



Thar Coal & Energy Board

Government of Sindh

No TCEB/Registrar/2-1/2014

October 21 , 2016

**DETERMINATION OF THAR COAL & ENERGY
BOARD IN THE MATTER OF TARIFF FOR SINDH
ENGRO COAL MINING COMPANY MINE
PURSUANT TO FINANCIAL CLOSE FOR 3.8
MTPA CAPACITY AT BLOCK II THAR
COALFIELDS, DISTRICT THARPARKAR, SINDH,
PAKISTAN**





Thar Coal & Energy Board

Government of Sindh

No TCEB/Registrar/2-1/2014

October, 21 2016

Determination of Reference Tariff for Sindh Engro Coal Mining Company Mine Pursuant to Financial Close for 3.8 MTPA Capacity at Block II Thar Coalfields, District Tharparkar, Sindh, Pakistan

Thar Coal Tariff Determination Committee

Constituted in Pursuance of Rule 3(1) of Thar Coal Tariff Determination Rules, 2014

Dr Abdul Ghani Pathan

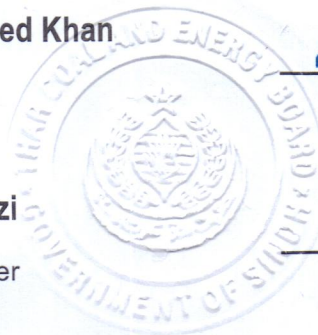
Member

Mr Sultan Farooq Ahmed Khan

Member

Mr Rashid Hussain Kazi

Member / Presiding Officer





Thar Coal & Energy Board

Government of Sindh

No TCEB/Registrar/2-1/2014

November 9, 2016

In pursuance of the Rule 10(5) of the Thar Coal Tariff Determination Rules, 2014, it is certified that the Thar Coal & Energy Board, on the recommendation of the Thar Coal Tariff Determination Committee, has approved the Determination of Reference Tariff for Sindh Engro Coal Mining Company Mine Pursuant to Financial Close for 3.8 MTPA Capacity at Block II Thar Coalfields, District Tharparkar, Sindh, Pakistan, appended in the following pages.




09/11/2016

Rashid Hussain Kazi

Managing Director
Thar Coal & Energy Board



Thar Coal & Energy Board Government of Sindh

BCM	Bank Cubic Meter
CAR	Contractors' All Risk
COD	Commercial Operations Date
CPI	Consumer Price Index
CSA	Coal Supply Agreement
ECC	Economic Coordination Committee
EPC	Engineering, Procurement & Construction
EPP	Energy Purchase Price
GCV	Gross Calorific Value
GoS	Government of Sindh
HSE	Health, Safety & Environment
IA	Implementation Agreement
ICB	International Competitive Bidding
ICC	In-pit Crushing & Conveying
IDC	Interest During Construction
IRR	Internal Rate of Return
KIBOR	Karachi Inter-Bank Offer Rate
LC	Letter of Credit
LDs	Liquidated Damages
LHV	Lower Heating Value
LIBOR	London Inter-Bank Offer Rate
MJ / Kg	Mega Joules per Kilogram
MSF	Mine Service Facilities
MTPA	Million Tons Per Annum
MW	Megawatt
MT	Million Tons
MYT	Multi Year Tariff
NCV	Net Calorific Value
NEPRA	National Electric Power Regulatory Authority
NOC	No Objection Certificate
NTDC	National Transmission & Despatch Company
O&M	Operations & Maintenance
OGRA	Oil & Gas Regulatory Authority
PKR	Pakistani Rupee
PPA	Power Purchase Agreement
RCOD	Required Commercial Operations Date
RMB	Chinese Renminbi
RoE	Return on Equity
RoEDC	Return on Equity During Construction
SBLC	Stand By Letter of Credit
SBP	State Bank of Pakistan
SCOD	Scheduled Commercial Operations Date
SECMC	Sindh Engro Coal Mining Company
SEPA	Sindh Environmental Protection Agency
TCEB	Thar Coal & Energy Board
TT & OD	Telegraphic Transfer & On Demand
USD	United States Dollar



Thar Coal & Energy Board

Government of Sindh

The Thar Coal & Energy Board, as per the respective notifications of the Government of Sindh and Government of Pakistan is the coal-pricing agency, in accordance with Section 5(m) of Thar Coal & Energy Board Act, 2011. This determination is conducted in accordance with the authority vested with TCEB and pertains to the Petition of Sindh Engro Coal Mining Company for Determination of Reference Financial Close Stage Tariff for SECMC's Mine of 3.8 MTPA up to 6.5 MTPA at Block II Thar Coalfields, District Tharparkar, Sindh, Pakistan, dated April 28, 2016. The coal tariff determination relates to the specific mine lease of Block II Thar Coalfields. The Petition has been assessed and reviewed in accordance with the parameters and guidelines established under the Thar Coal Tariff Determination Rules, 2014 dated November 27, 2014 as notified by Government of Sindh. The coal tariff, so determined, shall form the basis of fuel cost for downstream power generation to be determined by NEPRA.

MATERIAL ASPECTS OF THE PETITION - ANALYSIS & DECISIONS

Subsequent to the award of Contract Stage Tariff the Petitioner is seeking updation of the awarded Tariff on the basis of firm terms and conditions as established by the Financial Close agreements, for 3.8 Mtpa mine, between the SECMC & its Lenders.

In addition to the Financing Terms of the Financial Close Agreement, SECMC is seeking inclusions of certain project outlays which it considers as cost items that need to be incorporated in the Financial Close Tariff.

The following is a summary of the salient aspects of the Financial Close Stage tariff Petition:

1. TERMS OF FINANCING

1.1. DEBT: EQUITY RATIO

The Contract Stage Tariff was awarded on basis of Debt:Equity ratio of 80:20. The final contractual arrangement for Debt:Equity ratio of the project is fixed at 75:25.

This is in line with guidelines and parameters defined in the Contract Stage Tariff and is allowed as an adjustment in the FC Stage Tariff.

1.2. MIX OF FOREIGN / LOCAL DEBT

The Contract Stage Tariff was petitioned on basis of 100% Local Debt. During the course of negotiations with Lenders the Petitioner has negotiated a mix of Foreign / Local Debt as follow

	Foreign Debt	Local Debt
Facility Size	USD 200 million	PKR 45 billion
Interest	6 mths LIBOR + 3.3%	6 mths KIBOR + 1.75%
Tenor	14 years	14 years
Sinosure Premium	6.616 %	



Thar Coal & Energy Board

Government of Sindh

The above is in line with prudent business practices and the interest rates as negotiated with the Lenders reflect market based realities. The petitioned adjustment is accordingly permitted.

1.3. ROEDC ON INSTANTANEOUS EQUITY DRAWDOWN

SECMC petitions that the debt drawdown cycle as per the loan agreements at times necessitates a higher percentage of equity drawdown than the limiting parameters defined in the Determination. Accordingly, the Petitioner seeks the computation of the ROEDC in proportion to the instantaneous drawdowns of equity.

The Determination by TCEB allows an upfront equity drawdown of 35% followed by limiting parameters of pro-rata equity drawdown which is not to exceed 25% of the total drawdown. Impacts of micro changes in debt equity ratios need to be managed at by the Petitioner in an efficient manner at the project execution level and the tariff need not be unnecessarily burdened at every spike in monetary flows. The ROEDC on equity drawdowns will be subject to the limits of 25% of drawdown amounts.

2. ADDITIONAL COST OUTLAY & MISCELLANEOUS ITEMS

In addition to tariff adjustments directly associated with Financial Close, SECMC has petitioned for incorporation of anticipated additional costs on account of certain external / non-EPC Costs. The following summary table outlines the specifics of the petitioned anticipated costs.

S. No.	Description	Estimated Cost	Petitioned Rationale
1	Construction of dedicated Airstrip	USD 2.75 million	The airstrip planned by GoS has hit a construction snag due to a stay order obtained by a party.
2	Construction of waste water reservoir at Gorano	USD 17.5 million	The contracted work is running behind schedule, hence SECMC considers the need to execute the project from its resources
3	Development costs for expansion of mine to 7.5 mtpa	USD 2.94 million	The demand for additional coal is a credible reality and SECMC estimates the requirement of these funds for feasibility study and other engineering studies and administrative expenses.

The costs relating to the Airstrip and the waste water reservoir at Gorano are due to an apprehension that the contracting parties may not be able to fulfil their contractual obligations. TCEB understands that the GoS has undertaken to provide the support infrastructure including the provision of the specified works for which SECMC is seeking the additional dispensation to spend.



Thar Coal & Energy Board

Government of Sindh

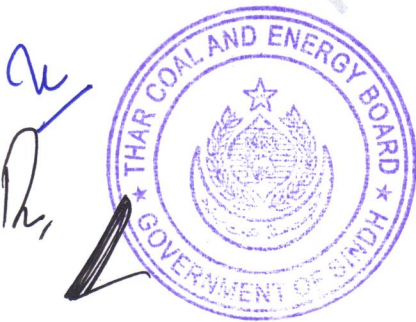
A Financial Close Tariff Petition is bounded by clearly defined parameters of matters strictly relating to finalized Terms of Project Debt. As such, the petitioned adjustments for such costs do not fall within the domain of a Financial Close Tariff Petition. Notwithstanding, petitions pertaining to consequences of extraneous factors as defined above cannot bear merit for consideration and or adjudication in any form or matter.

The claim for inclusion of estimated costs for mine expansion during subsequent development cannot be lumped up in the tariff for development of a 3.8 mtpa mine.

3. CATEGORIZATION OF COSTS – CONTROLLABLE / UNCONTROLLABLE

SECMC petitions that the cost categorizations and disciplines enforced in the Contract Stage Tariff Determination, particularly in terms of individual item costs may be lifted. Accordingly it is petitioned that while the control on overall cap of aggregate costs may be maintained, the capping of individual cost heads may be removed. Furthermore, it is petitioned that the categorization of Security Costs as controllable may be lifted and that this cost head may be categorized as uncontrollable cost.

TCEB considers that the costs under consideration related to estimates as at that stage no contractual commitments were in place. Accordingly, the Determination at Contract Stage had permitted these estimated costs within the tariff regime subject to maximum caps in specific cases. TCEB would like to maintain structured controls and caps over these estimated costs heads. The parameters defined for these costs under the Contract Stage Determination stand to remain in place. Accordingly, the petitioned relief and /or change is not permitted.





Thar Coal & Energy Board

Government of Sindh

COAL TARIFF DETERMINATION ORDER

No. TCEB/Registrar/2-1/2014: This determination is conducted in accordance with the authority vested with Thar Coal Energy Board and pertains to the Petition dated 28th April, 2016 of Sindh Engro Coal Mining Company for Determination of Reference Tariff pursuant to Financial Close for 3.8 Mtpa capacity at SECMC's Mine at Block II Thar Coalfields, District Tharparkar, Sindh, Pakistan. The Petition is assessed and reviewed in accordance with the parameters and guidelines established under the Thar Coal Tariff Determination Rules, 2014.

The Petitioner has submitted a request for determination of levelized tariff of USD 63.07 Ton for development & operations of 3.8 MTPA mining capacity and USD 47.34 per Ton for development & operations of an integrated mine development plan for 3.8 MTPA & 6.5 MTPA mining capacity respectively. The petitioned tariff was not strictly limited to the Terms of Financial Close and had also included additional cost items for additional works which the Petitioner wanted recognized within the ambit of a Financial Close Petition. The Determination does not factor in these extraneous costs as they do not fall within the domain of a Financial Close reference tariff.

Pursuant to Rule 10 of the Thar Coal Tariff Determination Rules 2014, Sindh Engro Coal Mining Company is allowed to charge the following ex mine mouth tariff for the composite production regimes of 3.8 MTPA & 6.5 MTPA:

Table I – Determined Composite Tariff (3.8M TPA & 6.5 MTPA)

Project Tariff	Year 1 – 12 Levellized	Year 13 – 30 Levellized	Year 1 – 30 Levellized
Total Production Payment Tariff Components	13.59	11.78	13.09
Total Capacity Payment Tariff Components	35.29	20.47	31.19
Total Project Tariff	48.88	32.25	44.27

All amounts in USD per Ton

Table II – Table I – Determined Tariff (3.8M MTPA)

Project Tariff	Year 1 – 10 Levellized	Year 11 – 30 Levellized	Year 1 – 30 Levellized
Total Production Payment Tariff Components	15.50	13.91	14.95
Total Capacity Payment Tariff Components	50.31	29.52	43.07
Total Project Tariff	65.81	43.43	58.02

All amounts in USD per

GENERAL CONDITIONS

- The reference tariff is computed on the basis of net capacity of 3.8 MTPA during the first 1.5 years and 6.5 MTPA for the remaining period of 28.5 years.
- The above tariff is applicable for a period of 30 years on BOO basis commencing from Commercial Operations Date of the 3.8 MTPA mine.
- The transportation cost to the power plant on trucking mode will be USD 0.27/Ton-kilometer.
- The cost of financing is based upon 6 months KIBOR + 1.75% and 6 months LIBOR + 3.3%. Tariff is computed on basis of Rupees 45 billion local debt and USD 200 million foreign debt

The basis of this determination is a Debt to Equity ratio of 75:25.





Thar Coal & Energy Board

Government of Sindh

- vi. Tariff is configured on upfront initial equity drawdowns up to a maximum of 35% followed by pro-rata drawdowns of debt and equity.
- vii. Debt servicing shall be paid during the first 10 years of each capacity establishment, i.e. first 10 years for 3.8 MTPA capacity, and from 1.5 to 11.5 years for 6.5 MTPA capacity for the incremental amount of debt (as and when applicable).
- viii. Pre-COD sale of 1.45 million Tons of lignite will be priced at the full first year tariff of coal as per this Determination. The proceeds of this sale will be utilized to finance the capital for expansion of mine to 6.5 MTPA capacity.
- ix. Working Capital facility and the resultant cost is permitted for a maximum of 30 days of receivables on production payment tariff, 30 days of coal inventory, 30 days of (foreign) O&M advance, 6 months of spares inventory. The financing cost of the working capital facility is permitted at a maximum of 1 Month KIBOR + 2.00%.
- x. Project Tariff is based on a reference exchange rate of PKR 101.75 per USD, project cost of USD 694.80 Million for development of 3.8 MTPA capacity, and an incremental project cost of USD 106.55 Million for enhancement to 6.5 MTPA (of which USD 85.46 Million is benchmarked to be offset through zero cost of funding generated from sale of coal extracted prior to COD).
- xi. The development / construction period allowed for the development of 3.8 MTPA capacity is 42 months from achievement of financial close. A maximum of 6 months extension in the stipulated period is allowed, during which only Interest During Construction and indexations & escalations (detailed in 'REFERENCE TARIFF ADJUSTMENTS & ESCALATIONS' section) is permitted to be adjusted.
- xii. Construction period for the development of 6.5 MTPA mine is 24 months from achievement of financial close for enhancement to 6.5 MTPA capacity. The scheduled COD of 6.5 MTPA mine capacity is 18 months beyond the 3.8 MTPA mine. An extension of up to three-month beyond the stipulated construction period is allowed on account of impact of overburden volumes & hard rock strata during which only Interest During Construction and indexations & escalations (detailed in 'REFERENCE TARIFF ADJUSTMENTS & ESCALATIONS' section) is permitted to be adjusted.
- xiii. A six-month delay in COD of 6.5 MTPA impacted by delay in downstream off-take agreements is permitted, without any bearing on the tariff. If a delay in achieving COD of 6.5 MTPA occurs beyond the 24-month period subsequent to the COD of 3.8 MTPA, the Petitioner shall surrender an amount equivalent to the higher of, 1% Equity IRR or USD 3.25 Million per annum from its accrued ROE. This deduction shall be applicable up to such time as the Petitioner achieves commercial operations for 6.5 MTPA capacity or higher. A pro rata calculation of deductions will be applicable in case summations of delays include partial years.

xiv. The Petitioner is entitled to adjustment of costs in accordance with the adjustments listed in detail below under 'REFERENCE TARIFF ADJUSTMENTS &





Thar Coal & Energy Board

Government of Sindh

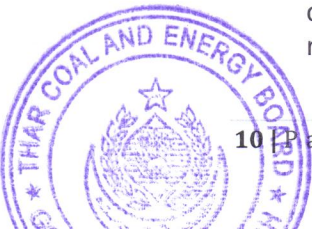
ESCALATIONS' section of this document and also indexations in accordance with the mechanisms laid down under the 'REFERENCE TARIFF INDEXATIONS' section of this document.

- xv. The detailed cost components of tariff are tabulated in Annexure A1-A3 appended to the end of this Order, whereas detailed project costs and debt servicing schedule are appended as Annexure B and Annexure C respectively.

REFERENCE TARIFF ADJUSTMENTS & ESCALATIONS

The reference tariff shall be subject to the following indexations and escalations only, at COD of respective capacities.

- i. Cumulative adjustment in EPC Cost relating to overburden removal and/or hard rock strata up to 5% of the assessed cost in this regard, subject to provision of sufficient documentary evidence and technical review conducted by a reputable party acceptable to the Board. Any cost in excess of this would not be acceptable for adjustment.
- ii. The impact of dewatering if any on EPC Cost and Cost of Power is capped to a maximum variation equal to 10 % of assessed cost, subject to provision of sufficient documentary evidence and technical review conducted by a reputable party acceptable to the Board. Any cost in excess of this would not be acceptable for adjustment.
- iii. Cumulative adjustment in O&M Cost relating to overburden removal and blasting of hard strata up to 5% of the assessed cost in this regard, subject to provision of sufficient documentary evidence and technical review conducted by a reputable party acceptable to the Board. Any cost in excess of this would not be acceptable for adjustment.
- iv. Adjustment in Cost of Power (operational period) related to dewatering maximum variations equal to 10% of assessed cost in this regard, subject to provision of sufficient documentary evidence and technical review conducted by a reputable party acceptable to the Board. Any cost in excess of this would not be acceptable for adjustment.
- v. EPC Cost components including Overburden Removal Services (Manpower), Overburden Removal Services (Spare Parts), Overburden Removal Services (Tyres), and Lignite Production Services (Non Diesel & Non Overhead) shall be allowed to be escalated using US CPI as benchmark. Cost of Diesel shall be escalated using price of diesel, as notified by OGRA for Islamabad, District Mithi, as benchmark. EPC Cost other than Cost of Diesel shall be escalated using both USD / PKR exchange rate and RMB / USD exchange rate as benchmarks. These costs, or portions thereof, shall be escalated from the date of determination order till the respective date of invoicing, subject to a maximum period of 48 months for development of 3.8 MTPA capacity, and 27





Thar Coal & Energy Board

Government of Sindh

months for enhancement to 6.5 MTPA capacity after achievement of the respective financial close.

- vi. Adjustment in Non EPC Cost for Land Acquisition & Village Relocation to be adjusted to actual incurred till commencement of commercial operations for the Non EPC component thereof, and at actual incurred for the O&M component thereof.
- vii. Insurance cost during the construction and operations shall be adjusted to actual incurred subject to a maximum of 1.35% of EPC Cost, and allowed on submission of documentary evidence.
- viii. Financing & LC Charges shall be adjusted to actual costs incurred till achievement of Commercial Operations Date, subject to a maximum allowable cost equal to 4.0% of debt secured by the project.
- ix. Interest During Construction shall be adjusted to actual costs incurred subject to maximum spread of 1.75% over KIBOR for Local Debt and 3.3% of LIBOR for foreign Debt, 75% debt secured, and prorate drawdowns subsequent to 35% upfront equity injection over the maximum allowable construction period of 42 months and 24 months for the development of 3.8 MTPA and 6.5 MTPA mining capacities respectively. However, maximum six additional months of time overruns beyond the allowable construction periods is permitted to be adjusted in the tariff.
- x. Equity Returns shall be allowed to be adjusted on the basis of the drawdown profile, which is permitted to be on a prorate basis subsequent to maximum upfront equity drawdown of 35%, during a construction period of 42 months and 24 months for the development of 3.8 MTPA and 6.5 MTPA mining capacities respectively.
- xi. No provision for income tax, workers profit participation fund and workers welfare fund, any other tax, custom/excise duty or other duty, levy, charge, surcharge or other governmental impositions, payable by the Project has been accounted for in the tariff. If the Petitioner is obligated to pay any of the above tax the exact amount will be reimbursed by the off taker on production of original receipts. However, withholding tax on dividend will not be pass thru under the tariff.

Reference Tariff Indexations

The indexations shall be applicable on the reference tariff shall only be as detailed hereunder.

i. Fuel Cost

$$\text{Fuel Cost}_{(\text{rev})} = \text{Fuel Cost}_x \times \frac{\text{Diesel Price}_{(\text{rev})}}{82.50}$$

Where,





Thar Coal & Energy Board

Government of Sindh

Fuel Cost_(rev) is the revised Fuel Cost Component

Fuel Cost_x is the Fuel Cost of x^{th} year of operations

Diesel Price_(rev) is the Delivered Diesel Price in terms of PKR per Litre notified by OGRA for Islamkot, District Mithi adjusted for NCV-GCV factor (Reference – 1.0574), Specific gravity (Reference – 0.84), and Calorific Value (Gross) (Reference – 44.2MJ/kg)

Frequency of indexation shall be as and when notified by Oil & Gas Regulatory Authority

ii. Variable O&M

$$\text{Variable O\&M}_{(rev)} = \text{Variable O\&M}_x \times \frac{\text{US CPI}_{(rev)}}{238.031} \times \frac{\text{PKR/USD}_{(rev)}}{101.75} \times \frac{6.10}{\text{RMB/USD}_{(rev)}}$$

Where,

Variable O&M_(rev) is the revised Variable O&M Component

Variable O&M_x is the Variable O&M Component of x^{th} year of operations

US CPI_(rev) is the latest United States Consumer Price Index for All Urban Consumers (CPI-U) notified by the US Bureau of Labor Statistics

PKR/USD_(rev) is the revised TT & OD selling rate of US Dollars as on the date on which the indexation is applicable, as notified by the National Bank of Pakistan

RMB/USD_(rev) is the revised TT & OD selling rate of Chinese RMB as on the date on which the indexation is applicable, as notified by the People's Bank of China

Frequency of indexation shall be quarterly

iii. Asset Replacement

$$\begin{aligned} & \text{Asset Replacement}_{(rev)} \\ &= \text{Asset Replacement}_x \times \frac{\text{US CPI}_{(rev)}}{238.031} \times \frac{\text{PKR/USD}_{(rev)}}{101.75} \times \frac{6.10}{\text{RMB/USD}_{(rev)}} \end{aligned}$$

Where,

Asset Replacement_(rev) is the revised Asset Replacement Component





Thar Coal & Energy Board

Government of Sindh

Asset Replacement $_x$ is the Asset Replacement Component of x^{th} year of operations

US CPI_(rev) is the latest United States Consumer Price Index for All Urban Consumers (CPI-U) notified by the US Bureau of Labor Statistics

PKR/USD_(rev) is the revised TT & OD selling rate of US Dollars as on the date on which the indexation is applicable, as notified by the National Bank of Pakistan

RMB/USD_(rev) is the revised TT & OD selling rate of Chinese RMB as on the date on which the indexation is applicable, as notified by the People's Bank of China

Frequency of indexation shall be quarterly

iv. Royalty

$$\text{Royalty}_{(\text{rev})} = \text{Coal Price}_y \times \text{Royalty}$$

Where,

Royalty_(rev) is the revised Royalty Component

Coal Price_y is the Price of Coal (excluding Royalty) in y^{th} month of operations

Royalty is the minimum of 7.5% of Production Payment Price of Coal (excluding Royalty) or PKR 150 per Ton or as otherwise notified by GoS for Royalty in Thar Coalfields

Frequency of Indexation shall be as and when notified by GoS





Thar Coal & Energy Board Government of Sindh

v. Fixed O&M – Local

$$\text{Fixed O\&M – Local}_{(\text{rev})} = \text{Fixed O\&M – Local}_x \times \frac{\text{Local CPI}_{(\text{rev})}}{206.11}$$

Where,

Fixed O&M – Local_(rev) is the revised Fixed O&M – Local Component

Fixed O&M – Local_x is the Fixed O&M – Local Component in x^{th} year of operations

Local CPI_(rev) is the latest is Consumer Price Index of Pakistan as notified by the Pakistan Bureau of Statistics

Frequency of Indexation shall be quarterly

vi. Fixed O&M – Foreign

$$\begin{aligned} & \text{Fixed O\&M Foreign}_{(\text{rev})} \\ &= \text{Fixed O\&M Foreign}_x \times \frac{\text{US CPI}_{(\text{rev})}}{238.031} \times \frac{\text{PKR/USD}_{(\text{rev})}}{101.75} \times \frac{6.10}{\text{RMB/USD}_{(\text{rev})}} \end{aligned}$$

Where,

Fixed O&M – Foreign_(rev) is the revised Variable O&M Component

Fixed O&M – Foreign_x is the Variable O&M Component of x^{th} year of operations

US CPI_(rev) is the latest United States Consumer Price Index for All Urban Consumers (CPI-U) notified by the US Bureau of Labor Statistics

PKR/USD_(rev) is the revised TT & OD selling rate of US Dollars as on the date on which the indexation is applicable, as notified by the National Bank of Pakistan

RMB/USD_(rev) is the revised TT & OD selling rate of Chinese RMB as on the date on which the indexation is applicable, as notified by the People's Bank of China

Frequency of indexation shall be quarterly

vii. Power Cost – By Grid

$$\text{Power Cost – By Grid}_{(\text{rev})} = \text{Power Cost – By Grid}_x \times \frac{\text{Grid Rate}_{(\text{rev})}}{16.28} \times \frac{\% \text{ of Grid}_{(\text{rev})}}{80\%}$$

Where,



Thar Coal & Energy Board

Government of Sindh

Power Cost – By Grid_(rev) is the revised Power Cost – By Grid Component

Power Cost – By Grid_x is the Power Cost – By Grid Component in x^{th} year of operations

Grid Power Rate_(rev) is the revised industrial rate of power cost as notified by HESCO

% of Grid_(rev) is the percentage of power acquired from grid in x^{th} year of operations

Frequency of indexation shall be as and when notified by HESCO

viii. Power Cost – By Diesel

$$\text{Power Cost – By Diesel}_{(rev)} = \text{Power Cost – By Diesel}_x \times \frac{\text{Diesel Price}_{(rev)}}{82.50} \times \frac{\% \text{ of Diesel}_{(rev)}}{80\%}$$

Where,

Power Cost – By Diesel Diesel_(rev) is the revised Power Cost – By Diesel Component

Power Cost – By Diesel_x is the Power Cost – Diesel Component in x^{th} year of operations

Diesel Price_(rev) is the Delivered Diesel Price in terms of PKR per Litre notified by OGRA for Islamabad, District Mithi adjusted for NCV-GCV factor (Reference – 1.0574), Specific gravity (Reference – 0.84), and Calorific Value (Gross) (Reference – 44.2MJ/kg)

% of Diesel_(rev) is the percentage of power generated by Diesel in x^{th} year of operations

Frequency of indexation shall be as and when notified by OGRA

ix. Cost of Working Capital

$$WC_{(rev)} = WC_x \times \left(a_x \frac{\text{Prod Pmt}_{(rev)}}{\text{Prod Pmt}_x} + b_x \frac{\text{Coal}_{(rev)}}{\text{Coal}_x} + c_x \frac{\text{Diesel}_{(rev)}}{82.50} + d_x \frac{\text{US CPI}_{(rev)} \times \text{PKR/USD}_{(rev)} \times 6.10}{238.031 \times 101.75 \times \text{RMB/USD}_{(rev)}} \right) \times \frac{\text{KIBOR}_{(rev)} + 2.00\%}{10.00\%}$$

Where,

Cost of WC_(rev) is the revised Cost of Working Capital Component

Cost of WC_x is the Cost of Working Capital in x^{th} year of operations





Thar Coal & Energy Board

Government of Sindh

a_x is the proportion of Coal Inventory Cost for 30 days calculated at Production Payment Price to amount of working capital facility in x^{th} year of operations

b_x is the proportion of Production Payment Price for 60 days to amount of working capital facility in x^{th} year of operations

c_x is the proportion of Fuel Cost for 21 days to amount of working capital facility in x^{th} year of operations

Prod Pmt_(rev) is the Production Payment Price as determined by TCEB after incorporating indexations till latest month

Prod Pmt_x is the Production Payment Price as determined by TCEB for x^{th} year of operations

Coal_(rev) is the Coal Price (excluding Working Capital Component) as determined by TCEB after incorporating indexations till latest month

Coal_x is the Coal Price (excluding Working Capital Component) as determined by TCEB at COD for x^{th} year of operations

Diesel Price_(rev) is the Delivered Diesel Price in terms of PKR per Litre notified by OGRA for Islamabad, District Mithi adjusted for NCV-GCV factor (Reference – 1.0574), Specific gravity (Reference – 0.84), and Calorific Value (Gross) (Reference – 44.2MJ/kg)

KIBOR_(rev) is 1-Month KIBOR rate at the end of the 1 month period prior to the month in which indexation is applicable, as notified by the State Bank of Pakistan

Frequency of Indexation shall be monthly

x. Interest Payments

$$\text{Interest} - \text{Local}_{(\text{rev})} = \text{Interest} - \text{Local}_x \times \frac{\text{KIBOR}_{(\text{rev})} + 1.75\%}{9.71\%}$$

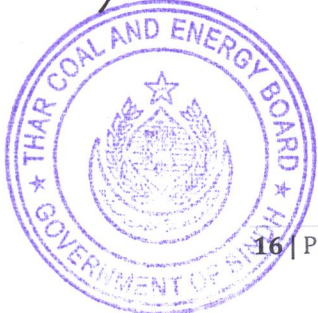
Where,

Interest – Local_(rev) is the Interest Payment – Local Component

Interest – Local_x is Interest Payment – Local Component determined by TCEB for x^{th} year of operations, subject to adjustment on account of escalations till COD.

KIBOR_(rev) is the relevant KIBOR rate prevailing for x^{th} year of operations, as notified by State Bank of Pakistan

Frequency of Indexation shall be semi-annually or as repayments are agreed with lender





Thar Coal & Energy Board Government of Sindh

xi. Equity Returns

$$\text{Equity Returns}_{(\text{rev})} = \text{Equity Returns}_x \times \frac{\text{PKR/USD}_{(\text{rev})}}{101.75}$$

Where,

Equity Returns_(rev) is the revised Equity Returns Component

Equity Returns_x is the Equity Returns component determined by TCEB for x^{th} period of operations

PKR/USD_(rev) is the revised TT & OD selling rate of US Dollars as on the date on which the indexation is applicable, as notified by the National Bank of Pakistan

Frequency of Indexation shall quarterly

xii. Cost of Transportation

$$\text{Cost of Transportation}_{(\text{rev})} = \text{Cost of Transportation}_x \times \frac{\text{Diesel Price}_{(\text{rev})}}{82.50}$$

Where,

Cost of Transportation_(rev) is the revised Cost of Transportation applicable on tariff

Cost of Transportation_x is the Cost of Transportation applicable on tariff as determined by TCEB for x^{th} period of operations

Diesel Price_(rev) is the Delivered Diesel Price in terms of PKR per Litre notified by OGRA for Islamabad, District Mithi adjusted for NCV-GCV factor (Reference – 1.0574), Specific gravity (Reference – 0.84), and Calorific Value (Gross) (Reference – 44.2MJ/kg)

Frequency of Indexation shall be as notified by OGRA

xiii. Heat Content Adjustment

$$\text{Adjusted Prod Pmt}_{(\text{rev})} = \text{Prod Pmt}_x \times \frac{\text{Heating Value}_{(\text{ref})}}{\text{Heating Value}_{(\text{rev})}}$$

Where

Adjusted Prod Pmt_(rev) is the Production Payment Price adjusted for heating value (LHV)

Indexed Prod Pmt_x is the reference Production Payment Price in x^{th} year of operations





Thar Coal & Energy Board

Government of Sindh

Heating Value_(ref) is the heat content of coal, which for Year 1 – 8 is equal to 11.30 MJ / kg (LHV) and for Year 9 – 30 is equal to 11.61 MJ / kg (LHV)

Heating Value_(rev) is the actual average heating value (LHV) during the relevant quarter of x^{th} of operations subject to a minimum heating value (LHV) permitted for Year 1 – 8 of 11.0175 MJ / Kg and for Year 9 – 3 of 11.31975 MJ / Kg

Indexation shall be computed annually.





Thar Coal Energy Board
Government of Sindh

Appendix 1 - Yearly Profile for Integrated Coal Tariff of 3.8 Mtpa & 6.5 Mtpa Mine Capacity in (USD/ton)

PRODUCTION (VARIABLE) PAYMENTS							CAPACITY (FIXED) PAYMENTS												
Year	Fuel Cost	Variable O&M - Tyres	Variable O&M - Spares/Consumables	Asset Replacement Cost	Royalty	Total Production Payments	Fixed O & M - Foreign	Fixed O & M - Local	Insurance	Power Cost - By Grid (80%)	Power Cost - By Diesel (20%)	Cost of Working Capital	Principal Debt Repayment	Interest Payment	ROE	ROEDC	Total Capacity Payments	Total	
1	6.0977	1.9278	2.9633	3.0441	-	14.0330	7.9868	7.2926	1.4539	1.5053	0.5126	0.4447	10.0914	8.9033	9.1803	5.3428	52.7136	66.7466	
2	5.1748	1.6499	2.5307	2.2462	3.9191	15.5207	6.4534	5.7860	1.1788	1.1107	0.5687	0.4457	8.0379	6.2047	6.8768	3.9912	40.6538	56.1744	
3	5.0186	1.6107	2.4690	1.7797	3.3566	14.2346	6.0446	4.7261	1.0180	0.8769	0.5994	0.4165	6.8719	4.5926	5.5301	3.2011	33.8771	48.1117	
4	4.7711	1.5396	2.3607	1.7797	3.2952	13.7463	5.7477	4.6403	1.0180	0.8738	0.5994	0.4097	7.3295	4.1349	5.5301	3.2011	33.4845	47.2308	
5	4.5237	1.4684	2.2525	1.7797	3.2392	13.2634	5.4508	4.6238	1.0180	0.8738	0.5994	0.4030	7.8203	3.6442	5.5301	3.2011	33.1645	46.4278	
6	4.5237	1.4684	2.2525	1.6868	3.1717	13.1031	5.4508	3.8201	1.0180	0.8738	0.5994	0.4008	8.3467	3.1177	5.5301	3.2011	32.3586	45.4617	
7	4.5237	1.4684	2.2525	1.6868	3.1717	13.1031	5.4508	3.8201	1.0180	0.8738	0.5994	0.4008	8.9117	2.5528	5.5301	3.2011	32.3586	45.4617	
8	4.5237	1.4684	2.2525	1.6868	3.1717	13.1031	5.4508	3.8201	1.0180	0.8738	0.5994	0.4008	9.5180	1.9464	5.5301	3.2011	32.3586	45.4617	
9	4.4029	1.4292	2.1923	1.6868	3.1550	12.8662	5.4508	3.8201	1.0180	0.8738	0.5994	0.3976	10.1689	1.2955	5.5301	3.2011	32.3553	45.2215	
10	4.4029	1.4292	2.1923	1.6868	3.1550	12.8662	5.4508	3.8201	1.0180	0.8738	0.5994	0.3976	10.8679	0.5965	5.5301	3.2011	32.3553	45.2215	
11	4.4029	1.4292	2.1923	1.6868	2.2918	12.0031	5.4508	3.4279	1.0180	0.8738	0.5994	0.3856	0.3261	0.0337	5.5301	3.2011	20.8465	32.8496	
12	4.4029	1.4292	2.1923	1.6868	2.2779	11.9892	5.4508	3.4227	1.0180	0.8738	0.5994	0.3855	0.1695	0.0104	5.5301	3.2011	20.6613	32.6504	
13	4.4029	1.4292	2.1923	1.6868	2.2640	11.9753	5.4508	3.4176	1.0180	0.8738	0.5994	0.3853	-	-	5.5301	3.2011	20.4760	32.4513	
14	4.4029	1.4292	2.1923	1.6868	2.2640	11.9753	5.4508	3.4176	1.0180	0.8738	0.5994	0.3853	-	-	5.5301	3.2011	20.4760	32.4513	
15	4.4029	1.4292	2.1923	1.6868	2.2640	11.9753	5.4508	3.4176	1.0180	0.8738	0.5994	0.3853	-	-	5.5301	3.2011	20.4760	32.4513	
16	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
17	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
18	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
19	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
20	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
21	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
22	4.4029	1.4292	2.1923	2.2239	2.3049	12.5532	5.4508	3.4176	1.0180	0.8738	0.5994	0.3932	-	-	5.5301	3.2011	20.4840	33.0372	
23	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
24	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
25	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
26	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
27	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
28	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
29	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
30	4.4029	1.4292	2.1923	-	2.1357	10.1601	5.4508	3.4176	1.0180	0.8738	0.5994	0.3602	-	-	5.5301	3.2011	20.4509	30.6110	
Average																			
1-10 Years	4.80	1.55	2.37	1.91	2.96	13.58	5.89	4.62	1.08	0.96	0.59	0.41	8.80	3.70	6.03	3.49	35.57	49.15	
11-30 Years	4.40	1.43	2.19	1.20	2.23	11.45	5.45	3.42	1.02	0.87	0.60	0.38	0.02	0.00	5.53	3.20	20.50	31.95	
1-30 Years	4.53	1.47	2.25	1.44	2.47	12.16	5.60	3.82	1.04	0.90	0.60	0.39	2.95	1.23	5.70	3.30	25.52	37.68	
Levelled																			
1-12 Years	4.87	1.57	2.40	1.96	2.79	13.59	6.01	4.74	1.10	0.99	0.58	0.41	7.81	3.89	6.18	3.58	35.29	48.88	
13-30 Years	4.40	1.43	2.19	1.50	2.25	11.78	5.45	3.42	1.02	0.87	0.60	0.38	-	-	5.53	3.20	20.47	32.25	
1-30 Years	4.74	1.53	2.34	1.84	2.64	13.09	5.85	4.37	1.07	0.96	0.59	0.40	5.65	2.81	6.00	3.48	31.19	44.27	





Thar Coal Energy Board Government of Sindh

Appendix 2 - Yearly Profile for Coal Price of 3.8Mt/a Mine Capacity in (USD/ton)

	PRODUCTION (VARIABLE) PAYMENTS						CAPACITY (FIXED) PAYMENTS												
Year	Fuel Cost	Variable O&M - Tyres	Variable O&M - Spares/Consumables	Asset Replacement Cost	Royalty	Total Production Payments	Fixed O & M - Foreign	Fixed O & M - Local	Insurance	Power Cost - By Grid (80%)	Power Cost - By Diesel (20%)	Cost of Working Capital	Principal Debt Repayment	Interest Payment	ROE	ROEDC	Total Capacity Payments	Total	
1	6.10	1.93	2.96	3.04	0.00	14.03	7.99	7.29	1.45	1.51	0.51	0.44	10.09	8.90	9.18	4.68	52.05	66.08	
2	5.32	1.68	2.57	3.04	4.76	17.37	6.99	7.03	1.45	1.51	0.51	0.49	10.75	8.24	9.18	4.68	50.84	68.21	
3	5.20	1.64	2.51	1.17	4.58	15.10	6.84	6.99	1.45	1.50	0.51	0.46	11.46	7.54	9.18	4.68	50.60	65.70	
4	5.20	1.64	2.51	1.17	4.58	15.10	6.84	6.98	1.45	1.49	0.51	0.46	12.22	6.78	9.18	4.68	50.58	65.68	
5	5.20	1.64	2.51	1.17	4.58	15.10	6.84	6.98	1.45	1.49	0.51	0.46	13.03	5.96	9.18	4.68	50.58	65.68	
6	5.20	1.64	2.51	1.97	4.54	15.85	6.84	5.60	1.45	1.49	0.51	0.47	13.90	5.09	9.18	4.68	49.22	65.07	
7	5.20	1.64	2.51	1.97	4.54	15.85	6.84	5.60	1.45	1.49	0.51	0.47	14.84	4.16	9.18	4.68	49.22	65.07	
8	5.20	1.64	2.51	1.97	4.54	15.85	6.84	5.60	1.45	1.49	0.51	0.47	15.84	3.15	9.18	4.68	49.22	65.07	
9	5.06	1.59	2.44	1.97	4.52	15.58	6.84	5.60	1.45	1.49	0.51	0.47	16.92	2.08	9.18	4.68	49.21	64.79	
10	5.06	1.59	2.44	1.97	4.52	15.58	6.84	5.60	1.45	1.49	0.51	0.47	18.07	0.92	9.18	4.68	49.21	64.79	
11	5.06	1.59	2.44	1.97	3.04	14.11	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.53	43.63	
12	5.06	1.59	2.44	1.97	3.04	14.11	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.53	43.63	
13	5.06	1.59	2.44	1.97	3.04	14.11	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.53	43.63	
14	5.06	1.59	2.44	1.97	3.04	14.11	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.53	43.63	
15	5.06	1.59	2.44	1.97	3.04	14.11	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
16	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
17	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
18	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
19	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
20	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
21	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
22	5.06	1.59	2.44	2.56	3.09	14.74	6.84	4.93	1.45	1.49	0.51	0.45	0.00	0.00	9.18	4.68	29.54	44.28	
23	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
24	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
25	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
26	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
27	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
28	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
29	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
30	5.06	1.59	2.44	0.00	2.89	11.99	6.84	4.93	1.45	1.49	0.51	0.42	0.00	0.00	9.18	4.68	29.50	41.49	
Average																			
1-10 Years	5.27	1.66	2.55	1.94	4.12	15.54	6.97	6.33	1.45	1.50	0.51	0.47	13.71	5.28	9.18	4.68	50.07	65.61	
11-30 Years	5.06	1.59	2.44	1.39	3.00	13.48	6.84	4.93	1.45	1.49	0.51	0.44	0.00	0.00	9.18	4.68	29.52	43.00	
1-30 Years	5.13	1.61	2.48	1.57	3.37	14.17	6.88	5.40	1.45	1.50	0.51	0.45	4.57	1.76	9.18	4.68	36.37	50.54	
Levelized																			
1-30 Years	5.33	1.68	2.58	2.00	3.91	15.50	7.03	6.51	1.45	1.50	0.51	0.46	13.04	5.96	9.18	4.68	50.31	65.81	
13-30 Years	5.06	1.59	2.44	1.78	3.03	13.91	6.84	4.93	1.45	1.49	0.51	0.44	-	-	9.18	4.68	29.52	43.43	
1-30 Years	5.24	1.65	2.53	1.93	3.60	14.95	6.96	5.96	1.45	1.50	0.51	0.46	8.50	3.88	9.18	4.68	43.07	58.02	

