

THAR COAL PRICING FRAMEWORK

STANDARDS & GUIDELINES – IN TERMS OF RULE 11(1) OF THAR
COAL TARIFF DETERMINATION RULES 2014

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Thar Coal & Energy Board
Government of Sindh

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Acronyms

CAPEX	Capital Expenses / Expenditure
COD	Commercial Operations Date
CPI	Consumer Price Index
CSA	Coal Supply Agreement
EPC	Engineering, Procurement, and Construction
FS	Feasibility Stage
FX	Foreign Exchange
GoP	Government of Pakistan
ICB	International Competitive Bidding
IDC	Interest During Construction
IRR	Internal Rate of Return
KIBOR	Karachi Inter-Bank Offer Rate
LIBOR	London Inter-Bank Offer rate
MD	Managing Director
MYT	Multi-Year Tariff
NASDAQ	NASDAQ Stock Market
NBP	National Bank of Pakistan
NEPRA	National Electric Power Regulatory Authority
O&M	Operations and Maintenance
OGRA	Oil and Gas Regulatory Authority
OPEX	Operational Expenses / Expenditure
PBS	Pakistan Bureau of Statistics
PKR	Pakistani Rupees
PPA	Power Purchase Agreement
PPI	Producer Price Index
RFO	Residual Furnace Oil
ROE	Return on Equity
SBP	State Bank of Pakistan
SEZ	Special Economic Zone
TCEB	Thar Coal & Energy Board
TT & OD	Telegraphic Transfer and On Demand
US BLS	United States Bureau of Labour and Statistics
USD	United States Dollars
WPPF	Workers' Profit Participation Fund
WWF	Workers' Welfare Fund

Chapter 01 – Introduction

1.1 Scope of the Thar Coal Pricing Framework

Thar Coalfields, located in the district of Tharparkar, Sindh, Pakistan, is one of the largest lignite coalfields, with an estimated reserve of 175 Billion tonnes of coal. In the context of Pakistan’s energy requirement, coal is identified as a major fuel source for power generation that has significant indigenous reserves to catalyse sustain economic growth. The development of Thar Coalfields is critical to securing the energy security of the country and promoting economic growth.

For the promotion and development of the said fields, Thar Coal and Energy Board (TCEB), through Thar Coal and Energy Board Act, 2011 and Sindh Act No XX, 2011, was established under the Chief Executive of Sindh, with representation on both federal and provincial levels, as a one stop government organization in matters relating to Thar Coal. The Economic Coordination Committee (ECC) of the Cabinet Division of Government of Pakistan in its decision dated October 15, 2010 also mandated the organization as the sole authority for regulating the price of coal in Thar.

This document serves to outline a uniform, transparent, objective and predictable mechanism for pricing of lignite coal extracted from Thar Coalfields.

1.2 Reference Guidelines

The following guidelines are pursuant to Thar Coal Tariff Determination Rules 2014. The Thar Coal Tariff Determination Committee constituted under Rule 3(1) of the said Rules shall clarify and interpret the following guidelines where necessary and applicable.

In view of the geotechnical & hydrological factors involved in Coal Mining Projects, a number of risks and uncertainties prevail at different levels of development and execution of such projects. It is not uncommon to have differences among the estimated costs at project feasibility stage, the costs quoted at time of finalization of contracts, and the actual costs incurred for the development of the project (at COD). In order to mitigate the risks of such exposure, a multistage pricing framework is adopted.

The pricing mechanism, outlined in this document, for determination of coal tariff is pursuant to Rule 11 of Thar Coal Tariff Determination Rules, 2014 and is governed by basic principles that are listed below.

- 1 Lignite mining industry in Pakistan will gradually mature over a period of time resulting in cost and project management efficiencies. As we progress towards a more stable business paradigm, these efficiencies will bear a positive impact on tariff regimes resulting in more competitive tariffs for the end consumer. The concept of MYT regime fundamentally reflects

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the transience of mining operations that will progressively achieve cost and operational efficiencies. The MYT regime establishes the mechanism under which such systemic improvements will be reflected in subsequent determinations.

- 2 The Thar Coal Tariff is designed on the basis of a cost-plus mechanism in order to cover (a) debt servicing costs including both interest charge and principle repayments, (b) equity returns to the sponsors, and (c) operational costs incurred over the duration of the project.
- 3 The early stage commercial viability of the mining projects operating in Thar Coalfields potentially relies on the off-take agreements of lignite from the mines at a cost that serves the dual objective of sustainable revenues for the mine as well as an affordable and reliable fuel supply for the downstream industry, most notably mine mouth power generation installations. The initial viability of lignite mining invariably limits the primary application of coal extracted from Thar Coalfields to utilization by such mine mouth power plants. The coal tariff is accordingly structured to enable ease of integration with the power tariff.
- 4 The coal tariff shall be adjusted at the Commercial Operations Date, on the basis of stipulated escalations, whereas during the operational phase of the mining project, indexations and escalations is provided for local & foreign inflation, exchange rate variations, and base interest rate fluctuations on a periodic basis. A provision for true up at predetermined intervals is made under the ambit of a Multi Year Tariff Regime.
- 5 The coal tariff shall be computed on the basis of delivered price of coal at mine mouth, and a further charge for transportation shall be computed for delivery to the battery limit of each power plant being served. This total price of coal shall be determined by TCEB at the time of tariff determination and subject to revisions / indexations of tariff.
- 6 The coal tariff shall be computed on the basis of such fiscal incentives as are confirmed by law through enabling instruments, such as notified SROs, at the time of determination, and any changes / change in law within the validity of the tariff regime shall be processed as pass-through in the tariff or as reimbursable.

1.3 Layout of the Document

The document has been structured for ease of navigation, and in keeping with the logical flow of tariff computation, as detailed hereunder.

Chapter 01 – Introduction

The first chapter of this document briefly introduces the scope of the pricing framework, and outlines the Reference Guidelines for Thar Coal Tariff, as well as indicates the layout of the document.

Chapter 02 – Thar Coal Tariff

The scope and reference guidelines of Thar Coal Tariff are followed by introduction of the tariff itself, the overall tariff structure, individual tariff components, payment mechanism and the basis of their computation. This chapter also outlines the principles guiding determination of tariff.

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Chapter 03 – Tariff Determination Stages

This chapter identifies the different stages of tariff determination over the duration of project implementation, detailing the basic eligibility requirements for submission of a petition at each stage.

Chapter 04 – Escalations & Indexations

The final chapter of the document details the indexation structure applicable for each tariff component, which essentially lays down the framework enabling escalation of tariff to match the justifiable costs incurred during mining operations.

Chapter 02 – Thar Coal Tariff

2.1 Tariff Components

The Thar Coal Tariff is structured as a two-part tariff. The coal tariff broadly comprises of ‘*production payment*’ and ‘*capacity payment*’, where the payment mechanism associated with each is discussed in more detail in the subsequent sections of this Chapter. The Thar Coal Tariff shall be determined in terms of ‘*United States Dollars/ (equivalent) PKR per Tonne*’ on the basis of the formula given below, which shall include, but not be limited to, the following components which shall be determined on the basis of the principles contained in this document.

$$\text{Coal Tariff}_x = \overbrace{\text{Variable O\&M}_x + \text{Royalty}_x}^{\text{Production Payment}} + \overbrace{\text{Fixed O\&M}_x + \text{Working Capital Interest}_x + \text{Insurance}_x + \text{Equity Returns}_x + \text{Debt Servicing}_x}^{\text{Capacity Payment}} + \text{Coal Transportation}_x$$

Where

Coal Tariff _x	is the annual Coal Tariff of the Mining Project located in Thar Coalfields for period x, where x is a year from 1 to n
Variable O&M _x	is the annual Variable Operations & Maintenance tariff component for period x, where x is a year from 1 to n
Royalty _x	is the annual Royalty tariff component for period x, where x is a year from 1 to n
Fixed O&M _x	is the annual Fixed Operations & Maintenance tariff component for period x, where x is a year from 1 to n
Working Capital Interest _x	is the annual Cost of Working Capital tariff component for period x, where x is a year from 1 to n
Insurance _x	is the annual Cost of Insurance tariff component for period x, where x is a year from 1 to n
Equity Returns _x	is the annual Return on Equity tariff component for period x, where x is a year from 1 to n
Debt Servicing _x	is the annual Debt Servicing tariff component both principal and interest for period x, where x is a year from 1 to n
Coal Transportation _x	is the annual Cost of Transportation of coal to respective power plant(s) for period x, where x is a year from 1 to n
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

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a. Variable Operations & Maintenance (O&M) Cost

The Variable O&M Costs can be identified as either local or foreign components on the basis of currency.

The computation of the annual Variable O&M cost component of the Thar Coal Tariff shall be on the basis of the formula provided below, where the sub components are provided as a list of representative costs.

$$\text{Variable O\&M}_x = \frac{\overbrace{\text{Power}_x + \text{Diesel}_x + \text{Labour}_x}^{\text{Variable O\&M} - \text{Local}} + \overbrace{\text{Spares}_x + \text{Tires}_x + \text{Asset Replacement}_x}^{\text{Variable O\&M} - \text{Foreign}}}{\text{Mining Capacity}_x}$$

Where

Variable O&M _x	is the annual Variable O&M tariff component for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Power _x	is the annual costs of power utilization for the period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Diesel _x	is the annual costs of diesel utilization, for the period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Labour _x	is the annual costs of engaging direct labour for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Spares _x	is the annual costs of spares & consumables for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Tyres _x	is the annual costs of tyres for main equipment for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Asset Replacement _x	is the annual levelized costs of asset replacement for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Mining Capacity _x	is the declared Mining Capacity of the Project for period <i>x</i> , where <i>x</i> is a period from 1 to <i>n</i>
<i>n</i>	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

b. Royalty

Government of Sindh (GoS) shall charge a royalty on number of tonnes of coal produced, which shall be allowed as a cost to the Petitioner. The applicable royalty for any given year shall be notified by GoS, as may be revised from time to time, and for the purposes of tariff shall be computed on basis of the formula given overleaf.

$$\text{Royalty}_x = \max [R, (\text{Coal Tariff}_x - \text{Royalty}_x) \times 7.5\%]$$

Where

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Royalty _x	is the annual Royalty tariff component for period x , where x is a year from 1 to n
Coal Tariff _x	is the annual Coal Tariff of the Mining Project located for period x , where x is a year from 1 to n
R	is Rupee rate of Royalty per ton of coal as applicable for year 'x'.
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

c. Fixed Operations & Maintenance (O&M) Cost

The Fixed O&M Costs can be identified as either local or foreign components on the basis of currency.

The computation of the annual Fixed O&M cost component of the Thar Coal Tariff shall be on the basis of the formula provided below, where the sub components are provided as a list of representative costs.

$$\text{Fixed O\&M}_x = \frac{\overbrace{\text{Overheads}_x + \text{Rehabilitation}_x + \text{Power}_x}^{\text{Fixed O\&M} - \text{Local}} + \overbrace{\text{Overheads}_x}^{\text{Fixed O\&M} - \text{Foreign}}}{\text{Mining Capacity}_x}$$

Where

Fixed O&M _x	is the annual Fixed O&M tariff component for period x , where x is a year from 1 to n
Overheads _x	are local or foreign annual overhead costs, for the period x , where x is a year from 1 to n
Rehabilitation _x	is the annual costs of village rehabilitation for the period x , where x is a year from 1 to n
Power _x	is the annual costs of power for period x , where x is a year from 1 to n
Mining Capacity _x	is the capacity of the Mining Project for period x , where x is a period from 1 to n
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

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d. Cost of Working Capital

A Working Capital facility shall be allowed to the Mining Project on the basis of periods allowed for the cost heads tabulated hereunder, or as determined by TCEB on a case to case basis. Inventory of Coal and Accounts Receivables shall be priced solely on production payments, based on the fact that capacity payments shall be allowed to the Petitioner on the basis of available capacity and shall thus not be tied up in the inventory.

Working Capital Cost Heads	Period Basis – as determined by TCEB on a case to case basis subject to the following limits
O&M Advance – (WC _{O&M})	Up to Thirty (30) Days –
Accounts Receivables (Production Payment Tariff) – (WC _{AR})	Up to Thirty (30) Days
Inventory – Coal (Production Payment Tariff) – (WC _I)	Up to Thirty (30) Days
Inventory – Spares / Consumables – (WC _{S&C})	Up to One hundred & Eighty (180) Days
Inventory – Diesel - (WC _D)	Up to Twenty One (21) Days

The interest charge of this Working Capital Facility shall be a part of the Thar Coal Tariff, where the interest rate for this facility shall be determined by TCEB on the basis of a reasonable spread over the prevailing 1 Month KIBOR rate, or the applicable rate of financing approved by TCEB in this regard. The annual Working Capital Interest component of the Coal Tariff shall be calculated on the basis of the formula provided hereunder

$$Cost\ of\ Working\ Capital_x = \left[\frac{n * (WC\ O\&M)_x}{365} + \frac{n * (WC\ AR)_x}{365} + \frac{n * (WC\ I)_x}{365} + \frac{n * (WC\ S\&C)_x}{365} + \frac{n * (WC\ D)_x}{365} \right] \times \frac{KIBOR + y\%}{Mining\ Capacity_x}$$

Where

Cost of Working Capital _x	is the annual Cost of Working Capital tariff component for period x, where x is a year from 1 to n
KIBOR _x	is the benchmark Karachi Inter Bank Offer Rate prevailing at the time of tariff determination
y% _x	is the spread on KIBOR assessed by TCEB to be allowable to mining projects from time to time
Mining Capacity _x	is the capacity of the Mining Project for period x, where x is a period from 1 to n
n	is the period (in days) for which working capital is allowed for each of the respective cost heads

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e. Cost of Insurance

The Petitioner shall procure the required insurances against the insurable risks in accordance with best industry practices during the operational phase of the Mining Project. This Cost of Insurance, as incurred and approved by TCEB, shall be allowed as a Thar Coal Tariff component.

$$\text{Insurance}_x = \frac{\text{Cost of Insurance}_x}{\text{Mining Capacity}_x}$$

Where

Insurance _x	is the annual Insurance tariff component for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Cost of Insurance _x	is the annual cost of insurance, as approved by TCEB, for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Mining Capacity _x	is the capacity of the Mining Project for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
<i>n</i>	is the total number of consecutive years for which the tariff is to be determined for the Mining Project
Note:	The Cost of Insurance shall be subject to a maximum limit as determined by TCEB from time to time.

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f. Equity Returns

The Petitioner shall undertake the Mining Project within a range of 20% - 30% Equity contribution. The upper ceiling of Equity contribution for specific project(s) shall be as determined by TCEB on a case-to-case basis. The parameters for determination of upper ceiling of Equity by TCEB will be largely governed by, amongst other things, the overall economic parameters impacting availability of capital and the progressive growth and development of indigenous skill sets for open pit mining in the country, etc. In case the equity contribution is more than as determined by TCEB, the excess equity shall be deemed and treated as debt financing. The Petitioner shall be entitled to equity returns based on the stipulated IRR, as declared by TCEB from time to time, and this component shall be computed as provided hereunder.

$$\text{Equity Returns}_x = \frac{\sum_{i=0}^t \frac{\text{Cash Outflow}_i}{(1 + y\%)^i} \times (1 + y\%)^t \times \frac{y\%}{1 - (1 + y\%)^{-n}}}{\text{Mining Capacity}_x}$$

Where

Equity Returns _x	is the annual Equity Returns tariff component for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
Cash Outflow _i	is the annual equity injections for the period <i>i</i> , where <i>i</i> is a year from 0 to <i>t</i>
Mining Capacity _x	is the capacity of the Mining Project for period <i>x</i> , where <i>x</i> is a year from 1 to <i>n</i>
y%	is the Equity IRR percentage applicable for the Mining Project, as declared and approved by TCEB
t	is the total number of consecutive years between the date of financial close and COD, as approved by TCEB
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

g. Debt Principal Charge

The Petitioner is allowed to secure debt financing either in local or foreign denominated currency, against the applicable financing rate, as approved by TCEB. The convertibility and repatriation of the principal amount, as well as, the interest amount shall be allowed in the respective approved foreign denominated currency. The repayment period of the loan shall be a minimum of ten (10) years, from the Commercial Operations Date. The computation of the Debt Principal Charge component of the Thar Coal Tariff shall be in accordance with the formula provided hereunder, or on the basis of the applicable debt repayment structure, as approved by TCEB.

$$\text{Debt Principal Charge}_x = \frac{\left[\text{Debt Facility} \times \frac{y\%}{1 - (1 + y\%)^{-t}} \right] - (\text{Debt Principal}_x \times y\%)}{\text{Mining Capacity}_x}$$

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Where

Debt Principal Charge _x	is the annual Debt Principal Charge tariff component for period x , where x is a year from 1 to n
Debt Facility	is the amount of debt facility secured by the Petitioner for the Mining Project, as approved by TCEB
Debt Principle _x	is the amount of debt principal outstanding at the beginning of period x , where x is a year from 1 to n
Mining Capacity _x	is the capacity of the Mining Project for period x , where x is a year from 1 to n
$y\%$	is the annual financing rate of the debt facility secured for the Mining Project, as approved by TCEB
t	is the total number of consecutive years for which the debt facility has been secured for the Mining Project
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

h. Debt Interest Charge

The cost of debt servicing (interest payments) shall be based on the financing rate secured for the debt facility, for which the financing spread over and above the applicable interbank offer rate shall be determined and approved by TCEB to be a reasonable cost of financing. The Debt Interest Charge component of the Thar Coal Tariff for a given year shall be computed as provided in the formula hereunder.

$$\text{Debt Interest Charge}_x = \frac{\text{Debt Principle}_x \times y\%}{\text{Mining Capacity}_x}$$

Where

Debt Interest Charge _x	is the annual Debt Interest Charge tariff component for period x , where x is a year from 1 to n
Debt Principle _x	is the amount of debt principal outstanding at the beginning of period x , where x is a year from 1 to n
Mining Capacity _x	is the capacity of the Mining Project for period x , where x is a year from 1 to n
$y\%$	is the annual financing rate of the debt facility secured for the Mining Project, as approved by TCEB
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

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i. Cost of Transit

Based on the mode of transportation utilized i.e. rail, road, or conveyers etc. the cost of transit shall be assessed and built into the total tariff, factoring in the distance of the plant from the mine. This shall reflect the cost of transportation of coal from the mine's stockyard till the point of exchange, which shall be within the battery limit in the case of power plants. Moreover, a transportation and handling loss of 0.20%* for mine mouth off-takers (utilizing self-operated modes of transit) and 1.00%* for off-takers located at a distance (and utilizing public modes of transportation for delivery of coal) shall be allowed on the delivered coal to account for pilferage, theft, spillage etc. As a general guideline it is emphasized that for mine mouth power plants conveyor systems have proven to be cost effective and efficient and for long haul rail transport has proven to be efficient and a least cost mode of transport. The Petitioner is to take these factors in consideration and detailed feasibility studies may be presented prior to seeking inclusion of transportation costs in the tariff.

(*these values to be subject to review on a progressive basis).

$$\text{Transportation}_x = \frac{\text{Variable Overheads}_x + \text{Fixed Overheads}_x}{\text{Mining Capacity}_x}$$

Where

Transportation _x	is the annual cost of coal transportation tariff component for period x, where x is a year from 1 to n
Variable Overheads _x	is the variable cost of transportation e.g. rate of fuel, consumables, etc. charged for period x, where x is a year from 1 to n
Fixed Overheads _x	is the fixed cost of transportation, e.g. driver salaries charged for period x, where x is a year from 1 to n
Mining Capacity _x	is the capacity of the Mining Project for period x, where x is a year from 1 to n
n	is the total number of consecutive years for which the tariff is to be determined for the Mining Project

2.2 Tariff Payment Mechanism

As a two-part tariff, payments of the Thar Coal Tariff shall be bifurcated into 'production payment' and 'capacity payment', which can be broadly related to as variable costs and fixed costs, where the Production Payment shall be determined and paid in terms of 'United States Dollars / (equivalent) PKR per Tonne' as product of actual off-take quantity of coal in a given year and the sum of Production Payment components of the Thar Coal Tariff for that year, which shall include the following.

- a. Variable O&M – Local
- b. Variable O&M – Foreign
- c. Royalty

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The Capacity Payment shall consist of the fixed costs of the Thar Coal Tariff, and determination of Capacity Payment components of the Thar Coal Tariff shall be in terms of '*PKR per Tonne*', subject to the availability of the capacity to produce as declared by the Petitioner in its Petition for the given year. Capacity Payments shall be further subject to TCEB's approval of availability of capacity and the standards of performance benchmarked in the Coal Supply Agreement (CSA) (such as the Lower Heating Value (LHV) of the extracted coal). The components of the Thar Coal Tariff to be categorized as Capacity Payment components shall include the following.

- a. Fixed O&M – Local
- b. Fixed O&M – Foreign
- c. Cost of Insurance
- d. Cost of Working Capital
- e. Equity Returns
- f. Debt Principal Charge
- g. Debt Interest Charge

If the off-take of the mine is to be lower than the mining capacity declared in the Petition, in any given year, as a direct result of events beyond the reasonable control of the Petitioner, then the CSA shall cater for the off-taker to compensate for the differential between the available Capacity and the off-take Capacity as per the per ton tariff apportioned for Capacity Payment. However, if the Petitioner is unable to produce to the declared capacity approved by TCEB, as a direct result of events within the reasonable control of the Petitioner, then the Petitioner shall be able to recover Capacity Payment only to the extent of the availability of the production capacity of the Mining Project that the Petitioner is able conform to for the given year.

2.3 Elements of the Tariff

Determination of the Thar Coal Tariff shall be based on the formulae contained in this Chapter, governed by the Reference Guidelines outlined in the previous chapter, and guided by the various principles listed hereunder.

- 7 The Project Cost is broadly defined to include the following representative list of cost heads, based upon information provided by the Petitioner and as assessed and determined by TCEB
 - a. EPC Cost – Equipment & Procurement, Construction Services, Overburden Removal Services, Power Generation Services, Lignite Production Services, Cost of Diesel, Taxes & Duties etc.
 - b. Non EPC Cost – Civil Works & Structure, Residential Buildings, Vehicles, Engineering & Consultancy, Approval & Process Fees, Administration & Management etc.
 - c. Insurance During Construction
 - d. Financing Fees & Charges – Debt Arrangement Fee, Debt Administration Fee, Debt Commitment Charges, LC Charges etc.
 - e. Interest During Construction
- 8 Recognition of Project Costs shall be as determined by TCEB and in any case restricted to the period subsequent to grant of the Exploration License to the Petitioner, up to achievement of commercial operations within the timeframe approved by TCEB. Cost overruns if any, as a

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result of delay in mine development/achievement of COD shall only be allowed to be capitalized that are consequent to events for which specific approval and extension has been granted by TCEB to the Petitioner.

- 9 Equity injected into the Project subsequent to the grant of the Exploration License and prior to the date of Financial Close shall be treated as an overnight cost as at that date, and equity returns shall be computed on the basis of cash flows resulting thereafter up to the COD. However, only such cash flows shall be taken into consideration, which are utilized to finance the Project Costs approved by TCEB.
- 10 Project costs shall be specifically assessed on a case-to-case basis and any adjustments to the same may be allowed if TCEB considers it to be within reasonable limits.
- 11 The design life of the power plant, the primary off-taker, is 30 years. Accordingly economic justification prevails in favour of determining a tariff for a 30 year period. Tariff for capacity enhancements shall be determined for the remaining concession period. TCEB, on the merits of each project, shall set the tariff to be prevalent thereafter on case to case basis.
- 12 Mine development is one integrated activity conforming to a single mine pit with certain initial capacities, which are ramped up to optimum levels of production in a seamless extension. This certain initial capacity needs to be economically justifiable, the standard of which shall be set by TCEB from time to time. Moreover, in order to realise economies of scale for the benefit of end consumer, ramping up to higher capacities shall be encouraged at the earliest opportunity. Tariff determination may take place for multiple capacities prevailing at different times over the concession period, however such enhancement to more economic capacities may be enforced through penalties by TCEB on a case to case basis, in consideration of off take availability. Wherever applicable, the pre-COD sale of coal extracted for purposes of testing shall be charged at the latest available Coal Tariff determined by TCEB. However, sale of peat, or coal of significantly lower quality than expected to be extracted from the mine, shall be made at its actual realisable value. Proceeds from sale of coal prior to commercial operations shall be used to offset the Project Costs by the realised amount.
- 13 The first MYT Period shall commence at COD, and shall run for a total of two (02) years, whereas subsequent MYT Periods shall run for a total of five (05) years.
- 14 The tariff thus provided will not contain any increase in the equity base from COD for the duration of the Mining Project. If, however, during the operational phase the mine plan needs fresh investment the Petitioner will have the option to petition for a new tariff for the next MYT Period, or, where such changes are required at any time during an existing MYT Period. At any point in time during the MYT Period, the Petitioner can file a tariff petition with TCEB in order to have a revision in its tariff for any and all future MYT Periods provided however, the fundamentals of Debt:Equity base remain unchanged.
- 15 At the end of each MYT Period, a true up adjustment shall be made to compare actual versus the projected expenses (based on escalation indices), and the difference will be recovered through the tariff in the subsequent MYT Period. If capacity payments in an MYT Period are recovered by the Petitioner over and above the aggregate expense of the Capacity Payment components as determined by TCEB for the said MYT Period, then the Coal Tariff in the next MYT Period shall be adjusted to compensate for the over-recovery of costs.

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- 16 Recurring Capital Expenditure, or Cost of Asset Replacement, shall be, if applicable, allowed on an annualized basis as part of the Variable O&M of the Thar Coal Tariff determined by TCEB.
- 17 A transportation and handling loss shall be allowed to the Petitioner at 0.20% for mine mouth power plants and 1.00% for non-mine mouth power plant (located at a distance), or such amount as specified by TCEB from time to time, in order to account for pilferage, theft, adulteration, spillage, erosion etc. of coal in transit.

Chapter 03 – Tariff Determination Stages

3.1 Feasibility Stage

On completion and approval of the technical and financial bankable feasibility studies, the Petitioner may seek determination of a **Feasibility Stage Coal Tariff** for the proposed project that shall enable the Lessee to (a) attract financing for the project, and (b) negotiate with the contractors for the finalization of the contract price. Seeking a tariff at the Feasibility Stage is not mandatory and is entirely the discretion of the Petitioner.

3.2 Contract Stage

The Petitioner shall negotiate and finalize the contractual arrangements (including the contract price) for the execution of the Mining Project. The Project Cost at this stage shall be based on extensive investigation / engineering design, work plans, and legally binding contractual arrangements. Subsequent to the finalization of the said contracts, the Petitioner shall file a petition with TCEB for the adjustment of the Feasibility Stage Coal Tariff (if applicable) on the basis of the contracted costs.

The Reference Coal Tariff shall be determined on the basis of certain assumptions with regards to debt terms including tenor, spread, and financing fees & charges. As long as the Petitioner is able to secure financial closure for the project within the limits defined by these assumptions, the Reference Coal Tariff shall be trued up at the time of COD. However, if financial closure unable to be secured within the said limits, the Petitioner shall have the option to file a limited scope *Petition for Approval of Revised Financing Terms*, on the approval of which the Reference Coal Tariff shall be revised.

As the primary use of coal extracted from Thar Coal Mining Projects is expected for the Power Sector, TCEB shall ensure that the resulting Reference Coal Tariff leads to an economic fuel cost for electricity generation, as compared to alternate sources of fuels, such as RFO, imported coal etc..

Determination of Reference Coal Tariff at the Contract Stage is mandatory for the Petitioner. Prior to commencement of commercial operations of the Mining Project, the Reference Coal Tariff shall serve as tariff applicable for sale prior to COD.

3.3 Commercial Operations Stage

Subsequent to achievement of COD, the Petitioner shall file a petition for updation of the Reference Coal Tariff, leading up to the determination of Commercial Operations Coal Tariff.

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The TCEB shall determine reasonably justifiable deviations of the factors listed below on a case to case basis, for cost implications differing from those determined at Contract Stage, and TCEB may only allow such deviations as a pass-through at COD.

- a. Variations on account of non-EPC costs incurred for village relocation and rehabilitation.
- b. Insurance Cost (subject to the limits imposed in the Determination)
- c. Operations and Maintenance Cost component, based upon a negotiated and signed contract, as the Contract Stage Tariff is based upon budgeted estimates of such costs.

Where applicable, the Mining Project shall be subjected to the following adjustments at the time of COD.

- a. Financing Cost (change in relevant base interest rate, and timing and amount of Debt / Equity draw-downs, subject to upper limits as set at the Contract Stage Tariff, etc
- b. Foreign Currency Exchange fluctuations on Mining Project cost components denominated in foreign currency
- c. Inflation, using relevant benchmark or index approved by TCEB, however the adjustment shall not be applicable on Insurance and Financing Costs
- d. Royalty, as determined and notified by GoS from time to time

There will be no retrospective adjustments to the Project Cost or the corresponding equity contribution after approval of the Commercial Operations Stage Tariff. There will be, however, true ups on the operational expenditure pass-through items at the end of every MYT Period, to ensure adjustments in over recovery and under recovery of justifiable costs incurred by the project.

Determination of the Commercial Operations Stage Tariff is mandatory, and the Commercial Operations Coal Tariff shall serve as the tariff applicable during the first MYT Period.

3.4 MYT Periods

The equity base of the tariff determined at the Commercial Operations Stage shall be revised each time the Petitioner undertakes capital expenditure (CAPEX) for either (a) expansion of production capacity, or (b) production in accordance to a changed mine plan, provided however the Debt:Equity ratios remain unchanged. In such cases, the Petitioner is allowed to file a petition with TCEB for a revision in the Commercial Operations Stage Tariff, however the revised tariff shall come into force after being subjected to a true up.

Chapter 04 – Tariff Escalations & Indexations

Various components of the Coal Tariff are indexed in order to ensure the return on investment for the Petitioner, thereby attracting investors and financing into the Coal Mining industry. All the Coal Tariff components determined by the TCEB at Commercial Operations Stage, and subsequently for each MYT Period, shall become the “*Reference Tariff Components*” for future adjustments due to indexations and escalations. All the tariff calculations shall be made on the basis of the incentives announced by TCEB, and any change in laws, duties, levies etc. which have not been assumed in the calculation of the tariff shall be treated as a pass-through and the tariff shall be adjusted accordingly.

4.1 Operations & Maintenance (O&M) Cost

The following indexations shall apply to the O&M subcomponents in the non-exhaustive list below. The indexations shall to each subcomponent on the basis of its share of costs.

Cost Component	Applicable Indexation
Fixed O&M	
Labour	
<i>Mining Labour</i>	Consumer Price Index
<i>Dewatering Labour</i>	Consumer Price Index
<i>Site General Facilities Labour</i>	Consumer Price Index
<i>Water Treatment Labour</i>	Consumer Price Index
<i>Accommodation & Amenities Labour</i>	Consumer Price Index
Power	
<i>Dewatering Power</i>	Electricity Tariff
<i>Water Treatment Power</i>	Electricity Tariff
Others	
<i>Mining Other</i>	Consumer Price Index
<i>Dewatering Repair & Maintenance</i>	Consumer Price Index
<i>Dewatering Other</i>	Consumer Price Index
<i>Stockyard Consumable</i>	Consumer Price Index
<i>Stockyard Repair & Maintenance</i>	Consumer Price Index

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<i>Site General Facilities Consumable</i>	Consumer Price Index
<i>Site General Facilities Repair & Maintenance</i>	Consumer Price Index
<i>Water Treatment Consumable</i>	Consumer Price Index
<i>Accommodation & Amenities Consumable</i>	Consumer Price Index
<i>Accommodation & Amenities Other</i>	Consumer Price Index
Variable O&M	
Mining Diesel	Diesel Price in Pakistan
Mining Lubes	Global Crude Benchmark (Brent)
Mining Tyres	PPI Tyres in US
Mining R&M	PPI Construction Machinery & Equipment in US

a. Fixed O&M

The Fixed O&M component shall be quarterly indexed to each of the following.

- i. $x\%$ of the Fixed O&M component shall be indexed to the Consumer Power Tariff, as notified by the National Electric Power Regulatory Authority (NEPRA); and
- ii. $y\%$ of the Fixed O&M component shall be indexed to the CPI, as notified by the Pakistan Bureau of Statistics (PBS), or the relevant official authority for foreign cost component.
- iii. $a\%$ of the Fixed O&M component, denominated in foreign currency, shall be indexed to the applicable exchange rate, based on the revised TT & OD selling rate of the foreign currency, as notified by the NBP.

The indexation of Fixed O&M shall be based on the following formula.

$$\text{Fixed O\&M}_{\text{Adj}} = \text{O\&M}_{\text{Ref}} \times \left[\left(x\% \times \frac{\text{Power Tariff}_{\text{Adj}}}{\text{Power Tariff}_{\text{Ref}}} \right) + \left(y\% \times \frac{\text{CPI}_{\text{Adj}}}{\text{CPI}_{\text{Ref}}} \right) \right] \times \left[a\% \times \frac{\text{FX}_{\text{Adj}}}{\text{FX}_{\text{Ref}}} \right]$$

Where

$\text{Fixed O\&M}_{\text{Adj}}$	is the revised Fixed O&M component applicable for the relevant quarter
O\&M_{Ref}	is the Reference O&M Tariff Component
CPI_{Adj}	is the revised CPI for the month prior to the month in which indexation is applicable, issued by PBS
CPI_{Ref}	is the CPI or equivalent index of the foreign country for the month in which the Reference Tariff Component was determined, issued by the relevant official / government authority
$\text{Power Tariff}_{\text{Adj}}$	is the revised Power Tariff of the power station located at mine mouth from which electricity is procured, issued by NEPRA a month prior to the month in which indexation is applicable

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Power Tariff _{Ref}	is the Power Tariff of the power station located at mine mouth from which electricity is procured, issued by NEPRA in the month in which Reference Tariff Component was determined
FX _{Adj}	is the revised TT & OD selling rate of the relevant foreign currency as on the date on which the indexation is applicable, as notified by the NBP
FX _{Ref}	is the TT & OD selling rate of the relevant foreign currency as on the date on which the Reference Tariff Component was determined, as notified by the NBP

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b. Variable O&M

The Variable O&M component shall be quarterly indexed to each of the following.

- i. $w\%$ of the Variable O&M shall be indexed to the cost of Diesel fuel in Pakistan, as notified by the Oil & Gas Regulatory Authority (OGRA);
- ii. $x\%$ of the Variable O&M shall be indexed to the Global Crude Benchmark (Brent), as notified by NASDAQ;
- iii. $y\%$ of the Variable O&M shall be indexed to the US PPI Tyres, as notified by the US Bureau of Labour and Statistics (US BLS); and
- iv. $z\%$ of the Variable O&M shall be indexed to the US PPI Machinery & Equipment, as notified by the US Bureau of Labour and Statistics.
- v. $a\%$ of the Variable O&M component, denominated in foreign currency, shall be indexed to the applicable exchange rate, based on the revised TT & OD selling rate of the foreign currency, as notified by the NBP.

The applicable formula shall be as follows.

$$O\&M_{Adj} = O\&M_{Ref} \times \left[v\% \times \frac{CPI_{Adj}}{CPI_{Ref}} + w\% \times \frac{D_{Adj}}{D_{Ref}} + x\% \times \frac{C_{Adj}}{C_{Ref}} + y\% \times \frac{T_{Adj}}{T_{Ref}} + z\% \times \frac{ME_{Adj}}{ME_{Ref}} \right] \times \left[a\% \times \frac{FX_{Adj}}{FX_{Ref}} \right]$$

Where

$O\&M_{Adj}$	is the revised Variable O&M component applicable for the relevant quarter
$O\&M_{Ref}$	is the Reference Variable O&M Tariff Component
CPI_{Adj}	is the revised CPI or equivalent index of the foreign country for the month prior to the month in which indexation is applicable, issued by the relevant official / government authority
CPI_{Ref}	is the CPI or equivalent index of the foreign country for the month in which the Reference Tariff Component was determined, issued by the relevant official / government authority
D_{Adj}	is the revised cost of diesel fuel in Pakistan for the month prior to the month in which indexation is applicable, as notified by the OGRA
D_{Ref}	is the cost of diesel fuel in Pakistan for the month in which the Reference Tariff Component was determined, as notified by the OGRA
C_{Adj}	is the revised Global Crude Benchmark (Brent) for the month prior to the month in which indexation is applicable, as notified by NASDAQ

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C_{Ref}	is the Global Crude Benchmark for the month in which the Reference Tariff Component was determined, as notified by NASDAQ
T_{Adj}	is the revised PPI for Tyres in US for the month prior to the month in which indexation is applicable, as notified by US BLS
T_{Ref}	is the PPI for Tyres in US for the month in which the Reference Tariff Component was determined, as notified by US BLS
ME_{Adj}	is the revised PPI for Construction Machinery & Equipment in US for the month prior to the month in which indexation is applicable, as notified by US BLS
ME_{Ref}	is the PPI for Construction Machinery & Equipment in US for the month in which the Reference Tariff Component was determined, as notified by US BLS
FX_{Adj}	is the revised TT & OD selling rate of the relevant foreign currency as on the date on which the indexation is applicable, as notified by the NBP
FX_{Ref}	is the TT & OD selling rate of the relevant foreign currency as on the date on which the Reference Tariff Component was determined, as notified by the NBP

4.2 Working Capital Interest

The interest charge of the Working Capital Facility shall be adjusted on a quarterly basis as a result of variation in the 1-Month KIBOR rate, as notified by the State Bank of Pakistan (SBP). The formula applicable for the adjustment shall be as follows. Increase in interest charge resulting directly from increase in amount of Working Capital on the basis determined by TCEB shall be allowed as a direct pass-through expense.

$$WC_{Adj} = WC_x \times \left(a_x \frac{Prod\ Pmt_{Adj}}{Prod\ Pmt_x} + b_x \frac{Coal_{Adj}}{Coal_x} + c_x \frac{Diesel_{Adj}}{Diesel_{Ref}} + d_x \frac{CPI_{Adj} \times FX_{Adj}}{CPI_{Ref} \times FX_{Ref}} \right) \times \frac{KIBOR_{Adj} + y\%}{KIBOR_{Ref} + y\%}$$

Where

WC_{Adj}	is the revised Working Capital Interest component applicable for the relevant quarter
$Prod\ Pmt_{Adj}$	is the adjusted Production Payment Tariff Component at the time of indexation
$Prod\ Pmt_x$	is the Reference Production Payment Tariff Component applicable in year x
$Coal_{Adj}$	is the adjusted Production Payment Tariff Component of coal at the time of indexation

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$Coal_x$	is the Reference Production Payment Tariff Component of coal applicable in year x
$Diesel_{Adj}$	is the revised Cost of Diesel applicable in year x, as notified by Oil & Gas Regulatory Authority
$Diesel_{Ref}$	is the reference Cost of Diesel prevailing for the month in which Reference Tariff Component was determined, as notified by Oil & Gas Regulatory Authority
CPI_{Adj}	is the revised CPI or equivalent index of the foreign country for the month prior to the month in which indexation is applicable, issued by the relevant official / government authority
CPI_{Ref}	is the CPI or equivalent index of the foreign country for the month in which the Reference Tariff Component was determined, issued by the relevant official / government authority
FX_{Adj}	is the revised TT & OD selling rate of the relevant foreign currency as on the date on which the indexation is applicable, as notified by the NBP
FX_{Ref}	is the TT & OD selling rate of the relevant foreign currency as on the date on which the Reference Tariff Component was determined, as notified by the NBP
$KIBOR_{Adj}$	is the revised 1-Month KIBOR rate at the end of the one month period prior to the month in which indexation is applicable, as notified by the SBP
$KIBOR_{Ref}$	is the 1-Month KIBOR rate prevailing at the time of determination of the Reference Tariff Component, as notified by the SBP
$y\%$	is the component of the interest charge over and above the KIBOR rate for the Working Capital Facility, as approved and determined by TCEB at COD / Capacity Enhancement Stage

4.3 Insurance Cost

Insurance Cost component of the Coal Tariff shall be indexed with the exchange rate of the relevant currency, where procurement of $a\%$ of insurance is from foreign sources. The applicable formula for quarterly adjustments shall be as follows.

$$\text{Insurance Cost}_{Adj} = \text{Insurance Cost}_{Ref} \times a\% \times \frac{FX_{Adj}}{FX_{Ref}}$$

Where

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Insurance Cost _{Adj}	is the revised Insurance Cost component applicable for the relevant quarter
Insurance Cost _{Ref}	is the Reference insurance Cost Tariff Component
FX _{Adj}	is the revised TT & OD selling rate of the relevant foreign currency as on the date on which the indexation is applicable, as notified by the NBP
FX _{Ref}	is the TT & OD selling rate of the relevant foreign currency as on the date on which the Reference Tariff Component was determined, as notified by the NBP

4.4 Equity Payments

Equity Payments (RoE) component of the Coal Tariff shall be quarterly indexed to the USD / PKR exchange rate, based on the revised TT & OD selling rate of USD, as notified by the NBP. The following formula shall apply.

$$\text{Equity Payments}_{\text{Adj}} = \text{Equity Payments}_{\text{Ref}} \times \frac{\text{FX USD}_{\text{Adj}}}{\text{FX USD}_{\text{Ref}}}$$

Where

Equity Payments _{Adj}	is the revised Equity Payments (RoE) component applicable for the relevant quarter
Equity Payments _{Ref}	is the Reference Equity Payments Tariff Component
FX USD _{Adj}	is the revised TT & OD selling rate of PKR / USD as on the date on which the indexation is applicable, as notified by the NBP
FX USD _{Ref}	is the TT & OD selling rate of PRK / USD as on the date on which the Reference Tariff Component was determined, as notified by the NBP

4.5 Debt Payments

Debt Payments component of the Coal Tariff shall be indexed biannually, or in line with the annual repayment frequency, in the following manner.

a. Principal

The Reference Debt Principal Payments Tariff Component shall be biannually indexed to USD / PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the NBP, where $a\%$ of the Debt Principal Payments are attributable to debt procured from foreign sources. The applicable formula shall be as follows.

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$$\text{Debt Principal Payments}_{\text{Adj}} = \text{Debt Principal Payments}_{\text{Ref}} \times a\% \times \frac{\text{FX USD}_{\text{Adj}}}{\text{FX USD}_{\text{Ref}}}$$

Where

$\text{Debt Principal Payments}_{\text{Adj}}$	is the revised Debt Principal Payments component applicable for the relevant biannual period
$\text{Debt Principal Payments}_{\text{Ref}}$	is the Reference Debt Principal Payments Tariff Component
$\text{FX USD}_{\text{Adj}}$	is the revised TT & OD selling rate of PKR / USD as on the date on which the indexation is applicable, as notified by the NBP
$\text{FX USD}_{\text{Ref}}$	is the TT & OD selling rate of PRK / USD as on the date on which the Reference Tariff Component was determined, as notified by the NBP

b. Interest (Local)

The Interest (Local) component of the Coal Tariff shall be adjusted on a biannual basis as a result of variation in the 6-Month KIBOR rate, as notified by the SBP. The formula applicable for the adjustment shall be as follows.

$$\text{Interest (Local)}_{\text{Adj}} = \text{Interest (Local)}_{\text{Ref}} \times \frac{\text{KIBOR}_{\text{Adj}} + \text{Spread}}{\text{KIBOR}_{\text{Ref}} + \text{Spread}}$$

Where

$\text{Interest (Local)}_{\text{Adj}}$	is the revised Interest (Local) component of the Tariff applicable for the relevant biannual period
$\text{Interest (Local)}_{\text{Ref}}$	is the Reference Interest (Local) Tariff Component
$\text{KIBOR}_{\text{Adj}}$	is the revised 6-Month KIBOR rate at the end of the biannual period prior to the month in which indexation is applicable, as notified by the SBP
$\text{KIBOR}_{\text{Ref}}$	is the 6-Month KIBOR rate prevailing at the time of determination of the Reference Tariff Component, as notified by the SBP
Spread	is the component of the interest charge over and above the KIBOR rate for the Debt Financing, as approved and determined by TCEB at COD / Capacity Enhancement Stage

c. Interest (Foreign)

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The Interest (Foreign) component of the Coal Tariff shall be adjusted on a biannual basis as a result of variation in the 6-Month LIBOR rate, as notified by the relevant official / government authority. The formula applicable for the adjustment shall be as follows.

$$\text{Interest (Foreign)}_{\text{Adj}} = \text{Interest (Foreign)}_{\text{Ref}} \times \frac{\text{LIBOR}_{\text{Adj}} + \text{Spread}}{\text{LIBOR}_{\text{Ref}} + \text{Spread}} \times \frac{\text{FX USD}_{\text{Adj}}}{\text{FX USD}_{\text{Ref}}}$$

Where

Interest (Foreign) _{Adj}	is the revised Interest (Foreign) component of the Tariff applicable for the relevant biannual period
Interest (Foreign) _{Ref}	is the Reference Interest (Foreign) Tariff Component
LIBOR _{Adj}	is the revised 6-Month LIBOR rate at the end of the biannual period prior to the month in which indexation is applicable, as notified by the relevant official / government authority
LIBOR _{Ref}	is the 6-Month LIBOR rate prevailing at the time of determination of the Reference Tariff Component, as notified by the relevant official / government authority
Spread	is the component of the interest charge over and above the LIBOR rate for the Debt Financing, as approved and determined by TCEB at COD / Capacity Enhancement Stage
FX USD _{Adj}	is the revised TT & OD selling rate of PKR / USD as on the date on which the indexation is applicable, as notified by the NBP
FX USD _{Ref}	is the TT & OD selling rate of PKR / USD as on the date on which the Reference Tariff Component was determined, as notified by the NBP