hour. When sought to clarify, the COPT has stated that the Consultant has revised the capacity from 40 to 80 tonnes. The revised position is relied upon.

The COPT has relied upon the power consumption of 3 units per hour estimated by the Consultant, which is relied upon in this analysis.

With regard to power consumption for illumination, the COPT has considered consumption of 120 units of power per hour for 1312.5 hours (2625 hours for bagging unit/ 20 hours per day * 10 hours per day). Consideration of 20 hours in a day does not arise as the optimal capacity has been calculated reckoning with the operation of 24 hours. The illumination of 10 hours per day is reported to be for the illumination required during night operations. The basis for the power consumption of 120 units per hour remains unexplained. Based on the judgment of the COPT the power consumption for illumination is considered in the analysis.

(ii). Fuel costs:

The fuel costs have been estimated by the port for operation of Trucks and Pay loaders.

Incase of trucks, the fuel cost has been estimated for 8750 hours of operation of trucks and fuel consumption of 13 litres per hour. Considering the capacity of each truck at 16 tonnes and the time required to handle 16 tonnes at 20 minutes, the COPT has arrived at the operating hours of truck at 8750 hours to handle 0.42 million metric tonnes per annum. The COPT has produced document in support of the fuel consumption of 13 litres per hour. Calculation for fuel cost of trucks is relied upon in the analysis.

Incase of pay loaders, the fuel cost has been estimated for 14000 hours of operation of pay loaders and fuel consumption of 9 litres per hour. Considering the capacity of each pay loader at 5 tonnes and the time required to handle 5 tonnes at 10 minutes, the COPT has arrived at the operating hours of pay loaders at 14000 hours to handle 0.42 million metric tonnes per annum. The COPT has produced document in support of the fuel consumption of 9 litres per hour. Calculation for fuel cost for Pay Loaders is relied upon in the analysis.

(iii). As per the norms prescribed in the guidelines for multipurpose berth, the repairs and maintenance cost on civil work is estimated by COPT at 1% on the civil cost and 5% on mechanical equipment.

(iv). Insurance cost is estimated at 1% and other expenses are estimated at 5% of the gross fixed assets relevant for the coal handling activity, which is in line with the norms prescribed in the guidelines. However, while considering the gross fixed assets, the COPT has not considered the portion of the miscellaneous capital costs relevant for the finished fertilizer. The same has been considered by us in our analysis.

(v). Depreciation is computed @ 3.34% on civil cost and 10.34% on equipment cost as per the rates prescribed in the Companies Act, 1956 under the Straight Line Method for the relevant group of assets and is in line with the guidelines for upfront tariff fixation.

The COPT has not calculated depreciation on the other miscellaneous assets. Hence, depreciation has been calculated on other miscellaneous assets duly considering the rate in proportion to the component of civil and equipment cost.

(vi). The guidelines for upfront tariff stipulate that lease rent for port land is to be estimated based on the rates prescribed in the Scale of Rates of the respective Major Port Trusts. Lease rental is estimated by the port for an area of 23800 square metres, relevant for finished fertilizer handling.

For the reasons stated earlier, the expenditure towards the licence fee is therefore, determined for an area of 23800 sq.m at the rate of ₹231.28 per sq.m and considered at ₹0.55 in the analysis.

(x). The statement for fixing upfront tariff submitted by the COPT has been modified in line with the above analysis. A copy of the modified statement is attached as **Annex - I**.

(a). Coal:

(i). The annual revenue requirement for handling coal which is the sum of the operating cost and return on capital employed is estimated at ₹92.37 crores as against ₹94.29 crores estimated by the port.

(ii). The COPT has proposed to apportion 98% of the estimated revenue requirement towards handling charges, and 1% each from storage charges and miscellaneous charges, as prescribed in the guidelines for coal terminal.

(iii). Considering the revenue requirement to be realised from handling coal and the total capacity of coal, the per tonne rate for handling coal works out to ₹106.24, as against ₹111.60 per tonne estimated by the port.

(iv). The entire coal cargo is estimated to be only foreign in nature. The COPT has stated that even in the past, it has not handled any coastal traffic of coal at COPT. Since the entire coal cargo is envisaged to be foreign cargo, the COPT has not proposed any rate for handling coastal coal cargo.

In this regard, it is relevant to mention here that in few cases relating to fixation of upfront tariff at VPT, such as handling of coal at General Cargo Berth, mechanised fertiliser handling facilities, at the Outer Terminal I at KOPT, etc., where the entire cargo was expected to be foreign, the upfront tariff was determined to meet the cargo capacity from foreign cargo. Concessional upfront rates for coastal cargo were prescribed to comply with the Government guidelines though it did not have any impact on the revenue realisation. In the instant case also, the rate for coastal coal cargo is prescribed to comply with the Government guidelines.

(v). The COPT has proposed a provision to state that the handling charge is a composite charge and includes charges for unloading from vessel, transfer to stockyard, storage at stack yard upto 5 days free period, loading on to the wagons/ trucks, wharfage and all other miscellaneous services not specifically prescribed in the Scale of Rates.

(vi). In the proposed Scale of Rates, the COPT has proposed a free period of 5 days for coal. The upfront guidelines for the coal terminal prescribe a free period of 25 days. The COPT has reasoned that with automated handling of coal and with evacuation mainly through rail, the average dwell time of Coal is expected to be only 15 days. COPT is of the view that a free period of 5 days has been prescribed so as to encourage faster evacuation.

The port has considered 25% of the coal cargo to attract storage charge beyond the proposed free period of 5 days. The port has proposed differential rates for the storage of coal. From the workings furnished by the COPT, it is seen that the COPT has not taken into account the cumulative volume of cargo that may remain in the storage yard in the preceding chargeable slab period to arrive at the per tonne per day storage rate. The calculation of COPT considers only the percentage of cargo estimated to be evacuated in each of the slab period and does not capture the percentage of cargo that may remain in each slab period before evacuation during the respective succeeding slab period. The said error is rectified in our calculation. Accordingly, the rate for the first slab of 5 days after the expiry of free days is calculated at ₹0.41 per tonne per day. The rate for the subsequent slabs is prescribed at 1.5 times and 2 times the rate of the first slab, as proposed by COPT.

(vii). Based on the modified revenue requirement, the upfront tariff cap for miscellaneous charge is prescribed at ₹1.08 per tonne as against ₹1.14 per tonne proposed by the Port. The miscellaneous charge is envisaged to cover miscellaneous services such as environment and management, sweeping of cargo on the wharf, safety measures, etc.

(b). Finished Fertiliser:

(i). The annual revenue requirement for handling Finished Fertiliser which is the sum of the operating cost and return on capital employed is estimated at ₹8.12 crores as against ₹7.89 crores estimated by the port.

(ii). The COPT has proposed to apportion 95% of the estimated revenue requirement towards handling charges, and 5% each from storage charges and miscellaneous charges, as prescribed in the guidelines for multipurpose cargo berth.

(iii). Considering the revenue requirement to be realised from handling Finished Fertiliser and the total capacity of Finished Fertiliser, the per tonne rate for handling Finished Fertiliser works out to ₹174.10, as against ₹169.25 per tonne estimated by the port.

(iv). The entire Finished Fertiliser cargo is estimated to be only foreign in nature. The COPT has stated that even during the past it has not handled any coastal traffic of Finished Fertiliser at COPT.

Since the entire Finished Fertiliser cargo is envisaged to be foreign cargo, the COPT has not proposed any rate for handling coastal Finished Fertiliser cargo.

For the reasons stated earlier and to comply with the Government guidelines on coastal policy, the rates for coastal finished fertilizer cargo is prescribed.

(v). The COPT has proposed a provision to state that the handling charge for finished fertilizer is a composite charge and includes charges for unloading from vessel, transfer to sheds, storage at the sheds upto free period of 5 days, bagging, loading on to trucks/ wagons, wharfage and all other miscellaneous services not specifically prescribed in the Scale of Rates.

(vi). In the proposed Scale of Rates, the COPT has proposed a free period of 5 days for finished fertilizer. The COPT has reported that no free days have been allowed in the past for storage of finished fertiliser. Since the prescription of free days would be in the interest of the users, the same is considered.

The port has considered the entire cargo of finished fertilizer to attract storage charge beyond the proposed free period of 5 days. The port has proposed differential rates for the storage of finished fertilizer. From the workings furnished by the COPT, it is seen that the COPT has not taken into account the cumulative volume of cargo that may remain in the storage yard in the preceding chargeable slab period to arrive at the per tonne per day storage rate. The calculation of COPT considers only the percentage of cargo estimated to be evacuated in each of the slab period and does not capture the percentage of cargo that may remain in each slab period before evacuation during the respective succeeding slab period. The said error is rectified in our calculation. Accordingly, the rate for the first slab of 5 days after the expiry of free days is calculated at ₹0.90 per tonne per day. The rate for the subsequent slabs is prescribed at 1.5 times and 2 times the rate of the first slab, as proposed by COPT.

(vii). Based on the modified revenue requirement, the upfront tariff cap for miscellaneous charge is prescribed at ₹9.67 per tonne as against ₹9.39 per tonne proposed by the Port. The miscellaneous charge is envisaged to cover miscellaneous services such as environment and management, sweeping of cargo on the wharf, safety measures, etc.

(xi). As reported by the COPT, the private developer is not expected to carry out any capital investment on berth. The berth hire charges would be collected and retained by COPT. Hence, no upfront berth hire charges have been proposed by the Port.

(xii). In the proposed upfront schedule, the COPT has proposed definition for the term day. The definition is found to be in line with the definition prescribed for the said term in the Scale of Rates of COPT.

(xiii). The COPT has also proposed some conditionalities governing levy of interest on delayed payments/ refunds, rounding off the bills, conditionalities governing the flexibility provided to the terminal operator to levy charges lower than ceiling rates, non-levy of charges for delay beyond a reasonable level attributable to the terminal etc., which are found to be in line with the general conditionalities prescribed in the Scale of Rates.

(xiv). Under the storage charges schedule, the COPT has proposed conditionalities like exclusion of customs notified holidays and port non workings days for the calculation of free period, free period to reckon from the day following the day of completion of final discharge, storage charges to not accrue for period when the operator is not in a position to deliver the cargo due to reasons attributable to the operator, which are found to be in line with similar conditionalities prescribed in the Scale of Rates.

10.1. As per clause 2.8 of the Guidelines, the tariff caps will be indexed to inflation but only to an extent of 60% of the variation in Wholesale Price Index (WPI) occurring between 1 January 2008 and 1 January of the relevant year. Such automatic adjustment of tariff caps will be made every year and the adjusted tariff caps will come into force from 1 April of the relevant year to 31 March of the following year. In the instant case, since the estimation of capital cost and unit rate of operating cost considered in the upfront tariff calculation are as of the year 2012 as reported by the COPT, it is found appropriate and relevant to prescribe the base WPI to be considered for automatic adjustment every year as 1 January 2012. The COPT has also proposed 1 January 2012 as the base WPI for such automatic adjustment every year, which is approved.

10.2. As specified in clauses 2.9.1. and 2.9.2. of the guidelines, before commencement of commercial operations, the private operator shall approach this Authority for notification of Scale of Rates containing the approved ceiling rates and the statement of conditions, as required under Section 48 of the Major Port Trusts Act, 1963.

10.3. As per clause 3.8.5 of the guidelines, if any question arises requiring clarifications or interpretation of the Scale of Rates and the statement of conditionalities, the matter shall be referred to this Authority and its decision in this regard will be binding on the operator.

10.4. The performance norms for the project should be clearly brought out in the bid documents. The private operator is expected to perform at least at the performance norms brought out in the bid document/ concession agreement.

10.5. The upfront tariff approved by this Authority is with reference to the use of ship unloaders for handling coal and use of ship's cranes for handling finished fertilizer. If there is any change in the equipping plan considered in this analysis, the upfront tariff will have to be reviewed.

10.6. The actual performance of the private operator will be monitored by this Authority. If any complaint regarding quality of service is received, this Authority will enquire into such allegation and forward its findings to the Cochin Port Trust. If any action is to be taken against the private operator, the Cochin Port Trust shall initiate appropriate action in accordance with the provisions of the relevant Concession Agreement.

10.7. During the commercial operation at the terminal, within 15 days from the end of every quarter, the private operator shall submit to this Authority through the Cochin Port Trust a report containing the terminal's physical and financial performance during the preceding three months.

11. In the result, and for the reasons given above, and based on a collective application of mind, this Authority approves the upfront tariff caps for handling coal and finished fertilizer at the Cochin Port Trust which is attached as **Annex - II**.

**(T.S. Balasubramanian)**
Member (Finance)

ANNEX - I

## UPFRONT TARIFF CALCULATION FOR THE GENERAL CARGO TERMINAL AT COCHIN PORT TRUST.

₹ in crores

| Sr. No. | Particulars | Revised estimates furnished by COPT | Estimates modified by TAMP |
|---|---|---|---|
| I | **Optimal capacity** | | |
| (a) | **Optimal Quay Capacity** | | |
| (i) | **Coal:** | | |
| | Parcel size per Panamax Vessel (in tonnes) (S1) | 56000 | 56000 |
| | Parcel size per Handymax Vessel (in tonnes) (S2) | 30000 | 30000 |
| | | | |
| | Percentage share of Panamax Vessel (P1) | 90% | 90% |
| | Percentage share of Handymax Vessel (P2) | 10% | 10% |
| | | | |
| | Average cargo capacity of the Vessel (S1 * S2) + (P1 * P2) | 53400 | 53400 |
| | | | |
| | Unloading rate per day | | |
| | [COPT - (1500 tonnes per hour per unloader * 2 unloaders * 70%) * 20 hours]<br>[TAMP - (1500 tonnes per hour per unloader * 2 unloaders * 60%) * 24 hours] | 42000 | 43200 |
| | | | |
| | Average loading/ unloading time for a vessel (no. of days) | 1.27 | 1.24 |
| | Berthing/ De-berthing time (no. of days) | 0.125 | 0.125 |
| | Turnaround time (no. of days) | 1.40 | 1.36 |
| | | | |
| | Unloading rate per day | 38143 | 39233 |
| | | | |
| | Capacity of coal (Unloading rate per day * 365 days * 70% * 85% share of coal) (A) | 8283762 | 8520351 |
| | | | |
| (ii) | **Finished Fertiliser:** | | |
| | Parcel size per Vessel (in tonnes) (S1) | 28000 | 28000 |
| | | | |
| | Unloading rate per day | | |
| | (COPT - 250 tonnes per hour per ship crane * 4 ship cranes * 70%) * 20 hours<br>(TAMP - 250 tonnes per hour per ship crane * 4 ship cranes * 60%) * 24 hours | 14000 | 14400 |
| | | | |
| | Average loading/ unloading time for a vessel (no. of days) | 2.00 | 1.94 |
| | Berthing/ De-berthing time (no. of days) | 0.125 | 0.125 |
| | Turnaround time (no. of days) | 2.13 | 2.07 |
| | | | |
| | Unloading rate per day | 13176 | 13530 |
| | | | |
| | Capacity of finished fertiliser (Unloading rate per day * 365 days * 70% * 15% share of finished fertiliser) (B) | 504988 | 518545 |
| | | | |
| (iii) | **Total optimal quay capacity (in tonnes) [(i) + (ii) ]** | 8788751 | 9038896 |
| | | | |
| (b) | **Optimal yard capacity** | | |
| (i) | **Coal:** | | |
| | Area of land available (in sq. metres) (A) | 152000 | 152000 |
| | Perecntage of yard area to be used for stacking (Q) | 70% | 70% |
| | Stacking factor (tonnes per sq. metre) (B) | 5 | 5 |
| | Turnover ratio (C) | 24 | 24 |
| | | | |
| | Capacity of coal ( A * B * C * Q * 70% ) | 8937600 | 8937600 |
| | | | |
| (ii) | **Finished Fertiliser:** | | |
| | Area of land available (in sq. metres) (A) | 23800 | 23800 |
| | Perecntage of yard area to be used for stacking (Q) | 70% | 70% |
| | Stacking factor (tonnes per sq. metre) (B) | 3 | 3 |
| | Turnover ratio (C) | 12 | 12 |
| | | | |
| | Capacity of finished fertiliser ( A * B * C * Q * 70% ) | 419832 | 419832 |
| | | | |
| (iii) | **Total optimal yard capacity (in tonnes) [ (i) + (ii) ]** | 9357432 | 9357432 |
| | | | |
| (c) | **Optimal capacity of the facility** (in tonnes) (lower of optimal quay capacity and optimal yard capacity) | **8788751** | **9038896** |
| | | | |
| (d) | **Optimal capacity of the facility** (in Million Metric Tonnes Per Annum) | **8.79** | **9.04** |
| | | | |
| II | **Capital Cost** | | |
| A. | **Cargo Handling Activity** | ₹ in crores | |
| (i) | **Civil Cost** | | |
| | **(a). Coal** | | |
| | - Wind Shield Construction | 5.00 | 5.00 |
| | - Conveyor Foundation | 1.30 | 1.30 |
| | - Stack yard Development | 17.20 | 17.20 |
| | - Buildings, ETP and Utility Blocks | 3.90 | 3.90 |
| | - Utilities (Water Supply & Fire Fighting) | 2.00 | 2.00 |
| | - Miscellaneous Costs | 3.00 | 3.00 |
| | (a) | 32.40 | 32.40 |
| | | | |
| | **(b). Finished Fertiliser** | | |
| | - Stack yard Development | 1.00 | 1.00 |
| | - Warehouses in Fertilizer Yards | 10.50 | 10.50 |
| | - Roads | 0.64 | 0.64 |
| | - Miscellaneous Costs | 1.00 | 1.00 |
| | (b) | 13.14 | 13.14 |
| | | | |
| | **(c). Total civil costs ( a + b )** | **45.54** | **45.54** |

| | | | |
|---|---|---|---|
| **(ii).** | **Equipment Cost** | | |
| | **(a). Coal** | | |
| | - Ship Unloader (1500 TPH) (2 nos.) | 56.00 | 56.00 |
| | - Conveyor (2000 m length) | 30.00 | 30.00 |
| | - Rail Mounted Hoppers (2 nos.) | 2.00 | 2.00 |
| | - Stacker Reclaimer (2 nos.) | 48.00 | 48.00 |
| | - Hydraulic Excavator (10 nos.) | 3.50 | 3.50 |
| | - Wagon Loader (2 nos.) | 18.00 | 18.00 |
| | - Utilities – Electrical | 1.00 | 1.00 |
| | (a) | 158.50 | 158.50 |
| | | | |
| | **(b). Finished Fertiliser** | | |
| | - Dumper (12 nos.) | 1.80 | 1.80 |
| | - Bagging machine (2 nos.) | 0.50 | 0.50 |
| | - Pay loaders (4 nos.) | 1.00 | 1.00 |
| | - Telescopic fertilizer loading arm (6 nos.) | 2.22 | 2.22 |
| | - Mobile Hopper at Fertilizer Jetty (4 nos.) | 1.20 | 1.20 |
| | (b) | 6.72 | 6.72 |
| | | | |
| | **(c). Total equipment costs ( a + b )** | **165.22** | **165.22** |
| | | | |
| **(iii).** | **Miscellaneous** | | |
| | - 5% on Civil Cost and Equipment Cost | 10.54 | 10.54 |
| | | | |
| | **Total Capital Cost ( i + ii + iii )** | **221.30** | **221.30** |
| | | | |
| **III** | **Operating Cost** | **₹ in crores** | |
| **(i)** | **Coal:** | | |
| | (a). Power cost | 14.22 | 10.22 |
| | (COPT - 1.4 units per tonne * 8.28 MMTPA * Rs.8.57 per unit + 0.5 units per hour per meter * 2000 meters of Conveyor * 5000 hours * Rs.8.57 per unit)<br>(TAMP - 1.4 units per tonne * 8.52 MMTPA * Rs.8.57 per unit) | | |
| | (b). Fuel Cost | | |
| | - Excavators | 3.74 | 4.36 |
| | (COPT - 32 ltrs/ hour/ excavator * Rs.44.50 per litre * 26286 hours pa for 10 excavators)<br>(TAMP - 32 ltrs/ hour/ excavator * Rs.50.32 per litre * 27049 hours pa for 10 excavators) | | |
| | (c). Repair & Maintenance | | |
| | - Civil Assets (1% on civil work) | 0.32 | 0.32 |
| | - Mechanical & Electrical Equipment including spares (7% on equipment cost) | 11.10 | 11.10 |
| | (d). Insurance (1% on Gross fixed assets) | 1.91 | 2.00 |
| | (e). Depreciation | | |
| | - Civil Work @ 3.34% | 1.08 | 1.08 |
| | - Mechanical Work @ 10.34% | 16.39 | 16.39 |
| | - Miscellaneous Assets @ 3.34% on civil component and 10.34% on equipment component | 0.00 | 0.87 |
| | (f). License Fee | 3.91 | 3.93 |
| | (g). Other Expenses towards salaries and overheads (5% on gross fixed assets) | 9.55 | 10.02 |
| | **Operating Cost for Coal** | 62.22 | 60.30 |
| | | | |
| **(ii)** | **Finished Fertiliser:** | | |
| | (a). Power cost | 0.14 | 0.12 |
| | (COPT - 2625 hours * 3 units per hour * Rs.8.57 per unit + 1312.5 hours for illumination * 120 units per hour * Rs.8.57 per unit ) (TAMP - 2625 hours * 3 units per hour * Rs.8.57 per unit + 1093.75 hours for illumination * 120 units per hour * Rs.8.57 per unit ) | | |
| | (b). Fuel Cost | | |
| | - Trucks | 0.51 | 0.57 |
| | (COPT - 13 ltrs/ hour/ truck * Rs.44.50 per litre * 8750 hours pa for 12 trucks)<br>(TAMP - 13 ltrs/ hour/ truck * Rs.50.32 per litre * 8750 hours pa for 12 trucks) | | |
| | - Pay loaders | 0.56 | 0.63 |
| | (COPT - 9 ltrs/ hour/ pay loader * Rs.44.50 per litre * 14000 hours pa for 4 pay loaders)<br>(TAMP - 9 ltrs/ hour/ pay loader * Rs.50.32 per litre * 14000 hours pa for 4 pay loaders) | | |
| | (c). Repair & Maintenance | | |
| | - Civil Assets (1% on civil work) | 0.13 | 0.13 |
| | - Mechanical & Electrical Equipment including spares (5% on equipment cost) | 0.34 | 0.34 |
| | (d). Insurance (1% on Gross fixed assets) | 0.20 | 0.21 |
| | (e). Depreciation | | |
| | - Civil Work @ 3.34% | 0.44 | 0.44 |
| | - Mechanical Work @ 10.34% | 0.69 | 0.69 |
| | - Miscellaneous Assets @ 3.34% on civil component and 10.34% on equipment component | 0.00 | 0.06 |
| | (f). License Fee | 0.55 | 0.55 |
| | (g). Other Expenses towards salaries and overheads (5% on gross fixed assets) | 0.99 | 1.04 |
| | **Operating Cost for Finished Fertiliser** | 4.56 | 4.79 |
| **(iii).** | **Total Operating cost** | **66.78** | **65.09** |

| Sr. No. | Particulars | Revised estimates furnished by COPT | Estimates modified by TAMP |
|---|---|---|---|
| IV | **Estimated Revenue Requirement & upfront tariff for Cargo Handling Activity** | | |
| A. | **Coal** | | |
| (i). | **Estimated Revenue Requirement** | | |
| | (a). Total Operating Cost | 62.22 | 60.30 |
| | (b). Return on capital Employed @ 16% | 32.07 | 32.07 |
| | **(c). Total Revenue requirement from cargo handling activity** | **94.29** | **92.37** |
| | | | |
| (ii). | **Apportionment of Revenue Requirement** | | |
| | (a). Cargo Handling Charges (98% of ARR) | 92.41 | 90.52 |
| | (b). Storage Charges (1% of ARR) | 0.94 | 0.92 |
| | (c). Miscelleneous Charge (1% of ARR) | 0.94 | 0.92 |
| | **(d).Total Revenue requirement from cargo handling activity** | **94.29** | **92.37** |
| | | | |
| (iii). | **Cargo Handling charge** | | |
| | **(a). Cargo Handling Charge** | | |
| | - Revenue Requirement (₹ in crores) | 92.41 | 90.52 |
| | - Capacity (Million Metric Tonnes per annum) | 8.28 | 8.52 |
| | - Per Tonne rate for handling of cargo | **111.60** | **106.24** |
| | | | |
| | **(b). Storage Charge** | | |
| | - Revenue Requirement (₹ in crores) | 0.94 | 0.92 |
| | - % of Cargo to attract storage charge | 25% | 25% |
| | - Capacity of cargo to attract storage charge (million metric tonnes) | 2.07 | 2.13 |
| | | | |
| | (i) Storage Charge (beyond the free period) | **Rate Per tonne per day or part thereof** | **Rate Per tonne per day or part thereof** |
| | -Free period | 5 days | 5 days |
| | -First five days | **0.74** | **0.41** |
| | -6th day to 10th day | **1.10** | **0.62** |
| | -11th day onwards | **1.47** | **0.83** |
| | | | |
| | **(c). Miscelleneous Charge** | | |
| | - Revenue Requirement (₹ in crores) | 0.94 | 0.92 |
| | - Capacity (Lakh Tonnes per annum) | 8.28 | 8.52 |
| | - Miscellenous Charge (₹ per tonne) | **1.14** | **1.08** |
| | | | |
| B. | **Finished Fertiliser** | | |
| (i). | **Estimated Revenue Requirement** | | |
| | (a). Total Operating Cost | 4.56 | 4.79 |
| | (b). Return on capital Employed @ 16% | 3.34 | 3.34 |
| | **(c). Total Revenue requirement from cargo handling activity** | **7.90** | **8.12** |
| | | | |
| (ii). | **Apportionment of Revenue Requirement** | | |
| | (a). Cargo Handling Charges (90% of ARR) | 7.11 | 7.31 |
| | (b). Storage Charges (5% of ARR) | 0.39 | 0.41 |
| | (c). Miscelleneous Charge (5% of ARR) | 0.39 | 0.41 |
| | **(d).Total Revenue requirement from cargo handling activity** | **7.90** | **8.12** |
| | | | |
| (iii). | **Cargo Handling charge** | | |
| | **(a). Cargo Handling Charge** | | |
| | - Revenue Requirement (₹ in crores) | 7.11 | 7.31 |
| | - Capacity (Million Metric Tonnes per annum) | 0.42 | 0.42 |
| | - Per Tonne rate for handling of cargo | **169.25** | **174.10** |
| | | | |
| | **(b). Storage Charge** | | |
| | - Revenue Requirement (₹ in crores) | 0.39 | 0.41 |
| | - % of Cargo to attract storage charge | 100% | 100% |
| | - Capacity of cargo to attract storage charge (million metric tonnes) | 0.42 | 0.42 |
| | | | |
| | (i) Storage Charge (beyond the free period) | **Rate Per tonne per day or part thereof** | **Rate Per tonne per day or part thereof** |
| | -Free period | 5 days | 5 days |
| | -First five days | **1.52** | **0.90** |
| | -6th day to 10th day | **2.28** | **1.36** |
| | -11th day onwards | **3.04** | **1.81** |
| | | | |
| | **(c). Miscelleneous Charge** | | |
| | - Revenue Requirement (₹ in crores) | 0.39 | 0.41 |
| | - Capacity (Lakh Tonnes per annum) | 0.42 | 0.42 |
| | - Miscellenous Charge (₹ per tonne) | **9.40** | **9.67** |

**Note: Workings to arrive at the per tonne per day storage charge for Coal and Finished Fertiliser:**

**As given by COPT:**

**(a) Coal**

| | | | | |
|---|---|---|---|---|
| Total optimal capacity of coal (in tonnes) | | 8283762 | | |
| | **Free days** | **1st slab** | **2nd slab** | **3rd slab** |
| No. of days under each slab | | 5 | 5 | 3 |
| Percentage of Cargo falling under each slab | 75% | 10% | 10% | 5% |
| Cargo falling under each slab | 6212822 | 828376 | 828376 | 414188 |
| Let Storage charge per tonne per day in first slab be x | 0.00 | x | 1.5x | 2x |
| Revenue Requirement (Rs.) | | | 9429224.44 | |
| Sum of x | | | 12839831.59 | x |
| Rate of storage per tonne per day | | 0.73 | 1.10 | 1.47 |

(b) **Finished Fertiliser**

| | | | | |
|---|---|---|---|---|
| Total optimal capacity of finished fertiliser (in tonnes) | | 419832 | | |
| | **Free days** | **1st slab** | **2nd slab** | **3rd slab** |
| No. of days under each slab | | 5 | 5 | 3 |
| Percentage of Cargo falling under each slab | 0% | 40% | 40% | 20% |
| Cargo falling under each slab | 0 | 167933 | 167933 | 83966 |
| Let Storage charge per tonne per day in first slab be x | 0.00 | x | 1.5x | 2x |
| Revenue Requirement (Rs.) | | | 3947608.94 | |
| Sum of x | | | 2602958.40 | x |
| Rate of storage per tonne per day | | 1.52 | 2.27 | 3.03 |

**As modified by us**

**(a) Coal**

| | | | | |
|---|---|---|---|---|
| Total optimal capacity of coal (in tonnes) | | 8520351 | | |
| | **Free days** | **1st slab** | **2nd slab** | **3rd slab** |
| No. of days under each slab | | 5 | 5 | 3 |
| Percentage of Cargo falling under each slab | 75% | 10% | 10% | 5% |
| Cargo falling under each slab | 6390264 | 852035 | 852035 | 426018 |
| Cargo falling under each slab with cumulative effect | | 2130088 | 1278053 | 426018 |
| Let Storage charge per tonne per day in first slab be x | 0.00 | x | 1.5x | 2x |
| Revenue Requirement (Rs.) | | | 9237152.88 | |
| Sum of x | | | 22791940.07 | x |
| Rate of storage per tonne per day | | 0.41 | 0.61 | 0.81 |

(b) **Finished Fertiliser**

| | | | | |
|---|---|---|---|---|
| Total optimal capacity of finished fertiliser (in tonnes) | | 419832 | | |
| | **Free days** | **1st slab** | **2nd slab** | **3rd slab** |
| No. of days under each slab | | 5 | 5 | 3 |
| Percentage of Cargo falling under each slab | 0% | 40% | 40% | 20% |
| Cargo falling under each slab | 0 | 167933 | 167933 | 83966 |
| Cargo falling under each slab with cumulative effect | | 419832 | 251899 | 83966 |
| Let Storage charge per tonne per day in first slab be x | 0.00 | x | 1.5x | 2x |
| Revenue Requirement (Rs.) | | | 4060784.36 | |
| Sum of x | | | 4492202.40 | x |
| Rate of storage per tonne per day | | 0.90 | 1.36 | 1.81 |

**Annex - II**

## UPFRONT TARIFF SCHEDULE FOR HANDLING COAL AND FINISHED FERTILISER AT COCHIN PORT TRUST.

### 1. Definitions – General

In this Scale of Rates, unless context otherwise requires, the following definitions shall apply:

**"Day"** shall mean the period of 24 hours starting from 06.00 hrs. of a day and ending at 06.00 hrs. on the following day.

### 2. General Terms and Conditions:

A. Interest on delayed payments / refunds.

a. The User shall pay penal interest on delayed payments under this Scale of Rates. Likewise, the terminal operator shall pay penal interest on delayed refunds.

b. The rate of penal interest will be 2% above the Prime Lending Rate of the State Bank of India.

c. The delay in refunds will be counted only 20 days from the date of completion of services or on production of all the documents required from the Users, whichever is later.

d. The delay in payment by the users will be counted only 10 days after the date of raising the bills by the Terminal Operator. This provision shall, however, not apply to the cases where payment is to be made before availing the services where payment of charges in advance is prescribed as a condition in this Scale of Rates.

B. All charges worked out shall be rounded off to the next higher rupee on the grand total of the bill.

a. The rates prescribed in the Scale of Rates are ceiling levels, likewise, rebates and discounts are floor levels. The operator may, if they so desire, charge lower rates and/or allow higher rebates and discounts.

b. The operator may also, if he so desire, rationalize the prescribed conditionalities governing the application of rates prescribed in the Scale of Rates if such rationalization gives relief to the users in the rate per unit and the unit rates prescribed in the Scale of Rates does not exceed the ceiling level.

c. The operator should notify the public such lower rates and/ or rationalization of the conditionalities governing the application of such rates and continue to notify the public any further charges in such lower rates and/or in the conditionalities governing the application of such rates provided the new rates fixed shall not exceed the rate notified by the TAMP.

C. Users will not be required to pay charges for delays beyond reasonable level attributable to the operator.

D. The minimum charge recovered in any one application / bill shall be rupees hundred only (₹100).

E. No claim for refund shall be entertained unless the amount refundable is ₹100/- or more. Likewise, terminal operator shall not raise any supplementary or under charge bills, if the amount due to the operator is less than ₹100/-.

**3. Cargo Handling Charges**

| Particulars | Rate in ₹ per metric tonne | |
|---|---|---|
| | Foreign | Coastal |
| Coal handling charges | 106.24 | 63.74 |
| Finished Fertilizer handling charges | 174.10 | 104.46 |

The handling charges for coal prescribed above are composite charges and include charges for unloading from the vessel, transfer to stack yard, storage at the stack yard up to 5 days free period, loading on the wagons/trucks, wharfage and all other miscellaneous services not specifically prescribed in the Scale of Rates.

The handling charges for finished fertilizers prescribed above are composite charges and include charges for unloading from the vessel, transfer to sheds, storage at the sheds up to 5 days free period, bagging, loading on the wagons/trucks, wharfage and all other miscellaneous services not specifically prescribed in the Scale of Rates.

**4. Storage Charges**

The storage charge for the coal and finished fertilizer stored in the yard beyond a free period of 5 days, applicable from the day following the date of completion of unloading, shall be as below:

| Description | Rate in ₹ per MT per Day or part thereof | |
|---|---|---|
| | Coal | Finished Fertilizer |
| Free period | 5 days | 5 days |
| First five days after expiry of free period | 0.41 | 0.90 |
| 6th day to 10th day after expiry of free period | 0.62 | 1.36 |
| From 11$^{th}$ day onwards | 0.83 | 1.81 |

**Notes**:

i. For the purpose of calculation of free period, Customs notified holidays and Terminal's non-working days shall be excluded.

ii. Free period for import cargo shall be reckoned from the day following the day of completion of final discharge from the vessel.

iii. Storage charges on cargo shall not accrue for the period when the Terminal Operator is not in a position to deliver the cargo when requested by the User due to reasons attributable to the Terminal operator.

**5. Miscellaneous charges**

The following Miscellaneous charges are applicable for coal and finished fertilizer handled:

| Particulars | Unit | Rate in Rupees |
|---|---|---|
| Miscellaneous Charges for coal | Per metric ton | 1.08 |
| Miscellaneous Charges for Finished Fertilizer | Per metric ton | 9.67 |

**Note**:

The above miscellaneous charges include Environment and Management, sweeping of cargo on the Wharf, safety and security measures etc.

**6. General Note To Schedule (3), (4) & (5) above:**

The tariff caps will be indexed to inflation but only to an extent of 60% of the variation in Wholesale Price Index (WPI) occurring between 1 January 2012 and 1 January of the relevant year. Such automatic adjustment of tariff caps will be made every year and the adjusted tariff caps will come into force from 1 April of the relevant year to 31 March of the following year.

**- - - -**

**SUMMARY OF THE COMMENTS RECEIVED FROM THE PORT USERS / DIFFERENT USER ORGANISATIONS AND ARGUMENTS MADE IN THIS CASE DURING THE JOINT HEARING BEFORE THE AUTHORITY**

**F. No.TAMP/74/2012 - COPT** - **Proposal from Cochin Port Trust for setting upfront tariff for the development of General Cargo Terminal at Q8-Q9 berths of Cochin Port.**

A joint hearing on the case in reference was held on 29 January 2013 at the Cochin Port Trust (COPT) premises. The COPT made a brief power point presentation of its proposal. At the joint hearing, COPT and the concerned users/ organisation bodies have made the following submissions:

**Cochin Port Trust**

(i). Proposal is for handling Coal and Fertilizer. Handling of Coal and Fertilizer is in our Business Plan.

(ii). 90% share of vessels is estimated to be Panamax vessels and 10% is Handymax vessels both bringing coal.

(iii). Ship unloader rate is 1500 TPH for coal and ship's crane unloading rate is 250 TPH for finished fertilizer. We have to keep provision for time required for repairs and maintenance of ship unloader and ship's crane. Therefore, we have considered 70% handling rate for both the equipment as operational efficiency.

(iv). TAMP's guideline for coal terminal is 35000 tonnes per day. But, the proposed unloader will have a capacity to handle 42,000 tonnes per day.

(v). Plot turnover ratio of 12 based on the dwell time of 30 days is very conservative. We have estimated dwell time of 15 days and therefore plot turnover ratio is 24. Further reduction in dwell time is not feasible due to constraints in evacuation of cargo.

**Cochin Chamber of Commerce & Industry**

(i). We have no objection to the proposal.

**Cochin Custom House Agents Association**

(i). We support any move of the Cochin Port Trust for development.

2. A summary of the comments received from M/s. Adani Ports and Special Economic Zone Ltd. (APSEZL) and reply furnished by COPT thereon are tabulated below:

| Sl. No. | Comments received from APSEZL | Reply furnished by COPT |
|---|---|---|
| (i). | With regard to Section 5 of the proposal which is on Estimation of optimal yard capacity, APSEZL feel that Yard Capacity has been calculated on a higher side. The reasons for the same can be seen as under: | ---- |
| | (a). The plot proposed for General Cargo Terminal is not having a square or rectangular shape. The proposed plot has several corners with triangular edges at various ends which will lead to sub-optimal utilisation of the plot. The layout as proposed by Cochin Port is furnished. The stack pile length and width proposed for the mechanized handling system by Cochin Port is not practical as per the layout of the plot area. | The plot proposed for development of General Cargo Terminal is as per the Master Plan of Port. As such, there is no scope for making it regular shape. The stack pile configuration is as envisaged in the feasibility report. However, the developer is free to have their own plan within the area earmarked for the project. |
| | (b). Cochin Port has considered the Dwell Time of cargo at 15 days which is on a lower side. In order to have less dwell time, the cargo should be linked to nearby power plants or steel plants, which is not the case in Cochin Port at present. Apart from this, the dwell time will be even more for the cargo imported by traders for Stock & Sell. In this scenario, if we consider a realistic Dwell Time of 20 days the turnover | The concerns expressed deserve merit for consideration. It is well in our knowledge that the hinterland demand exist in excess of 200 km from the Port. It is also case that the rail connectivity has several level crossings and the line is congested, which are likely to reduce the |

| | | |
|---|---|---|
| | of the storage space cannot be more than 18 times in a year. | capacity. However, the assumption of 15 days of dwell time was made on an optimistic note. |
| | (c). The storage rate considered by Cochin Port is 5 ton/ sq.m. for coal which practically cannot be achieved. To achieve this rate of 5 ton/ sq.m. it would require a stack height of beyond 16 meters. This seems to be impractical as the same will not be approved by The State Pollution Control Board. | The stack height of 16m quoted seems unreasonable considering the density of coal. Also the feasibility report has taken the height of 12m for a stack density of 5T/Sq. m. As such normal density of coal considered is around 0.8 T/cu. m. In that consideration even if the stack is conical or trapezoid, the stack height considered at 12m in feasibility report is reasonable. |
| (ii). | In the Development Plan proposed by Cochin Port only 300m (approx) long loading line is available for railway operation. This arrangement will require splitting the rakes into at least 3 parts. This operation will lead to shunting of the rakes which will in turn result in very high operation time and eventually capacity loss. In this case of rail operation, as per our estimate only 3 rakes can be handled on a daily basis. This will substantially bring down the capacity of the terminal. | The existing railway line is a common user facility applicable to cater all berths in Ernakulam Wharf. The developer can make his own sidings of adequate capacity inside the project area to accommodate the rakes. However, shunting operations will be permitted in common user facility outside the project area also. |
| (iii). | An indicative layout prepared by APSEZL showing an option of stacking coal for mechanised operation is furnished. The layout shows 5 stock piles for stacking coal and the dimension of each stock pile is 240m x 45m. With this configuration the total stacking area available with 5 stock piles will be 54,000 sq.m. for complete mechanised coal handling operation. The other part of the backup area cannot form part of mechanised coal handling scheme. Considering the area of 54,000 sq.m. with 12 meter of stack height, 3.5 tons of storage per sq.m. and 18 turnarounds, the total capacity of the yard will work out to be around 3.40 MTPA for coal. This is much less than the calculated capacity of 8.94 MTPA as per the proposal. This will have substantial impact in calculating the Coal Handling Charges and Minimum Guaranteed Throughput. | We have no comments on the planning of the developer. Every developer has the liberty to develop their own planning of stack piles. As far as Port is concerned, Port has relied on feasibility report and considered stack pile of 5T/Sq. m. by optimum utilization of the area earmarked. It is indeed agreed that the shape of the yard is irregular and there shall be constraints for regular planning of the yard. |
| (iv). | As per Section 4 of the proposal, the unloading rate considered for Panamax and Handymax coal vessels is 42,000 MT/day. However, as per the TAMP norms the unloading rates are 15000 MT/day for Handymax vessels and 35000 MT/day for Panamax vessels. Hence, the weighted average of the coal unloading rate while considering 10% Handymax and 90% Panamax vessels comes out to be 33000 MT/day. Hence, it is requested that rate for unloading coal should be as per TAMP guidelines. | The productivity rates have been arrived based on the capacity of the unloaders. |
| (v). | As per Section 4 of the proposal, the unloading rates assumed for the unloaders is assumed on a higher side. As mentioned in the DCA the General Cargo terminal has a limitation of handling Panamax vessels upto 56000 MT and would require the Panamax vessels to be lighteraged before coming to the terminal. Hence, the average unloading rates proposed by COPT cannot be achieved throughout the completion of the vessel. Hence, it is requested that rate for unloading coal should be as per TAMP guidelines. | |