SECMC

Sindh Engro Coal Mining Company

TARIFF PETITION

SUBMITTED BEFORE

THAR COAL AND ENERGY BOARD

BY

SINDH ENGRO COAL MINING COMPANY LIMITED

FOR DETERMINATION OF

COMMERCIAL OPERATIONS STAGE TARIFF

IN RESPECT OF

OPEN CAST LIGNITE MINING PROJECT ENTAILING 3.8 MT/A COAL MINE

LOCATED AT

THAR BLOCK-II, DISTRICT THARPARKAR, SINDH, PAKISTAN

DATED

OCTOBER 10, 2019

Sindh Engro Coal Mining Company

Table Of Contents

1 Introduction

1.1 Petitioner Details

Sindh Engro Coal Mining Company

16th Floor, The Harbor Front Building,
HC # 3, Marine Drive, Block 4, Clifton, Karachi
Tel: +92-21-35297501-10
Fax: +92-21- 35296018

Petitioner's Representative's Details

(a)Syed Abul Fazl Rizvi, Chief Executive Officer.

(b)Mohammad Saqib, Chief Financial Officer.

Sindh Engro Coal Mining Company

1.2 List Of Abbreviations

BCM	Bank Cubic Meters
BoD	Board of Directors
CSA	Coal Supply Agreement
EPC	Engineering, Procurement and Construction
GoS	Government of Sindh
KIBOR	Karachi Interbank Offer Rate
LBOD	Left Bank Outfall Drainage Canal
LIBOR	London Interbank Offer Rate
Mt/a	Million Tons per Annum
NEPRA	National Electric Power Regulatory Authority
O&M	Operations and Maintenance
PKR	Pakistani Rupees
SBP	State Bank of Pakistan
SCA	Sindh Coal Authority
TCEB	Thar Coal and Energy Board
USD	United States Dollar

Note:

It is submitted before TCEB that all Project Cost and Coal tariff numbers contained in this Tariff Petition are based on and taken from the Financial Model, as submitted together with this Tariff Petition. All numbers have been rounded off to the nearest decimal places.

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:

Annexure means a reference to an annexure of this Tariff Petition.

Auditor means A.F.Ferguson's and Co., Chartered Accountants, a member firm of the PWC network.

CHS means coal handling system.

Commercial Operations Stage Tariff shall bear the meaning ascribed thereto in the Rules, being, in respect of the Phase I Mine, the tariff submitted by Petitioner for determination by the TCEB pursuant to this Tariff Petition.

Coal Purchaser means the entity that entering into the Coal Supply Agreement with the Petitioner for the purchase of coal, the same being the owner of the Power Plant.

Coal Supply Agreement (CSA) means the agreement executed and/or to be executed by the Petitioner with the Coal Purchaser for the sale of Coal/ Lignite, as amended, modified, supplemented and/or novated from time to time.

Coal/Lignite means the lignite reserves in Thar Block-II.

Commercial Operations Date or **COD** shall bear the meaning ascribed to the term '*Commercial Operations Date*' in the GOS IA.

Contract Stage Tariff shall bear the meaning ascribed thereto in the Tariff Rules, the same being, in respect of the Phase I Mine, the reference tariff (together with all assumptions and other parameters relating thereto) determined by the TCEB in terms of the Contract Stage Tariff Determination.

Contract Stage Tariff Determination means the Determination No. TCEB/Registrar/2-1/2014 of TCEB dated June 5, 2015, as subsequently reviewed and determined in Contract Stage Tariff Review Determination.

Contract Stage Tariff Petition means the tariff petition filed by the Petitioner before TCEB dated January 5, 2015 for determination by TCEB of the Contract Stage Tariff for the Phase I Mine of the Project.

Contract Stage Tariff Review Determination means the Determination No. TCEB/Registrar/2-1/2014/1047 of TCEB dated October 2, 2015.

Contract Stage Motion For Leave For Review means the "*Motion For Leave For Review*" dated June 30, 2015 filed by the Petitioner before TCEB in respect of matters relating to the Project and the Contract Stage Tariff Determination.

EDS shall bear the meaning ascribed thereto in Section 4.3.1.

EDS Scheme shall bear the meaning ascribed thereto in Section 4.3.1.

EPC Contracts means collectively the EPC Offshore Supply and Services Agreement and EPC Onshore Supply and Services Agreement, and **EPC Contract** means each of the foregoing individually.

EPC Contractors means collectively the EPC Offshore Contractor and the EPC Onshore Contractor and EPC Contractor means each of the foregoing individually.

EPC Offshore Contractor means CHINA MACHINERY ENGINEERING CORPORATION (a company duly organized and existing under the laws of the People's Republic of China, with its registered office located at No. 178, Guang An Men Wai Street, Xi Cheng District, 100055, Beijing, the People's Republic of China), being the party contracting with the Petitioner under the EPC Offshore Supply and Services Agreement.

EPC Offshore Supply and Services Agreement means the agreement entitled "*Offshore Supply & Services Agreement for Mining Project*" dated September 10, 2014 and entered into between the Petitioner and the EPC Offshore Contractor in respect of the Phase I Mine, as amended, supplemented, modified and/or novated from time to time.

EPC Onshore Contractor means CHINA EAST RESOURCE IMPORT & EXPORT CORPORATION (a company duly organized and existing under the laws of the People's Republic of China with its registered office located at No.248, Guang An Men Wai Street, Xi Cheng District, 100055, Beijing, the Peoples Republic of China), being the party contracting with the Petitioner under the EPC Onshore Supply and Services Agreement.

EPC Onshore Supply and Services Agreement means the agreement entitled "Onshore Supply & Services Agreement for Mining Project" dated September 10, 2014 and entered into between the Petitioner and the EPC Onshore Contractor in respect of the Phase I Mine, as amended, supplemented, modified and/or novated from time to time.

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, Inter Connections etc.

Financial Close Stage Tariff shall bear the meaning ascribed thereto in the Tariff Rules, the same being, in respect of the Phase I Mine, the reference tariff (together with all assumptions and other parameters relating thereto) determined by the TCEB in terms of the Financial Close Stage Tariff Determination.

Financial Close Stage Tariff Determination means the Determination No. TCEB/Registrar/2-1/2014 of TCEB dated October 21, 2016 for determination by TCEB of the Financial Close Stage Tariff for the Phase I Mine of the Project.

Financial Close Stage Tariff Petition means the tariff petition filed by the Petitioner before TCEB dated October 2, 2015 for determination by TCEB of the Financial Close Stage Tariff for the Phase I Mine of the Project.

Financial Model means the financial model submitted to the TCEB by the Petitioner together with this Tariff Petition, as attached hereto at **SCHEDULE 10 (FINANCIAL MODEL)**.

Gorano Reservoir shall bear the meaning ascribed thereto in Section 4.3.1.

GoS means the Government of Sindh.

Interburden means all material that lies between the coal seams and/ or found associated with the coal.

GoS Implementation Agreement(s) (GoS IA) means the implementation agreement dated 17 August 2015 between the Petitioner and the GOS for the implementation of the Project.

IDC means interest during construction.

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 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 Stock Yard, Interconnections, Outside Dump, Inside Dump, surface and mine drainage system, floods prevention dams, dust suppression system and any other system required for a safe, credible, sustainable efficient and most cost effective Operations & Maintenance of the Mining Facility.

Mine Surface Facilities (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, warehouse 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, inter connections etc.

NHI means M/S NORTHERN HEAVY INDUSTRIES LIMITED.

O&M Agreement shall bear the meaning ascribed thereto in Section 7.3.

O&M Contractors shall bear the meaning ascribed thereto in Section 7.3.

Operations & Maintenance (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 at the most economical price.

Outside Dump means the area where the overburden and interburden will be dumped during the initial years of mining.

Overburden (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 means Sindh Engro Coal Mining Company.

Sindh Engro Coal Mining Company

Phase I Mine means the Mine having a capacity of 3.8 Mt/a.

Phase II Mine means the Mine having a capacity of 7.6 Mt/a.

Phase II Contract Stage Tariff Determination means the Determination No. TCEB/Registrar/2-1/2014/1047 of TCEB dated September 25, 2018.

Phase II Contract Stage Tariff Petition means the tariff petition filed by the Petitioner before TCEB dated December 28, 2017 for determination by TCEB of the '*contract stage tariff*' for the Phase II Mine of the Project.

Power Plant means the 2 x 330 MW Coal based mine mouth power generation facility owned and developed by the Coal Purchaser.

Project means Open Cast Lignite Mine in Thar Block-II with an initial capacity of 3.8 Million tons/annum i.e. Phase I Mine, which is currently being expanded to 7.6 Million tons/annum in phase II.

Project Cost means the total cost incurred or accrued on the Phase I Mine including project development cost, project execution cost including EPC costs and all expenses incurred for consultancy and studies, project management, project supervision, financing, insurances, infrastructure development cost, financial advisors' fees, legal advisors' fees, duties, taxes any other payments to the Relevant Authority or Public Sector Entity, land acquisition cost and all other associated costs related to achievement of COD of the Phase I Mine by the Petitioner and approved by Lenders.

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.

Quarter means a calendar quarter.

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.

Schedule means a reference to a schedule of this Tariff Petition.

Section means a reference to a section of this Tariff Petition.

Solar Power System shall bear the meaning ascribed thereto in Section 7.7.

Tariff Rules or **Rules** means The Coal Tariff Determination Rules, 2014.

Tariff Petition means this petition dated October 10, 2019 submitted by the Petitioner before TECB for determination by TCEB of the Commercial Operations Stage Tariff for the Phase I Mine.

TCEB Act means the Thar Coal and Energy Board Act, 2011.

Sindh Engro Coal Mining Company

Transport Contractor shall bear the meaning ascribed to the term in Section 8.3.

Sindh Engro Coal Mining Company

1.4 APPLICABLE LAW & POLICY

Under the TCEB Act, TCEB has been set up, *inter alia*, as a one window facilitator in matters relating to coal mining projects being established in the region of Thar, Sindh, Pakistan. Pursuant to section 5 of the TCEB Act, TCEB is mandated to determine the tariff of coal from Thar, Sindh, Pakistan subject to the need to comply with guidelines, not inconsistent with the provisions of the TCEB Act, laid down by the GoS. In addition, TCEB is also responsible for determining the process and procedures for reviewing tariff and recommending tariff adjustments.

In accordance with the requirements of the relevant laws of Pakistan (including, without limitation, the TCEB Act and rules and regulations made thereunder), the Petitioner hereby submits this Tariff Petition for tariff determination by the TCEB of the Commercial Operation Stage Tariff, as submitted herein, for the Petitioner's Mining Facility located at Thar Block – II, the same being the Phase I Mine.

This Tariff Petition is being filed under part III (*Tariff Determination Procedure*) of the Tariff Rules. This Tariff Petition and the matters contained herein have been prepared on the basis of the guidelines presented in part IV (*Standards and Guidelines*) of the Tariff Rules and the Economic Coordination Committee's approved incentive package for the Project. Further, any other information required to be filed is included in and /or with this Tariff Petition.

1.5 GROUNDS AND FACTS FORMING BASIS OF TARIFF PETITION

Pakistan has been blessed with the world's seventh largest lignite reserves of around 186 Bt. The largest reserves are located in the Tharparkar District in the province of Sindh, Pakistan where 95% of total lignite (175Bt) have been identified. The extension of entire lignite bearing area is about 9100 km². Despite having such a vast energy resource, Pakistan has been plagued with the power crisis arising out of a suboptimal fuel mix with an over reliance on imported fuel; expensive electricity; and a demand and supply gap exceeding 5000-7000 MW at its peak.

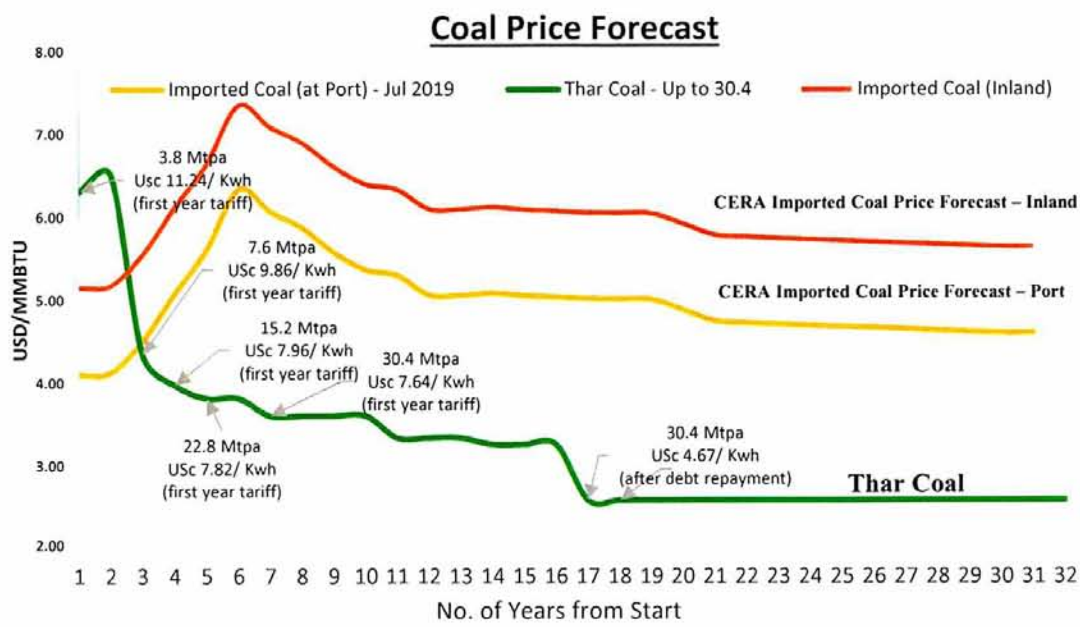
As a result, it was critical to harness the enormous potential of Thar Coal to alleviate the energy crisis and ensure energy security for Pakistan. This fact was also recognized in the CPEC Energy Planning Report as well that states:

> *"The development potential (of Thar Coal) 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"*

It is in recognition of this potential that the Petitioner was incorporated as a joint venture between the GoS, Engro Energy Limited (formerly Engro Powergen Limited), Thal Limited, Hub Power Company, Habib Bank Limited, China Machinery Engineering Corporation and Huolinhe Open Pit Coal (HK) Investment Co., Limited to construct, develop, own and operate a coal Mine in Block II of the Thar Coal Fields.

In the initial phase of the Project i.e. Phase I Mine, the Phase I Mine was to be developed that would fuel the Power Plant as a proof of concept. The Phase I Mine is now being subsequently expanded in phases to enhance the associated power generation capacity from Block II until it reaches its optimum capacity and lowering the tariff of the Coal and power produced from the Project.

As the Mine expands, Thar Coal offers the potential to be the cheapest source of thermal energy in Pakistan. At the optimum Mine capacity, it will offer a tariff of less than 5 cents/kwh (post debt repayment).



In addition to offering the lowest tariff among thermal independent power producers in the country, the use of Thar Coal will lead to substantial foreign exchange savings for the country. Even at the initial stage, the project leads to an foreign exchange savings of USD 170 million vs. a similar capacity regasified liquefied natural gas (RLNG) plant. As the Mine scales up to its optimum capacity of 30.8 Mt/a fueling 5000 MW, this foreign exchange saving will exceed USD 1.5 billion per annum.

The development of Mine and associated power plant in Thar has also provided unprecedented opportunities to the locals. Over 3500 people have been directly employed at these projects. In addition, the region has also witnessed an investment by the companies involved in the Thar Coal projects in the fields of invested fields of healthcare, education, and infrastructure.

1.5.1 FACTS FORMING BASIS OF THE PETITION

As outlined above, the Petition initially decided to construct the Phase I Mine. After the completion of the feasibility study, the EPC Contractors were selected through an international competitive bidding process. Following this process, EPC Contracts were executed between the Petitioner and the EPC Contractors. In addition, the Petitioner also selected the O&M Contractors through an international competitive bidding process and entered into the O&M Agreements with the O&M Contractors.

It is submitted that the Petitioner, vide the Contract Stage Tariff Petition, requested the TCEB for determination of reference Contract Stage Tariff for the Phase I Mine. The Petitioner also submitted all relevant data/information required by the TCEB to arrive at an informed decision. Thereafter, TCEB, pursuant to the applicable Laws (including rule 10(5) of the Tariff Rules) issued the Contract Stage Tariff Determination. Following the Contract Stage Tariff Determination, pursuant to rule 10(8) of the Tariff Rules, the Petitioner filed a Contract Stage Motion For Leave For Review before TCEB to highlight, *inter alia*, certain key points stated in the Contract Stage Tariff Determination that could potentially affect the Project. The TCEB, through its Contract Stage Tariff Review Determination, addressed most of the points highlighted in the Contract Stage Motion For Leave For Review.

The Petitioner achieved its financial close for Phase I Mine on April 4, 2016 and submitted the Financial Close Stage Tariff Petition before TCEB for determination by TECB of the Financial Close Stage Tariff for the Phase I Mine. Subsequently, TCEB, vide the Financial Close Stage Tariff Determination, determined the Financial Close Stage Tariff for Phase I Mine.

Following achievement of financial close by the Petitioner for the Phase I Mine, the Petitioner embarked on the pioneering journey for implementation of the Phase I Mine of the Project and over the course of 39 months achieved COD for Phase I Mine. During the course of the implementation, 112 M BCM of Overburden was removed to achieve a depth of 160 meters to mine Coal.

As the Commercial Operations Date for Phase I Mine has been achieved, the Petitioner hereby submits this Tariff Petition in accordance with and pursuant to the requirements of, in each case, the applicable Laws (including the TCEB Act and the rules and regulations made thereunder (including the Tariff Rules) for determination by TCEB of the reference Commercial Operations Stage Tariff for the Phase I Mine, as required under the Rules.

2 PROJECT COST

2.1 PROJECT COST IN CONTRACT STAGE TARIFF

At the time of determination of the Contract Stage Tariff of the Petitioner, TCEB reviewed the relevant petition filed by the Petitioner (alongside with its supporting data) and determined the reference Contract Stage Tariff pursuant to the Contract Stage Tariff Determination. At this stage, the Project Cost determined was based on EPC Contracts and estimates of other costs to be incurred by the Petitioner over the construction period of Phase I Mine. TCEB determined a cost of USD 730.9 million based on local financing and then prevailing macros and assumptions in the Contract Stage Tariff Determination for the Phase I Mine.

2.2 PROJECT COST IN FINANCIAL CLOSE STAGE TARIFF

In its Financial Close Stage Tariff Determination, the TCEB updated the Project Cost of the Petitioner based on the actual financing mix of the Petitioner, the resulting Sinosure Fee on Chinese financing and then prevailing macros and assumptions. The resultant Project Cost was determined by TCEB at USD 694.8 million.

2.3 PROJECT COST IN COMMERCIAL OPERATIONS STAGE TARIFF

The Petitioner submits that it has completed construction of the Phase I Mine and that the total actual cost incurred is USD 626.8 million. Details of the Project Cost incurred are set out in Section 3 to 5 below and the same have duly been verified by an independent Auditor.

Sindh Engro Coal Mining Company

3 EPC COST

To undertake the EPC of the Phase I Mine, the Petitioner entered into the EPC Offshore Supply and Services Agreement with the EPC Offshore Contractor and the EPC Onshore Supply and Services Agreement with the EPC Onshore Contractor following an international competitive bidding process. The agreed aggregate contract price under the EPC Contracts was USD 461.5 million with indexation on account of PKR/ USD, RMB/ USD parity, US CPI and cost of Diesel.

The EPC Contracts were reviewed in detail by TCEB as part of matters submitted with the Contract Stage Tariff Petition and an EPC price was allowed by TCEB to the Petitioner along with the indexations/ escalations included in the EPC Contracts, as evidenced by the excerpt below of the Contract Stage Tariff Determination – key comments of the TCEB with regards to the EPC Contract are reproduced below:

> *"The Board notes this is a first of a kind open cast mine venture in Pakistan and no benchmarks are available for Pakistan. Independent consultants have reviewed these costs and found them to be reasonable with respect to global benchmarks. Notwithstanding, the Board has reviewed the process of international competitive bidding as adapted by the Petitioner and finds that in conformity with industry practice. In light of the above the Petitioned EPC Costs for the Contract Stage Determination are found reasonable. ...*
>
> *...Lastly, the Petitioner has requested for escalations in EPC Cost against variations in PKR / USD parity, RMB / USD parity, US CPI and Cost of Diesel, in accordance with the terms of contract.*
>
> *This request of the Petitioner is considered to be reasonable by the Board, and the EPC Cost shall therefore be subject to escalations on account of variations in PKR / USD parity, RMB / USD parity, US CPI, and Cost of Diesel from the established benchmarks, in accordance with the terms of the EPC Contract, during the allowable construction / development period."*

Pursuant to the Contract Stage Tariff Determination, TECB indexed the EPC price using then prevailing Diesel price of PKR 82.50/ liter and an indicative '*EPC Cost*' of USD 420.88 million was used for the purpose of determining the Project Cost in the Contract Stage Tariff Determination and the resultant Contract Stage Tariff.

Subsequently upon achievement of financial close by the Petitioner in respect of Phase I Mine, the '*EPC Cost*' was further indexed by TCEB in terms of the Financial Close Stage Tariff Determination using the then prevailing Diesel price of PKR 73.83 per Liter and as a result of which an '*EPC Cost*' of USD 409.2 million was worked out for determination of a Project Cost equal to USD 694.8 million in terms of the Financial Close Stage Tariff Determination and for determination of the resultant Financial Close Stage Tariff.

With the Phase I Mine having achieved the COD, the Petitioner hereby submits and details below for TCEB's approval the actual cost incurred by the Petitioner under the EPC Contracts and in relation to the scope defined therein:

4

3.1 PROCUREMENT AND SUPPLIES

The EPC Offshore Supply and Services Agreement had a contract price/value of USD 101.6 million for the import of equipment and machinery that was required for OB removal, CHS, dewatering, power generation and Mine service facilities. This cost included USD 6.2 million on account of procurement of CHS, which was removed from the scope of the EPC Offshore Contractor through a change order – *please refer to details of the change order in Section 3.4.3.*

The net cost of the procurement and supplies was USD 95.4 million after accounting for above mentioned change order. After accounting for indexations and escalations (USD/ RMB and US CPI) included in the EPC Offshore Supply and Services Agreement, it is submitted that the actual cost incurred by the Petitioner under the EPC Offshore Supply and Services Agreement is USD 91.61 million. This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE A)**. It is submitted that this cost be allowed and is approved by TCEB

DESCRIPTION	FINANCIAL CLOSE STAGE TARIFF (USD M)	CONTRACT VALUE AFTER CHANGE ORDERS (USD M)	ACTUAL COST INCURRED AFTER INDEXATIONS IN THE CONTRACT (USD M)
Procurement and Supplies	101.6	95.4	91.61

3.2 CONSTRUCTION COST

The construction component of the EPC Onshore Supply and Services Agreement included costs related to geological survey and detail design, drilling and water outlets of 29 wells, 2 flood protection dams, water treatment house, water supply system, firefighting water pump house, foundation of the diesel generators substation, construction of the workshop and warehouse auxiliary structures, administration & accommodation structure, development of roads over the mining area and the CHS installation. The total cost of this component, as approved pursuant to the Financial Close Stage Tariff Determination by TCEB, was USD 41.4 million with indexations allowed for US CPI and USD/RMB Exchange rate.

The Petitioner issued change orders to the EPC Onshore Contractor with respect to construction of CHS (*as described in Section 3.4.3*) and construction of roads (*as described in Section 3.4.4*) whereby the scope related to these activities was taken over by the Petitioner and excluded from the scope of the EPC Onshore Contractor. As a result, the price/contract value of the EPC Onshore Supply and Services Agreement for the construction component was revised to USD 33.56 million.

After accounting for indexations and escalations (USD/ RMB and US CPI) included in the EPC Onshore Supply and Services Agreement, it is submitted that the actual cost incurred by the Petitioner is USD 30.83 million. This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE A)**

It is submitted that this cost be allowed and is approved by TCEB.

DESCRIPTION	**FC STAGE TARIFF (USD M)**	**CONTRACT VALUE AFTER CHANGE ORDERS (USD M)**	**ACTUAL COST INCURRED (USD M)**
Construction Services	41.40	33.56	30.83

Sindh Engro Coal Mining Company

3.3 OVERBURDEN, LIGNITE AND POWER GENERATION SERVICES

Under the EPC Onshore Supply and Services Agreement, the EPC Onshore Contractor was responsible for the removal of 113 M BCM of Overburden, production of 1.45 Mt of lignite and supply of power to Phase I Mine for safe mining operations.

To ensure early completion of the Phase I Mine, the Petitioner removed 4 M BCM of OB prior to financial close and as a result of which total overburden volume under the EPC Onshore Supply and Services Agreement was reduced to USD 109 M BCM. In addition, under the EPC Onshore Supply and Services Agreement, the Petitioner worked with the EPC Onshore Contractor to optimize the slope during the detailed engineering. As a result of such optimization, the total OB volume to be removed during the EPC phase of the Phase I Mine of the Project was reduced to 108 M BCM and the construction period was reduced to 41 months.

Change orders were issued to the EPC Onshore Contractor in terms of the EPC Onshore Supply and Services Agreement to reflect the afore-stated changes and, as a result of the same, the contract value was reduced by USD 13.03 Million. Details of the change orders and the cost incurred by the Petitioner of these activities has been set out in Section 3.4.1.

It is highlighted that the cost in relation to the Overburden, lignite production and power generation under the EPC Onshore Supply and Services Agreement was divided into two components, namely:

(i) non-Diesel; and

(ii) Diesel.

3.3.1 Overburden Removal, Lignite Production & Power Generation Services – Non-Diesel

The total non-Diesel component related to OB Removal, lignite production (LG) and power generation (PG) services under the EPC Contracts was USD 167.61 million. Following the change orders issued in relation to variation in OB costs, the revised cost in relation to these services is USD 159.98 million.

After accounting of indexations and escalations (USD/ RMB and US CPI) included in the EPC Onshore Supply and Services Agreement and early completion of the Phase I Mine, it is submitted before TCEB that the actual cost incurred by the Petitioner is USD 150.15 million. This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE A).** It is submitted that this cost be allowed and is approved by TCEB.

DESCRIPTION	FC STAGE TARIFF (USD M)	CONTRACT VALUE AFTER CHANGE ORDERS (USD M)	ACTUAL COST INCURRED (USD M)
OB, LG and PG (Non-Diesel)	167.61	159.98	150.15

3.3.2 Overburden Removal, Lignite Production And Power Generation Services – Diesel

The Diesel component in relation to Overburden removal, lignite production and power generation services had a contract value of USD 150.9 million. This price was indexable against the price of Diesel notified by OGRA for Islamkot, Mithi. Following issuance of change orders to the EPC Onshore Contractor on account of 4 M BCM Overburden removal and volume reduction due to slope optimization, the net cost of Diesel (before indexation) was reduced to USD 145.49 million. Against this cost, it is submitted before TECB that the actual cost incurred on account of Diesel was USD 103.5 million. This was on account of lower prevailing prices of Diesel against the contract value and early completion of the Project. This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE A)**.

It is submitted that this cost be allowed and is approved by TCEB.

DESCRIPTION	**ORIGINAL CONTRACT VALUE (USD M)**	**CONTRACT VALUE AFTER CHANGE ORDERS (USD M)**	**ACTUAL COST INCURRED (USD M)**
OB, LG and PG (Diesel)	150.89	145.49	103.5

Sindh Engro Coal Mining Company

3.4 Change Orders/ Amendments To The EPC Contracts

It is highlighted and submitted before TCEB that as part of the development and implementation of the Phase I Mine, no change orders were issued to the EPC Contractors that would have increased the Project Cost of the Phase I Mine. However, amendments were made to the EPC Contracts to optimize cost and ensure that the Phase I Mine is completed on time. The following Sections 3.4.1 to 3.4.4 set out and submit before TCEB the amendments made in the EPC Contracts post financial close of the Phase I Mine and after the Financial Close Stage Tariff Determination.

3.4.1 Amendment on Account of Variation in Overburden Volume

Under the EPC Onshore Supply and Services Agreement, the EPC Onshore Contractor was responsible for the removal of 113 M BCM of Overburden. However, during the detailed engineering following financial close, the volume required to be removed for this activity was capped at 112 M BCM. As a result, the contract price under the EPC Onshore Supply and Services Agreement was reduced by USD 2.75 million on account of OB, LG and PG Diesel and non-Diesel Components. In addition, the construction period was also reduced to 41 months from 42 months, this resulting in reduction of the contract price by approximately USD 0.97 million.

In addition, in order to ensure that the Project is completed at the earliest, the Petitioner started Overburden removal prior to financial close and removed approximately 4 M BCM. It is noted that the Contract Stage Tariff Determination allowed the Petitioner to undertake this cost with the following conditions:

(a) *cost associated with such Overburden removal cannot exceed the rate for such OB removal in the EPC Contract; and*

(b) *cost of the OB removal must be adjusted against the EPC price to ensure there is no duplication of cost.*

In light of the determination of TCEB, the Petitioner reduced the value of its EPC Onshore Supply and Services Agreement by USD 9.31 million. Against this contract value, the cost incurred by the Petitioner was USD 7.85 million – thus resulting in a saving of USD 1.46 million. This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **Schedule 4 (Annexure A)**. It is submitted that this cost be allowed and is approved by TCEB.

Description	**Equivalent EPC Contract Value (USD M)**	**Actual Cost Incurred (USD M)**
OB Removal by Petitioner	9.31	7.85

3.4.2 Amendment In Indexation Mechanism For Diesel

Under the EPC Onshore Supply and Services Agreement, the Diesel price was stipulated to be indexed using Diesel rate notified by OGRA for Islamkot, Mithi, and the USD/RMB exchange rates. However, in terms of the Contract Stage Tariff Determination, TCEB only allowed for indexation on account for Diesel rate notified by OGRA.

In view of TCEB's determination, an amendment to the EPC Onshore Supply and Services Agreement was signed whereby Diesel component was only indexed by the Diesel price notified by OGRA. Furthermore, it was agreed that all costs in relation to Diesel will be paid in PKR so as to reduce the foreign exchange outflow from the country.

3.4.3 Amendment On Account Of Coal Handling System

As part of the Contract Stage Tariff Determination, the TCEB approved a CHS valuing in aggregate 28.3 M USD. The system was divided in to two parts:

(a) **EPC scope:** Under the EPC Contracts, the EPC Contractors had to provide and install one crusher of 1000 t/h, conveyor belts, tripper car, associated electrical, control & auxiliary systems and stockyard storage of approximately 150,000 tons, costing USD 11.6 M, which TCEB had approved as part of the EPC scope.

(b) **Petitioner's scope (Non-EPC cost):** As part of Non-EPC scope, the Petitioner had to construct an additional stockyard of 180,000 tons with two units of stacker reclaimers, conveyor belts & associated equipment for which TCEB had approved USD 17.1M.

This CHS was partially included in the offshore procurement and onshore construction sections of the EPC Contracts and it is highlighted that the TCEB also allowed the Petitioner USD 17.1 million for the remaining scope as part of the Controllable costs under the Petitioner's scope of Capital Expenditure.

Based on TCEB's instructions to expediently finalize and proceed with the execution of subsequent Mine expansion (i.e. Phase II Mine), the Petitioner diligently worked towards finalization of its expansion plans post the issuance of the Contract Stage Tariff Determination and thus finalized Mine expansion from 3.8 Mt/a to 7.6 Mt/a (i.e. Phase II Mine) instead of 6.5 Mt/a. Based on this development, the Petitioner re-evaluated the design for the CHS in light of the 7.6 Mt/a Mine and its future expansion plans.

To realize the synergies within the existing and expansion projects and to avoid any upfront investment and duplication of cost, the Petitioner decided to carve out the EPC scope and developed a detailed design for coal handling system which would have been executed within the two mine development phases (Phase I – 3.8 Mtp/a & Phase II – Expansion of 3.8 Mt/a to 7.6 Mt/a).

The revised CHS detailed design is to cater to the 7.6 Mt/a mine capacity, comprising of 2x2500 t/h crushers (replacing 1000 t/h crusher included in the Original Phase I Design), 2 x 2500 t/h Stacker & Reclaimers, a Loading Silo and its auxiliary system. Part of the scope was in Phase I with a total cost of USD 28.3 million while the remaining scope equivalent to USD 10.57 million was approved by TCEB in Phase II Contract Stage Tariff Determination.

The Petitioner, in line with the revised feasibility, proceeded with an international competitive bidding process for the revised CHS scheme and subsequently awarded a contract to NHI based in Shenyang, China after the requisite due diligence procedure. It is highlighted that since financial close for the Phase II Mine had not been achieved at the time of award of the contract, only the first segment of CHS was awarded.

During the installation of the CHS and the course of performance of its obligation by NHI in relating to the CHS, it was realized that NHI was behind schedule on installation of the CHS and it may not be possible for NHI to complete the system in time to provide commissioning Coal to the Coal Purchaser. As a result, the Petitioner took a proactive decision and terminated the contract awarded to NHI and encashed its advance payment and performance bonds worth USD 4.1 million.

Due to the delay caused by NHI, there was a risk that complete scope of revised CHS would not get completed on or before COD and it may become difficult to provide commissioning Coal to the Coal Purchaser for the Power Plant. Rather than delaying the Phase I Mine and its contemplated COD, the Petitioner chose to set up a temporary solution to provide Coal to the Power Plant for commissioning. The setup of the temporary solution enabled the timely supply of commissioning, inventory and commercial coal to the power plant.

To finance the afore-stated temporary solution, the funds received by the Petitioner through encashment of performance and advance payment bonds of NHI were utilized. The funds received as a result of this encashment were USD 4.1 million, which were used to net-off the cost incurred by the Petitioner with respect to the NHI contract in addition to setting up a temporary system consisting of a 1 x 600 t/h single roller crusher, 1 x 1200 t/h single roller crusher, associated conveyer and associated auxiliary equipment. It is important to note that the Petitioner is not asking for any extra cost in relation to setting up of a temporary system as same has been financed through encashment of bond issued by NHI and no debt and/or equity drawn from the funds relating to the Phase 1 Mine has been used.

Furthermore, to meet the requirements of storage and blending, the Petitioner also installed a skyline tripper car along with a 2500 t/h double roller crusher, which were part of the CHS approved by TCEB.

The net cost incurred for setting up the CHS for Phase I Mine is USD 17.2 Million, which remains within the budget of USD 28.3 million approved by TCEB for the CHS. Cost of the temporary system has been adjusted against the funds received from NHI. The cost has been duly verified by the Auditor whose verification is attached in **SCHEDULE 4 (ANNEXURE B)**.

	USD M
COST OF TEMPORARY SYSTEM + NHI CONTRACT RELATED COST	4.3
LESS: BOND ENCASHMENT OF NHI	(4.1)
NET COST OF TEMPORARY SYSTEM	**0.2**
SKYLINE TRIPPER CAR + CRUSHER AND ASSOCIATED CIVIL WORKS	17.0
TOTAL COST BEING PETITIONED AS PART OF PROJECT COST	**17.2**

The installation of the remaining CHS is being deferred to the development and implementation of the Phase II Mine where it will be combined with the scope already outlined in the Phase II Contract Stage Tariff Determination. The composite scope of CHS for Phase II Mine shall now consist of procurement supply and installation of 2x stacker reclaimers, conveyor belt, 1 x 2500 t/h crusher, its loading system, wind fence and associated equipment. The total cost of this system will be USD 21.67 million (USD 10.57 million already allowed in respect of the Phase II Mine plus the USD 11.1 million deferred from Phase I Mine).

It is thus submitted that the allowed cost in lieu of the CHS in relation to the scope which was originally part of Phase I Mine but will now be completed in Phase II Mine should be rolled over into Phase II Mine and that the TCEB approves and allows the same.

3.4.4 Amendment On Account Of Road Construction

Under the EPC Onshore Supply and Services Agreement, the EPC Onshore Contractor was responsible for the construction of roads in Block II, Thar including the main access road, coal supply road, internal roads (MSF) and colony roads. However, it is highlighted that the EPC Onshore Contractor was struggling to complete the roads on time. In addition, there was also severe shortcomings in the maintenance of roads that had already been completed under the EPC Onshore Supply and Services Agreement.

This raised serious concerns over the EPC Onshore Contractor's capability of road construction in terms of quality and meeting deadlines. To rectify this, the Petitioner issued a change order to the EPC Onshore Contractor to carve out this scope and as a result of the same the contract value/price of the EPC Onshore Supply and Services Agreement was reduced by USD 2.9 million.

To remedy the situation, a local contractor was engaged through competitive bidding to construct the roads at a cost of USD 2.9 million. It is submitted that the resulting roads are better quality asphalt based instead of the TST – Triple Surface Treatment – envisioned at the time of the EPC Contracts. The new roads have an improved level of base course and asphalt wearing course thickness (at coal road) which improved durability of these roads and will ensure smooth and uninterrupted coal supply operations. At the same time, the Petitioner also managed to minimize the flow of foreign exchange from the country as the payments were made to the new road contractor in PKR.

This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE B).** It is submitted that this cost be allowed and is approved by TCEB as a Project Cost for the Phase I Mine.

DESCRIPTION	**APPROVED COST IN EPC SCOPE (USD M)**	**ACTUAL COST INCURRED THROUGH CHANGE IN CONTRACTOR (USD M)**
Road Construction (Road 2 and 3)	2.9	2.9

3.5 <u>DUTIES AND TAXES</u>

The Contract Stage Tariff Determination and subsequently Financial Close Stage Tariff Determination did not include any taxes or duties however expressly stated that these costs will be a pass-through in the tariff.

Under clause (xi) of the Reference Tariff Adjustments & Escalations, it was provided as follows:

> *"No provision for income tax, workers profit participation fund and workers welfare fund, any other tax, custom/excise duty or other duty, levy, charge, surcharge or other governmental impositions, payable by the Project has been accounted for in the tariff. If the Petitioner is obligated to pay any tax the exact amount will be reimbursed by the offtaker on production of original receipts. However, withholding tax on dividend will not be pass though under the tariff."*

As part of its Contract Stage Tariff Review Determination, TCEB clarified that:

> *"The Determination already recognizes the concept of unforeseen duties and taxes as a pass-through in the Tariff Regime. In the event such situation emerges, the tariff will be trued up as per established procedure"*

During the construction phase, the Petitioner incurred USD 3.1 million in lieu of duties and taxes.

This has been duly been verified by the Auditor. The Auditor's verification along with supporting documents and evidences are included in the Tariff Petition as **SCHEDULE 4 (ANNEXURE A)**. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

3.6 SUMMARY OF EPC COST

Based on the submissions presented above, it is submitted for TCEB's approval that the total cost incurred by the Petitioner under the EPC Contracts as part of the EPC scope is as follows and it is requested that these costs be allowed and are approved by TCEB:

DESCRIPTION	APPROVED COST (USD M)	ACTUAL COST INCURRED (USD M)
EPC		
Procurement and Supplies	95.4	91.6
Construction Services	33.6	30.8
OB, PG & LG (non-Diesel)	167.6	150.2
OB, PG & LG (Diesel)	98.6	103.5
Petitioner's OB Removal	Included in OB and Diesel cost above	7.8
Coal Handling System*	28.3	17.2
Road Construction	2.9	2.9
Duties and Taxes	As per Actual	3.1
TOTAL	**426.4**	**407.1**

** Includes USD 17.1 million scope approved as part of Non-EPC CAPEX in the Contract Stage Tariff.*

f

4 NON-EPC COST

Non-EPC Cost relates to the scope of work that was undertaken by the Petitioner on its own for the development of Phase I Mine. In the Contract Stage Tariff Determination, TCEB divided the Non-EPC cost into '***Controllable Costs***' and '***Non-Controllable Costs***'.

Controllable Costs were described as those expenditures in which the Petitioner could exercise a degree of control and spending under these heads were capped by the TCEB. In addition, Non-Controllable costs related to acquisition and fencing of land and resettlement of Senhri Dars Village – costs which are driven by government approved policies and directives. As a result, such costs were not capped and were to be adjusted against actuals at the time of the COD.

4.1 CONTROLLABLE COSTS

Under the head of Controllable Costs, TCEB allowed the Petitioner approximately USD 126.80 million during the construction period of the Phase I Mine. However, as explained earlier, this scope also included part of the CHS, approved cost related to which is being requested to be carved out and petitioned for approval together with EPC scope of CHS in Section 3.4.3. As a result, the adjusted budget under the Controllable Costs scope is USD 109.7 million.

	USD m
CONTROLLABLE COSTS	126.80
LESS: CHS COST BEING PETITIONED IN CLAUSE 3.4.3	(17.1)
ADJUSTED CONTROLLABLE COST	109.7

Understanding its responsibility to keep the tariff as low as possible for the end-consumer, the Petitioner employed strict cost controls and optimized its implementation strategy to ensure that the project cost remains well below the approved cost. At the same time, achieving COD three months before the scheduled commercial operations date also helped the Petitioner realize additional savings on account of operating costs and salaries, wages and benefits.

The actual cost incurred by the Petitioner against the Controllable Cost scope is USD 85.7 million. This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE B)**. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

DESCRIPTION	**APPROVED COST (USD M)**	**ACTUAL COST INCURRED (USD M)**
Capital Items[1]	11.6	9.1
Operating Expenses	21.7	16.4
Salaries, Wages & Benefits	26.4	21.3
Consultancy and Studies	21.2	16.8
Effluent Disposal Pond	8.3	1.9
Legal and Professional charges	2.9	2.9
Project Development Expenditure	17.6	17.4
TOTAL	**109.7**	**85.7**

4.2 Non-Controllable Costs

The Contract Stage Tariff Determination determined USD 39.59 million for land acquisition and village relocation and outlined that as these costs are driven by determination/ policies of the competent government, these shall be adjusted for actual cost incurred at COD. As such and therefore, these costs were outlined as non-controllable costs.

Against this provisioned cost of USD 39.59 million, the actual cost incurred by the Petitioner was USD 27.4 million.

Description	Approved Cost (USD M)	Actual Cost Incurred (USD M)
Land and Village Relocation	39.59	27.4

4.3 ADDITIONAL COSTS RELATED TO THE NON-EPC SCOPE

4.3.1 Cost of Gorano Reservoir

Open pit mining operations at Thar require continuous dewatering throughout the life of the mine. To cater to this requirement, the GoS in the GOS IA agreed to construct an Effluent Disposal Scheme (the **EDS**) to dispose ground water from the Mine (the **EDS Scheme**). The EDS Scheme comprised of a 37 KM GRP pipeline, a reservoir at Dukkur Chho located south of Block IX along with a reservoir at Gorano.

Under the GOS IA, the EDS was to be completed by June 2016. However, following financial close for Phase I Mine, it came to the Petitioner's knowledge that while the pipeline for the EDS Scheme was under construction, the bidding process for the construction of the reservoir had not even begun.

Subsequently, it was communicated to the Petitioner by the GoS that it was not possible to complete the reservoir by the timelines required which would have led to a delay in OB removal activities. Expected delay in the Project timelines was approximately 1 year if it was decided to wait for completion of the entire scope of EDS by GoS as per its commitment outlined in the GOS IA.

To rescue this flagship Project, the Petitioner took the initiative to undertake the construction of the reservoir at Gorano (the **Gorano Reservoir**). At the same time, the Petitioner requested TCEB to include the cost of the construction for the Gorano Reservoir in the Project Cost for Phase I Mine. In the Financial Close Stage Tariff Determination, the TCEB 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 at the time of the Financial Close Stage Tariff Determination.

It is highlighted that under the Thar Coal Tariff Determination Framework, at the time of the Commercial Operations Stage Tariff, the Petitioner may request for costs not previously included in the Contract Stage Tariff, as noted below:

> *"The components / parameters of the Mining Project that can be adjusted / trued up, on the basis of variations from those determined at the Contract Finalization Stage, shall include COD Stage include those listed below. However, a risk sharing concept shall be introduced, where 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 Finalization Stage, and TCEB may only allow such deviations as a pass-through at COD.*
>
> *(b) Variations on account of non-EPC costs incurred for project development, subject to the justifiability and approval of TCEB for the variation in such costs"*

It is noted that the Petitioner has achieved COD three months ahead of schedule and this was made possible due to, *inter alia*, one of the key decisions of the Petitioner to step in and complete the Gorano Reservoir. The total cost incurred for the construction of the Gorano Reservoir is USD 13.0 million. However, it is important to note that if Petitioner had decided to wait for completion of Gorano by GoS, it would have been forced to stop further removal of Overburden in 1Q 2017. The delay would have resulted in following consequences:

(a) COD delayed in respect of Phase I Mine by 12 months. It is submitted that only the IDC cost of this delay would have increased the project cost by USD 24 million.

(b) Continued expenses of team deployed at site by the Petitioner and idling charges by EPC Onshore Contractor would have added to the extra cost.

(c) Consequent delay in Power Plant completion would have resulted in liquidated damages claims by Coal Purchaser (up to USD 50 million) besides reputational loss of this flagship Project.

It is further noted that the costs mentioned above would have been pass-through in the tariff as per the GoS IA and therefore would have led to an increase in the tariff. The Petitioner's decision to take over EDS has effectively salvaged the Project for which Petitioner is only seeking inclusion of this cost of USD 13.0m in the allowed Project Cost.

This cost has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE B)**. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

4.3.2 Investment In Thar Power Company Limited

The off-take from Thar Block II was only possible if mine mouth power plants were developed in the area. One of the key requirements for development of the power plants in Thar Block II is reliable supply of water. While the GoS is constructing the LBOD scheme to supply water to Thar Block II, the lenders of both the mining and power projects required that a reliable operator be appointed to operate the water scheme.

As a result, the Petitioner established a wholly owned subsidiary by the name of THAR POWER COMPANY LIMITED. The entity has been established on a no profit and loss basis where any surplus within the company will be spent on CSR in Thar.

Total paid up capital to establish the subsidiary and set up its organization is USD 2.0 million. It is requested that this cost be allowed as part of the project cost of the Petitioner as development of power projects in Block II was not possible without reliable water supply to the power plants.

4.4 SUMMARY OF NON-EPC COST

Total cost incurred by the Petitioner as part of the Non-EPC scope is as follows:

DESCRIPTION	APPROVED COST (USD M)	ACTUAL COST INCURRED (USD M)
Controllable Costs	109.7	85.7
Non-Controllable Cost	39.59	27.4
Other Costs		15.0
TOTAL COSTS	**149.3**	**128.1**

The total cost remains well within the total cost approved by TCEB even after inclusion of costs related to Gorano Reservoir and investment in Thar Power Company Limited. Therefore, it is submitted that costs incurred by the Petitioner on account of Non-EPC (including other costs) are allowed as pass-through in the tariff.

The costs incurred has been duly verified by the Auditor. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

5 OTHER COSTS INCLUDED IN PROJECT COST

5.1 INSURANCE

In the Contract Stage Tariff Determination, TCEB allowed the Petitioner actual expenditure incurred in lieu of insurance, subject to a maximum cap of 1.35% of EPC price. In the Financial Close Stage Tariff Determination, this cost was worked out to be USD 5.5 million. The actual cost incurred by the Petitioner on account of insurance is USD 3.3 million.

The cost incurred has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE D)**. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

5.2 <u>FINANCIAL CHARGES</u>

As part of the Contract Stage Tariff Determination, TCEB allowed the Petitioner to incur costs in relation to financial charges such as commitment fee, arrangement fees, Letter of Credit charges etc. TCEB however, capped the expenses to be incurred against such costs at 4% of total debt secured for the Project. The Petitioner submits that to complete the Project, it agreed a funding plan of USD 845.2 million with the lenders which included contingency and escalations which are part of the allowed escalations under the tariff. This resulted in a funding plan higher than that approved Contract Stage Tariff Determination to avoid any shortfall of funds due to uncontrollable factors that were already allowed as pass-through in the tariff.

As a result, the total debt arranged for the Phase I Mine was USD 633.9 million, which implies a financial charges cap of USD 25.35 million.

However, due to effective negotiation by the Petitioner, the actual cost incurred in this regard is USD 14.15 million.

The cost incurred has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE D)**. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

5.3 **Sinosure Premium**

As part of the Financial Close Stage Tariff Determination, TCEB allowed the Petitioner Sinosure Premium of 6.616% of its Foreign Debt plus interest on such Debt over the life of the loan. The Petitioner secured foreign debt equal to USD 200 million with the tenure of 14 years (4 years grace + 10-year repayment). The Sinosure Fee paid by the Petitioner in regard to this Facility is USD 19.75 million.

The cost incurred has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **Schedule 4 (Annexure D)**.

5.4 INTEREST DURING CONSTRUCTION

The Financial Close Stage Tariff Determination determined the IDC at USD 72.8 million. IDC is a function of the cost incurred in respect of the Phase I Mine, drawdowns of debt and actual rates of LIBOR and KIBOR at the time of drawdowns. The negotiated rate on local and foreign loans were KIBOR +175 bps and LIBOR + 330 bps respectively, as allowed by TCEB as part of the Financial Close Stage Tariff Determination.

Due to the saving in the Project Cost and achievement of COD in 39 months instead of 42 months, the Petitioner incurred an IDC cost of USD 54.4 million.

The cost incurred has been duly verified by the Auditor whose verification along with supporting invoices and data are attached as **SCHEDULE 4 (ANNEXURE C)**. It is submitted that this cost be allowed and approved by TCEB as a Project Cost for the Phase I Mine.

6 SUMMARY OF PROJECT COST

On account of the submissions of cost in Sections 2, 3, 4 and 5, it is submitted that the Petitioner has completed the Phase I Mine at a cost of USD 626.8 million as opposed to the provisional project cost of USD 694.8 million notified at the time of Financial Close Stage Tariff Determination. As a result, savings of approximately USD 68 million have been recognized in the Phase I Mine.

An item wise summary of the Project Cost is below, and it is submitted that the same be allowed and approved by TCEB as a Project Cost for the Phase I Mine:

DESCRIPTION	FINANCIAL CLOSE STAGE TARIFF PROJECT COST (USD M)	PETITIONED COD STAGE PROJECT COST (USD M)
EPC	**395.3**	**383.9**
Procurement and Supplies	95.4	91.6
Construction Services	33.6	30.8
OB, PG & LG (non-Diesel)	167.6	150.2
OB, PG & LG (Diesel)	98.6	103.5
Petitioner's OB Removal	Included in OB and Diesel cost above	7.8
Coal Handling System	**28.3**	**17.2**
Road Construction	**2.9**	**2.9**
Duties & Tax	**Allowed as per actual**	**3.1**
NON-EPC	**149.1**	**128.1**
Controllable Cost	109.5	85.7
Capital Items	11.6	9.1
Utility System (Effluent Pond)	8.3	16.4
Salaries, Wages and Benefits	26.4	21.3
Operating Expenses	21.7	16.8
Consultancy and Studies	21.2	1.9
Legal and Professional Charges	2.9	2.9
Project Development Cost	17.4	17.4
NON-Controllable Cost	39.6	27.4
Land Acquisition and Village Relocation	39.6	27.4
Other Costs		15.0
Investment in TharCo		2.0
Effluent Disposal System (Gorano Pond)		13.0
IDC	**72.9**	**54.4**
Insurance	**5.5**	**3.3**
Sinosure	**19.8**	**19.8**
Financial Charges	**21.0**	**14.1**
Total	**694.8**	**626.8**

To finance the above Project Cost, the Petitioner obtained a loan of USD 470.175 million and injected equity of USD 156.675 million. The loan included USD 200 million foreign debt and local debt component of PKR 30,879.52 million (USD 270.175 Million @

USD/PKR 114.294). The debt and equity injection have been verified by the Auditor and attached as **Schedule 4 (Annexure E and F)** respectively.

7 COMMERCIAL OPERATIONS STAGE TARIFF

At the Contract Stage, the Tariff was determined in USD as recovery of capital cost was allowed in USD. However, the indexation mechanism specified therein outlined that the tariff at the Commercial Operations Stage will be converted to PKR.

This is also required as the both the Petitioner and Coal Purchaser are companies incorporated in Pakistan and therefore the transactions between them can only be denominated and settled in PKR.

The Petitioner hereby submit below further parameters and matters relating to the Commercial Operations Stage Tariff for TCEB approval.

7.1 PRINCIPAL REPAYMENT AND INTEREST

As outlined in Section 6, the Petitioner drew USD 200 million in Foreign Loan and PKR 30,879.52 in Local Loan to finance its Project Cost of USD 626.8 million. Based on the LIBOR and KIBOR rates prevailing at COD, reference rates (benchmark + Spread) of foreign and local debt are 5.56% and 14.89% respectively.

Repayment schedules for Local and Foreign Debt have been worked out and attached as **SCHEDULE 2 (REPAYMENT SCHEDULE FOREIGN DEBT & LOCAL DEBT)** and the same are submitted before TCEB for approval.

Applicable indexations in line with the framework for the Thar Coal Tariff Determination are as follows:

$$\textbf{Debt Principal Payments (Foreign)}_{\textbf{Adj}}$$

$$= \text{Debt Principal Payments (Foreign)}_{\text{Ref}} \times \frac{\text{PKR/ USD}_{\text{Adj}}}{\text{PKR/ USD}_{\text{Ref}})}$$

Where

$\text{Debt Principal Payments}_{\text{Adj}}$	is the revised Debt Principal Payments (Foreign) component for the relevant biannual period in PKR
$\text{Debt Principal Payments}_{\text{Ref}}$	is the Reference Debt Principal Payments (Foreign) Tariff Component determined by TCEB for the relevant biannual period determined by TCEB in PKR
$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	is 157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date was determined, as notified by the NBP

$$\textbf{Interest (Foreign)}_{\textbf{Adj}}$$

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

Where:

$\text{Interest (Foreign)}_{\text{Adj}}$	is the revised Interest (Foreign) component of the Tariff applicable for the relevant biannual period in PKR
$\text{Interest (Foreign)}_{\text{Ref}}$	is the Reference Interest (Foreign) Tariff Component determined by TCEB for the relevant biannual period in PKR

$\text{LIBOR}_{\text{Adj}}$	is the revised 6-Month LIBOR rate on the last day of the quarter prior to the period for which the indexation is applicable as published on the Intercontinental Exchange (ICE) website
$\text{LIBOR}_{\text{Ref}}$	is 2.257%, being the 6-Month LIBOR rate on the last day prior to Commercial Operations Date as published on the Intercontinental Exchange (ICE) website
Spread	is 330 bps
$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	is 157.90, being the TT & OD selling rate of PRK / USD as on the date of Commercial Operations Date was determined, as notified by the NBP

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

Where:

$\text{Interest (Local)}_{\text{Adj}}$	is the revised Interest (Local) component of the Tariff applicable for the relevant quarter
$\text{Interest (Local)}_{\text{Ref}}$	is the Reference Interest (Local) Tariff Component as determined by TCEB for the relevant biannual period in PKR
$\text{KIBOR}_{\text{Adj}}$	is the revised 6-Month KIBOR rate on the last day of the quarter prior to the period in which indexation is applicable, as notified by the SBP
$\text{KIBOR}_{\text{Ref}}$	13.14%, being the 6-Month KIBOR rate prevailing on the Commercial Operations Date, as notified by the SBP
Spread	175 bps

There are no indexations on the component of Debt Principal (Local).

Frequency of indexation shall be quarterly.

7.2 ROE AND ROEDC

To finance the Project Cost of USD 626.8 million, the Petitioner injected a total equity of USD 156.675 million. A USD denominated IRR of 20% was allowed to the Petitioner on equity injected in the Project.

ROEDC of USD 82.34 million during the construction phase. This has been verified by the Auditor and attached as **SCHEDULE 4 (ANNEXURE G)**

Based on the actual drawdown of equity, the ROE and ROEDC Component of the Commercial Operations Stage Tariff is calculated as USD 12.63/ton which converted to PKR at the exchange rate on the date of COD is PKR 1,995/ton.

Indexation for the Return on Equity Components is as follows:

$$\textbf{Equity Payments}_{\textbf{Adj}} = \text{Equity Payments}_{\text{Ref}} \times \frac{\text{PKR/ USD}_{\text{Adj}}}{\text{PKR/ USD}_{\text{Ref}})}$$

Where:

$\text{Equity Payments}_{\text{Adj}}$	is the revised Equity Payments (IRR) component applicable for the relevant quarter in PKR
$\text{Equity Payments}_{\text{Ref}}$	is the Reference Equity Payments Tariff Component determined by TCEB in PKR
$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP

Frequency of indexation shall be quarterly.

7.3 O&M – FOREIGN

In its Contract Stage Tariff Determination, TCEB determined the Foreign O&M Cost based on the bid price it had received as part of its competitive bidding process at the time of the EPC Contracts. Since then, the Petitioner has finalized 4.5-year O&M agreements (the **O&M Agreements**) with the O&M contractors (the **O&M Contractors**). It is highlighted that for the purposes of calculating the levelized tariff for 30 years, the O&M contract price prevailing after Year 4 is assumed to prevail for 30 years. The actual cost based on revised O&M agreements will be presented in subsequent multiyear tariff petitions before TCEB.

The initial bid for the O&M was in USD with a requirement to pay the relevant O&M Contractors offshore however, in light of the current account situation in the country, the Petitioner sought to reduce the foreign exchange flow from Pakistan. This approach was also required as SBP does not allow remittance of 100% outflow under an O&M contract where a significant portion of work is to be done in Pakistan. Based on above, the Petitioner successfully negotiated with the O&M Contractors to take payment of approximately USD 63 million over the life of the contract in PKR instead of USD, as originally envisioned. As a result of this required optimization both from regulatory and commercial aspects, the O&M cost structure is divided into following 03 segments:

(a) Procurement of Spares, Tyres & Consumables;

(b) Technical Services; and

(c) Site Services.

The split between Variable and Fixed O&M submitted at the time of the bid has been maintained in the O&M Contracts.

7.3.1 Variable O&M - Foreign

The Variable O&M – Foreign component consists of two segments:

(a) Procurement of Spares, Tyres & Consumables; and

(b) Variable Site Services.

Variable O&M Costs are directly linked to production of Coal.

In the Procurement of Spares, Tyres & Consumables section, the O&M Contractor is responsible for the tyres, spares and lubes required for the Operation of the mining equipment. Payment milestones under this section along with applicable indexations is as follows:

YEAR	CONTRACT	USD/ TON	PKR/TON
Year 1	Procurement of Spares, Tyres & Consumables	4.77	753.42
Year 2	Procurement of Spares, Tyres & Consumables	4.15	654.81
Year 3	Procurement of Spares, Tyres & Consumables	4.05	638.99
Year 4	Procurement of Spares, Tyres & Consumables	4.05	638.99
Year 4.5	Procurement of Spares, Tyres & Consumables	4.05	638.99

$$\textbf{Variable O\&M} - \textbf{Proc.}_{\textbf{Adj}} = \text{Variable O\&M} - \text{Proc.}_{\text{Ref}} \times \left[\frac{\text{US CPI}_{\text{Adj}}}{\text{US CPI}_{\text{Ref}}} \times \frac{\text{USD/RMB}_{\text{Ref}}}{\text{USD/RMB}_{\text{Adj}}} \times \frac{\text{PKR/USD}_{\text{Adj}}}{\text{PKR/USD}_{\text{Ref}}}\right]$$

$\text{Variable O\&M} - \text{Proc.}_{\text{Adj}}$	is the is the revised Variable O&M component for the supply of tyres, spares and consumables component applicable for the relevant quarter in PKR
$\text{Variable O\&M} - \text{Proc.}_{\text{Ref}}$	is the Reference Variable O&M component for the supply of tyres, spares and consumables for the reference quarter determined by TCEB in PKR
$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP
$\text{US CPI}_{\text{Adj}}$	is the revised Consumer Price Index for All Urban Consumer (CPI-U) as notified by the US Bureau of Labor Statistics
$\text{US CPI}_{\text{Ref}}$	256.143, being is the reference Consumer Price Index for All Urban Consumer (CPI-U) as notified by the US Bureau of Labor Statistics for the month of June 2019
$\text{USD/RMB}_{\text{Adj}}$	is the revised average of the last buying and selling rate of USD / RMB, as published on the Bank of China website prior to 12 noon on the date on which indexation is applicable
$\text{USD/RMB}_{\text{Ref}}$	6.885, being the average of the last buying and selling rate of USD / RMB as published on the

Bank of China website prior to 12 noon on the Commercial Operations Date

Frequency of indexation shall be quarterly.

The Variable O&M – Site Services component includes the services rendered such as short term mine planning, fleet management and management of the Diesel supply.

Annual payment milestones under this Variable O&M Site Services along with applicable indexations are as follows:

YEAR	CONTRACT	USD/ TON	PKR/TON
Year 1	Site Services	1.35	213.15
Year 2	Site Services	1.18	185.96
Year 3	Site Services	1.15	181.69
Year 4	Site Services	1.15	181.69
Year 4.5	Site Services	1.15	181.64

$$\textbf{Variable O\&M} - \textbf{Site}_{\textbf{Adj}} = \text{Variable O\&M} - \text{Site}_{\text{Ref}} \times \left[\frac{\text{PKR/USD}_{\text{Adj}}}{\text{PKR/USD}_{\text{Ref}}} \right]$$

$\text{Variable O\&M} - \text{Site}_{\text{Adj}}$ is the is the revised Variable O&M component for Site Services applicable for the relevant quarter in PKR

$\text{Variable O\&M} - \text{Site}_{\text{Ref}}$ is the Reference Variable O&M component for Site Services for the reference quarter determined by TCEB in PKR

$\text{PKR/USD}_{\text{Adj}}$ 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

$\text{PKR/USD}_{\text{Ref}}$ 157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP

Frequency of indexation shall be quarterly.

7.3.2 <u>Fixed O&M – Foreign</u>

The Fixed O&M Component – Foreign consists of the Technical Services and Onshore Site Services.

The scope of Technical Services includes long range mine planning, engineering services, design audits by experts, hydrological and geotechnical detailed design, project management services and overheads.

Annual Payments under the fixed O&M Technical Services Component are as follows:

YEAR	CONTRACT	USD/ TON	PKR/ TON
Year 1	Offshore Technical Services	4.85	766.37
Year 2	Offshore Technical Services	4.27	674.28
Year 3	Offshore Technical Services	4.18	659.66
Year 4	Offshore Technical Services	4.18	659.66
Year 4.5	Offshore Technical Services	4.18	660.05

$$\textbf{Fixed O\&M} - \textbf{Tech.}_{\textbf{Adj}} = \text{Fixed O\&M} - \text{Tech.}_{\text{Ref}} \times \left[\frac{\text{US CPI}_{\text{Adj}}}{\text{US CPI}_{\text{Ref}}} \times \frac{\text{USD/RMB}_{\text{Ref}}}{\text{USD/RMB}_{\text{Adj}}} \times \frac{\text{PKR/USD}_{\text{Adj}}}{\text{PKR/USD}_{\text{Ref}}}\right]$$

$\text{Fixed O\&M} - \text{Tech.}_{\text{Adj}}$	is the is the revised Fixed O&M - Technical Services component applicable for the relevant quarter in PKR
$\text{Fixed O\&M} - \text{Tech.}_{\text{Ref}}$	is the Reference Fixed O&M - Technical Services Component for the reference quarter determined by TCEB in PKR
$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP
$\text{US CPI}_{\text{Adj}}$	is the revised Consumer Price Index for All Urban Consumer (CPI-U) as notified by the US Bureau of Labor Statistics
$\text{US CPI}_{\text{Ref}}$	is 256.143, being is the reference Consumer Price Index for All Urban Consumer (CPI-U) as notified by the US Bureau of Labor Statistics for the month of June 2019

USD/RMB_{Adj}	is the revised average of the last buying and selling rate of USD / RMB, as published on the Bank of China website prior to 12 noon on the date on which indexation is applicable
USD/RMB_{Ref}	6.885, being the average of the last buying and selling rate of USD / RMB as published on the Bank of China website prior to 12 noon on the Commercial Operations Date

Frequency of indexation shall be quarterly.

The Fixed O&M Site Services includes construction & supervision of mining, dewatering, power distribution, supply & utilities for day to day site operations.

Annual payment milestones under this Fixed O&M Site Services along with applicable indexations is as follows:

YEAR	**CONTRACT**	**USD/ TON**	**PKR/TON**
Year 1	Fixed Site Services	2.88	454.81
Year 2	Fixed Site Services	2.50	394.50
Year 3	Fixed Site Services	2.44	384.87
Year 4	Fixed Site Services	2.44	384.87
Year 4.5	Fixed Site Services	2.44	385.29

$$\mathbf{Fixed\ O\&M - Site_{Adj}} = \text{Fixed O\&M} - \text{Site}_{\text{Ref}} \times \left[\frac{\text{PKR/USD}_{\text{Adj}}}{\text{PKR/USD}_{\text{Ref}}}\right]$$

f

Fixed O&M – Site $_{Adj}$	is the is the revised Fixed O&M component for Site Services applicable for the relevant quarter in PKR
Fixed O&M – Site $_{Ref}$	is the Reference Fixed O&M component for Site Services for the reference quarter determined by TCEB in PKR
PKR/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
PKR/USD_{Ref}	157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP

Frequency of indexation shall be quarterly.

7.3.3 Duties and Taxes in relation to the O&M Contracts

The Contract Stage Tariff Determination did not include any provision for taxation however did allow pass-through of any taxes to be borne by the Petitioner.

As part of its Contract Stage Tariff Review Determination, TCEB clarified that:

> *"The Determination already recognizes the concept of unforeseen duties and taxes as a pass-through in the Tariff Regime. In the event such situation emerges, the tariff will be trued up as per established procedure"*

Based on the prevailing tax regime, the Petitioner will be required to pay the following taxes/ duties in relation to the O&M Agreements:

		Import Duties (PKR/Ton)	**Other Taxes (PKR/Ton)**	**Total (PKR/Ton)**
Year 1	Variable O&M	75.34	18.13	93.47
Year 2	Variable O&M	65.48	15.82	81.30
Year 3	Variable O&M	63.90	15.45	79.35
Year 4	Variable O&M	63.90	15.45	79.35
Year 4.5	Variable O&M	63.90	15.45	79.35
Year 1	Fixed O&M		162.58	162.40
Year 2	Fixed O&M		142.56	142.40
Year 3	Fixed O&M		139.38	139.22
Year 4	Fixed O&M		139.38	139.22
Year 4.5	Fixed O&M		139.48	139.32

The table above is based on the Petitioner's best estimate with respect to interpretation of the current Laws. It assumes that any SST and GST will be adjustable in line with incentives provided for in the Laws and there will be no requirement of Income Tax withholding on offshore procurement of spares, tyres and consumables.

In the event that the Relevant Authorities have a different interpretation of the Laws, the tax component allowed in the Tariff will subject to adjustment as per actual tax paid by the Petitioner on the production of original receipts.

7.4 DIESEL

In the bid received for O&M, the O&M Contractors were responsible for the procurement and supply of Diesel for the mining operations. In 2016, the Government of Pakistan allowed mining companies operating in Thar to benefit from the Input-Output adjustment of Sales tax on procurement of Diesel, similar to that in the power sector. However, to benefit from this adjustment, the invoices related to Diesel had to be issued in the name of the Petitioner.

As a result, the Petitioner negotiated with the O&M Contractors to take-over the supply of Diesel during the O&M phase. The Petitioner will supply Diesel up to 100 M liters over the 4.5-year period of the O&M Agreement. Based on the ex-GST Diesel Price of PKR 110.28/liter prevailing at COD, the annual Diesel cost component is as follows:

YEAR	CONTRACT	PKR/ TON
Year 1	Fuel	763.92
Year 2	Fuel	666.48
Year 3	Fuel	651.17
Year 4	Fuel	651.17
Year 4.5	Fuel	651.00

Applicable indexation is as follows:

$$\mathbf{Fuel_{Adj}} = \text{Fuel}_{\text{Ref}} \times \left[\frac{\text{Diesel}_{\text{Adj}}}{(\text{Diesel}_{\text{Ref}})}\right]$$

Fuel_{Adj}	is the is the revised Fuel price component for the relevant month
Fuel_{Ref}	is the Reference Fuel price component determined by TCEB for the Reference month in PKR
$\text{Diesel}_{\text{Adj}}$	is the ex-GST Diesel Price per liter as notified by OGRA for Islamkot, Mithi the relevant month
$\text{Diesel}_{\text{Ref}}$	is PKR 110.28/Liter, being the ex-GST Diesel price notified by OGRA for Islamkot, Mithi for the month of July 2019

Frequency of indexation shall be as and when notified by OGRA.

7.5 FIXED O&M LOCAL

In the Contract Stage Tariff Determination, TCEB reviewed the cost structure of the Petitioner and determined costs in relation to the Fixed O&M for the Petitioner and capped the expenses allowed to the Petitioner under each head. The determined costs in USD M are as follows:

	Year 1	Year 2	Year 3	Year 4-5	Year 6-10	Year 11-30
CONTROLLABLE						
Salaries, Wages and Benefits	6.80	6.80	6.80	6.80	6.80	6.80
Operating Expenses	5.28	4.29	4.13	4.12	4.12	4.12
Consultancy	1.40	1.40	1.40	1.40	1.40	1.40
Effluent Disposal	0.45	0.45	0.45	0.45	0.45	0.45
Capital Item	2.10	2.10	2.10	2.10	2.10	2.10
Land Rehab & Water	0.66	0.67	0.66	0.62	0.62	0.62
Legal and Professional Services	0.45	0.45	0.45	0.45	0.45	0.45
NON-CONTROLLABLE						
Village Relocation	5.22	5.22	5.22	5.22		
Financial Charges	3.56	3.56	3.56	3.56	3.56	1.65
TOTAL	**25.93**	**24.94**	**24.78**	**24.73**	**19.50**	**17.59**

Based on the annual production capacity of 3.8 Mt/a and exchange rate of 157.90, the rate prevalent on the date of COD, the table above translates into a PKR/Ton price of:

	YEAR 1	YEAR 2	YEAR 3	YEAR 4-5	YEAR 6-10	YEAR 11-30
CONTROLLABLE						
Salaries, Wages and Benefits	282.56	282.56	282.56	282.56	282.56	282.56
Operating Expenses	219.47	178.44	171.78	171.34	171.34	171.34
Consultancy	58.17	58.17	58.17	58.17	58.17	58.17
Effluent Disposal	18.70	18.70	18.70	18.70	18.70	18.70
Capital Item (Leasing, Maintenance Cost, rental, Shared Services)	87.26	87.26	87.26	87.26	87.26	87.26
Land Rehab & Water	27.61	27.69	27.69	25.87	25.76	25.76
Legal and Professional Services	18.70	18.70	18.70	18.70	18.70	18.70
NON-CONTROLLABLE						
Village Relocation	217.07	217.07	217.07	217.07		
Financial Charges	147.78	147.78	147.78	147.78	147.78	68.48
Total	**1,077.32**	**1,036.37**	**1,029.72**	**1,027.44**	**810.37**	**731.07**

Applicable indexation is as follows:

$$\textbf{Fixed O\&M} - \textbf{Local}_{\textbf{Adj}} = \text{Local O\&M}_{\text{Ref}} \times \left[\frac{\text{Local CPI}_{\text{Adj}}}{\text{Local CPI}_{\text{Ref}}}\right]$$

Fixed O&M $-$ Local $_{Adj}$	is the is the revised Fixed O&M - Local component applicable for the relevant quarter in PKR
Fixed O&M $-$ Local $_{Ref}$	is the is the reference Fixed O&M - Local component determined by TCEB for the reference quarter in PKR
Local CPI $_{Adj}$	is the latest Consumer Price Index of Pakistan as notified by the Pakistan Bureau of Statistics
Local CPI $_{Ref}$	is 123.86, being the Consumer Price Index of Pakistan (Base year 2015-16) notified by the Pakistan Bureau of Statistics for the month of July 2019

7.6 ASSET REPLACEMENT

In the Contract Stage Tariff Determination, the Asset Replacement schedule was devised based on $7m^3$/60t shovel and truck combination keeping in view a mine expansion up to 6.5 Mt/a. However, since then the Petitioner has revised its expansion plan to expand the mine to 7.6 Mt/a and as part of the Phase II Contract Stage Tariff Determination, a revised asset replacement schedule was reviewed and approved by TCEB.

A revised "**Asset Replacement Schedule**," as applicable to Phase I Mine in line with TCEB's determination in the Phase II Contract Stage Tariff Determination, is attached as **SCHEDULE 3.**

As determined by TCEB in the Contract Stage Tariff Determination, the '*Replacement Reserve*' will be included in the tariff over 3 levelized periods using an annual interest of 0.25%.

The asset replacement cost is submitted as follows.

YEAR	ASSET REPLACEMENT COMPONENT (PKR/TON)	OPENING BALANCE (USD M)	INTEREST EARNED (USD M)	ASSET EXPENSE (USD M)	CLOSING BALANCE (USD M)
1	401.99	9.67	0.01	2.49	7.19
2	401.99	16.86	0.02	0.14	16.74
3	401.99	26.42	0.03	0.00	26.45
4	401.99	36.12	0.04	4.81	31.35
5	401.99	41.03	0.00	40.93	0.10
6	433.59	10.53	0.01	5.42	5.12
7	433.59	15.56	0.02	3.19	12.38
8	433.59	22.82	0.02	4.13	18.71
9	433.59	29.14	0.03	6.10	23.08
10	433.59	33.51	0.02	17.05	16.48
11	433.59	26.92	0.03	4.76	22.19
12	433.59	32.62	0.04	0.14	32.52
13	433.59	42.95	0.02	25.01	17.97
14	433.59	28.40	0.03	5.06	23.37
15	433.59	33.81	0.01	29.52	4.29
16	466.61	15.52	0.01	5.84	9.69
17	466.61	20.92	0.02	2.99	17.96
18	466.61	29.19	0.03	4.14	25.08

19	466.61	36.31	0.04	6.32	30.03
20	466.61	41.26	0.03	19.84	21.44
21	466.61	32.67	0.00	30.80	1.88
22	466.61	13.11	0.02	0.04	13.09
23	466.61	24.31	0.03	0.00	24.34
24	0.00	24.34	0.03	2.26	22.11
25	0.00	22.11	0.02	3.98	18.15
26	0.00	18.15	0.00	18.11	0.04
27	0.00	0.04	0.00	0.00	0.04
28	0.00	0.04	0.00	0.00	0.04
29	0.00	0.04	0.00	0.00	0.04
30	0.00	0.04	0.00	0.00	0.04

Since the equipment is to be imported into the country, the Asset Replacement Component will be indexed based on the USD/PKR exchange rate and US CPI.

$$\textbf{Asset Replacement}_{\textbf{Adj}} = \text{Asset Replacement }_{\text{Ref}} \times \left[\frac{\text{US CPI}_{\text{Adj}}}{\text{US CPI}_{\text{Ref}}} \times \frac{\text{PKR/USD}_{\text{Adj}}}{\text{PKR/USD}_{\text{Ref}}} \right]$$

$\text{Asset Replacement}_{\text{Adj}}$	is the is the revised Asset Replacement Component applicable for the relevant quarter in PKR
$\text{Asset Replacement}_{\text{Ref}}$	is the Reference Asset Replacement Component for the reference quarter determined by TCEB in PKR
$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP
$\text{US CPI}_{\text{Adj}}$	is the revised Consumer Price Index for All Urban Consumer (CPI-U) as notified by the US Bureau of Labor Statistics
$\text{US CPI}_{\text{Ref}}$	is 256.143, being is the reference Consumer Price Index for All Urban Consumer (CPI-U) as notified by the US Bureau of Labor Statistics for the month of June 2019

7.7 POWER GENERATION

At the time of Contract Stage Tariff Determination, the power generation source mix was determined on the basis of supply of 80% of the power from the national grid and 20% of power through self-power generation from diesel.

The Petitioner approached NEPRA, NTDC, CPPA(G) and HESCO for provision of a stable and dedicated power supply to meet the Project's requirements from the grid. The Petitioner further approached TCEB to seek its support to convince NEPRA/NTDC and Ministry of Power, Government of Pakistan for this purpose. However, by the end of the construction period of Phase I Mine and the achievement of COD, the relevant agencies and entities failed to commence supply of power from the grid to the Petitioner for its Phase I Mine. The Petitioner was informed that while HESCO, the relevant distribution company, is working on a technical feasibility for a stable and dedicated line from different grid stations including Umerkot and Mithi, the provision of power from grid is not expected to materialize by or before 2021. As a result, it is submitted before TCEB that out of the envisioned sources of power generation, only '**Diesel Gensets**' are available to the Petitioner to meet its power requirements.

In view of the afore-stated circumstances, the Petitioner, on its own initiative, initiated its efforts for working towards supply of cheap and green energy for the Project and entered into an agreement for the provision of 5 MW solar power with a private party, being the contractor, on build, own, operate and transfer (BOOT) mode following a competitive bidding process. The parties entered into a 15-year contract whereby the contractor will supply approx. 7.65 MkWh on annual basis at a fixed ex-GST price of 9.25 PKR/kWh. The system (the **Solar Power System**) is expected to be operational by 4th Quarter 2019.

In light of the aforementioned, the Petitioner now submits that until such time that the power is available and supplied from the grid, the only sources of power available to the Petitioner is from the Solar Power System and from the diesel gensets. The supply of power from the diesel power generations shall be at the already approved rate of 33 cents/kwh, as determined by TECB in the Contract Stage Tariff Determination.

The total power consumption contemplated at the time of the Contract Stage Tariff Determination was 44 M Kwh however, during the detailed engineering and subsequent execution of the Phase I Mine, the projected power load has increased to 52.094 M Kwh. This increase is mainly due to installation of 7 additional dewatering pumps of 132 kw capacity each besides additional auxiliary equipment.

The applicable indexations with respect to the power generation component are as follows:

$$\textbf{Power Cost} - \textbf{Diesel}_{\textbf{Adj}} = \text{Power Cost} - \text{Diesel}_{\text{Ref}} \times \frac{\text{PKR/ USD}_{\text{Adj}}}{\text{PKR/USD}_{\text{Ref}}} \times \frac{\%\, of\; Diesel_{\text{Adj}}}{85\%}$$

Where:

$\text{Power Cost} - \text{Diesel}_{\text{Adj}}$	is the revised Power Cost – Diesel Component for the relevant quarter in PKR
$\text{Power Cost} - \text{Diesel}_{\text{Ref}}$	is the reference Power Cost – Diesel Component for the relevant quarter determined by TCEB in PKR

f

$\text{PKR/USD}_{\text{Adj}}$	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
$\text{PKR/USD}_{\text{Ref}}$	157.90, being the TT & OD selling rate of PRK / USD as on the Commercial Operations Date as notified by the NBP
$\%\text{ of Diesel}_{\text{Adj}}$	is the percentage of power generated by Diesel in relevant quarter of Operations

$$\textbf{Power Cost} - \textbf{Solar}_{\textbf{Adj}} = \text{Power Cost} - \text{Solar}_{\text{Ref}} \times \frac{\%\ of\ Solar_{\text{Adj}}}{15\%}$$

Where:

$\text{Power Cost} - \text{Solar}_{\text{Adj}}$	is the revised Power Cost – Solar Component for the relevant quarter in PKR
$\text{Power Cost} - \text{Solar}_{\text{Ref}}$	is the reference Power Cost – Solar Component for the relevant quarter determined by TCEB in PKR
$\%\text{ of Solar}_{\text{Adj}}$	is the percentage of power generated to be generated by Solar for the relevant quarter of operations

Frequency of the indexation shall be quarterly.

7.8 INSURANCE

In the Contract Stage Tariff Determination, TCEB allowed the Petitioner actual expenditure incurred in lieu of insurance, subject to a maximum cap of 1.35% of EPC price.

Based on the EPC Price of USD 404.7 million, the insurance cost in PKR/ton is PKR 229/ton.

7.9 COST OF WORKING CAPITAL

In the Contract Stage Tariff Determination, TCEB allowed the Petitioner cost of working capital is based on 30 days Production Price Payment receivables, 30 days coal inventory, 21 days Diesel Storage, 30 days advance payment to the O&M Contractors and 6 months inventory of spares and tires. The allowed rate of KIBOR + 2%.

$$
\begin{aligned}
\mathrm{WC_{(rev)}} &= \mathrm{WC_x} \\
&\times \left(a_x \frac{\text{Prod Pmt}_{(\text{rev})}}{\text{Prod Pmt}_x} + b_x \frac{\text{Coal}_{(\text{rev})}}{\text{Coal}_\text{x}} + c_x \frac{\text{Diesel}_{(\text{rev})}}{110.28} \right. \\
&\left. + \, d_x \frac{\text{US CPI}_{(\text{rev})} \times \text{PKR/USD}_{(\text{rev})}}{256.143 \times 159.70} \right) \times \frac{\text{KIBOR}_{(\text{rev})} + 2.00\%}{14.98\%}
\end{aligned}
$$

Where,

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

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

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

b_x is the proportion of Production Payment Price for 30 days to amount of working capital facility in x^{th} year of operations

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

d_x is the proportion of Spares for 06 months to amount of working capital facility in x^{th} year of operations

Prod $Pmt_{(rev)}$ is the Production Payment Price as determined by TCEB after incorporating indexations till latest month in PKR/ ton

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

$Coal_{(rev)}$ is the Coal Price as determined by TCEB after incorporating indexations till latest month

$Coal_x$ is the Coal Price as determined by TCEB at COD for x^{th} year of operations

$Diesel_{(rev)}$ is the Ex-GST Diesel Price in terms of PKR per Litre notified by OGRA for Islamkot, District Mithi

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

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

$KIBOR_{(rev)}$ is 1-Month KIBOR rate at the end of the 1 month period prior to the month in which indexation is applicable, as notified by the State Bank of Pakistan
Frequency of Indexation shall be quarterly

7.10 HEATING VALUE

In the Contract Stage Tariff Determination, the TCEB had set the reference heating value (for years 1-8) as 11.3 MJ/kg, with a permissible floor limit of 11.0175 Mj/Kg.

At the Commercial Operations Stage, the Tariff is being designed with a heating value of 11.0175 i.e. the floor determined by TCEB as under the CSA, the off-taker has agreed to take off-take up to 10.3 Mj/Kg.

7.11 Duties and Taxes

No provision for income tax, workers profit participation fund and workers welfare fund, any other tax, custom/excise duty or other duty, levy, charge, surcharge or other governmental impositions, payable by the Project has been accounted for in the tariff other than the taxes mentioned in Section 7.3.3.

In the event that the Petitioner is obligated to pay any tax, it is submitted that the exact amount will be passed through in the tariff upon production of original receipts, as set out in Phase I Contract Stage Tariff.

7.12 Summary Of Tariff

In light of the above, the Petitioner requests that the following Commercial Operations Stage Tariff is approved and determined by TCEB with respect to the Phase I Mine:

	Average (1-10 Years)	Average (11-30 Years)	Levelized (1-30 Years)
Production (Variable) Payments	**PKR/Ton**	**PKR/Ton**	**PKR/Ton**
Fuel Cost	657	618	649
Variable O&M			
- Site Services Variable	183	172	181
- Spares/ Tyres/Consumables	645	606	637
- Duties and Taxes	80	75	79
Asset Replacement Cost	418	295	400
Royalty	655	498	581
	2,639	**2,265**	**2,528**
Capacity (Fixed) Payments			
Fixed O&M			
- Foreign Site Services	393	385	393
- Foreign Technical Services	672	660	671
- Fixed O&M Local	925	731	876
- Duties and Taxes	142	139	142
Insurance	228	228	228
Power Cost - By Solar	19	19	19
Power Cost - By Diesel	552	552	552
Cost of Working Capital	176	166	173
	3,107	**2,881**	**3,054**
DEBT & ROE			
Principal Debt Repayment	1,644	0	993
Interest Payment	1,038	0	755
ROE	1,308	1,308	1,308
ROEDC	687	687	687
	4,677	**1,995**	**3,743**
Ex-Mine Coal Price	**10,423**	**7,141**	**9,325**

7.13 SUMMARY OF APPLICABLE INDEXATIONS

f

In light of the above, the Petitioner requests that the following indexations and escalation are allowed in the Commercial Operations Stage Tariff by TCEB with respect to the Phase I Mine:

	INDEXATIONS
Fuel Cost	Ex-GST Diesel Price notified by OGRA for Islamkot, Mithi
Variable O&M	
- Site Services - Variable	USD/PKR
- Spares/ Tyres/Consumables	USD/PKR, USD/RMB, US CPI
- Duties and Taxes	As per actual
Asset Replacement Cost	US CPI, USD/PKR
Royalty	As notified by GoS
Fixed O&M	
- Foreign Site Services	USD/PKR
- Foreign Technical Services	USD/PKR, USD/RMB, US CPI
- Fixed O&M Local	Local CPI
- Duties and Taxes	As per Actual
Insurance	As per Actual
Power Cost - By Solar	Units produced through Solar
Power Cost - By Diesel	USD/PKR
Cost of Working Capital	USD/PKR, US CPI, 3-month KIBOR
Principal Debt Repayment	USD/PKR for Foreign Debt, No indexation for LCY Debt
Interest Payment	6 Month Libor and USD/PKR for Foreign Debt 6-month KIBOR for Local Debt
ROE	USD/PKR
ROEDC	USD/PKR

8 Other Submissions

8.1 Heating Value Adjustment

In the Contract Stage Tariff Determination, the TCEB had set the reference heating value (for years 1-8) as 11.3 MJ/kg, with a permissible floor limit of 11.0175 Mi/Kg. Furthermore, the Petitioner has agreed the floor heating value of 10.3 MJ/kg with the power plant.

Considering that the Petitioner has no influence over the nature of coal, TCEB's decision to maintain the coal quality floor of 11.0715 MJ/ Kg, will result in the Petitioner mining only the seams which can be blended to produce coal of slightly higher quality than the threshold determined by TCEB. This will result in wasting a valuable and usable natural resource as the coal with lower heating value, which could be supplied to the power plant will be disposed of.

Based on the above, the Petitioner submits to the TCEB to allow the Petitioner to produce coal optimally to ensure full utilization of coal thus minimizing the loss of commercially viable coal by accepting the submission previously made Phase II Contract Stage Motion For Leave For Review.

f

8.2 DEWATERING

The underground water serves as the utmost critical challenge with respect to maintaining continuous mining operations. The current dewatering plan is based on a set of hydrological assumptions and the subsequent model and therefore any change in the hydrological assumptions may lead to installation of additional dewatering wells. Therefore, the Petitioner submits that it be allowed to carry out capital expenditure as well as O&M expenses with respect to any additional dewatering wells, where applicable, during the course of the O&M. The same cost may be submitted by the Petitioner to TCEB for its approval in the subsequent monthly tariff indexation petitions, which once approved be made pass-through cost for the subsequent month's coal pricing.

8.3 Cost of Transportation

As part of the Phase I Contract Stage Tariff Determination TCEB had approved USD 0.27/tonne/Km for coal transportation and required the Petitioner to submit the details of coal transportation along with its contract at the time of COD. This cost was determined based on using 50-ton trucks to transport coal from Mine to the Power Plant.

To optimize the cost of transport, the transportation model was reevaluated by the Petitioner post financial close of the Phase I Mine. Such reevaluation, *inter alia*, concluded that as 50-ton trucks were are not readily available in the local market, there was limited expertise available to operate and maintain these trucks. However, it was observed that the predominant model available in the market were 30 ton trucks which also had an added advantage of significantly lower capital and O&M Costs.

The Petitioner conducted a bidding process and awarded a contract to M/S Agility Logistics (the **Transport Contractor**). The negotiated price of transport was USD 0.148/ton/km vs. the originally approved cost of USD 0.27/ton/km. The contract is structured into fixed and variable components. This pricing model is an industry norm with respect to dedicated transportation model where the contractor employs the trucks only for a specific customer.

Under the terms of the transport agreement, the Transport Contractor is responsible for providing a fleet of 25 new trucks which will be operated in 3-shifts. In addition, to ensure that the local populace benefits from the development of Thar Coal projects in the region, the Petitioner has included provisions in the contract whereby the Transport Contractor is required to hire and train locals as drivers for coal transportation trucks.

The fixed payment includes cost of CAPEX (trucks), insurances, fixed O&M etc. while variable payment constitutes of tires, spares etc. The fuel consumption was actualized so as to enable the maximum cost optimization and thus would be supplied by the Petitioner.

It is thus submitted, that the following tariff be approved and also notified with respect of transportation of Coal to the Power Plant:

	PKR/ Ton	Applicable Indexation
Fixed Cost	31.49	No Indexation
Fixed O&M Cost	42.26	Local CPI
Variable O&M	8.97	Local CPI
Diesel	42.93	Ex-GST Diesel Price notified by OGRA
Total	**125.65**	

9 CONCLUSION & DETERMINATION SOUGHT

9.1 SUBMISSION

In light of the foregoing submissions contained in this Tariff Petition, together with all Schedules, Annexures and information referred herein and/orattached hereto, the Petitioner hereby submits before TCEB and requests TCEB to approve and determine the Commercial Operations Stage Tariff of the Petitioner's Phase I Mine, as contained herein, together with the Project Cost, indexations, adjustments, escalations, assumptions and other matters set out herein.

The Petitioner will be pleased to provide any further information, clarification and explanation that TCEB may require during its evaluation process.

LIST OF SCHEDULES

SCHEDULE 1: YEARLY COAL PRICE PROFILE

Annexure 1 (A) - Yearly Profile for Coal Price of 3.8Mt/a Mine Capacity in (PKR/ton)

	PRODUCTION (VARIABLE) PAYMENTS							CAPACITY (FIXED) PAYMENTS													
Year	Fuel Cost	Variable O&M - Site Services	Variable O&M - Spares/ Consumables	Duties and Taxes	Asset Replacement Cost	Royalty	Total Production Payments	Fixed O & M - Foreign Site Services	Fixed O & M - Foreign Tech. Services	Fixed O & M - Local	Duties and Taxes	Insurance	Power Cost – Solar (15%)	Power Cost - By Diesel (85%)	Cost of Working Capital	Principal Debt Repayment	Interest Payment	ROE	ROEDC	Total Capacity Payments	Total
1	764	213	753	93	402	0	2,226	455	766	1,077	162	228	19	552	167	1,033	1,649	1,308	687	8,104	10,329
2	666	186	655	81	402	742	2,732	395	674	1,036	142	228	19	552	178	1,130	1,552	1,308	687	7,902	10,634
3	651	182	639	79	402	736	2,690	385	660	1,030	139	228	19	552	177	1,238	1,444	1,308	687	7,867	10,556
4	651	182	639	79	402	736	2,689	385	660	1,027	139	228	19	552	177	1,359	1,323	1,308	687	7,864	10,554
5	651	182	639	79	402	736	2,689	385	660	1,027	139	228	19	552	177	1,494	1,188	1,308	687	7,865	10,554
6	651	182	639	79	434	722	2,707	385	660	810	139	228	19	552	177	1,647	1,035	1,308	687	7,649	10,356
7	651	182	639	79	434	722	2,707	385	660	810	139	228	19	552	177	1,818	864	1,308	687	7,649	10,356
8	651	182	639	79	434	722	2,707	385	660	810	139	228	19	552	177	2,012	670	1,308	687	7,649	10,356
9	618	172	606	75	434	716	2,622	385	660	810	139	228	19	552	175	2,230	452	1,308	687	7,646	10,268
10	618	172	606	75	434	716	2,622	385	660	810	139	228	19	552	175	2,477	205	1,308	687	7,646	10,268
11	618	172	606	75	434	509	2,414	385	660	731	139	228	19	552	170	0	0	1,308	687	4,880	7,294
12	618	172	606	75	434	509	2,414	385	660	731	139	228	19	552	170	0	0	1,308	687	4,880	7,294
13	618	172	606	75	434	509	2,414	385	660	731	139	228	19	552	170	0	0	1,308	687	4,880	7,294
14	618	172	606	75	434	509	2,414	385	660	731	139	228	19	552	170	0	0	1,308	687	4,880	7,294
15	618	172	606	75	434	509	2,414	385	660	731	139	228	19	552	170	0	0	1,308	687	4,880	7,294
16	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
17	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
18	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
19	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
20	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
21	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
22	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
23	618	172	606	75	467	511	2,450	385	660	731	139	228	19	552	171	0	0	1,308	687	4,881	7,330
24	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
25	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
26	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
27	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
28	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
29	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
30	618	172	606	75	0	476	1,947	385	660	731	139	228	19	552	158	0	0	1,308	687	4,868	6,816
										Levelized											
1-30 Years	649	181	637	79	400	581	2,528	393	671	876	142	228	19	552	173	993	755	1,308	687	6,797	9,325

Exchange rate: 157.90

Annexure 1 (B) - Yearly Profile for Coal Price of 3.8Mt/a Mine Capacity in (USD/ton)																					
	PRODUCTION (VARIABLE) PAYMENTS							CAPACITY (FIXED) PAYMENTS													
Year	Fuel Cost	Variable O&M - Site Services	Variable O&M - Spares/ Consumables	Duties and Taxes	Asset Replacement Cost	Royalty	Total Production Payments	Fixed O & M - Foreign Site Services	Fixed O & M - Foreign Tech. Services	Fixed O & M - Local	Duties and Taxes	Insurance	Power Cost – Solar (15%)	Power Cost - By Diesel (85%)	Cost of Working Capital	Principal Debt Repayment	Interest Payment	ROE	ROEDC	Total Capacity Payments	Total
1	4.84	1.35	4.77	0.59	2.55	0.00	14.10	2.88	4.85	6.82	1.03	1.45	0.12	3.50	1.05	6.54	10.44	8.28	4.35	51.32	65.42
2	4.22	1.18	4.15	0.51	2.55	4.70	17.31	2.50	4.27	6.56	0.90	1.45	0.12	3.50	1.13	7.15	9.83	8.28	4.35	50.04	67.35
3	4.12	1.15	4.05	0.50	2.55	4.66	17.03	2.44	4.18	6.52	0.88	1.45	0.12	3.50	1.12	7.84	9.15	8.28	4.35	49.82	66.85
4	4.12	1.15	4.05	0.50	2.55	4.66	17.03	2.44	4.18	6.51	0.88	1.45	0.12	3.50	1.12	8.60	8.38	8.28	4.35	49.81	66.84
5	4.12	1.15	4.05	0.50	2.55	4.66	17.03	2.44	4.18	6.51	0.88	1.45	0.12	3.50	1.12	9.46	7.52	8.28	4.35	49.81	66.84
6	4.12	1.15	4.05	0.50	2.75	4.58	17.14	2.44	4.18	5.13	0.88	1.45	0.12	3.50	1.12	10.43	6.56	8.28	4.35	48.44	65.58
7	4.12	1.15	4.05	0.50	2.75	4.58	17.14	2.44	4.18	5.13	0.88	1.45	0.12	3.50	1.12	11.52	5.47	8.28	4.35	48.44	65.58
8	4.12	1.15	4.05	0.50	2.75	4.58	17.14	2.44	4.18	5.13	0.88	1.45	0.12	3.50	1.12	12.74	4.25	8.28	4.35	48.44	65.58
9	3.91	1.09	3.84	0.48	2.75	4.54	16.60	2.44	4.18	5.13	0.88	1.45	0.12	3.50	1.11	14.12	2.86	8.28	4.35	48.42	65.03
10	3.91	1.09	3.84	0.48	2.75	4.54	16.60	2.44	4.18	5.13	0.88	1.45	0.12	3.50	1.11	15.69	1.30	8.28	4.35	48.42	65.03
11	3.91	1.09	3.84	0.48	2.75	3.22	15.29	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.90	46.19
12	3.91	1.09	3.84	0.48	2.75	3.22	15.29	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.90	46.19
13	3.91	1.09	3.84	0.48	2.75	3.22	15.29	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.90	46.19
14	3.91	1.09	3.84	0.48	2.75	3.22	15.29	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.90	46.19
15	3.91	1.09	3.84	0.48	2.75	3.22	15.29	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.90	46.19
16	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
17	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
18	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
19	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
20	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
21	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
22	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
23	3.91	1.09	3.84	0.48	2.96	3.24	15.52	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.08	0.00	0.00	8.28	4.35	30.91	46.42
24	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
25	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
26	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
27	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
28	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
29	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
30	3.91	1.09	3.84	0.48	0.00	3.01	12.33	2.44	4.18	4.63	0.88	1.45	0.12	3.50	1.00	0.00	0.00	8.28	4.35	30.83	43.16
Levelized																					
1-30 Years	4.11	1.15	4.04	0.50	2.54	3.68	16.01	2.49	4.25	5.55	0.90	1.45	0.12	3.50	1.10	6.29	4.78	8.28	4.35	43.05	59.05

SCHEDULE 2: REPAYMENT SCHEDULE FOREIGN DEBT & LOCAL DEBT

Annexure 2.0 (A)

Debt Schedule - 3.8Mt/a Mine Capacity - Local Loan

Total Project Cost	USD 626.8 M	**KIBOR**	13.14%
Debt : Equity	75 : 25	**Spread**	1.75%
Total LCY Debt	PKR 30879.5 M	**Interest Rate**	14.89%

Year	Period	Principal Outstanding (PKR M)	Principal Repayment (PKR M)	Interest (PKR M)	Balance (PKR M)	Annuity Installment (PKR M)	Principal Repayment (PKR/Ton)	Interest (PKR/Ton)	Total Debt Payment (PKR/Ton)
1	1	30,879.5	717.4	2,299.0	30,162.1	3,016.4	188.8	605.0	793.8
	2	30,162.1	770.8	2,245.6	29,391.3	3,016.4	202.8	590.9	793.8
2	3	29,391.3	828.2	2,188.2	28,563.1	3,016.4	217.9	575.8	793.8
	4	28,563.1	889.9	2,126.5	27,673.3	3,016.4	234.2	559.6	793.8
3	5	27,673.3	956.1	2,060.3	26,717.1	3,016.4	251.6	542.2	793.8
	6	26,717.1	1,027.3	1,989.1	25,689.9	3,016.4	270.3	523.4	793.8
4	7	25,689.9	1,103.8	1,912.6	24,586.1	3,016.4	290.5	503.3	793.8
	8	24,586.1	1,185.9	1,830.4	23,400.1	3,016.4	312.1	481.7	793.8
5	9	23,400.1	1,274.2	1,742.1	22,125.9	3,016.4	335.3	458.5	793.8
	10	22,125.9	1,369.1	1,647.3	20,756.8	3,016.4	360.3	433.5	793.8
6	11	20,756.8	1,471.0	1,545.3	19,285.7	3,016.4	387.1	406.7	793.8
	12	19,285.7	1,580.6	1,435.8	17,705.2	3,016.4	415.9	377.8	793.8
7	13	17,705.2	1,698.2	1,318.1	16,007.0	3,016.4	446.9	346.9	793.8
	14	16,007.0	1,824.7	1,191.7	14,182.3	3,016.4	480.2	313.6	793.8
8	15	14,182.3	1,960.5	1,055.9	12,221.8	3,016.4	515.9	277.9	793.8
	16	12,221.8	2,106.5	909.9	10,115.3	3,016.4	554.3	239.4	793.8
9	17	10,115.3	2,263.3	753.1	7,852.0	3,016.4	595.6	198.2	793.8
	18	7,852.0	2,431.8	584.6	5,420.2	3,016.4	639.9	153.8	793.8
10	19	5,420.2	2,612.8	403.5	2,807.4	3,016.4	687.6	106.2	793.8
	20	2,807.4	2,807.4	209.0	0.0	3,016.4	738.8	55.0	793.8

Annexure 2.0 (B)

Debt Schedule - 3.8Mt/a Mine Capacity - Foreign Loan

Total Project Cost	626.8	**LIBOR**	2.257%
Debt : Equity	75 : 25	**Spread**	3.30%
Total LCY Debt	USD 200 M	**Interest Rate**	5.557%

Amounts in PKR M

Year	Period	Principal Outstanding	Principal Repayment	Interest	Balance	Annuity Installment	Principal Repayment (PKR/Ton)	Interest (PKR/Ton)	Total Debt Payment (PKR/Ton)
1	1	31,580.0	1,202.0	877.5	30,378.0	2,079.4	316.3	230.9	547.2
	2	30,378.0	1,235.4	844.1	29,142.6	2,079.4	325.1	222.1	547.3
2	3	29,142.6	1,269.7	809.7	27,872.9	2,079.4	334.1	213.1	547.3
	4	27,872.9	1,305.0	774.4	26,567.9	2,079.4	343.4	203.8	547.3
3	5	26,567.9	1,341.3	738.2	25,226.7	2,079.4	353.0	194.3	547.3
	6	25,226.7	1,378.5	700.9	23,848.1	2,079.4	362.8	184.5	547.3
4	7	23,848.1	1,416.8	662.6	22,431.3	2,079.4	372.8	174.4	547.3
	8	22,431.3	1,456.2	623.3	20,975.1	2,079.4	383.2	164.0	547.3
5	9	20,975.1	1,496.6	582.8	19,478.5	2,079.4	393.9	153.4	547.3
	10	19,478.5	1,538.2	541.2	17,940.3	2,079.4	404.8	142.4	547.3
6	11	17,940.3	1,581.0	498.5	16,359.3	2,079.4	416.0	131.2	547.3
	12	16,359.3	1,624.9	454.5	14,734.4	2,079.4	427.6	119.6	547.3
7	13	14,734.4	1,670.0	409.4	13,064.3	2,079.4	439.5	107.7	547.3
	14	13,064.3	1,716.4	363.0	11,347.9	2,079.4	451.7	95.5	547.3
8	15	11,347.9	1,764.1	315.3	9,583.8	2,079.4	464.2	83.0	547.3
	16	9,583.8	1,813.2	266.3	7,770.6	2,079.4	477.1	70.1	547.3
9	17	7,770.6	1,863.5	215.9	5,907.1	2,079.4	490.4	56.8	547.3
	18	5,907.1	1,915.3	164.1	3,991.8	2,079.4	504.0	43.2	547.3
10	19	3,991.8	1,968.5	110.9	2,023.2	2,079.4	518.0	29.2	547.3
	20	2,023.2	2,023.2	56.2	0.0	2,079.4	532.4	14.8	547.3

SCHEDULE 3: ASSET REPLACEMENT

MME Required	Life	Cost per Unit (USD M)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Hydraulic excavator 7m³	8	1.06	2					15								16								17									
Hydraulic excavator 15m3	8	3.5																															
Dump Trucks 100t	11	1.1																															
Dump Trucks 60t	4	0.17	99				15	91				15	91				15	98				15	98					15	105				
Phase I -Auxillary Equipment																																	
Water Sprinklers	8	0.14						6								6	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-		-
Grader	8	0.32						6								6	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-		-
Dozers	8	0.40						6								6	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-		-
Wheel Loader	8	0.14						9								9	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-		-
Wheel Excavator	8	0.19						1								1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-		-
Trailer	8	0.07						1								1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-		-
Fuel Truck	8	0.08						3								3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-		-
Cranes	8	0.06						2								2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-		-
Truck crane	8	0.16						1								1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-		-
Roller	8	0.06						2								2	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-		-
Buses	8	0.04						6								6	-	-	-	-	-	-	-	6	-	-	-	-	-	-	-		-
Maintenance Vehicles	8	0.06						3								3	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-		-
Vigos/Hilux	8	0.04						5								5	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-		-
Coal Handling System																																	
Semi-Mobile crusher (2,500t / h)	15	9.98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belt Conveyor (L=2100 m)	15	0.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belt Conveyor (L=2x800 m/04 years)	15	4.45	-	-			0.3					0.3					0.3					0.3					0.3						
Bucket wheel stacker-reclaimer (2,500 t/h)	15	0.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coal Quality Laboratory	10	0.92	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Auxiliary equipments for Coal conveying and storage system(increased)	10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dewatering																																	
Stainless steel submersible pumps（132KW）	10	0.13		7	-	-	-	-	-	23	-	-	6	-	-	-	-	-	-	23	-	-	8	-	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic DN150	10	0.00		492	224		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic DN630 × 9	10	0.00	-	-	-	-	-	-	330	330	1,194	-	-	330	330	-	-	-	660	660	1,194	-	-	500	330	-	-	-	-	-	-	-	-

steel pipe with coating plastic DN720 × 10	10	0.00	-	-	-	-	-	-	440	330	2,068	-	-	330	330	-	-	-	770	660	2,068	-	-	1,500	330	-	-	-	-	-	-	-	-
steel pipe with coating plastic DN920 ×10	10	0.00	-	-	-	-	-	-	-	2,090	-	-	-	-	-	-	-	-	-	2,090	-	-	-	-	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic D325 × 6	10	0.00	-	-	-	-	-	-	-	1,500	-	-	-	-	-	-	-	-	-	1,500	-	-	-	-	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic D219 × 6	10	0.00	-	-	-	-	-	38	50	160	16	-	55	33	22	-	22	71	105	160	38	-	127	77	22	-	22	109	-	-	-	-	-
Crossing pipe Spiral welded steel pipe D920 × 18, Q235a	10	0.00	-	-	-	-	-	-	-	385	-	-	-	-	-	-	-	-	-	385	-	-	-	-	-	-	-	-	-	-	-	-	-
Others																																	
Replacement of dewatering wells	10	0.01	-	-	-	-	-	-	4	2	-	-	-	4	-	-	-	-	-	6	-	-	-	7	-	-	-	-	-	-	-	-	-
Additional drilling - m	10	0.0	880	880	260	-	-	1,903	-	260	260	260	260	260	260	260	260	2,027	-	-	-	-	2,604	-	-	-	-	-	-	-	-	-	-
Surface drainage	10	0.00	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
drainage pump 37kw	10	0.01	6	6	3	-	-	-	-	-	-	-	-	6	3	-	-	-	-	-	-	-	-	6	3	-	-	-	-	-	-	-	-
drainage pump 90kw	10	0.03	5	5	-	-	-	-	-	-	3	-	-	5	-	-	-	-	-	-	3	-	-	5	-	-	-	-	-	-	-	-	-
drainage pump 560kw	10	0.17	2	2	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic D219 × 6	10	0.00	1,128	1,128	-	-	-	-	-	-	-	-	-	2,255	-	-	-	-	-	-	-	-	-	2,255	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic D529× 8	10	0.00	703	703	-	-	-	-	-	-	-	-	-	2,255	-	-	-	-	-	-	-	-	-	2,255	-	-	-	-	-	-	-	-	-
steel pipe with coating plastic DN630 × 8	10	0.00	2,275	2,275	-	-	-	-	-	-	-	-	-	4,550	-	-	-	-	-	-	-	-	-	4,550	-	-	-	-	-	-	-	-	-
drainage pump 160KW	10	0.05	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
drainage pump 4KW	10	0.00	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
drainage pump 15KW	7	0.01	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-
drainage pump 160KW	7	0.04	1	1	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
drainage pump 18.5KW	7	0.01	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-
Spiral welded steel pipe D273×6 235a	10	0.00	-	-	-	-	-	-	-	-	-	-	690	-	-	-	-	-	-	-	-	-	690	-	-	-	-	-	-	-	-	-	-
Straight seam welding steel pipe D133×4 235a	10	0.00	-	-	-	-	-	-	-	-	-	-	690	-	-	-	-	-	-	-	-	-	690	-	-	-	-	-	-	-	-	-	-
Straight seam welding steel pipe D159×6 235a	10	0.00	-	-	-	-	-	-	-	-	-	-	2,320	-	-	-	-	-	-	-	-	-	2,320	-	-	-	-	-	-	-	-	-	-
Other parts	10		-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Control & Communication	10	0.71	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Late increase costs of control & communication	10	0.40	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-
Power Distribution	10	0.70	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Late increase costs of power distribution [Mio. $US]	10	1.84	-	-	-	-	1	-	-	-	-	-	1	-	-	-	1	1	-	-	-	-	1	-	-	-	1	1	-	-	-	-	-
Cable	10	0.66	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Late increase costs of cable [Mio. $US]	10	0.29	-	-	-	-	-	1	-	-	-	-	1	0	-	-	-	1	1	-	-	0	1	0	-	-	-	1	1	-	-	-	-
Diesel Generator & Aux Equipment	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Late increase costs of high voltage switch cabinet [Mio. $US]	10	0.03	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Water Supply	10	0.57	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Water pipes	10	7.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ventilation /Dust Suppression	10	0.20	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Maintainance Facility Equipment	10	2.77	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Storage Building Equipment	10	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-

Fuel Storage Equipment	10	0.85	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
HVAC and other equipment for colony	10	0.08	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Colony & office utilities	10	0.43	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Sewage station	10	0.09	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-