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Tariff Authority for Major Ports

G No.217

New Delhi,

30 August 2010

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 review proposal filed by the Tuticorin Port Trust on the Order No.TAMP/27/2009-TPT dated 23 February 2010 passed by this Authority fixing upfront tariff for coal handling in pursuance of the guidelines for upfront tariff setting for Public Private Participation (PPP) projects at Major Ports which was notified vide this Authority's Notification No.TAMP/52/2007-Misc. dated 26 February 2008 as in the Order appended hereto.

(Rani Jadhav)
Chairperson

Tariff Authority for Major Ports
Case No. TAMP/29/2010-TPT

Tuticorin Port Trust

Applicant

O R D E R

(Passed on this 23rd day of July 2010)

This Authority had passed an Order No.TAMP/27/2009-TPT on 23 February 2010 fixing upfront tariff for coal handling at Tuticorin Port. The said Order was notified in the Gazette on 16 April 2010.

2. With reference to the said Order, Tuticorin Port Trust (TPT) has sent a letter dated 14 June 2010. Based on the submission / clarifications sought by M/s.Sterlite Industries India Limited, the TPT in its above mentioned letter has made the following points:

- (i). During the joint hearing, the Port had clarified that the upfront tariff rates for coal cargo would apply for all bulk cargoes which can be handled with the proposed infrastructure. But, in the Order notified in the Gazette on 16.4.2010, the Authority vide para 10 (xii) did not accept this and has notified the rates for thermal coal and industrial coal only.
- (ii). It is submitted that the scope of project covers all bulk cargoes. M/s.Sterlite Industries (I) Ltd. are the only applicant evincing interest to handle Copper Concentrate and Rock Phosphate, in addition to Thermal Coal and Industrial Coal. The Company has also conveyed its acceptance to adopt the rates of upfront tariff for Thermal Coal and Industrial Coal notified by the Authority vide Notification No.102 dated 16.4.2010 to Copper Concentrate and Rock Phosphate.
- (iii). The Authority is requested to consider the Port's request to issue suitable a amendment to the effect of applying the rates notified by the Authority dated 16.4.2010 to bulk cargoes to be handled in the proposed NCB-II.

3.1. With reference to the points made by the TPT, the following points were conveyed to TPT vide our letter dated 16 June 2010:

- (i). The feasibility report furnished by the TPT is for developing the berth for handling thermal coal and industrial coal. Section 5.1 of the Feasibility Report clearly states that the NCB-II will handle thermal coal and industrial coal and the stacking and the evacuation plan in the report covers only these two cargo items. The capacity assessed in the report is also with reference to stacking and handling rate assumed for these two cargo items. The revenue requirement attached as Appendix 10.01 of the Feasibility Report estimates revenue from these two cargo items viz. thermal coal and industrial coal.
- (ii). The upfront tariff fixed for coal handling at the TPT by this Authority vide its Order No TAMP/27/2009-TPT dated 23 February 2010 is with reference to the optimal capacity of the terminal which is determined based on the various parameters relevant for thermal coal and industrial coal. Para 10(xii) of our Order clarifies that the entire exercise of upfront tariff fixation is for handling thermal coal and industrial coal and that too at the ratio of 65% and 35% respectively and these assumptions have influenced the capacity determination and hence the tariff.
- (iii). It has to be recognised that the handling rate and stacking factor of all other bulk cargo need not be the same as those of thermal coal and industrial coal adopted in the upfront tariff calculation. Further, the optimal capacity is determined keeping in mind share of the two cargo viz. thermal coal and industrial coal at 65% and 35% respectively. Hence any modification in the model considered in the relevant tariff Order can be made only after reassessment of capacity.

3.2. In view of the above, the TPT was advised to file a comprehensive proposal for handling of additional goods, if necessary with detailed calculation, reassessing the capacity based on the handling rate and share of cargo mix, stacking factor, etc., along with justification for the parameters considered in the calculation and proposed tariff following the tariff guidelines of 2008.

4. The TPT in response to our letter dated 16 June 2010 has sent a fax dated 17 June 2010 requesting to issue a suitable amendment with reference to the Order passed by this Authority on 23 February 2010 fixing upfront tariff for thermal coal and industrial coal. The further main submissions made by the TPT are summarised below:

- (i). The handling rate, storage factor and evacuation process of copper concentrate, rock phosphate, fertiliser, etc. are similar to industrial coal taking into account the physical parameters viz. density, size, etc.
- (ii). In the upfront tariff fixed by the Authority, based on the proposal of the TPT, the share of capacity of panamax vessels bringing thermal coal and industrial coal was considered at 65% and 35%. The TPT has now stated that the terminal will mainly handle thermal coal to the tune of 65% as originally envisaged. The share of other bulk cargoes such as copper concentrate, rock phosphate, fertiliser and industrial coal is envisaged at 35%.
- (iii). (a). Considering ship day output of panamax vessel bringing thermal coal at 40000 tonnes per day and other bulk cargo at 20000 tonnes per day, the optimal quay capacity of the terminal is estimated at 8.43 million tonnes per annum as against 8.88 million tonnes per annum assessed in the tariff Order of 23 February 2010.
- (b). The stacking area for thermal coal is maintained at 35000 sq. mtrs. and the balance 35000 sq. mtrs is for stacking other bulk cargo. Considering the stacking factor of 6.6 tonnes/sq. mtrs for thermal coal and 3.5 tonnes / sq. mtrs for other bulk cargo, the optimal yard capacity is maintained at 6.928 Million tonnes per annum as estimated in the tariff Order of 23 February 2010 which is reckoned as the optimal capacity of the terminal in the upfront tariff calculation.
- (iv). Thus in short, it has not made any modification in any other parameters except including copper concentrate, rock phosphate and fertiliser along with industrial coal. Optimal capacity of the terminal, capital cost and revenue requirement estimation is maintained at the level considered in the tariff Order of February 2010.
- (v). Based on the above submissions, the TPT has proposed the rate for other bulk cargoes i.e. copper concentrate, rock phosphate, industrial coal, fertiliser, etc., same at the level of Rs.163.05 per tonne (foreign) as prescribed by the Authority for industrial coal.

5.1. The TPT has furnished revised calculation. A summary of the main parameters considered by this Authority while fixing the upfront tariff and the proposal now forwarded by the TPT is tabulated below:

As per the tariff Order of 23 February 2010		Revised formulation by TPT vide fax dated 17 June 2010	
Particulars	Considered in the Tariff Order	Particulars	Revised estimates by TPT
Optimal Quay Capacity		Optimal Quay Capacity	
Share of capacity of Panamax vessels (for thermal coal)	65%	Share of capacity of Panamax vessels (for thermal coal) vessels	65%
Share of capacity of Panamax vessels (for industrial coal)	35%	Share of capacity of Panamax vessels (for Bulk cargoes like Copper Concentrate/Rock Phos/Fertiliser etc.)	35%
Ship day Output		Ship day Output	
- Panamax vessel (thermal coal)	Tonnes/day 40000	- Panamax vessel (thermal coal)	Tonnes/day 40000
- Panamax vessel (industrial coal)	25000	- Panamax vessel (for Bulk cargoes like Copper Concentrate/Rock Phos/Fertiliser etc.)	20000

Quay Capacity in million tonnes	8.88	Quay Capacity in million tonnes	8.43
Optimal Yard Capacity		Optimal Yard Capacity	
Stacking Quantity		Stacking Quantity	
- For thermal coal	6.6 T/sqm	- For thermal coal	6.6 T/sqm
- For industrial coal	3.5 T/sqm	- For Bulk cargoes like Copper Concentrate/Rock Phos/Fertiliser etc.	3.50 T/sqm
Annual turnover ratio of the plot	28	Annual turnover ratio of the plot	28
Total yard capacity (in million tonnes)	6.93	Total yard capacity (in million tonnes)	6.93
Optimal capacity of the terminal	6.93	Optimal capacity of the terminal	6.93
Composite handling charges (foreign):		Composite handling charges (foreign):	
- For thermal coal	163.05	- For thermal coal	163.05
- For industrial coal	163.05	- For Bulk cargoes like Copper Concentrate/Rock Phosphate/fertiliser	163.05

5.2. The port has not furnished justification/ explanation for the various parameters considered in the calculation in its review proposal with reference to the cargo items now proposed to be included i.e. copper concentrate, rock phosphate, fertiliser, etc. The TPT was, therefore, requested to furnish information / clarifications on a few points vide our letter dated 21 June 2010. The port has furnished its reply by email dated 25 June 2010. A summary of the clarifications sought by us and the response furnished by the port is tabulated below:

Sl. No.	Queries raised by us	Reply furnished by TPT												
(i).	The break up of share of industrial coal and the other bulk cargo items assumed by the TPT at 35% may be furnished. The basis adopted for determining the share of the each bulk cargo items viz. copper concentrate, rock phosphate, fertiliser and industrial coal may be explained.	(a). During the year 2009-10, Tuticorin Port handled 2.59 Million Tonnes of Industrial coal, 1.18 Million Tonnes of Copper Concentrate, 0.82 Million Tonnes of Fertilizer raw material, 1.22 Million Tonnes of finished Fertilizer, 0.82 Million Tonnes of Rock Phosphate and 0.48 million tones of other dry bulk cargoes. (b). The Business Plan envisages 1.5 Million Tonnes of Industrial Coal, 2.00 Million Tonnes of Copper concentrate and 0.55 Million Tonnes of Rock Phosphate during the year 2010-11 and as per the Financial plan the projected cargo for the above is 2.52 Million Tonnes, 1.26 Million Tonnes and 0.55 Million Tonnes respectively. (c). In view of the above, the share of Industrial Coal and other bulk cargoes are as follows: <table><tr><th>Sl. No.</th><th>Cargoes</th><th>Proportion</th><th>Share</th></tr><tr><td>1.</td><td>Industrial Coal + other bulk (2.00 +0.48)</td><td>$\frac{2.48}{6.93} \approx$</td><td>36%</td></tr><tr><td>2.</td><td>Copper Conc. + Rock phosp + other bulk. (1.18+0.82+.48)</td><td>$\frac{2.48}{6.93} \approx$</td><td>36%</td></tr></table> (d). The above cargo composition is based on the current trends and is based on probable options. The ultimate cargo	Sl. No.	Cargoes	Proportion	Share	1.	Industrial Coal + other bulk (2.00 +0.48)	$\frac{2.48}{6.93} \approx$	36%	2.	Copper Conc. + Rock phosp + other bulk. (1.18+0.82+.48)	$\frac{2.48}{6.93} \approx$	36%
Sl. No.	Cargoes	Proportion	Share											
1.	Industrial Coal + other bulk (2.00 +0.48)	$\frac{2.48}{6.93} \approx$	36%											
2.	Copper Conc. + Rock phosp + other bulk. (1.18+0.82+.48)	$\frac{2.48}{6.93} \approx$	36%											

		profile depends on the successful bidder of the PPP project. Hence the figures furnished are only indicative and further stipulation of the share of each bulk cargo viz., copper concentrate, rock phosphate, fertilizer and industrial coal is not possible at this juncture of RFP stage.															
(ii).	In the review proposal, the handling rate for bulk cargo like copper concentrate, rock phosphate, fertiliser, etc., has been considered at 20,000 tonnes per day. It is relevant to mention that handling rate of fertiliser and murate of phosphate considered while fixing the upfront tariff for mechanised fertiliser handling facilities at Visakhapatnam Port Trust (VPT) is 25,000 tonnes per day.	As pointed out by TAMP, the ship berth day output is modified as 25,000 tonnes as considered in the TAMP Order dated 16.4.2010. Accordingly, the berth hire charges of Re.0.4121 per GRT per hour for Foreign-going vessel and Re.0.2472 per GRT per hour for coastal vessel sanctioned by TAMP Order dated 16.4.2010 may be considered by the Authority for adoption.															
	(a). Since no handling norms for rock phosphate, fertiliser and copper concentrate are prescribed in the tariff guidelines, the TPT should justify the norms proposed by it for handling the said commodities. It is to be noted that no feasibility study is conducted by TPT in respect of handling of other bulk cargo like fertiliser, copper concentrate, etc.	Tuticorin Port already handles similar type of cargoes and the handling rate, evacuation rate for other bulk cargoes are approximately same. Besides, the Port's submissions to the Authority during the joint hearing held at Chennai Port Trust premises on 11.1.2010 as recorded in 4.(iv) (a) as to same handling rate for bulk cargoes with respect to same handling facility are reiterated. It is submitted that the same handling facility is being used for handling bulk cargoes. Hence, the Feasibility Study already conducted may please be accepted by the Authority considering the uncertainty of exact cargo composition of bulk cargoes at the time of RFP stage in progress.															
	(b). Please furnish the actual traffic and productivity levels achieved by the port in respect of these commodities during the last three years. In this regard, a comparative analysis of the handling method adopted at the port trust berths in respect of these commodities and the technology envisaged to be employed by the PPP operator, may be furnished.	The actual productivity levels achieved by the Port in respect of bulk cargoes are furnished in the table as below: <table><tr><th>Berth</th><th>Cargo handled</th><th>2007-08 in Tons</th><th>2008-09 in Tons</th><th>2009-10 in Tons</th></tr><tr><td>VOC-III</td><td>All Bulk cargoes</td><td>18540</td><td>17656</td><td>18527</td></tr><tr><td>VOC-IV</td><td></td><td>15102</td><td>15662</td><td>14638</td></tr></table> The PPP operator will provide 2 number of shore unloaders 1800 TPH capacity each with effecting loading rate of 60 %. It is proposed to have a 2 numbers of conveyor with 1600 mm belt width with a recommended speed of 2.5 m/sec. It will have a rating of 1250 to 2000 TPH. The daily discharge rate of conveyor for handling Thermal coal is 40000 Tonnes and for other bulk cargoes assessed for 25,000 Tonnes.	Berth	Cargo handled	2007-08 in Tons	2008-09 in Tons	2009-10 in Tons	VOC-III	All Bulk cargoes	18540	17656	18527	VOC-IV		15102	15662	14638
Berth	Cargo handled	2007-08 in Tons	2008-09 in Tons	2009-10 in Tons													
VOC-III	All Bulk cargoes	18540	17656	18527													
VOC-IV		15102	15662	14638													
	(c). The handling rate of each of the other bulk cargo items considered in the calculation must be justified with reference to the capacity of the handling equipment considered and facilities envisaged to be developed by the successful bidder.	The handling rate, storage factor and evacuation process of the above cargoes are similar in operation taking into account the physical parameters viz. density, size, shape, etc.															

(iii).	The stacking factor assumed in the calculation for the bulk cargo items at 3.5 tonnes / sq. metre may be justified with reference to the stacking height achieved for each of the cargo items in the last three years in the port. The density of industrial coal and each of the other bulk cargo items may also be furnished to justify the parameters adopted in the review proposal.	(a). The stacking height achieved for each cargo in the last three years is furnished below: <table><tr><th>Bulk Cargoes</th><th>Stack Height in Metre</th><th>Average Density</th><th>Load Intensity Ton per Sqm</th></tr><tr><td>Industrial Coal</td><td>8.4</td><td>0.90</td><td rowspan="5">7.5</td></tr><tr><td>Copper Concentrate</td><td>3.4</td><td>2.2</td></tr><tr><td>Rock Phosphate</td><td>4.70</td><td>1.60</td></tr><tr><td>Sulphur</td><td>6.3</td><td>1.2</td></tr><tr><td>MOP</td><td>8.4</td><td>0.90</td></tr></table> In as much as the above stacking height is with respect to limited open space in the Transit Area and around Warehouse area inside Green Gate, the above are for information only. (b). While the proposed project cover earmarked stacking places with usage of specialized stacking equipments, the arrangements in the existing berths are one of adhoc arrangements made by individual users relevant to the time of storage of their respective cargoes. Therefore, the same cannot be compared with parameters of the area allotted for the subject PPP Project.	Bulk Cargoes	Stack Height in Metre	Average Density	Load Intensity Ton per Sqm	Industrial Coal	8.4	0.90	7.5	Copper Concentrate	3.4	2.2	Rock Phosphate	4.70	1.60	Sulphur	6.3	1.2	MOP	8.4	0.90
Bulk Cargoes	Stack Height in Metre	Average Density	Load Intensity Ton per Sqm																			
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MOP	8.4	0.90																				
(iv).	The basis of considering the annual turnover of copper concentrate, rock phosphate, fertiliser at 28 may be justified with reference to the average dwell time of these cargo items handled in the port in the last three years.	(a). The norm for plot turnover for a coal terminal prescribed in the guidelines is 12. The TPT while furnishing reply to the queries raised vide its letter dated 9 February 2010 has effected modification in the turnover factor and considered it at 28 instead of 32 considered in the original proposal. The port has stated that the turn over factor of 28 is considered based on the evacuation of 18000 tonnes per day. (b). The port has confirmed that evacuation at the rate of 18000 tonnes / day is possible and, therefore, the turnover ratio of 28 is achievable. Based on clarification by the port, the turnover factor assumed by the port is considered in the calculation. It is notable that plot turnover considered for coal terminals in Visakhapatnam Port Trust and Paradip Port Trust is 30 and the parameter considered by TPT at 28 is not very different from the other two ports. The port has recognised evacuation by road only in this proposal. Hence, the evacuation rate of 28 may please be accepted.																				
(v).	The upfront tariff calculation furnished with the review proposal states bulk cargo items like copper concentrate, rock phosphate, fertiliser, etc., but does not mention industrial coal separately. It seems the TPT has proposed to cover it under 'etc'.	The upfront tariff for Industrial Coal has already been notified by TAMP vide its Order dated 16.4.2010. This is based on the handling rate of 25,000 tonnes / day considered in the Port's proposal and covered by the above order. It is confirmed																				

	Recognising the differential in the handling rate of other bulk cargo items (i.e. 20000 tonnes per day) as against handling rate of 25000 tonnes per day assumed in the upfront tariff approved by the Authority for industrial coal, it is necessary to consider industrial coal separately while determining the optimal quay capacity, composite handling rate and berth hire charge.	that the handling rate of 25,000 MT is uniformly applicable to all bulk cargoes other than Thermal Coal. While issuing amendment, Industrial Coal shall be considered along with other Bulk Cargoes. Considering the fact that handling rate of 25,000 tonnes / day is confirmed for bulk cargoes other than Thermal Coal, the question of determining optimal quay capacity, composite handling rate and berth hire charges separately for Industrial Coal is not felt necessary.
(vi).	The berth hire may be re-worked taking into consideration the handling rate of each cargo items, share of cargo capacity, and other factors involved in determining the berth hire charge.	The handling rate for Bulk Cargoes including Industrial Coal and excluding Thermal Coal are uniform with respect to the same handling infrastructure and hence re-working of Berth Hire will not arise. Besides, the composition of cargo actually depends on the DBFOT operator selected after completion of the RFP process with the approval of the competent authority with respect to the user-profile and scope of his project which cannot be predicted at present. Hence, the reworking of Berth hire is not felt required now.
(vii).	The Authority in its Order passed on 23 February 2010 while setting upfront tariff for coal terminal at the TPT has prescribed uniform composite handling rate for thermal coal and industrial coal. Since other bulk cargo items now proposed to be handled have different productivity level, the composite handling rate proposed by the TPT may be reviewed and related to the productivity factors assumed in the calculation for individual bulk cargo items. While proposing handling rate for individual bulk cargo items now proposed, the impact of concessional tariff applicable for coastal cargo may be considered. If no coastal cargo is envisaged with reference to these bulk cargo item, it may be stated explicitly.	The proposal of the Port for fixation of upfront tariff is with respect to clearance given by PPPAC for NCB II for handling bulk cargoes at TPT on DBFOT basis. As the same handling facility is operated for all bulk cargoes, the handling rate will be the same irrespective of the density of cargo. Hence, the rates fixed by the Authority vide its Order dated 16.4.2010 may be considered subject to redefining the rate for handling charges of Rs.163.05 per MT (foreign) and Rs.97.83 per MT (Coastal) applicable to Industrial Coal as applicable to Bulk cargoes other than Thermal Coal. In view of the submissions above, separate handling rate for individual bulk cargo items does not arise. It is confirmed that no coastal cargo is anticipated in respect of bulk cargoes anticipated to be handled in the proposed NCB II with respect to place of availability of cargo. However, coastal rate may be indicated as covered in the order dated 16.4.2010.

5.3. The TPT was advised to make a presentation of its (revised) review proposal during the hearing to be held on 30 June 2010. The TPT was also advised to intimate the users/ user associations and short listed bidders who will be affected by the review proposal, to be present during the hearing of this matter and to furnish a copy of the review proposal to them.

6.1. Accordingly, a joint hearing in this case was held on 30 June 2010 at the Tuticorin Port Trust premises. The TPT made a power point presentation its proposal. At the joint hearing, TPT and the concerned users / organisation bodies have made their submissions.

6.2. As decided in the joint hearing, M/s.Sterlite Industries Ltd. were requested to furnish the productivity and stacking factor details relating to copper concentrate and rock phosphate to Tuticorin Port Trust (TPT). The TPT was advised to consider the suggestions to be received from M/s.Sterlite Industries Ltd. and review the capacity calculation, if found necessary. The TPT was also requested to look at productivity of its own operations for the two commodities.

7.1. In response to the decisions taken at the joint hearing, the TPT vide letter dated 7 July 2010 has forwarded the written submissions made by M/s.Sterlite Industries India Ltd (SIL) vide their letter dated 30.06.2010 and also furnished its comments on the points made by SIL.

7.2. Apart from the above, the TPT has made the following submissions:

- (i). The request of SIL is not based on any specific cargo composition and is also outside the purview of upfront fixation which is for the project in general and not user/ developer specific. The developer /bidder of the project is to evaluate the compatibility of the project to different alternative proposals considering the investment envisaged in the upfront tariff proposal which is based on the upfront tariff guidelines notified by the Authority.
- (ii). The Port has to conform to the environmental regulations and requirements prescribed by the environmental authorities and Court directions to maintain the safe stack height of the dangerous and hazardous cargoes. Considering the nature of hazardous material and open stacking area and conform to the environmental requirements, the request of the company to maintain a stacking factor of 6.6T/Sq.Mr is not acceptable to the Port. A stacking factor of 3.5T/Sq.mr is only acceptable to the Port for bulk cargoes other than Thermal Coal. The Authority is requested to consider the same and accordingly pass appropriate orders to fix upfront tariff for Thermal Coal and other bulk cargoes.
- (iii). It has reiterated that the handling rate achieved by the Port in the existing berth is based on the 20 Tonne capacity ELL Wharf Crane. The proposed terminal is provided with two Nos. Grab Unloaders of 1800 TPH capacity each and it can be possible to achieve 25000 tonnes per day for rock phosphate and copper concentrate. It is also for confirmation that due to the deployment of 20 Nos. Front End loaders, 3 Nos. stackers in the stackyard it can be possible to evacuate 20000 tonnes per day from the stack yard. The productivity is uniform for all other bulk cargoes and the optimal capacity of the Terminal is 6.93 MT.

8.1. In response to the TPT letter dated 7 July 2010 received by fax on 9 July 2010, the following points were highlighted to the TPT vide our letter dated 13 July 2010 with a request to revisit its review proposal:

- (i). The port has agreed with the point made by the Sterlite Industries that the density of copper concentrate and rock phosphate is higher than the density of the industrial coal. Despite this, the port has maintained the productivity and the stacking factor for these two cargo items will be at par with the industrial coal without adjusting the relevant parameters. Even if the submission made by the TPT about restriction in achieving higher stack height for these two cargo items is admitted, recognising that the density of rock phosphate and copper concentrate is higher than industrial coal, higher stacking factor in terms of tonnes per square metre can be achieved for these two cargo for the same area as that for industrial coal. On the same principle, the handling rate in tonnes of rock phosphate and copper concentrate will also be higher even if the grab holds the same volume of these cargo items vis-à-vis industrial coal.
- (ii). Since differential rate will have to be prescribed for the cargo items linking it to different productivity level, the share of each of the cargo items in the capacity may be furnished
- (iii). In the light of the above observation, the TPT was advised to furnish the stack height, handling rate for these two commodities separately, along with share of the cargo and also furnish revised calculation reviewing the optimal capacity and the upfront tariff.

8.2. The TPT has responded vide its letter dated 14 July 2010. It agrees that the density of copper concentrate and rock phosphate is higher than the density of the industrial coal. However, considering the hazardous nature of the cargo and sensitivity of nearby marine environment, the Port is of the view that it would be appropriate to adopt the stacking factor at 3.5 tonnes per sq. mtrs. However, in view of the advice rendered by the Authority, the port has reviewed its proposal filed earlier and has made the further submissions. The TPT has subsequently vide letter dated 15 July 2010 and 20 July 2010 furnished the working sheet for determining the storage charge and berth hire charge. The highlights of the submissions made by the TPT in its letter dated 14 July 2010, 15 July 2010 and 20 July 2010 are given below:

- (i). The port has requested that the upfront tariff may be fixed based on the following two options:
 - (a). Handling of only Thermal coal and industrial coal by the BOT operator.
 - (b). Handling of Thermal coal and industrial coal alongwith copper concentrate and rock phosphate.
- (ii). The port has furnished the working of optimal capacity and the handling charges, for the second alternative cargo composition of handling thermal coal, industrial coal, copper concentrate and rock phosphate which is summarised below:
 - (a). Optimal Quay capacity is assessed at 8533700 tonnes per annum, considering the share of the share of panamax vessel bringing thermal coal at 56%, industrial coal at 7%, 15% rock phosphate and 22% copper concentrate.
 - (b). The handling rate for panamax vessels bringing the industrial coal, rock phosphate, copper concentrate is considered at 25,000 Tonnes per day and for thermal coal it is maintained at 40000 tonnes per day as per the norms prescribed in the guidelines.
 - (c). The optimal yard capacity is assessed at 7082264 tonnes per annum considering the following parameters:
 - The stacking factor for copper concentrate and rock phosphate is considered at 6.6 tonnes / sq. mtr. and for industrial coal and thermal coal, it is maintained at as considered in the tariff Order of February 2010.
 - The total stacking area of 70000 sq. mtrs. is maintained as per the original proposal and is proposed to be allotted cargo-wise viz. 39200 sq. mtrs for thermal coal, 4900 sq. mtrs. for industrial coal, 10500 sq. mtrs for rock phosphate and 15400 sq. mtrs. for copper concentrate.
 - The turnover of the plot for the copper concentrate and rock phosphate is considered at 14. For thermal coal and industrial coal this factor is maintained at 28 as considered in the tariff Order of February 2010.
 - Consequent to the above modifications, the optimal yard capacity of the terminal for handling the four cargo items is considered at 7.08 M.T. per annum being lower of the quay and yard capacities.
 - (d). The port has worked out differential handling rate based on the optimal cargo capacity and the cargo working days. The entire capacity pertaining to thermal coal is reckoned as coastal cargo and the other cargo are assumed to be foreign.

- (e). The rates furnished by the TPT in the revised calculation for handling optimal capacity of 7.08 Million Tonnes (MT) of thermal coal 5.07 Million Tonnes, Industrial Coal 0.33 MT., Copper Concentrate 1.0 MT and Rock Phosphate 0.68 MT is tabulated below:

Cargo	Rate in Rs. per tonne	
	Foreign	Coastal
Thermal Coal	-	136.87
Industrial Coal	211.36	126.82
Copper Concentrate	219.46	131.68
Rock Phosphate	217.27	130.36

- (iii). The port has vide email dated 15 July 2010 furnished the calculation for determining the storage charge. In the said calculation it has considered the tonnage for the area proposed to be allotted for each cargo, evacuation of copper concentrate and rock phosphate is assumed @ 4800 tonnes per day and the plot turnover is considered at 15 and 13.32 for the said two cargo items. The number of days for one turn over of the plot is estimated cargo wise at 24 for copper concentrate, 27 for rock phosphate and 11 days each of thermal coal and industrial coal. Based on the calculation furnished by the port, the storage charges arrived for the 3 slabs after allowing 10 days free period to recover the revenue requirement of Rs.114.86 lakhs are as under:

(Rate in Rs. per tonne per day)

First six day after free period	-	1.14
Next six days	-	1.84
Thereafter	-	3.59

- (iv). The port has vide fax dated 20 July 2010 also furnished the calculation of berth hire for optimal capacity of 7.08 Million Tonnes Per Annum for the alternative of handling cargo in combination. The berth hire proposed is Re.0.4318 per GRT per hour for foreign-going vessel and Re.0.2591 per GRT per hour for coastal vessel.

8.3. The port has reiterated that the rates are fixed for each of the above two alternatives separately since the rate fixed for thermal coal & industrial coal in the first alternative cannot be adopted for second alternative which envisages handling of four commodities and have different cargo share composition.

9. 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 the 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>

10. Based on the information collected with reference to the proposal filed by the TPT for review of the upfront tariff for the coal terminal, the following position emerges:

- (i). The main submission made by the TPT in the original review proposal filed in June 2010 was to extend the upfront tariff cap prescribed by this Authority for thermal coal and industrial coal to other bulk cargo i.e. copper concentrate, rock phosphate and fertiliser which is handled at the same facility. The port has subsequently proposed to exclude finished fertiliser from the range of cargo proposed to be added. The share of industrial coal assumed at 35% in the earlier Order was stated to cover other bulk cargoes as well and on the presumption that all the parameters applicable for industrial coal viz. handling rate, storage factor and evacuation will hold good for copper concentrate and rock phosphate, the port had proposed to extend the rate prescribed for industrial coal to the other two bulk cargo items. Subsequently, on our insistence, to reassess the capacity duly recognizing the difference in the density of rock phosphate and industrial coal and furnish justification for each of the parameters with reference to the cargo proposed to be added, the port has filed a revised proposal dated 14 July 2010. The revised proposal dated 14 July 2010 and the other information and clarifications received from the TPT during the proceeding of this case are considered in the analysis.

In the revised review proposal, the port has suggested to prescribe separate rates under two alternatives – viz. (i). only thermal coal and industrial coal are handled and (ii). if thermal coal, industrial coal, rock phosphate and copper concentrate are handled in combination. It is submitted by the port that the PPPAC has cleared the NCB-II project at TPT for handling bulk cargoes.

Before proceeding ahead with the review proposal of the TPT, it is necessary to bear in mind that as per Clause 2.2. of the guidelines for upfront tariff setting for PPP Projects at the major ports of February 2008, the tariff caps prescribed are applicable to all the terminals that are bid out in the port in the next five years for handling identical commodity / service. The review exercise in hand is not upfront tariff determination with reference to any particular project of the port and as rightly stated by the port not with reference to any user /developer specific.

- (ii). It is to be noted that review of the earlier Order dated 23 February 2010 arises not for rectification of any error in the said Order but in the context of the port seeking alternative tariff if cargo is handled in combination in view of revision of the scope of the proposal. The Order of 23 February 2010 sets upfront tariff for coal handling terminal as the proposal from the port trust, which was supported by the feasibility report envisaged handling coal only in the facility to be created. The revised scope of operation envisaged by the port takes into account handling of rock phosphate and copper concentrate in addition to coal. It has to be recognized that the upfront tariff guidelines of 2008 do not explicitly prescribe any separate norms for mechanised handling for rock phosphate and coal concentrate or for mechanised cargo handling in the combination envisaged by the port. The feasibility report submitted by the port trust also does not take into account handling of rock phosphate and copper concentrate and therefore, no technical and operational specification oriented towards the revised scope of operation is available. The present form of semi-mechanical handling of rock phosphate and copper concentrate will not throw any light to the anticipated performance parameters in the fully mechanised facility envisaged. In this backdrop, this Authority has no other option but to rely upon the technical and operational details furnished by the port. The entire analysis is done relying on the following parameters adopted by TPT for these two cargo items:
 - (a). The handling rate for rock phosphate and industrial coal is assumed at 25000 tonnes / day in the calculation of quay capacity at par with industrial coal though the port admits that the density of these two cargo items is higher than industrial coal.
 - (b). The stack height of 6.6 tonnes / sq. mtrs. assumed for rock phosphate and copper concentrate is relied upon in the absence of any specific norms prescribed in the guidelines for these two cargo items.
- (iii). As stated in the factual note, in the first alternative, the port envisages handling of thermal coal and industrial coal only. The upfront tariff the thermal coal and industrial coal is already approved by this Authority vide Order No.TAMP/27/2009-TPT dated 23 February 2010. The port has not suggested any modification in the said Order with reference to handling these coal cargo. That being so, the upfront tariff approved in the tariff Order of 23 February 2010 will apply for handling of thermal coal and industrial coal in the prescribed combination.

In the second alternative, the port has proposed to prescribe separate ceiling rates if coal and other bulk cargo viz. rock phosphate and copper concentrate are handled in combination at the terminal. The exercise before this Authority is restricted to prescription of separate upfront tariff for the second alternative proposed by the port i.e. for handling of thermal coal, industrial coal, rock phosphate and copper concentrate.

- (iv). The port has in the revised proposal indicated the share of panamax vessel bringing thermal coal at 56%, industrial coal at 7%, rock phosphate at 15% and copper concentrate at 22%. The port has not explained the basis adopted for the proposed share of cargo composition in the optimal quay capacity calculation despite a specific query raised in this regard. The share of cargo capacity furnished by the port is relied upon.
- (v). As stated earlier, the TPT has considered the handling rate for rock phosphate and copper concentrate at 25000 tonnes / day at par with the industrial coal. The upfront tariff guidelines of 2008 do not prescribe any handling norm for mechanised handling of rock phosphate and copper concentrate. As admitted by the TPT also, the average productivity for other bulk cargo reported by the port at its own berth is not relevant in the instant case as the mechanised facilities envisaged in the terminal with two unloaders and conveyors are not comparable to the semi-mechanised handling at the existing berths with wharf cranes. Sterlite Industries Limited who are one of the major users of copper concentrate has not furnished the productivity factor for these two cargo items despite a specific request.

Since, the port agrees that the average density of rock phosphate and copper concentrate is higher than the average density of industrial coal, it was again advised to review the handling for these two cargo items, considering that the handling rate of rock phosphate and copper concentrate in tonnes will be higher even if the grab holds the same volume of these cargo items vis-à-vis industrial coal. The port has in the revised proposal maintained that the productivity for these two cargo items will be the same as for industrial coal irrespective of the density of cargo as the handling facility is the same. This Authority relies upon the expertise of the TPT with reference to handling rate for copper concentrate and rock phosphate which is considered at 25000 tonnes/ day. The handling rate for thermal coal and industrial coal are maintained as considered in the tariff Order of February 2010. Accordingly, the optimal quay capacity of the terminal is assessed at 8533700 tonnes per annum i.e. 8.53 Million tonnes per annum. Cargo-wise share of optimal quay capacity assessed by the port is 5723200 tonnes of thermal coal, 447125 tonnes of industrial coal, 958125 tonnes of rock phosphate and 1405250 tonnes of copper concentrate.

- (vi).
 - (a). The total stacking area of 70,000 sq. mtrs., as considered in the earlier proposal is maintained and is proposed to be allotted cargo-wise viz. 39200 sq. mtrs. for thermal coal, 4900 sq. mtrs. for industrial coal, 10500 sq. mtrs. for rock phosphate and 15400 sq. mtrs. for copper concentrate for determining the optimal yard capacity.
 - (b). Stating that the stack height for rock phosphate and copper concentrate can be higher than the level considered for industrial coal, the Sterlite Industries Limited has suggested to adopt the stack height at 6.6 tonnes/sq. mtrs. for copper concentrate and rock phosphate at par with thermal coal as the weighted average density of these cargo is similar to thermal coal.

The port had initially requested to consider the stacking factor at 3.5 tonnes/ sq. mtr. in view of the nature of copper concentrate and rock phosphate and sensitivity of nearby marine environment which require a safe stack height is to be maintained at the new facilities to be created to conform with the regulation of environmental authorities. The port has reported to have achieved average stacking height of 7.5 tonne / sq. mtrs. for bulk cargo. It has submitted that stacking factor achieved by the port is with reference to limited open space in the transit area and at stackyard protected by break water parapet wall and the flying of cargo during windy period is completely restricted. This cannot be applied for the new facilities to be created which does not envisage such arrangement and moreover it has to conform with the regulation of environmental authorities.

The position clarified by the TPT about the wind factor affecting stacking height is appreciated but does not found to be fully relevant to the point raised by us. The stacking height is measured in metres which is different from the stacking factor which represents cargo in tonnes that could be stacked per sq. mtr. The density of rock phosphate and copper concentrate being higher than the industrial coal as admitted by the port also, higher quantity can be stacked in terms of tonnes per square metre even by maintaining permissible stacking height. When pointed this to the TPT, it has subsequently reviewed its earlier stand and considered the stacking factor of 6.6 tonnes/ sq. mtr. for rock phosphate and copper concentrate which is relied upon for assessing the optimal yard capacity.

The turnover factor for the two cargo items is considered at 14 by the TPT as against turn over factor of 28 for thermal coal and industrial coal. In the storage calculation furnished by the port, the annual turnover for copper concentrate is worked out at 15 and for rock phosphate at 13 based on daily evacuation of these two cargo at 4800 tonnes per day.

It is notable that the turnover for thermal coal and industrial coal assumed by the port in the original proposal was 28 which was considered in the tariff Order of 23 February 2010. Even in the review proposal filed by the port on 25 June 2010, the port has maintained that the turn over factor at 28 for all commodities including rock phosphate and copper concentrate. Plot turnover depends on evacuation and may not perhaps have any linkage to the density of cargo. No justification is furnished by the port for scaling down the turn over ratio particularly for these two bulk cargo items to 14. It is notable that there is a gap between the optimal quay capacity assessed by the port at 8.53 Million tonnes and the optimal yard capacity assessed by the port at 7.08 Million tonnes per annum. In the absence of any justification furnished by the port for assuming the turn over for rock phosphate and copper concentrate at the lower level, this factor is retained at 28 as considered for thermal coal and industrial coal. This will also enable to reduce the mismatch between the optimal quay and the optimal yard capacities. It is necessary for the port to ensure that evacuation facilities to clear cargo from the terminal are developed.

Adopting all the parameters as assumed by the TPT subject to modification in the turn over factor for the two cargo items, the optimal yard capacity works out to 8.76 million tonnes per annum. Cargo-wise optimal yard capacity assessed by the port is 5070912 tonnes of thermal coal, 336140 tonnes of industrial coal, 1358280 tonnes of rock phosphate and 1992144 tonnes of copper concentrate.

- (vii). As per the upfront tariff guidelines, lower of the optimal quay or the optimal yard capacity is to be considered as the optimal capacity of the terminal for determining the upfront tariff. In this case, the optimal quay capacity is found to be lower than the optimal yard capacity if seen at aggregate level. In the instant case the port has also furnished optimal quay and the optimal yard capacity cargo-wise which has been modified in our analysis with reference to the turnover factor for rock phosphate and copper concentrate. Cargo-wise capacities determined reveals that the optimal yard capacity is lower than the optimal quay capacity for thermal coal and industrial coal whereas for rock phosphate and copper concentrate, the optimal quay capacity is lower than the optimal yard capacity. Therefore, lower of the two capacities for each cargo items is considered i.e. 5070912 tonnes of thermal coal, 336140 tonnes of industrial coal, 958125 tonnes of rock phosphate and 1405250 tonnes of copper concentrate. Accordingly, the optimal capacity of the terminal is 7770427 tonnes per annum which is considered for setting upfront tariff for handling coal cargo in combination with rock phosphate and copper concentrate.
- (viii). No revision in the capital cost considered in the earlier Order is proposed as the same facility concerned for handling coal will cater to the requirement of rock phosphate and copper concentrate.

- (ix). The operating cost for cargo handling activity considered in the earlier Order will not undergo any modification except the power cost which is now estimated with reference to the optimal capacity of 7.77 million tonnes. Consequently, the operating cost is estimated at Rs.6777.48 lakhs and the annual revenue requirement is estimated at Rs.11604.52 lakhs. As per the guidelines, 98% of the total revenue requirement is apportioned to handling charge and 1% each to storage charge and miscellaneous charge for arriving at the pre-determined tariff. Accordingly, the revised revenue requirement estimated apportioned to handling charge is Rs.11372.42 lakhs (as against Rs.11312.56 lakhs estimated by the TPT), Rs.116.05 lakhs from storage charges (as against Rs.114.86 lakhs estimated by the TPT) and Rs.116.05 lakhs from Miscellaneous Charges.

The Annual revenue requirement from the berth hire charge determined at Rs.648.74 lakhs in the tariff Order of February 2010 does not undergo any modification.

The port has not furnished any detailed calculation of the operating cost, annual revenue requirement, etc., while seeking approval of the upfront tariff in the revised calculation submitted vide its letter dated 14 July 2010. Based on modified annual revenue requirement indicated by the port in the calculation of cargo-wise composite handling charge, the estimates of power cost, and other items are extrapolated to reflect the port estimates in the cost statement. The modified cost statement is attached as **Annex - I**.

- (x). The upfront tariff guidelines do not explicitly require prescription of separate rates for different categories of coal. Hence a uniform upfront handling rate was prescribed for both thermal coal and industrial coal in the tariff Order of February 2010 as both these cargo fall under coal category. This is also in line with the approach followed in the upfront tariff determined for coal terminals in Visakhapatnam Port Trust and also Mormugao Port Trust. The upfront tariff prescribed in the tariff Order of 23 February 2010 will apply if only these two categories of coal cargo are handled by the operator.

In the second alternative now envisaged by the TPT for which the current review exercise is undertaken, the two bulk cargo viz. copper concentrate and rock phosphate by nature of cargo are not coal and cannot be categorised with coal cargo even if the handling rates are the same. It is, therefore, not appropriate to prescribe a uniform handling rate for these cargo items to be handled in combination with coal cargo. Different handling rate need to be prescribed for each of the cargo items linking it to the productivity rate of the respective cargo. While doing so, the rate for the industrial coal also need to be prescribed separately based on the productivity rate as the cargo mix envisaged is completely different from the coal terminal considered in the tariff Order of February 2010. The TPT in the revised proposal has furnished commodity-wise tariff cap taking into consideration the cargo wise optimal capacity assessed by the port and the expected cargo working days with reference to the handling rate. The calculation furnished by the TPT is modified with reference to the revised cargo-wise optimal capacity considered in the calculation.

The port envisages the entire thermal coal to be coastal category. Coastal concession is not envisaged for thermal coal in the Government policy in this regard. The TPT has confirmed that industrial coal, rock phosphate and copper concentrate will be foreign cargo. Though prescribing concession rate to coastal cargo / vessel is not likely have any impact on the revenue realization, concessional rate is prescribed for eligible coastal cargo in line with the Government policy in this regard. Accordingly, the composite handling rate is prescribed at Rs.121.11 for Thermal coal and Rs.193.78 per tonne for industrial coal, rock phosphate and copper concentrate. A statement detailing the calculations is attached as **Annex - II**.

- (xi). The TPT has furnished the calculation for determining the slab-wise storage charge beyond the free period. In the said calculation, the TPT has assumed that the turnover of copper concentrate and rock phosphate at 15 and 13.32 respectively based on the evacuation of 4800 tonnes / day. For the reasons cited in the earlier paragraph the parameters proposed by the TPT are not fully relied upon in the analysis.

For determining the storage charge, the cargo capacity likely to attract storage charge after free period is assumed at 14.3% as considered in the tariff Order of 23 February 2010. Considering the revised revenue requirement and cargo capacity likely to attract storage charge after the free period, the storage charge for the first six days is arrived at Rs.1.74 per tonne per day, Rs.2.82 per tonne per day for the next six days and Rs.5.50 per tonne per day for the last slab maintaining the differential in the rates as considered in the tariff Order of February 2010.

- (xii). Based on the modified revenue requirement, tariff cap for miscellaneous services is prescribed at Rs.1.49 per tonne.
- (xiii). There is no modification in the annual revenue requirement determined for berth hire service in the tariff Order of February 2010. The TPT has furnished the berth hire working for the revised optimal capacity assessed for the second alternative handling of cargo. The GRT, parcel size of vessel and the handling rate for rock phosphate and copper concentrate are assumed at par with industrial coal in determining the berth hire charge. The impact of concession rate applicable to the coastal vessels carrying thermal coal is considered. The approach followed by TPT is in line with the approach followed while determining upfront berth hire in other Major Port Trusts.

Taking into account the modified optimal capacity with the consequent modification in the number of vessels and the GRT hours, the upfront berth hire for foreign-going vessels works out to Re.0.3672 per GRT per hour and Re.0.2203 per GRT per hour for coastal vessel. Detailed computation of berth hire is furnished at **Annex - III**.

- (xiv). The TPT has requested to prescribe separate upfront tariff for handling of coal cargo viz. thermal coal, industrial coal in combination with rock phosphate and copper concentrate. As the optimal capacity of the terminal and share of cargo considered now under Alternative II are different from the parameters considered in the upfront tariff determined in the tariff Order of February 2010 for a dedicated coal terminal, upfront tariff schedule for handling the coal cargo in combination with other bulk cargo need to be prescribed separately. By way of abundant caution, it is clarified that upfront tariff schedule approved in this order will apply only if the terminal handles thermal coal and industrial coal in combination with rock phosphate and copper concentrate at the proportion as envisaged in this alternative. If the terminal handles only thermal coal and industrial coal, then the upfront tariff arrangement prescribed in the Order No.TAMP/27/2009-TPT dated 23 February 2010 will be applicable.
- (xv). Definitions / general terms and conditions and the provisions relating to annual indexation in the upfront tariff prescribed in the upfront tariff schedule for coal terminal are incorporated in the alternative upfront tariff schedule prescribed in this order.
- (xvi). If at the time of actual operations of the terminal, any of the parameters adopted to decide this case or in the tariff Order of 23 February 2010 are found to vary significantly, thus having an impact on the upfront tariff approved, then the TPT should file an appropriate proposal for resetting the upfront tariff fixed now as the case is and should also incorporate an appropriate clause to this effect in the concession agreement.

11.1. 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.

11.2. 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.

11.3. The performance norms for the projects 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.

11.4. The actual performance of the private operators 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 Tuticorin Port Trust. If any action is to be taken against the private operators, the Tuticorin Port Trust shall initiate appropriate action in accordance with the provisions of the relevant Concession Agreement.

11.5. 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 Tuticorin Port Trust a report containing the terminal's physical and financial performance during the preceding three months. The quarterly report should specifically highlight any deviations from the parameters assumed to determine the tariff caps in this order.

12. In the result, and for the reasons given above and based on a collective application of mind,, this Authority approves separate upfront tariff schedule caps for handling of coal cargo viz. thermal coal, industrial coal in combination with rock phosphate and copper concentrate as attached as **Annex - IV**.

(Rani Jadhav)
Chairperson

REVIEW OF UPFRONT TARIFF FOR COAL TERMINAL AT TUTICORIN PORT TRUST FIXED BY THE AUTHORITY VIDE ORDER DATED 23 FEBRUARY 2010 FOR DETERMINING UPFRONT TARIFF FOR ALTERNATE HANDLING OF COAL CARGO VIZ. THERMAL COAL AND INDUSTRIAL COAL IN COMBINATION WITH ROCK PHOSPHATE AND COPPER CONCENTRATE

		Rs. in lakhs	
Sr. No.	Particulars	Revised Estimates furnished by TPT vide letter dated 14 July 2010 (Refer the note)	Estimates of TPT modified by TAMP
I	<u>Optimal capacity</u>		
(i).	<u>Optimal Quay Capacity</u>		
(a).	Share of Vessel Size		
	Percentage share of capacity of Panamax vessels (for thermal coal) vessels upto 75000 DWT (S1)	56.0%	56.0%
	Percentage share of capacity of Panamax vessels for industrial coal (S2)	7.0%	7.0%
	Percentage share of capacity of Panamax vessels (for Rock Phosphate) (S3)	15.0%	15.0%
	Percentage share of capacity of Panamax vessels (for Copper Concentrate) (S4)	22.00%	22.00%
(b).	Ship day Output (in tonnes per day)		
	- Panamax vessels (for thermal coal) (P1)	40000	40000
	- Panamax vessels (for Copper Concentrate, Rock Phosphate) (P2)	25000	25000
	- Panamax vessels (for industrial coal) (P3)	25000	25000
(c).	Optimal Quay Capacity cargo-wise = $0.7*((S1*P1)+(S2*P2)*365$		
	Optimal Quay Capacity for Thermal coal	5723200	5723200
	Optimal Quay Capacity for industrial coal	447125	447125
	Optimal Quay Capacity for Rock phosphate	958125	958125
	Optimal Quay Capacity for Copper Concentrate	1405250	1405250
	Optimal Quay Capacity	8533700	8533700
	Optimal Quay Capacity in million tonnes	8.53	8.53
(ii).	<u>Optimal Yard Capacity</u>		
(a).	Area of yard made available by the Port (in square metres) (A)	Thermal coal 39200, Industrial coal 4900, Rock Phosphate 10500 and Copper Concentrate 15400	Thermal coal 39200, Industrial coal 4900, Rock Phosphate 10500 and Copper Concentrate 15400
(b).	Area available for stacking (%) (U)	70%	70%
(c).	Stacking Quantity per square metre (tons) (Q)		
	Thermal Coal	6.6 T/sqm	6.6 T/sqm
	For Copper concentrate, Rock Phosphate and industrial coal	3.5 T/sq m for industrial coal and 6.6 T/sq mt for Copper Concentrate and Rock Phosphate	3.5 T/sq m for industrial coal and 6.6 T/sq mt for Copper Concentrate and Rock Phosphate
(d).	Annual Turnover Ratio of the plot (T)	28 for Thermal Coal and industrial coal and 14 for Copper Concentrate and Rock Phosphate	28 for Thermal Coal and industrial coal and 28 for Copper Concentrate and Rock Phosphate
(e).	Optimal Yard Capacity (in tonnes) = $0.7 * A * U * Q * T$ (for thermal coal)	5070912	5070912
	Optimal Yard Capacity (in tonnes) (for industrial coal)	336140	336140
	Optimal Yard Capacity (in tonnes) (for Rock phosphate)	679140	1358280
	Optimal Yard Capacity (in tonnes) (for Copper concentrate)	996072	1992144
(f).	Total Optimal Yard Capacity (in tonnes)	7082264	8757476
(g).	Total Optimal Yard Capacity (in million tonnes)	7.08	8.76
(iii).	Optimal capacity of the Terminal - lower value of the optimal quay capacity and optimal stack yard capacity (in Million tonnes).	7.08	8.53
	Optimal capacity considered in analysis at lower of the quay capacity / yard capacity for individual cargo		
	For thermal coal - Yard Capacity	-	5070912
	For industrial coal - Yard Capacity	-	336140
	For Rock phosphate - Quay Capacity	-	958125
	For Copper Concentrate - Quay Capacity	-	1405250
	Total Optimal capacity in tonnes	-	7770427
	Total Optimal capacity of the terminal in million tonnes	7.08	7.77

Sr. No.	Particulars	Revised Estimates furnished by TPT vide letter dated 14 July 2010 (Refer the note)	Estimates of TPT modified by TAMP
II	Capital Cost		
(i).	Cargo Handling Activity	Rs. in lakhs	Rs. in lakhs
(a).	Civil Cost	6598.00	6598.00
(b).	Equipment Cost	22166.00	22166.00
(c).	Miscellaneous [5% on (a) and (b) excluding works contract tax.]	1405.00	1405.00
	Total Capital Cost for Handling Activity (a + b + c)	30169.00	30169.00
(ii).	Capital Cost For Berthing Services	3040.00	3040.00
(iii).	Total Capital Cost of the Project	33209.00	33209.00
III	Operating Cost		
(i).	Cargo Handling Activity	Estimates (Rs.in lakhs)	Estimates (Rs.in lakhs)
(a).	Power Cost (@ 1.4 units per tonne)	647.11	708.20
(b).	Repair & Maintenance		
	- Civil Assets (1% on civil work)	65.98	65.98
	- Mechanical & Electrical Equipment including spares (7% on mechanical and electrical works)	1551.62	1551.62
(c).	Insurance (1%on Gross fixed assets)	301.69	301.69
(d).	Depreciation		
	- Civil Assets 3.34%	220.37	220.37
	- Mechanical and Electrical Works 10.34%%	2291.96	2291.96
(e).	License Fee		
	- Water Front Charges (33250 sq. mtr @ Rs. 8 per sq. mtr./month *12)	31.92	31.92
	- Stack yard at Hare Island (126000sq. mtr @ Rs. 6.40 per sq. mtr.month *12)	96.77	96.77
	- Way Leave for conveyors (36480 sq. mtr @ Rs. 1.428 per sq. mtr.annum)	0.52	0.52
(f).	Other Expenses towards salaries and overheads (5% on gross value of assets)	1508.45	1508.45
	Total Operating Cost	6716.39	6777.48
IV	Revenue Requirement & proposed tariff		
(i).	Cargo Handling charge		
	1. Revenue Requirement		
(a).	Total Operating Cost	6716.39	6777.48
(b).	Return on capital Employed @ 16%	4827.04	4827.04
(c).	Total Revenue requirement from cargo handling activity	11543.43	11604.52
	2. Apportionment of Revenue Requirement		
(a).	Coal Handling Charges (98% of ARR)	11312.56	11372.42
(b).	Storage Charges (1%of ARR)	114.86	116.05
(c).	Miscellaneous Charge (1% of ARR)	116.01	116.05
(d).	Total Revenue requirement from cargo handling activity	11543.43	11604.52
	3. Proposed tariff per tonne rate		
(a).	Coal Handling Charge (Composite)		
	- Revenue Requirement (Rs. in lakhs)	11312.56	11372.42
	- Capacity (Million Tonnes per annum)	7.08	7.77
	Composite Handling Charge - cargo wise (Rs.per tonne) - Foreign		
	Thermal coal (Foreign or coastal)	136.87	121.11
	Industrial coal	211.36	193.78
	Rock phosphate	219.46	193.78
	Copper Concentrate	217.27	193.78
(b).	Storage Charge		
	- Revenue Requirement (Rs. in lakhs)	114.86	116.05
	- % of Cargo to attract storage charge		14.3%
	- Cargo likely to pay storage charge (lakh tonnes)		11.11
(i).	Free period	10 days	10 days
(ii).	Storage Charge (beyond the free period)	Rate Per tonne per day or part thereof	Rate Per tonne per day or part thereof
	-Firstsix day	1.14	1.74
	-Next six days	1.84	2.82
	-Thereafter	3.60	5.50
(c).	Miscellaneous Charge		
	- Revenue Requirement (Rs. in lakhs)	116.01	116.05
	- Capacity (Million Tonnes per annum)	7.08	7.77
	- Miscellenous Charge per tonne	1.64	1.49
(ii).	BERTH HIRE CHARGES	(Rs. in Lakhs)	(Rs. in Lakhs)
(a).	Revenue requirement from Berthing services as estimated in the tariff Order of 23 February 2010	648.74	648.74
	Berth hire Charge		
	Foreign going vessel (Industrial Coal) (Rate per GRT per hour) in Re	0.4318	0.3672
	Coastal vessel (Thermal Coal) (Rate per GRT per hour) in Re	0.2591	0.2203

Note: The TPT has not furnished detail calculation of operating cost, estimated revenue requirement with reference to the optimal capacity assessed at 7.08 Million Tonnes in its letter dated 14 July 2010. In the statement prepared above, the revenue requirement considered by the TPT for arriving at composite handling charge and storage charge in its letters dated 14 July 2010 and 15 July 2010 is taken as the base and the other figures are extrapolated based on the cost statement submitted by the port in its letter dated 17 June 2010 with suitable modifications to match the revenue requirement considered by the port while proposing the revised upfront rate in its proposal dated 14 July 2010 .

STATEMENT SHOWING THE CALCULATIONS OF HANDLING CHARGES

Review proposal by TPT vide letter dated 14 July 2010

Cargo Group	Cargo Share	Handling Rate in tonnes / Day	Cargo to be handled (tonnes)	Cargo Working Days	Percentage of Cargo Working days	Revenue Require-ment (Rs. in Lakhs)	Cargo to be handled		Rate in Rs. per tonne For foreign cargo	Rate in Rs. per tonne For coastal cargo
							(Foreign) in tonnes	Coastal (in tonnes.)		
Thermal Coal	56.00%	40000	5070912	127	61.18%	6,940.56	0	5070912	-	136.87
Industrial Coal	7.00%	25000	336140	13	6.49%	710.45	336140	0	211.36	126.82
Copper Concentrate	15.00%	25000	679140	27	13.11%	2,186.00	679140	0	219.46	131.68
Rock Phosphate	22.00%	25000	996072	40	19.23%	1,475.55	996072	0	217.27	130.36
Total	100%		7082264	207	100%	11312.56	2011352	5070912		

STATEMENT SHOWING THE CALCULATIONS OF HANDLING CHARGES

Modified by TAMP

Cargo Group	Cargo Share	Handling Rate in tonnes / Day	Cargo to be handled (tonnes)	Cargo Working Days	Percentage of Cargo Working days	Revenue Require-ment (Rs. in Lakhs)	Cargo to be handled		Rate in Rs. per tonne For foreign cargo	Rate in Rs. per tonne For coastal cargo
							(Foreign) in tonnes	Coastal (in tonnes.)		
Thermal Coal	56.00%	40000	5070912	127	54.00%	6,141.40	0	5070912	121.11	121.11
Industrial Coal	7.00%	25000	336140	13	5.73%	651.36	336140	0	193.78	116.27
Copper Concentrate	15.00%	25000	958125	38	16.33%	1,856.62	958125	0	193.78	116.27
Rock Phosphate	22.00%	25000	1405250	56	23.94%	2,723.04	1405250		193.78	116.27
Total	100%		7770427	235	100%	11372.42	2699515	5070912		

BERTH HIRE COMPUTATION

Working furnished by TPT vide fax dated 20 July 2010.				
Sr. No.	Particulars	Thermal Coal	Industrial Coal, Copper Concentrate and Rock Phosphate	Total
i.	Average DWT	75000	75000	
ii.	Ship day output	40000	25000	
iii.	Average GRT	40000	40000	
iv.	Average parcel size	60000	60000	
v.	Tonnage expected to be handled	5070912	2011352	7082264
vi.	Average no of berth days (v / ii)	127	80	207
vii.	No of berth hours {24 x (vi)}	3043	1931	4973
viii.	Expected number of vessels (v/iv)	85	34	118
ix.	Total GRT hours	121701888	77235917	198937805
x.	Revenue Requirement			648.74
xi.	Berth hire - foreign going vessel			0.4318
	Berth hire -Coastal vessel			0.2591

Working for foreign / coastal vessel rate		
$77235917x + 121701888 * 0.6x =$		648.74
$77235916x + 73021133 * 0.6x =$		648.74
$x = \text{Foreign going vessel rate}$		0.4318
$\text{Coastal vessel Rate} = 0.6 \times \text{foreign going vessel rate}$		0.2591

Revised working of TAMP on the review proposal of the TPT

Sr. No	Particulars	Thermal Coal	Industrial Coal	Copper Concentrate and Rock Phosphate	Total
i.	Average DWT	75000	75000	75000	
ii.	Ship day output	40000	25000	25000	
iii.	Average GRT	40000	40000	40000	
iv.	Average parcel size	60000	60000	60000	
v.	Tonnage expected to be handled	5070912	336140	2363375	7770427
vi.	Average no of berth days (v / ii)	127	13	95	235
vii.	No of berth hours {24 x (vi)}	3043	323	2269	5634
viii.	Expected number of vessels (v/iv)	85	6	39	130
ix.	Total GRT hours	121701888	12907776	90753600	225363264
x.	Revenue Requirement				648.74
xi.	Berth hire - foreign going vessel				0.3672
	Berth hire -Coastal vessel				0.2203

Working for foreign / coastal vessel rate		
$103661376x + 121701888 * 0.6x =$		648.74
$103661376x + 121701888 * 0.6x =$		648.74
$x = \text{Foreign going vessel rate}$		0.3672
$\text{Coastal vessel Rate} = 0.6 \times \text{foreign going vessel rate}$		0.2203

TUTICORIN PORT TRUST

**UPFRONT TARIFF SCHEDULE FOR HANDLING COAL CARGO COMPRISING OF
THERMAL COAL, INDUSTRIAL COAL IN COMBINATION WITH ROCK PHOSPHATE AND
COPPER CONCENTRATE**

1.1. Definitions – General

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

- (i). **“Coastal vessel”** shall mean any vessel exclusively employed in trading between any port or place in India to any other port or place in India having a valid coastal licence issued by the competent authority.
- (ii). **“Day”** shall mean the period starting from 6 a.m. of a day and ending at 6 a.m. on the following day.
- (iii). **“Foreign-going vessel”** shall mean any vessel other than coastal vessel.

1.2. General Terms & Conditions

- (i). The status of the vessel, as borne out by its certification by the Customs or the Director General of Shipping, shall be the deciding factor for classifying into 'coastal' or 'foreign-going' category for the purpose of levying vessel related charges; and, the nature of cargo or its origin will not be of any relevance for this purpose.
- (ii).
 - (a). A foreign going vessel of Indian Flag having a General Trading Licence can convert to Coastal run on the basis of a Customs Conversion Order.
 - (b). A foreign going vessel of Foreign Flan can convert to coastal run on the basis of a Coastal Voyage Licence issued by the Director General of Shipping.
 - (c). In cases of such conversion, coastal rates shall be chargeable by the load port from the time the vessel starts loading coastal goods.
 - (d). In cases of such conversion, coastal rates shall be chargeable only till the vessel completes coastal cargo discharging operations; immediately thereafter, foreign going rates shall be chargeable by the discharge ports.
 - (e). For dedicated Indian coastal vessels having a Coastal Licence from the Director General of Shipping, no other document will be required to be entitled to Coastal rates.
- (iii).
 - (a). The berth hire charges for all coastal vessels should not exceed 60% of the corresponding charges for other vessels.
 - (b). The cargo related charges for all coastal cargo other than thermal coal should not exceed 60% of the normal cargo related charges.
 - (c). In case of cargo related charges, the concessional rates should be levied on all the relevant handling charges for ship shore transfer and transfer from/to quay to/from storage yard including wharfage.
 - (d). Cargo from a foreign port which reaches an Indian Port “A” for subsequent transshipment to Indian Port “B” will be levied the concession charges relevant for its coastal voyage. In other words, cargo from/to Indian Ports carried by vessels permitted to undertake coastal voyage will qualify for the concession.

- (iv). In calculating the gross weight or measurement by volume or capacity of any individual item, fractions upto 0.5 shall be taken as 0.5 unit and fractions of 0.5 and above shall be treated as one unit, except where otherwise specified.
- (v). Interest on delayed payments / refunds.
 - (a). The user shall pay penal interest on delayed payments of 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 on refunds will be counted only 20 days from the day of completion of services or on production of all the documents required from the users, whichever is later.
 - (d). The delay in payments 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 the scale of rates.
- (vi). All charges worked out shall be rounded off to the next higher rupee on the grand total of the bill.
- (vii).
 - (a). The rates prescribed in the Scale of Rates are ceiling levels: likewise, rebates and discounts are floor levels. The terminal operator may, if they so desire, charge lower rates and / or allow higher rebates and discounts.
 - (b). The terminal operator may also, if they so desire rationalise the prescribed conditionalities governing the application of rates prescribed in the Scale of Rates if such rationalisation gives relief to the user in rate per unit and the unit rates prescribed in the Scale of Rates do not exceed the ceiling levels.
 - (c). The terminal operator should notify the public such lower rates and / or rationalisation of the conditionalities governing the application of such rates provided the new rates fixed shall not exceed the rates notified by the TAMP.
- (viii). Users will not be required to pay charges for delays beyond reasonable level attributable to terminal operator.

2. BERTH HIRE CHARGES

Sl. No.	Vessels	Rate per GRT per hour or part thereof	
		Foreign Going Vessel (in Re.)	Coastal Vessel (in Re.)
1.	Vessels	0.3672	0.2203

Notes:

- (i). The Period of berth hire shall be calculated from time the vessel occupies berth till she vacates the berth.
- (ii).
 - (a). Berth hire shall stop four hours after the time of the vessel signaling its readiness to sail.
 - (b). The time limit of 4 hours prescribed for the cessation of the berth hire shall exclude the ship's waiting time for want of favorable tide conditions, inclement weather and due to lack of night navigation.
 - (c). The Master/ agent of the vessel shall signal readiness to sail only in accordance with favourable tidal and weather conditions.

- (iii). The Penal berth hire shall be equal to one-day's (24 hours) berth hire charges for a false signal.

"False Signal" would be when the vessel signals readiness and asks for a pilot in anticipation even when she is not ready for un-berthing due to engine not being ready or cargo operation not completed or such other reasons attributable to the vessels. This excludes signaling readiness when a vessel is not able to sail due to unfavorable tide, lack of night navigation or adverse weather conditions."

- (iv). Ousting Priority / Priority Berth Hire Charges:

The rates and conditions for granting ousting priority berthing / priority berthing will be governed by extant Government guidelines in this regard and provisions prescribed in the Scale of Rates of the Tuticorin Port Trust.

- (v). No berth hire shall be levied for the period when the vessels idle at its berths for continuous one hour or more due to break down of Terminal Operator's equipment or power failure or any other reasons attributable to the Terminal Operator.

3. CARGO HANDLING CHARGES

Sl. No.	Commodity	Unit	Rate in Rupees	
			Foreign	Coastal
(a).	Thermal coal	Per Metric Tonne	121.11	121.11
(b).	Industrial coal	Per Metric Tonne	193.78	116.27
(c).	Rock phosphate	Per Metric Tonne	193.78	116.27
(d).	Copper concentrate	Per Metric Tonne	193.78	116.27

Note:

The cargo handling charges prescribed above is a composite charge and includes charges for unloading of the cargo from the vessel, transfer upto the point of storage, storage at the stackyard upto 10 days free period, loading on the trucks, wharfage and all other miscellaneous services not specifically prescribed in the Scale of Rates.

4. STORAGE CHARGES (Per tonne per day)

The storage charges to the cargo stored in the stack yard beyond the free period allowed shall be as below:

(A). Free Period : 10 days

(B). Storage charges after free period (Per tonne / day)

First 6 days after expiry of Free period	-	Rs. 1.74 per tonne per day
For the next 6 days	-	Rs. 2.82 per tonne per day
Thereafter	-	Rs. 5.50 per tonne per day

Notes:

- (i). For the purpose of calculation of free period Customs notified holidays and Terminals 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 / ship 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 thermal coal, industrial coal, rock phosphate and copper concentrate handled:

Sl. No.	Particulars	Rate per tonne or part thereof (in Rs.)
(i).	Charges for all miscellaneous services such as environment and management, sweeping of cargo on the wharf safety measures, etc.	1.49

6. GENERAL NOTE TO SCHEDULE (2) TO (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 2010 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 31st March of the following year.

* * * *

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

- F. No.TAMP/29/2010-TPT** - Review proposal filed by the Tuticorin Port Trust on the Order passed by the Authority on 23 February 2010 fixing upfront tariff for coal handling terminal at Tuticorin Port on DBFOT basis.

A joint hearing in this case was held on 30 June 2010 at the Tuticorin Port Trust (TPT) premises. The TPT made a power point presentation of its proposal. At the joint hearing, TPT and the concerned users / organisation bodies have made the following submissions:

Tuticorin Port Trust

- (i). Powerpoint presentation.
- (ii). All parameters applicable to Industrial coal will hold good for copper concentrate and rock phosphate.

TAMP

- (i). TPT to furnish the actual performance of rock phosphate / fertiliser / copper concentrate in terms of handling and storage.

i-maritime for Madhucon

- (i). Evacuation of 16000 Tonnes / day is not possible. Port has to review the capital estimates.

M/s.Sterlite Industries Ltd.

- (i). Handling rate of industrial coal was determined based on density of 0.5. For copper concentrate, the density is higher. Therefore, the handling rate could be higher.
- (ii). Stacking factor of 3.5 can be increased for copper concentrate / phosphate.

2. As decided in the joint hearing, M/s.Sterlite Industries Ltd. were requested to furnish the productivity and stacking factor details relating to copper concentrate and rock phosphate to Tuticorin Port Trust (TPT). The TPT was advised to consider the suggestions to be received from M/s.Sterlite Industries Ltd. and review the capacity calculation, if found necessary.

3. In response to the decisions taken at the joint hearing, the TPT has forwarded the written submissions made by M/s.Sterlite Industries India Ltd (SIL). The TPT has also furnished its comments on the points made by SIL. The main points submitted by SIL and the comment of TPT thereon are summarised below:

Sl. No.	Submissions by M/s.Sterlite Industries Limited	Port's comments															
1.	The other bulk cargoes considered in the proposal are industrial coal, copper concentrate, rock phosphate and fertilisers.	It is in line with RFQ only. Fertilizer (finished) are excluded.															
2.	The traffic mix of the various cargo categories in the 2008-09 is as follows. (the figures have been taken from Techno-Economic Feasibility Report for NCB II)-Industrial Coal 2.11 m.t, Copper Concentrate-1.14 m.t. and Rock Phosphate 0.66mt. Finished fertilisers-0.93 m.t.	The traffic mix of various categories actually handled during 2008-09 and 2009-10 are as follows: (in million tonnes) <table> <tr> <th>Cargo name</th><th>2008-09</th><th>2009-10</th></tr> <tr> <td>Industrial coal</td><td>2.11</td><td>3.03</td></tr> <tr> <td>Copper concentrate</td><td>1.13</td><td>1.18</td></tr> <tr> <td>Rock phosphate</td><td>0.66</td><td>0.81</td></tr> <tr> <td>Finished Fertilizers</td><td>1.14</td><td>1.23</td></tr> </table>	Cargo name	2008-09	2009-10	Industrial coal	2.11	3.03	Copper concentrate	1.13	1.18	Rock phosphate	0.66	0.81	Finished Fertilizers	1.14	1.23
Cargo name	2008-09	2009-10															
Industrial coal	2.11	3.03															
Copper concentrate	1.13	1.18															
Rock phosphate	0.66	0.81															
Finished Fertilizers	1.14	1.23															

3.	The densities of the various commodities are as follows: Industrial coal (0.5 T per cubic meter.), Copper Concentrate (1.6 to 3.0 per cu. metre) and Rock Phosphate (1.5 to T/cum)	Individual bulk cargo has different densities.
4.	A terminal which handles coal can not handle fertilizers due to issues of contamination. This is the feedback that we have received from our interviews with port authorities as well as from importers of fertilizers	Port authorities have not confirmed as such anywhere. It is for the bidder to evaluate handling mechanism included in the upfront tariff proposal and plan the cargoes to be brought to the Terminal while handling the bulk cargoes at NCB II. The bidders may consider the views of their own sources while submitting their bids. As stated in SI.No.1, fertilizer (finished) is excluded.
5.	Considering traffic mix and densities, the weighted average density of other bulk cargo, works out to 0.99T per cubic metre. $(2.11 \times 0.5 + 1.14 \times 1.6 + 0.66 \times 1.5) / (2.11 + 1.14 + 0.66)$. This is comparable to the density of thermal coal, which has been taken as 0.95 T per cubic metre by TPT	The stacking factor fixed for other bulk cargoes are mainly based on the nature of hazardousness. The calculation furnished by the company is not acceptable as weighted average density linked with existing cargo handled is not realistic and logical.
6.	Due to the above reasons, it is requested that a stacking factor for other bulk cargo is also taken as 6.6, the same as the stacking factor considered for thermal coal.	The proposed stacking yard at Hare Island is open stacking. The wind pattern at Tuticorin Region is a typical tropical pattern. The average wind speed at Tuticorin varies between 27.5 km per hour and 29 kmph and maximum predominant wind speed of 80 kmph. The highest wind speed recorded during cyclonic period at 113 kmph and 142 kmph. The stacking factor is linked with the nature of hazardous and toxic materials to be stacked, physical environment prevailing at the area and nearby biological environment, etc. According to the shape, the copper concentrate and rock phosphate are powder in nature. It can fly and spread in the nearby sea area and will cause serious threat to marine life/environment. The stack yard at Wharf is protected by ship and breakwater parapet wall, the flying of hazardous materials during windy period completely restricted. Hence, it may not be appropriate to adopt stacking factor as proposed by the individual firm. Considering the nature of hazardous materials and sensitivity of nearby marine environment, it may be appropriate to adopt stacking factor at 3.5 tonnes per sq. metre for other bulk cargoes. The permissible stacking factor inside transit shed, and warehouses allowed is also 3.5 tonnes per square metre by the Port. Hence, the same shall be adopted. For the reasons stated and as provided in Clause 10 (IV)(b)(ii) of TAMP Notification dated 16.4.2010, the stacking factor considered in the proposal is only 3.5 tonnes per sq.m. for other bulk cargoes and not 6.6 tonnes per sq.m.