SECMC
Sindh Engro Coal Mining Company

PETITION FOR REFERENCE COAL TARIFF DETERMINATION FOR CONTRACT STAGE TARIFF

SUBMITTED TO

THAR COAL AND ENERGY BOARD

FOR OPEN CAST LIGNITE MINING PROJECT IN THAR BLOCK-II

DISTRICT THARPARKAR, SINDH

For Development & Operations of Mine Expansion to 7.6 Mt/a

SUBMITTED BY

SINDH ENGRO COAL MINING COMPANY LIMITED

On (28th December) 2017

Sindh Engro Coal Mining Company Limited

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Sindh Engro Coal Mining Company Limited

1 INTRODUCTION

1.1 PETITIONER DETAILS

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PETITIONER'S REPRESENTATIVES:
Shamsuddin A. Shaikh — Chief Executive Officer
Mohammad Saqib — Chief Financial Officer
Syed Abul Fazl Rizvi — Chief Operating Officer

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1.2 LIST OF ABBREVIATIONS

1	BCM	Bank Cubic Meters
2	BoD	Board of Directors
3	CEDD	Coal Energy and Development Department
4	CSA	Coal Supply Agreement
5	DFS	Detailed Feasibility Study
6	EPC	Engineering, Procurement and Construction
7	GoS	Government of Sindh
8	HSE	Health Safety and Environment
9	ICC	In-pit Coal Crushing and Conveying System
10	JV	Joint Venture Company
11	KIBOR	Karachi Interbank Offer Rate
12	LBOD	Left Bank Outfall Drainage Canal
13	LIBOR	London Interbank Offer Rate
14	MDO	Mine Developer and Operator
15	Mt/a	Million Tons per Annum
16	NEPRA	National Electric Power Regulatory Authority
17	NIC	National Insurance Company
18	O&M	Operations and Maintenance
19	PMC	Project Management Cost
20	PPIB	Private Power & Infrastructure Board
21	SCA	Sindh Coal Authority
22	SECMC	Sindh Engro Coal Mining Company Limited
23	SECP	Securities and Exchange Commission of Pakistan
24	SEPA	Sindh Environmental Protection Agency
25	SIDA	Sindh Irrigation and Drainage Authority
26	TCEB	Thar Coal and Energy Board
27	USD	United States Dollar

Note: All project cost and coal tariff numbers in this petition have been taken from Financial Model which has been provided to TCEB along with this petition. These numbers have been rounded off to the nearest decimal places

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1.3 DEFINITIONS

Unless otherwise defined herein or if the context otherwise requires, all capitalized terms used in this petition shall have the meanings assigned to them hereunder:

"**Change in Law**" means:

(a) the adoption, promulgation, repeal, modification or reinterpretation by any relevant authority of any applicable law of Pakistan (including a final, binding and non-appealable decision of any relevant authority); or

(b) the imposition by a relevant authority of any material term or condition in connection with the issuance, renewal, extension, replacement or modification of any consent, license or authorization in respect of the Project; or

(c) the imposition by a relevant authority of any additional consent or requirement,

that in the case of each of clause (a), (b), or (c) above establishes an increase in the cost of the design, supply, construction, operation or maintenance of the Project or causes a delay to the Project.

"**Coal Reserve**" means a mineral formed below earth's surface and includes anthracite, bituminous coal, sub-bituminous coal and lignite;

"**Coal Supply Agreement(s)**" or "**CSA**" means the agreement(s) signed by the Petitioner with Coal Purchaser(s) for the sale of Coal/ Lignite;

"**Coal**" or "**Lignite**" means the lignite reserves in Thar Block-II;

"**Coal Purchaser(s)**" means the company(ies) that have entered into the Coal Supply Agreement(s) with the Petitioner and are setting up Power Plants in Thar Block II;

"**COD**" means the date on which the Petitioner achieves commercial operations in respect of the Project with a capacity of 7.6 Mt/a;

"**ECC**" means the Economic Coordination Committee of the GoP;

"**Environmental Laws**" means any Laws concerning:

- Human health or Safety or Social issues, including minimum labor standards and laws prohibiting forced labor or harmful child labor;
- the Environment, any Emission or Substance which is capable of causing harm to any living organism or the environment; or
- Hazardous Materials;

"**Environmental Requirements**" means all environmental standards and requirements issued by the Sindh Environmental Protection Agency;

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"**External Infrastructure**" means the roads, utilities & effluent network, transmission line, communication network, rail network outside the Thar Block-II but connected or associated with the Mine, Lignite stockyard, Outside Dump, Interconnections, etc.;

"**Financial Closing**" or "**Financial Close**" means the financial close in respect of the Project (having capacity of 7.6 Mt/a) whereby all conditions precedent to availability of financing from lenders to the Project have been met, deferred or waived;

"**GoS**" means Government of Sindh;

"**GoS Implementation Agreement**" means the GoS implementation agreement dated 19th November 2015 and entered into between the GoS and the Petitioner;

"**GoP**" means Government of Islamic Republic of Pakistan;

"**Hazardous Material**" means any pollutant, contaminant, solid waste, hydrocarbon product, toxic or hazardous substance, materials or waste, any flammable, explosive or radioactive materials defined, listed, classified or regulated as such in or under, or subject to, any applicable Laws (including Environmental Laws) including:

- any petroleum or petroleum products (including gasoline or crude oil or any fraction of them, but excluding small quantities of lubricating greases), flammable explosives, radioactive materials, asbestos in any form that is or could become friable, urea formaldehyde foam insulation and polychlorinated biphenyl;
- any chemicals, materials or substances defined as or included in the definition of "hazardous substances", "hazardous wastes", "hazardous materials", "extremely hazardous wastes", "restricted hazardous wastes", "toxic substances", "toxic pollutants", "contaminants" or "pollutants", or words of similar import, under any applicable Environmental Law;
- any other chemical, material or substance, exposure to or release of which is prohibited, limited or regulated by any Relevant Authority; and
- any hazardous material or substance identified as such or otherwise regulated under the environmental standards applicable in Pakistan;

"**Inside Dump**" means the waste material dump created by the dumping of Overburden and Interburden by re-filling the void created below the surface by the removal of Overburden and Coal;

"**Interconnections**" means all interconnections between the Mine, MSF, Mine Infrastructure, mine mouth power plant, township and External Infrastructure;

"**Interburden**" means all material that lies between the Coal seams and or found associated with the Coal;

"**KIBOR**" means the average "ask side" Karachi Inter-Bank Offer Rate for a period equal to six (6) months which appears on the appropriate page of the Reuters service at or about 11:30 a.m. in Karachi on the last available business day prior to the beginning of the relevant period, or in the event that the Reuter's service, or any successor thereto, no longer provides such information, such other service as agreed to by the parties that provides the average "ask side" Karachi Inter-Bank Offer Rate for Rupee deposits in the Karachi interbank market;

"**Law**" or "**Laws**" means any applicable statute, ordinance, rule, decree, notices, requirement, national, provincial or local legislation, statutes, ordinances and other laws and regulations including Mines Act 1923, Mines Act 1954, Sindh Mining Concession Rules 2002, labor laws, health, safety, Environment Laws, bye-laws, rules, orders, decrees, judicial decisions, delegated legislation, directives, guidelines (to

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the extent mandatory) policies or code of GoS/GoP or any Public Sector Entity or Relevant Authority or agency, whether federal, provincial, municipal, local or other government subdivision of Pakistan, or of any legally constituted Relevant Authority, as amended from time to time;

"**Mine**" or "**Mining Facility**" means the open cast lignite mine at Thar Block-II and associated Mine Surface Facilities, Mine Infrastructure, Lignite stockyard, Coal handling facility, Interconnections, Outside Dump, Inside Dump, surface and mine drainage system, floods prevention dams, dust suppression system and any other system required for Operations & Maintenance of the Mining Facility;

"**Mine Surface Facilities**" or "**MSF**" means the facilities required for the safe, sustainable and cost-effective operations and maintenance of the Mining Facility including office buildings, workshop, motor pool, training center, utilities, ware house, conveyer belts, crushing and blending system, etc.;

"**Mine Infrastructure**" means the roads, utilities & effluent network, electric network, transmission line, communication network, mine & production planning & control system and other requisite infrastructure within Thar Block-II associated with the Mine, stock, Outside Dump, Interconnections, etc.;

"**Operations & Maintenance**" or "**O&M**" means removal, transfer and dumping of Overburden/Interburden production, loading and dispatch of lignite, construction and maintenance of ramps, benches, and Mine service roads, construction and maintenance of surface water prevention dams, installation, maintenance and operations of surface drainage system, installation, operations and maintenance of all other temporary and permanent works required for safe, sustainable and most cost-effective operations of Mine and production of lignite;

"**Outside Dump**" means the area where the overburden and Interburden will be dumped during the initial years of mining;

"**Overburden**" or "**OB**" means the top soil / all materials above the Coal which are required to be removed to expose the coal seams and allow extraction of the Coal as per the Mine production plan;

"**Petitioner**" or "**SECMC**" means Sindh Engro Coal Mining Company Limited;

"Phase I" means a Mine having capacity of 3.8 Mt/a

"**Phase I Commercial Operation Date**" means start of commercial supply of Lignite to the Coal Purchaser(s) from the 3.8 Mt/a Mine as per specifications agreed in the relevant Coal Supply Agreements;

"Phase II" means a Mine having capacity of 7.6 Mt/a

"**Phase II Commercial Operation Date**" means start of commercial supply of Lignite to the Coal Purchaser(s) from the 7.6 Mt/a Mine as per specifications agreed in the relevant Coal Supply Agreements;

"**Phase I Contract Stage Tariff Determination**" means Determination No. TCEB/Registrar/2-1/2014 dated 5th June 2015 and subsequently reviewed and determined upon in Determination No. TCEB/Registrar/2-1/2014/1047 dated 2nd October 2015;

"**Phase I Financial Close Stage Tariff Determination**" means Determination No. TCEB/Registrar/2-1/2014 dated 21st October 2016;

"**Project**" means Open Cast Lignite Mine in Thar Block-II with an initial capacity of 3.8Mt/a in Phase – I, which is currently being expanded to 7.6 Mt/a in Phase - II;

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"Project Cost" means the total cost incurred on the Project including Project Development Cost, EPC Contract Cost, Non EPC Cost including all expenses incurred for Petitioners Consultancy, Project Management, Project Supervision, Financing, Insurances, Infrastructure Development Cost, Financial Advisor Fees, Legal Advisor Fee, Duties, Taxes any other Relevant Authority or Public Sector Entity, Land Acquisition Cost and all other associated costs till the COD of the Project as declared by the Petitioner;

"Project Development Cost" means all costs incurred/to be incurred by the Petitioner till Financial Close of the Project

"Prudent Mining & Construction Practices" means the degree of skill and judgment and the use of equipment, practices, techniques, standards and methods that are generally expected of skilled and experienced engineering, construction and mining firms in the international independent construction and mining industry. Employing high standards in respect of the design, engineering, construction, commissioning and testing of works similar in nature and extent to the work involved in the Project including as required to comply with applicable industry codes, standards, and regulations in Pakistan;

"Public Sector Entity" means (a) The GoP, the GoS, any subdivision of either, or any local governmental authority with jurisdiction over the Petitioner, the Project, or any part thereof, (b) any department, authority, instrumentality, agency, or judicial body of the GoP, the GoS or any such local governmental authority, (c) courts and tribunals in Pakistan, and (d) any commission or regulatory agency or body having jurisdiction over the Petitioner, the Project or any part thereof;

"Relevant Authority(ies)" means the department, authority, agency or other relevant entity from which consent is to be obtained and any authority, body or other person having jurisdiction under the Laws of Pakistan with respect to the Project;

"Scheduled Commercial Operations Date" means the date reasonably estimated by the Petitioner as the Commercial Operations Date based on the then-existing construction schedule, as notified to the Board, as such date may be modified by the Petitioner from time to time by way of written notice to the Board by the Petitioner;

"Tariff" means the price of Coal and shall include rates, charges, terms and conditions for the off take of Coal extracted from Thar;

"Tariff Rules" means the Thar Coal Tariff Determination Rules, 2014, as amended, supplemented or replaced from time to time;

"TCEB" or **"Board"** means the Thar Coal and Energy Board established under section 3 of the TCEB Act;

"TCEB Act" means the Thar Coal and Energy Board Act No XX of 2011, as amended, supplemented or reenacted from time to time; and

"Thar" means the region comprising of districts Tharparkar, Umarkot and Mirpurkhas.

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1.4 APPLICABLE LAW & POLICY

Under the TCEB Act, TCEB has been set up as a one window facilitator in matters relating to Coal mining projects being established in region of Thar, Sindh, Pakistan. Pursuant to Section 5 of the TCEB Act, TCEB is mandated to determine and control the tariff of Thar Coal, subject to the need to comply with guidelines, not inconsistent with the provisions of the TCEB Act, laid down by the GoS.

TCEB is also responsible for determining the process and procedures for reviewing tariff and recommending tariff adjustments. In accordance with the requirements of the TCEB Act and rules and regulations made thereunder, the Petitioner hereby submits this petition, in accordance with the Tariff Rules for tariff determination for its Mining Facility located at Thar Block - II.

This petition is being filed under Part III (Tariff Determination Procedure) of the Tariff Rules. Tariff has been prepared on the basis of the guidelines presented in Part IV (Standards and Guidelines) of the Tariff Rules and ECC approved incentive package for the Project and information required to be filed is included in and /or with this petition.

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1.5 GROUNDS AND FACTS FORMING A BASIS FOR THE TARIFF PETITION

Over the past decade, Pakistan has been plagued with chronic electricity shortfall. NTDC expects the electricity demand growth at 5-6% p.a over the next ten years. To meet this growing demand and current shortfall, significant investment has been routed towards the energy sector. Power projects constitute the largest investment under the China Pakistan Economic Corridor (CPEC).

In addition to the investment required within the sector, the Government is also cognizant of the fact that the fuel mix is also required to be rebalanced to reduce dependence on imported fuel and safeguard against price shocks from the international market along with preventing a balance of payment crisis. Development of Thar Coal Resources is part of this effort.

Located in the province of Sindh, Thar Coal Fields represent the 7th largest Coal Reserves in the world with ~ 175 billion tons of Coal Reserves. These constitute 95% of the total Coal Reserves present in Pakistan. While the coal present within Thar is of lignite quality, it is perfectly suitable for electricity generation, a fact also highlighted in CPEC Energy Planning Report:

"The development potential is huge. Even if in the future the development scale of Thar coal field is expanded to 100 million tons, it is sufficient to supply the fuel demand of Pakistan for several centuries"

Owing to this development Potential of Thar Coal, the GoP and GoS are actively promoting the investment into Thar Coal based mining and power projects. The Mining and Power projects being set up in Thar Block II are the pioneering projects in Thar.

As the pioneer of Coal mining in Thar, the Petitioner is already in the process of constructing a 3.8 Mt/a Coal Mine. The said Project (having capacity of 3.8 Mt/a) achieved its Financial Close in April 2016 and since has successfully removed ~67.7 million BCM of overburden (i.e. approximately 60.5% of the total overburden to be removed for the construction of the Mine). The overall progress of the Project is 4 months ahead of schedule and the Petitioner expects to complete the Project by June 2019 against the contracted completion of October 2019.

To enable the Financial Close of the Project (having capacity of 3.8 Mt/a), TCEB notified the Phase I Contract Stage Tariff for the 3.8 Mt/a project as well as a composite tariff for a 3.8 Mt/a mine which will be expanded to the 6.5 Mt/a mine. This determination required the Petitioner to expand the Mine to a capacity of 6.5 Mt/a within 18 months of Phase I Commercial Operations Date. A provision of extending the timeline by another 6 months due to an impact of delay in downstream off-take agreements was also allowed.

The expansion envisioned in the Phase I Contract Stage Tariff was to cater to supply coal to an additional 1x330 MW power plant and 0.8 Mt/a to the Jamshoro Power Company Limited. However, due to the surge in demand for Thar Coal Off-take after the Financial Close of the Phase I, the Petitioner has revised its expansion plan. The capacity of the Mine will now be expanded to 7.6 Mt/a and will serve two 330 MW power plants to be located next to the Mine. Both Coal Purchasers have executed their security package with CPPAG and the Petitioner has entered into 30-year Coal Supply Agreements with both parties for the supply of 1.9 Mt/a of Coal to each.

The Petitioner therefore requests that it is issued a revised Contract Stage Tariff which caters to the expansion of the Mine to 7.6 M/a instead of 6.5 Mt/a.

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2 PROJECT DETAILS

2.1 BUSINESS PLAN

The Petitioner intends to the expand the capacity of the Mine to 7.6 Mt/a to cater to the requirements of its two new off-takers. DADI Design Institute has completed the Feasibility Study for the Project and it has been further ratified by RWE and approved by the Sindh Coal Authority. During this expansion, the box-cut will be expanded to 1000 meters over a course of 33 months. Overburden volume required to be removed for this expansion is ~51.5 MBCM.

For this enhanced capacity, the Petitioner has entered into 30-year Coal Supply Agreements with two Coal Purchasers for the off-take of 1.9 Mt/a each. As per the timelines agreed within the CSAs, the first Coal Purchaser has requested coal off-take within 30 months of Financial Close while the second Coal Purchaser will be ready within 33 months of Financial Close. The Mine's expansion has been designed to cater to supply to both Coal Purchasers as per their required timelines with any sale made to the first Coal Purchaser prior to COD but after commercial operations of the first Coal Purchaser being classified as Pre-COD sale.

Based on precedence, the power plants being developed by both Coal Purchasers will have to be completed before SECMC can declare COD. However, a delay in completion of the projects of either of the Coal Purchasers can delay the COD of the Project's expansion and thus delay the lowering of the coal tariff.

Therefore, the Petitioner requests that upon completion of the Mine after 33 months, it is allowed to declare COD even if one out of two of the Coal Purchasers has achieved commercial operations. At this stage, the complete capital cost will be divided over 5.7 Mt/a which will still result in a lower Tariff a compared to the Tariff in respect of a capacity of 3.8 Mt/a. Once the second Coal Purchaser achieves commercial operations, the Petitioner will request TCEB to revise the capacity of the Mine to 7.6 Mt/a, thus lowering the Tariff further.

This concept has been explained in detailed in Section 4.3

2.2 SELECTION OF TECHNOLOGY

For expansion of the Mine from 3.8 Mt/a to 7.6Mt/a, the Petitioner has opted for traditional shovel and truck technology. Several equipment size options were reviewed and the same size equipment as Phase I i.e. 60-ton trucks and $7m^3$ shovels were selected. The selection of equipment was made after careful consideration of lead times of the equipment, overall impact on the tariff, synergies with the existing project and managing the funding requirement for the Project.

2.3 COAL QUALITY

Phase I Contract Stage Tariff Determination was designed based on a heating value of 11.6 MJ/kg based on the Coal Sampling and testing work carried out by North East Coal Bureau of China in 2002-03. In 2014, a series of five confirmatory boreholes were sunk (ZK-series) in the area of initial box cut in Block II, Thar under the supervision of RWE expert. The coal and parts of the interburden was sampled and sent for coal

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quality tests to RWE Head Laboratory, Germany. The results show a lower average heating value of ~10.84 MJ/kg and higher moisture content of 49.5%, while ash content is similar. As per RWE experts, reduction of coal quality vs. earlier (2002-03) results of Chinese was due to moisture loss during coal samples transportation to China, which was not precisely captured in earlier studies. Based on the results, RWE performed the geo-statistical analysis to correct the old database of coal quality.

In 2016-17, In order to increase measured coal reserves and further confirmation of coal quality, SECMC initiated a detailed exploration program in which 56 boreholes (SGH Series) were drilled and coal quality analysis was done. Xenith Consulting from Australia was engaged to monitor the drilling campaign in compliance with JORC code and prepare JORC resource and reserves report. The coal quality results of 2016-17 campaign shows the similar results with ZK series boreholes.

A comparison of the original Coal Quality Data along with the revised data is provided in the following table:

Thar Block II Coal Quality							
		Previous	**Updated – Raw Coal Quality, Main Mineable Coal seams**				
		Average (30 years)	Average (30 years)	Min/Max	Y (1-10)	Y (11-20)	Y (21-30)
Heating value	LCV.ar (MJ/kg)	11.587	10.86	10.312/ 12.771	10.935	10.913	10.73
Proximate Analysis	Moisture.ar (%)	47.7	49.49	44.0/ 50.2	49.17	49.6	49.7
	Ash.ar (%)	7.5	9.3	5.1 / 12	8.1	8.5	11.1
	Volatile Matter (ar)	24.9	24.3	24.1/ 26.0	24.2	23.92	23.85
	Fixed Carbon (ar)	19.8	19.16	19.1/ 20.3	19.2	19.4	18.9
	Total Sulfur.ar (%)	1.1	1.3	0.7 / 1.7	1.19	1.21	1.7

As part of the Phase I Tariff Determination, TCEB had set a limited on the downward heating value adjustment of 2.5%.

The Petitioner hereby requests that since it has no control over the heating value of Coal, the floor placed on the downward heating value is removed in the revised tariff determination and that it be allowed to actualize Production Payment Price on the basis of the actual heating value of Coal.

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3 PROJECT COST ANALYSIS

3.1 TOTAL PROJECT COST

The total incremental Project Cost for Mine expansion to 7.6 Mt/a has been estimated at USD 235.2 Million. The Project Cost is based on a firm EPC contract for OB removal. The break-down of the total Project Cost is set out below:

Project Cost Heads	USD M
EPC Cost	128.3
Non-EPC Cost	75.2
Insurance	1.7
Financial Cost	7.6
IDC	22.4
TOTAL PROJECT COST	**235.2**

3.1.1 Equipment, Procurement and Construction:

The EPC cost of the Project will be USD 128.3 million and includes Procurement, Construction and OB removal costs.

The cost structure is highlighted in the below table.

Cost Components	EPC Model (M USD)
Procurement and Engineering	77.7
OB removal	18.6
Lignite Production	1.1
Diesel Procurement	29.8
Pre-stripping by Owner	1.1
TOTAL COST	**128.3**

The Petitioner has opted to use the same contractor as Phase I to carry out the Project after carefully considering the following:

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- Using separate contractors for different phases will relieve the Phase I Contractor of its risk undertaking due to confusion regarding assignment of risks and responsibilities for the contractor and the Petitioner as the same mining pit would have to be divided into construction zones for each contractor. The same pit, dump, Haul roads have to be used in Mine expansion as this is the only way to realize scale advantage.
- The Petitioner has given warranties to banks for Phase 1 of the Project that limit all activities which contribute additional risk to the Project and can potentially delay COD. In the event of violation, and undefined construction domains, the Petitioner may not be able to identify the cause of a default. Moreover, having separate contractors working in the same pit would increase the risk exposure of the Petitioner significantly and would have an adverse impact on the bankability of the Project.
- It will become a challenge to enforce performance warranties obtained from two different contractors with work area in same pit. Even if these contractors are assigned different areas within a pit, both will use common facilities, haul roads, etc. It will be almost impossible to hold two different contractors accountable for any possible technical issues in common areas of pit and hence getting any relief through warranties.
- Having two different contractors would have resulted in duplication of resources for assembly warehouses and settlement facilities at the Construction Site. This would hike up the production cost unnecessarily and translate into a higher coal tariff.

3.1.2 Non-EPC & Other Costs

3.1.2.1 Non-EPC Cost

The Petitioner estimates that it will incur USD 75.2 million in lieu of Non-EPC Costs i.e. for activities to be carried out outside the scope of EPC for the execution of the Project. Main costs are summarized below:

	Cost USD M
Capital Items	42.2
Security	3.4
SWB	4.5
Operating Expense	9.4
Consultancy and Studies	2.3
Legal and Professional	1.0
Relocation Costs	8.5
Project Development Costs	3.9
TOTAL	**75.2**

Capital items includes expansion of existing workshop, warehouse and accommodation facilities, construction of additional roads for Coal Supply, an additional crusher for the enhanced production capacity, wells for dewatering and the development of an additional Ground Water Disposal Site in addition to Gorano and Dukkar Chho. It is to be noted that some of these items e.g. dewatering wells, roads, coal handling system and construction of warehouse and accommodations were part of the EPC scope during Phase I however, the Petitioner believes that significant cost savings can be achieved through competitive bidding for these items if the Petitioner takes responsibility of these. Therefore, the Petitioner has excluded these from the scope of the EPC Contract for the expansion.

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The Petitioner also submits that the Government of Sindh has announced a compensation scheme for the local people affected by the Thar Coal Project residing in Block II whereby they will be issued preference shares to ensure that they receive a recurring income from the Project throughout its lifetime. Each affected family from Block II will be issued preference shares worth PKR 500,000, the cost of which has been included in Relocation Costs. The affected families will be identified by the GOS. In addition to the issuance of the of shares, under the scheme, SECMC will be required to pay each family PKR 100,000 per year until the preference shares start paying dividends. It is submitted that cost of equity in lieu of issuance of shares plus annual payments are until dividends begin are allowed as part of the Tariff.

Development Costs are estimated to be USD 3.9 million, which is in-line with the total costs that have been incurred to-date. This cost will be trued up at the time of Financial Close Stage Tariff.

3.1.2.2 Insurance

Insurance Cost is calculated to be USD 1.7 million, with the cost being equivalent to 1.35 percent of EPC value.

3.1.2.3 Financial Cost

The Petition has been designed on 100% local financing which was already arranged as part of Phase I financing. However, since the EPC contract requires payments to be made in USD, the Petitioner may be required to arrange USD denominated funding in light of the directives of SBP. As a result, it is requested that the Petitioner may be allowed 4% of Debt Amount as Financing Fee and up to 7% of foreign Debt and Interest as Sinosure Premium, if required in line with the cap allowed in Phase I Financial Close Stage Tariff Determination.

3.1.2.4 Interest During Construction (IDC)

Total IDC for the Project has been calculated to be USD 22.4 million. This has been calculated on the basis of the following assumptions:

- Debt: Equity ratio has been assumed at 75%:25% subject to section 3.2 below
- Construction period of 33 months
- 30% Equity drawdown has been assumed upfront and remaining debt-equity drawdown is assumed to be at a pro-rata basis in line with allowed mechanism under Phase I Financial Close Stage Tariff Determination.
- Interest rate of KIBOR + 1.75% on Local Debt.

3.1.3 OTHER SUBMISSIONS RELATED TO PROJECT COST

3.1.3.1 Cost of Gorano Reservoir

During the Phase I Financial Close Stage Tariff Determination, the Petitioner had requested the Board to include the cost of the construction for the Gorano Reservoir (~USD 15 million) in the Project Cost for Phase I. In the Financial Close Stage Tariff Determination, Tariff Committee had determined that owing to the limited nature of the said determination and the uncertainty surrounding the incurrence of such cost, the cost of the reservoir cannot be adjudicated upon at the time.

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The Petitioner has since completed the construction of the reservoir and discharge of water has begun in the reservoir. As the Tariff to be determined will be a composite Tariff of Phase I and II, it is requested to include the cost of the reservoir within the approved project cost of Phase I.

3.1.3.2 Treatment of Pre-CoD Sale

In the Phase I Contract Stage Tariff Determination, the Tariff Committee had determined that the revenue generated from the sale of pre-COD production should reduce the capital cost of expansion. However, due to the early start of the expansion project, majority of expenses related to expansion will be incurred in the overlapping construction period of Phase I and Phase II while the revenue collected from pre-CoD sale will be received close to or after COD of Phase I. As a result, only a portion of capital cost saving can be achieved if this revenue is used for reduction of capital cost in Phase II.

To ensure that the maximum benefit of Pre-COD sale can be realized, the Petitioner requests that actual revenue collected from pre-COD of Phase I (if any) should instead be used to supplement the Asset Replacement Reserve after Phase I COD to reduce the asset replacement component of the Tariff. This approach will not result in any mismatch of cash flows needed for expansion and timing of receipt of pre-COD sale. Moreover, this arrangement will reduce the tariff during the initial years rather than spreading its impact over a period of 30 years, making the Thar Coal more competitive in its initial years vs other fuel sources.

The suggested treatment will also be applicable for the pre-COD sale made to the first Coal Purchaser after it has achieved Commercial Operations in Phase II and reduce the asset replacement component accordingly.

3.1.3.3 Cost of completion of LBOD Scheme

The bankable source of water for the upcoming Power Plants in Thar Block II is LBOD scheme being developed by the GoS. The Petitioner's wholly-owned subsidiary, Thar Power Company Limited is responsible for the O&M of the scheme.

Under the terms of the GoS Implementation Agreement, the deadline for completion of the scheme was 30th June 2017, however it has not been completed to date. The Petitioner believes that certain sections may not be completed by the time water is required by the Coal Purchasers. Such delay will directly impact downstream commissioning and eventually off take of Coal.

It should be noted that under the GOS Implementation Agreement, the cost of such delay is a pass-through item in the Tariff. However, given the flagship nature of the Project, it is imperative that the Project is completed on time.

The Petitioner requests that if required it be allowed to complete the scheme and any cost incurred in this regard be allowed as pass-through under the Tariff.

3.1.3.4 Allowance of 2% of Project Cost for CSR

Thar is one of the poorest regions of the country, with lowest in Human Development Indices. As a result, there is a vast requirement of Community Development in the region. During a recent visit to the Petitioner's Phase I Project, the Honorable Chief Minister of Sindh announced that the companies

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undertaking projects in Tharparkar will be allowed to spend up to 2% of their project costs under the Tariff for purposes of community development work.

In light of this development, the Petitioner submits that it be allowed to spend 2% of its Project Cost in Phase I and II for community development in the region.

3.2 CAPITAL STRUCTURE

The Tariff has been designed on a Debt: Equity Ratio of 75:25 with the following structure:

		USD M
Equity	25%	58.8
LCY Debt	75%	176.4

The Petitioner was granted a Sovereign Guarantee of USD 700 million for the construction of a 6.5 Mt/a Mine. Under the revised plan, the Petitioner aims to achieve a capacity of 7.6 Mt/a within the same Sovereign Guarantee Limit. However, for the purpose of Financial Close, the Petitioner is required to arrange funding for contingencies and escalations of macro variables which are a pass-through in the Tariff. As a result, incremental additional debt beyond USD 700 million (i.e. approximately USD 15 million) is required to be arranged.

The Petitioner requests that it is allowed to arrange the incremental funds via equity with an overall cap of 30% equity (for Phase I & Phase II combined) to ensure that the Financial Close is achieved at the earliest and as soon as the two Coal Purchasers who have executed CSAs with the Petitioner in Phase II have achieved their respective financial close. It should be noted that the additional equity commitment will only be for funds needed beyond the USD 700 million loan and will only be utilized in case all of the contingencies and escalations are realized. The net impact of this change will only lead to an increase in Coal price by ~ USD 0.6/ ton and resulting power tariff increase by USc 0.05/ Kwh.

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4 TARIFF SUMMARY

4.1 KEY TARIFF ASSUMPTIONS AND BASIS

Coal tariff has been calculated on the basis of a cost-plus mechanism with guaranteed USD based return for equity holders, cost pass through of debt servicing and operational costs pass through in line with the Phase I Tariff Determination.

For the purpose of calculating levelized tariff, a discount rate of 10% has been used. Coal tariff has been calculated on the basis of fiscal incentives as approved by GoP with the understanding that any subsequent changes will be processed as pass through.

The following basis has been used for calculation of Coal tariff:

(a) 20% IRR on equity;

(b) Zero percent (0%) custom duties and other related tax on import of Coal mining equipment, spares, and machinery, including vehicles for site use;

(c) Exemption on withholding tax to shareholders on dividends for initial thirty (30) years;

(d) Exemption on withholding tax on procurement of goods, services and contracts during Project construction and operations;

(e) Exemption for thirty years on other levies, including Special Federal Excise Duty, Federal Excise Duty, WPPF, and WWF;

(f) In addition to the aforesaid incentives, Thar Coal Mining Projects have been granted same incentives, concessions, protections and security package as that available to Independent Power Producer ("IPPs") developed pursuant to Policy for Power Generation Projects 2002 (as amended from time to time) including but not limited to exemption from Corporate Tax, Minimum Turnover Tax, etc.;

Transportation charges have been maintained at (USD 0.27/ton/km adjusted as per reference FISD price) which will be added on ex-Mine price. 0.2% transportation losses have also been assumed in line with Phase I Tariff Determination.

Phase II of the Project has been designed to meet the demand for coal of 2x330MW gross capacity power plants operating at 85% availability as communicated to the Petitioner by the Coal Purchasers. Coal demand shall be finalized at the commercial operations date of the power project and the Coal tariff shall be adjusted accordingly. In case final, off-take requirements by the power plants are higher than 3.8Mt/a then the Petitioner may require additional capex/cost which shall be adjusted in the tariff at Commercial Operations Date.

4.2 TARIFF COMPONENT DETAILS

4.2.1 PRODUCTION (VARIABLE) PAYMENTS:

The Production Payment Price of the tariff consists of the following items:

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	Levelized USD M/ Annum	Levelized USD/ton
Fuel Cost	41.7	5.5
Variable O&M	34.8	4.6
Asset Replacement Component	23.1	3.0
Royalty	24.8	3.3

a) **Fuel Cost**

This component includes the cost of diesel required for all the equipment utilized for Coal extraction & Overburden removal. The main equipment includes Dump Trucks & Shovels, Loaders, Dozers, Crawlers, Auxiliary Equipment, Emergency & Rescue Vehicles, Buses, and Wagons & Cars for transportation of the workers and staff to & from the mine site and any other equipment operated on diesel fuel used in mining operations. The cost is based on a diesel price of **88.08** PKR/liter (Diesel rate for Islamkot City, District Mithi, as notified by OGRA on **December 1, 2017**).

b) **Variable O&M Costs**

This component includes the cost of annual maintenance i.e. cost of tyres, spares/consumables of all mining and auxiliary equipment.

c) **Asset Replacement Cost**

To replace the mining equipment when it reaches end of its useful life, an Asset Replacement Reserve will be established for which a reserve component will be built into the Tariff. This component will be adjusted by any Pre-COD sale made by the Petitioner.

d) **Royalty**

Royalty has been assumed as maximum of 7.5% of Coal price or PKR 150 per ton. This is subject to adjustments based on the notified royalty from time to time.

4.2.2 CAPACITY (FIXED) PAYMENTS:

a) **O&M Cost**

O&M Costs being submitted for review at this stage are best estimates which have been derived from feasibility and on-ground experience of the Petitioner. A breakup is presented below:

	Levelized USD M/ Annum
Fixed O&M Foreign	53.5
Owners Operating Expenses	5.2
Consultancy and Studies	1.9
Capital Items	2.8
Village Relocation	1.6
Owner's SWB	8.2
Legal and Professional Fees	0.5

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EDS Operating Expenses	0.7
Land Rehabilitation	1.0
Financial Charges	1.7

It should be noted that the abovementioned costs are indicative and are dependent on the expansion plans of the Petitioner and contract entered with the O&M Contractor. Therefore, it is submitted that the Petitioner be allowed to furnish revised estimates for O&M expenses at COD.

b) **Insurance**
For the operational phase of the Mine, TCEB Tariff Committee had allowed a cost of 1.35% of EPC cost per annum for the payment of insurance premium. However, given the incremental nature of investment required for doubling the capacity of the Mine, the premium may or may not be sufficient to cover all the risks. Therefore, the Petitioner requests it should be allowed to adjust the cost of insurance as per the actual premium paid per year.

c) **Power Cost**
This component includes the cost of electricity required for running all the electrical equipment such as: coal handling system, Mine Service Facilities, Underground & Surface Water Pumps, Lighting & Illumination networks, Telecommunications, Water Treatment System, Diesel Handling & Storage System, Sewerage Treatment System, Fire, Raw & Potable Water Systems, etc. Power required for all the infrastructure facilities including township is also included under this head. In light of the suggestion of the TCEB Tariff Determination Committee, the Petitioner has entered into a deal to fulfill its 5 MW of its power requirement from a dedicated solar power facility. This will result in a cost saving of ~USD 1 million per annum.

To fulfill the remaining power requirement, the Petitioner intends to use the local grid and diesel gensets. Cost of grid is based on the power cost at the industrial rate of 16 USc/kWh. This component includes cost of 77% of all power generation required, remaining 23% power generation has been assumed through diesel power generation (price of 88.08 PKR/liter for diesel assumed as per diesel rate for Islamkot City, District Mithi, as notified by OGRA on December 1, 2017). The power generation mix shall be actualized quarterly based on actual grid availability and solar availability.

d) **Cost of Working Capital**

The cost of working capital has been calculated at 1-month KIBOR +2% for the following items in line with the Phase I Contract Stage Tariff Determination

Receivables	30 days
Inventory	30 days
Diesel	21days
Strategic Spares	6 months
O&M Advance	30 days

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e) **Debt Servicing (Principal Debt Repayment and Interest Payment)**

This is the principal & interest payment of debt portion of project cost which is USD 25.8 million. Grace period will be of **33** months (which is equivalent to the construction period of the Project) and the loan repayment period is assumed to be 10 years (beginning from the 1st year of operations).

It should be noted that in addition to the Debt servicing of Phase II, the Debt servicing for Phase I also forms part of the tariff.

f) **Return on Equity**

ROE and ROEDC components are calculated based on a 20% USD Denominated IRR based on a construction period of 33 months.

4.2.3 OTHER SUBMISSIONS:

4.2.3.1 IRR Penalty for non-Expansion of the Mine

Under the Tariff Determination for Phase I the Petitioner was allowed a period of 18 months to achieve CoD of 6.5 Mt/a mine. A maximum period of 6 months was allowed in case of a delay in downstream agreements including CSAs; otherwise there was a proposed reduction in the IRR.

However as mentioned earlier, the Petitioner has no control over the Coal Purchasers and therefore cannot be held responsible for the achievement of their Financial Close. Furthermore, it is submitted that since the Financing is being arranged from China by the Coal Purchasers, there are many external factors that can impact the achievement of Financial Close by the Coal Purchasers.

Therefore, it is requested that the IRR penalty is removed if the delay is attributable to downstream agreements and/or reasons not attributable to the Petitioner.

4.3 TARIFF SNAPSHOT

As indicated above, the construction period of the Mine is 33 months; however, the Petitioner cannot declare its COD until both Coal Purchasers have achieved their respective commercial operations. Therefore, a delay in any one of the Coal Purchaser's power project can delay the reduction in Tariff which may not be a desirable scenario from a consumer's perspective if the other Coal Purchaser has achieved commercial operations and the Petitioner has started supply of Coal to such Coal Purchaser. As a result, the Petitioner requests that it be allowed to achieve COD once construction of Mine is complete and any one of the Coal Purchasers has achieved its commercial operations. At such stage, the Mine capacity will be 5.7 Mt/a, however the Tariff will be lower for all Coal Purchasers compared to the Phase I tariff.

Once the second Coal Purchaser achieves its commercial operations, the Petitioner will request TCEB for an adjustment in the denominator to 7.6 Mt/a which will lead to a further reduction in the Tariff. Tariff at both capacities is highlighted below:

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a) Coal Tariff in USD/ton for 5.7 Mt/a mine capacity

Tariff Component	Average (1-10 Years)	Average (11-30 Years)	Levelized (1-30 Years)
PRODUCTION (VARIABLE) PAYMENTS	**USD/Ton**	**USD/Ton**	**USD/Ton**
Fuel Cost	5.20	6.28	5.48
Variable O&M			
- Tyres	1.36	1.71	1.45
- Spares/Consumables	2.99	3.52	3.13
Asset Replacement Cost	3.21	2.15	3.04
Royalty	3.50	2.76	3.27
	16.27	**16.42**	**16.37**
CAPACITY (FIXED) PAYMENTS			
Fixed O&M			
- Foreign	8.92	10.70	9.38
- Local	5.07	4.20	4.87
Insurance	1.24	1.24	1.24
Power Cost - By Grid	1.00	1.00	1.00
Power Cost - By Diesel + Solar	0.52	0.52	0.52
Cost of Working Capital	0.59	0.60	0.60
	17.33	**18.26**	**17.60**
DEBT & ROE			
Principal Debt Repayment	11.23	0.00	7.32
Interest Payment	4.13	0.00	3.12
ROE	8.21	8.21	8.21
ROEDC	4.38	4.38	4.38
	27.94	**12.59**	**23.03**
Ex-Mine Coal Price	**61.54**	**47.26**	**57.00**

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b) Coal Tariff in USD/ton for 7.6 Mt/a mine capacity

Tariff Component	Average (1-10 Years)	Average (11-30 Years)	Levelized (1-30 Years)
PRODUCTION (VARIABLE) PAYMENTS	**USD/Ton**	**USD/Ton**	**USD/Ton**
Fuel Cost	5.20	6.28	5.48
Variable O&M			
- Tyres	1.36	1.71	1.45
- Spares/Consumables	2.99	3.52	3.13
Asset Replacement Cost	3.21	2.15	3.04
Royalty	3.50	2.76	3.27
	16.27	**16.42**	**16.37**
CAPACITY (FIXED) PAYMENTS			
Fixed O&M			
- Foreign	6.69	8.02	7.04
- Local	3.80	3.15	3.65
Insurance	0.93	0.93	0.93
Power Cost - By Grid	0.75	0.75	0.75
Power Cost - By Diesel + Solar	0.39	0.39	0.39
Cost of Working Capital	0.44	0.45	0.45
	13.00	**13.69**	**13.20**
DEBT & ROE			
Principal Debt Repayment	8.42	0.00	5.49
Interest Payment	3.10	0.00	2.34
ROE	6.16	6.16	6.16
ROEDC	3.29	3.29	3.29
	20.96	**9.44**	**17.27**
Ex-Mine Coal Price	50.22	39.55	46.84

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4.4 ADJUSTMENTS AT FC

The Petitioner may request adjustment in the Project cost at the time of Financial Close due to change in financial assumptions. The following components of the Project Cost may be adjusted at the Financial Close:

Project Cost Component	Required Adjustment
EPC cost	Project Cost to be adjusted as per agreed indexations in the EPC I.e. USD/RMB, USD/PKR, USCPI accordingly; further adjustment may be done at COD
Project Development Cost	Project Cost to be adjusted with actual Project Development Cost
Insurance during construction	Project Cost to be adjusted as per actual insurance cost
Spread on foreign and local financing	Project Cost to be adjusted as per the spread in firm finalised term sheets
Break-up of Local & Foreign Currency loan	Project Cost to be adjusted as per break-up of Local and Foreign Currency loan financing
Financing Costs	Project Cost to be adjusted with financing costs as per lender requirements
Capital Structure	Project Cost to be adjusted based on capital structure agreed with lenders

4.5 ADJUSTMENTS AT COD

At Commercial Operations Date, the project cost will be adjusted and trued-up based on following provisions:

a) **Adjustments in EPC Cost**
At Commercial Operations Date EPC contract cost shall be adjusted for the following:

i. **Variations in Overburden Volumes**
Current Overburden volume assumes 50.8M BCM to reach a Mine capacity of 7.6 Mt/a. The Petitioner will be required to pay for any additional overburden volume required to be removed due to change in slope angles/ Mine design or change in strata. This will be actualized at CoD.

It should be noted that as part of the Phase I Contract Stage Tariff Determination, TCEB allowed SECMC a cap of 5% of determined cost for Overburden removal on account of

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increased volume and/or blasting requirement. However, based on the Mine site conditions, the actual slope angle and overburden volumes may change.

Therefore, it is submitted that the Petitioner be allowed to actualize OB volume based on studies/ recommendations from reputed Third-Party Consultants.

ii. **Variations in Dewatering Volumes**
The volume of ground water to be extracted is ~30 Mm^3 per annum as per the hydrological study. However, the ground water model for the Petitioner's Mining Block is still under calibration and the actual volumes of ground water are still unclear. Therefore, the Petitioner requests that upward variation in cost of 10% be allowed at COD, in line with the Phase I Contract Stage Tariff Determination.

iii. **Blasting Requirement**
EPC contract assumes that there is no blasting required as per the data available. However, in case of blasting requirement cost will be adjusted as per actual.

iv. **All local currency related costs adjusted for PKR/USD parity**
All local currency costs will be adjusted based on PKR/USD rate on the date of each payment of Debt and equity components.

v. Escalations will be allowed on components as per agreed indexation mechanism

- For labor, spare parts and tyres — US CPI (Consumer Price Index for All Urban Consumers (CPI-U) for September 2017 as per EPC Contract - http://www.bls.gov/cpi/) to be used as benchmark
- For diesel — HSD price to be used as benchmark.
- Indexation to USD/RMB rate for all components paid in USD

b) At Commercial Operations Date, the Petitioner will submit evidence of any withholding tax/sales tax/Infrastructural CESS grossed up in payment to contractors; same will be allowed as addition to project cost including requisite adjustments in IDC.

c) Insurance cost, financing costs and withholding tax on interest income to be actualized as per actual.

d) Costs incurred for land acquisition In Thar will be actualized based on announcement of award by GoS. Costs of resettlement of villages will be actualized as per the resettlement action plan approved by GoS.

e) At COD, the Petitioner will submit details of actual LIBOR and KIBOR rates applicable for each interest payment made to foreign and local lenders during Project construction. Therefore, IDC will be adjusted due to change in base rates of local and foreign currency financing.

f) Increase in Project costs due to Change in Law, non-implementation of ECC incentives (as mentioned in Section 3.1 — Key Tariff Assumption and Basis) and other events set out in the GOS Implementation Agreement for the Project shall be treated as pass-through.

c) Royalty payments as notified by GoS.

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d) The Project Cost mentioned in the petition is based on a scheduled COD of 33 months. However, the TCEB is requested to true-up Project Cost and related tariff components up to RCOD of 39 months in case the COD is achieved by the RCOD on account of variation in overburden removal volumes, dewatering volumes and blasting or delay in COD due to downstream agreements.

e) Furthermore, as mentioned above, the Petitioner aims to achieve COD in case any one of the Coal Purchasers' achieves commercial operations of the incremental capacity so the impact can be passed on to the consumer immediately.

4.6 INDEXATIONS AND ADJUSTMENTS DURING OPERATIONS

a) Indexations requested for the tariff components are as follows

Tariff Components	Indexation/Adjustments
Production (Variable) Payments	
Fuel Cost	Diesel Price as notified
Variable O&M (Tyres, spares, comsumables)	US CPI, PKR/USD RMB/USD
Asset Replacement	US CPI, PKR/USD RMB/USD
Royalty	As notified by GoS
Capacity (Fixed)Payments	
Fixed O&M (Local)	Local CPI
Fixed O&M (Foreign)	US CPI, PKR/USD RMB/USD
Insurance	As per actual
Power Cost	Industrial rate of Electricity Diesel Price as notified
Cost of Working Capital	• 1 Month KIBOR • Production Price • Diesel Price • Coal Price excl. Working Capital

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Principle Debt Repayment	USD/PKR exchange rate (FCY)
Interest Payments	KIBOR/ LIBOR rate USD/PKR exchange rate (FCY) Actualize Lender's Tax for FCY Interest Payments
ROE/ROEDC	USD/PKR Exchange Rate
Transportation Cost	Diesel Price as notified

b) Production (variable) payment price will also be trued up on quarterly basis for any variation in heating value.

c) Any variation is geotechnical properties of rock/change in Overburden volume will be adjusted in Tariff.

d) Blasting requirement in case of hard strata is encountered during overburden removal will be adjusted in Tariff.

e) Variation in dewatering volumes will be adjusted in Tariff subject to the 10% cap as determined in the Phase I Contract Stage Tariff.

f) Any variations, changes in the fiscal incentives, including changes in the duties/taxes and levy of new duties and taxes will be treated as pass-through items and it will be paid as supplementary tariff in a twelve (12) months period.

g) Moreover, any delay in any payment due to the Petitioner from any government owned institution beyond six (6) months will be allowed as additional cost to be compensated through adjustment in tariff.

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5 DETERMINATION SOUGHT

In light of the foregoing submissions, TCEB is requested to approve the Petitioner's Reference Coal tariff determination for contract stage tariff for 5.7 Mt/a and 7.6 Mt/a Mine capacities together with the pertinent indexations and COD adjustments in accordance with the Project Costs and the assumptions related thereto mentioned above for a 30-years CSA term post COD.

The Petitioner will be pleased to provide any further information, clarification or explanation that may be required by the Board during its evaluation process.

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6 LIST OF ANNEXURES