Before the Thar Coal & Energy Board

Tariff Review Petition

For

Coal Mine of 7.8mtpa at Block-I of Thar Coalfields

Pursuant to Rule 10(8) of Thar Coal Tariff Determination Rules, 2014 read with the provisions of Thar Coal & Energy Board Act, 2011

Dated: 20th January 2017

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1. DETAILS OF PETITIONER

Name and Registered Office

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Karachi, Pakistan

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Representative of SSRL

NAME:	CHAUDHARY ABDUL QAYYUM
DESIGNATION:	CHIEF OPERATING OFFICER

2. GROUNDS FOR MOTION FOR LEAVE FOR REVIEW

2.1 Sino Sindh Resources (Pvt.) Ltd. ("SSRL") was established to construct, develop, own, and operate Block-I of Thar Coalfields, located in District Tharparkar, Sindh, Pakistan

2.2 SSRL, vide its tariff petition dated 5th September, 2016, requested Thar Coal & Energy Board ("TCEB") in accordance with the authority vested with TCEB to determine Feasibility Stage Tariff for SSRL's coal mine of 7.8 million tons per annum ("mtpa") at Block-I of Thar Coalfields, located in District Tharparkar, Sindh, Pakistan

2.3 TCEB pursuant to Rule 10(5) of the Thar Coal Tariff Determination Rules, 2014 ("Rules"), approved determination of Feasibility Stage Tariff ("Tariff Determination") for SSRL on 9th January, 2017 via determination order bearing reference no. TCEB/Registrar/2-2/2015

2.4 Following Tariff Determination, and pursuant to Rule 10(8) of the Rules, and on the basis of factors detailed below, SSR L is filing this Motion for Leave for Review ("Motion for Leave for Review"), before TCEB, in order to object to, and to clarify key points detailed in Tariff Determination, which played a critical role in determination of Feasibility Stage Tariff. It is requested that TCEB kindly reconsiders these key points in an objective manner.

2.5 Key issues being covered in this Motion for Leave for Review are as follows, and are elucidated in detail in Section 3 to 9 :

- Selection of Mining Technology
- Estimates of Overburden Volume
- EPC Costs
- Non-EPC Costs
- Miscellaneous
- Operations & Maintenance Cost
- Proposed Tariff in Review Motion

2.6 It is requested that SSRL be allowed to submit additional evidence, as well as further submissions associated with this Motion for Leave for Review, if required by TCEB

2.7 We may be pleased to provide any additional information as required by TCEB pertaining to this Motion for Leave for Review

3. SELECTION OF MINING TECHNOLOGY

Referring to Section 2.1 of Tariff Determination, on Page 6, TCEB is of the view that transitioning to Scheme-5 would enable to project to incur lower operating costs during production period, while incurring higher capital costs, both upfront, as well as during asset replacement. In Table 6 of Tariff Determination on Page 8, cumulative cost saving (including both high capital costs, and operational cost savings) is around CNY 4.8 billion, spread over a period of 32 years.

It may be noted here that cumulative cost savings of CNY 4.8 billion does not take into consideration costs associated with equity and debt repayments which would certainly increase, as upfront capital investment increases. In a base case scenario, Scheme-5 (as per table 6 of Tariff Determination) would entail incremental Capital Expenditure ("CAPEX") of USD 224 million. Similarly, operational cost savings amount to USD 950 million spread over 30 years of operations. Operational cost savings amount to USD 4.06 per ton. Assuming all such cost synergies materialize, the levelized tariff on a ceteris paribus basis still increases to USD 40.96 per ton, against a tariff of USD 40.62 as determined by TCEB.

The increase in levelized tariff can be attributed to higher upfront capital costs, which would entail higher interest costs, higher principal repayments, as well as higher tariff components for both ROE, and ROEDC. In such a scenario, Scheme-5 may not necessarily be optimal in a cost-plus tariff regime, as higher capital costs during the first thirteen years would outweigh any savings achieved through lower operating costs.

It may also be noted that useful life as approved by TCEB in Table 5 of Tariff Determination, are acceptable to the petitioner, while deployment schedule has been updated accordingly. The same has been incorporated in the updated tariff.

Keeping in view incremental capital costs associated with Scheme-5, it is requested that SSRL be allowed to proceed with Scheme-1, considering a lower levelized tariff for the latter. Furthermore, SSRL accepts rationalization in useful life of equipment

4. ESTIMATES OF OVERBURDEN VOLUME

Referring to Section 2.3 of Tariff Determination, on Page 9, TCEB details that petitioned targeted volume of waste material is 123.7 Mbcm higher than volumes determined from Pit Shell files, due to which was volume scheduled has been revised accordingly.

As per the Feasibility Study Report, construction period is of 2 years, while operations period is 30 years. Total waste volume for 32 years is 1865.86 Mbcm, with total lignite output being 234 Mt. We may refer to the Feasibility Study Report to verify the same.

It may also be noted that during last six years of production, incremental waste volume amounting to 26.82 Mbcm was assumed to ensure production for the following period (year 32 onwards). Since the mining lease is for up to 30 years, the same is not being considered anymore. Excluding excess waste volume of 26.82 Mbcm, total waste volume that will be generated over a period of 32 years will be 1839.04 Mbcm, while lignite production will be 234 Mtons. After adjustment of excess waste volume, average stripping ratio would reduce to 7.86 bcm/ton for 32 years.

The difference is due to classification of waste and coal, amounting to 34.12 Mtons. The discrepancy in lignite output estimates can be attributed to varying classifications as follows, which are further quantified in Annexure-I:

a) Overburden volume of boundary blocks
b) Loss of lignite in roof and floor
c) Loss of roughly 0.5m lignite
d) Minor Design error

As can be seen from the table below, Total Volume of OB & Lignite removal as calculated by TCTDC was 2029.5 Mbcm, whereas total volume being resubmitted for Review by SSRL is 2034.04 Mbcm, resulting in minimal discrepancy of only 0.2%, or 4.54 Mbcm.

Total Volumes of OB Removal & Mining			
	OB Removal Volume (Mbcm)	Lignite Production (Mtons)	Total Volume of OB & Lignite Removal (Mbcm)
Calculated by TCTDC	1806.06	268.12	2029.50
Resubmitted for Review by SSRL	1839.04	234	2034.04

Similarly, after adjustment in OB Removal Volume, updated Stripping ratios are illustrated in the table below. For 32 years, Stripping Ratio resubmitted by SSRL for review is 7.86 m^3/ton, as against 6.74 m^3/ton as calculated by TCTDC, with the submitted Stripping Ratio being higher by 1.12 m^3/ton. Similarly, for 30 years, Stripping Ratio as calculated by TCTDC is 6.14 m^3/ton, as against 7.18 m^3/ton being submitted for review by SSRL, which is higher by 1.04 m^3/ton.

Stripping Ratio *(32 years)*			
	OB Removal Volume (Mbcm)	Lignite Production (Mtons)	Stripping Ratio (m^3/ton)
Calculated by TCTDC	1806.06	268.12	6.74
Resubmitted for Review by SSRL	1839.04	234	7.86

Stripping Ratio *(30 years)*			
	OB Removal Volume (Mbcm)	Lignite Production (Mtons)	Stripping Ratio (m^3/ton)
Calculated by TCTDC	1646.06	268.12	6.14
Resumbitted for Review by SSRL	1679.04	234	7.18

Revised Stripping Ratio for 30 years is 7.18 m^3/ton, and for 32 years is 7.86 m^3/ton. The increase in Stripping ratio is due to adjustment of waste volume as detailed above. Detailed calculations are also provided in Annexure-I of this review petition. Please note that due to higher Stripping Ratio, quantum of works pertaining to Overburden removal increase, having a direct impact on overall production costs.

Total Volume of OB Removal & Lignite is largely in-line with the calculations of TCTDC, with a minor discrepancy of around 0.2%. Due to adjustment of waste volume, Stripping Ratio has increased to 7.18m^3/ton for 30 years, and 7.86 m^3/ton for 32 years. Considering a higher Stripping Ratio, overall scope and quantum of works increases, potentially resulting in higher Overburden removal costs, equipment, and labor costs. It is requested that TCEB takes into consideration a higher Stripping Ratio in order to ascertain an economically feasibility Overburden removal cost for the Project.

5. EPC COSTS

Referring to Section 2.6 of Tariff Determination, on Page 12, EPC Costs have been reduced to USD 684 million, as against USD 803.1 million which was initially submitted with the petition. EPC Cost as approved by TCEB is not economically feasible for the scale of mining under consideration, as well as other project and site complexities. It is pertinent to note here that due to higher stripping ratio, overburden removal works can be deemed as intense, necessitating investment in equipment, and human capital.

In the review petition, structuring of EPC and Non-EPC costs have been modified, such that the same may be more representative of actual costs incurred. In the submitted petition, and the revised tariff model, all Construction Costs are being classified as EPC costs. Similarly, all costs which do not have a direct impact on construction, such as overheads of the Management Company, Legal & Professional charges, Security Costs, etc. are being classified as Non-EPC costs. The table below details classification of various costs as EPC or Non-EPC:

Classification of Costs	
EPC Costs	Non-EPC Costs
Overburden Removal	Land & Rehabilitation
Dewatering	Consultancies & Studies
Civil Works	Legal & Professional
Equipment & Installation	Development Costs
Mine Service Facilities Operating Expenses	Management Company (SSRL) Operating Expenses
	Insurance
	Arrangement & Commitment Fee
	Interest During Construction
	Sinosure Fee

Reclassification of costs into respective EPC and Non-EPC components provides a more representative estimate of costs that would be incurred. Total EPC Cost is now USD 709.4 million, breakup of which is provided in the table below:

Construction / EPC Costs

Total Overburden Removal	
Overburden Removal	283.3
Dewatering Cost	24.2
Total Overburden Removal	**307.5**
Civil Works	
Roads for overburden and dump yard	20.4
Coal Handling System	9.3
Mine Service Facilities Roads (incl. Rerouting)	11.9
Construction of dewatering wells and pipeline network	41.3
Communication system	0.2
Power Supply System	0.1

Water treatment and supply	2.9
Workshop	4.7
Warehouse	2.4
Office and accommodation	27.5
Leveling, pavement and boundary of MSF	19.2
Environmental Protection	9.7
Total Civil Works	**149.6**
Equipment & Installation	
Mining and OB Equipment	90.7
Coal Handling System	16.2
Dewatering and Drainage	37.0
Communication & Control Systems	8.2
Power Supply System	30.6
Water treatment and supply	6.5
Workshop and warehouse	5.9
Site vehicles and office equipment	11.7
Total Equipment & Installation	**206.6**
Other EPC Costs	
Detailed Design Engineering	11.0
Mine Service Facilities Operating Expenses	33.8
Rerouting works (Transmission Line)	1.0
Total Capital Expenditure (Mining Construction+Civil+Equipment+Other)	**709.4**
Total CAPEX / EPC Costs	**709.4**

It is essential to note that Overburden removal cost is USD 1.77 per bcm, which can be deemed as highly competitive, considering the high stripping ratio, and depth of the mine. Necessary economies of scale are being attained as greater overburden removal work is being conducted at a fairly competitive price, relative to other projects of similar nature. It is also important to take into consideration depth of coal seam floor of 210 meters, which makes overburden removal work more intensive. Similarly, due to depth of dewatering well at about 280 meters, dewatering at the rate of 142,520 m^3 per day is also power intensive, thereby nudging up overall costs.

EPC costs also include construction costs associated with Disposal Pipeline, amounting to USD 58.56 million, making up almost 8.25 percent of total EPC costs. The 35 kilometer long double pipeline which will have a capacity of 50 cusecs will necessitate costs associated with procurement of land falling enroute, and reservoir, earth work, route alignment, procurement of special purpose pipes, specialized vehicles, reservoir construction, etc. It is to be noted that costs associated with disposal pipeline are bring incurred by the project, rather than by the Government – thereby pushing up overall EPC cost levels.

Another important characteristics of the Project is the short timeline, as 160Mm^3 of overburden volume needs to be removed within 24 months. Keeping in view capital intensive nature of overburden removal,

and greater depth, it is essential deploy highly skilled human capital, thereby pushing up overall management, and operations costs.

Requirement of highly skilled human capital, which has had extensive experience in developing mines of similar scale and scope necessitates utilizing Chinese human capital, which already has extensive experience with projects of similar nature. During the construction period Chinese workers will make up about 73 percent of human capital deployed. However, the ratio would gradually reduce once COD is attained, and production operations are initiated.

In-effect, following reclassification of various costs, EPC costs are being proposed at USD 709.4 million, primarily due to reasons detailed above, as against EPC cost of USD 684 million allowed in the Tariff Determination.

It is therefore requested that increase in EPC costs be allowed considering incremental capital expenditure required for disposal pipeline, intensive overburden removal works required due to higher stripping ratio of the mine, and greater depth, and more importantly requirement of deploying highly skilled human capital to ensure removal of 160Mm^3 of overburden within 24 months. Even with an increase in EPC cost, overburden removal cost at USD 1.77 per bcm remains highly competitive.

6. NON-EPC COSTS

Referring to Section 2.2 of Tariff Determination, on Page 8, to be read in congruence with Table 12 on Page 12, Non-EPC Costs have been approved at USD 255.2 million.

In this review petition, as detailed in Section 5 above, restructuring of EPC and Non-EPC costs has been done to ensure that various costs are more representative of their respective heads. Costs which are being considered as Non-EPC are detailed below, with revised cost estimates.

Non-EPC Costs	USDm
Land Acquisition Cost	17.58
Rehabilitation Cost	70.00
Consultancies & Studies	27.3
Legal & Professional	10.00
Development Costs	26.04
Management Company (SSRL) Operating Expenses	41.37

Relative to costs submitted in the earlier petition, Consultancies & Studies, Legal & Professional Costs, and Operating Expenses of Management Company (SSRL), have been reclassified as Non-EPC Costs, as these costs do not pertain to the EPC Contractor, or associated works. These costs are beyond the scope of EPC Contract, and hence must be considered as Non-EPC costs.

Total Non-EPC Costs that are being submitted with this review motion is USD 192.29 million, as against approved cost of USD 113.64 million. Increase in Non-EPC costs is primarily due to inclusion of the following costs as Non-EPC, considering their scope:

Inclusion in Non-EPC Costs	USDm
Consultancies & Studies	27.3
Legal & Professional	10.00
Management Company (SSRL) Operating Expenses	41.37

Apropos to Tariff Determination, costs pertaining to Consultancies & Studies, Legal & Professional, SSRL Operating Expenses, and others, are a combination of anticipated spending and estimates. Quotations for Consultancies & Studies are being provided with the review petition. However, costs pertaining to Legal & Professional, and SSRL Operating Expenses, will be substantiated with sufficient documentary evidence, and quotations, as and when various costs are incurred.

Furthermore, costs pertaining to Boiler Combustion Tests as referenced in Section 2.2 on Page 9 of Tariff Determination, are not being considered in the review petition, and are not a part of any cost or tariff calculations.

Keeping in view nature of costs, it is requested that TCEB allows proposed modification in Non-EPC Costs.

7. MISCELLANEOUS

Referring to Section 2.7 of Tariff Determination, on Page 12-14, terms have been revised for Debt Financing, Insurance During Construction, Financing Costs, Royalty, and Working Capital. The same would be discussed in this section.

Referring to Section 2.7.1, which pertains to Terms of Debt Financing, it is to be noted that the Project already has firm commitment from lenders, who are willing to lend funds at a price of 3-months LIBOR + 350 basis points. In the review motion, keeping in view presence of Letter of Comfort from lenders, benchmark interest rate has been changed to 3-month LIBOR, from 6-month LIBOR. Similarly, lending spread has been reduced to 350 basis points, from 450 basis points as approved in Tariff Determination. Interest During Construction will also be charged at similar rate of 3-month LIBOR + 350 basis points.

Debt Funding Parameters	
	USDm
Principal Amount (incl. IDC)	805.25
Currency of Debt	USD
Total Debt Maturity	13
Grace Period	3
Debt Repayment Period	10
3-month LIBOR	1.02%
LT Debt Spread	3.50%
Effective Interest Rate	4.52%
Interest During Construction	68.9
Sinosure Fee (% of Total Debt + Interest)	7%
Sinosure Fee	75.51

Referring to Section 2.7.3, which pertains to Insurance During Construction – cost of insurance has been reduced to 1.35 percent, in-line with stipulations of Tariff Determination. Furthermore, it is understood that only actual Insurance costs will be allowed, subject to a maximum of 1.35 percent of EPC Cost.

Insurance During Construction	
	USDm
Insurance Cost (% of EPC)	1.35%
Insurance Cost	9.58

Referring to Section 2.7.4, Commitment & Arrangement Fee has been reduced to 0.5 percent, as against 1 percent, which was petitioned earlier. A Commitment & Arrangement Fee of 0.5 percent is in-line with levels stipulated in Tariff Determination. Similarly, Sinosure Fee is at 7 percent of Total Debt, including all interest to be paid. It is also pertinent to note that Commitment & Arrangement Fee, as Sinosure Fee in absolute terms vary depending on Project size, and Total debt.

Commitment & Arrangement Fee	
	USDm
Commitment Fee (% of Undrawn Facility)	0.50%
Commitment Fee	4.94
Arrangement Fee (% of Total Debt)	0.50%
Arrangement Fee	4.01

Referring to Section 2.7.5 of Tariff Determination, Royalty has been incorporated in the tariff in-line with stipulations of Energy Department, Government of Sindh, vide letter no. SO(COORD)/ED(COAL).5-7/2015 dated 8th January, 2015, which notified rate of royalty to be equal to maximum of 7.5 percent of value of coal at pit mouth, or PKR 150 per ton. Levelized Royalty per ton in the tariff being submitted for review motion is USD 3.55 per ton.

Referring to Section 2.7.6 of Tariff Determination, pertaining to Working Capital, interest rate has been modified in-line with stipulations of Tariff Determination to 3-month KIBOR + 2 percent. Number of days for various working capital components are in-line with stipulations of the Tariff Determination, and are -appended in the table below. Levelized cost of Working Capital per ton in the tariff being submitted for review motion is USD 0.4 per ton.

Working Capital	
Receivable Days	30
Payable Days	18
Coal Inventory Days	15
Diesel & Lubricant Inventory Days	10
3-month KIBOR	6.10%
Spread	2%
Effective Interest Rate	8.10%
Levelized Working Capital Cost (USD per ton)	0.40

Keeping in view availability of Letter of Comfort from lenders to provide financing at 3-month LIBOR + 350 basis points, it is requested that TCEB allows proposed change in interest rate, being requested through this review motion.

8. OPERATIONS & MAINTENANCE COSTS

Referring to Section 2.5 of Tariff Determination, on Page 10, pertaining to Operations & Maintenance Costs (O&M Costs), various variable and fixed O&M costs have been rationalized to reflect market, and project realities.

O&M Costs being submitted for review stage are best estimates which have been derived from technical specifications provided by vendors, as well as on-ground experience of the EPC Contractor. In the review motion, Variable O&M Costs consists of Spares & Consumables, Fuel Costs, Lubricant Costs, Tyre Costs, Asset Replacement, and Royalty – since these costs are directly linked to the production levels of the mine. Similarly, Fixed O&M Costs include Power Costs, Labor & Management Salary, Security Cost, Management Company (SSRL) Operating Expenses, and other costs.

Levelized Variable O&M Costs (excluding Royalty & Asset Replacement) have been reduced to USD 8.78 per ton in the review petition, as against Determined Variable O&M Costs of USD 9.25 per ton. Similarly, following stipulations of Tariff Determination, costs associated with Spares & Consumables have also been reduced in the review petition, relative to the tariff petition filed earlier. Spares & Consumables pertain to spare parts, and ancillary equipment, which will be required for regular maintenance of mining & other equipment. Efforts have been made to ensure such maintenance costs are reduced in presence of stringent cost, and operational controls, in-line with stipulations of Tariff Determination.

Variable O&M Costs	
	Levelized Cost per ton (USD)
Spares & Consumables	1.95
Fuel Costs	5.45
Lubricants Costs	0.86
Tyre Costs	0.52
Variable O&M Costs	8.78

In the review motion, Fuel Costs have been notched upwards, in-line with increase in Diesel prices from PKR 74.5 per liter, to PKR 78.7 per liter. Levelized Fuel Costs amount to USD 5.45 per ton, with the costs directly dependent on market price of Diesel. It is also essential to note that fuel consumption of equipment is in-line with manufacture recommended guidelines, as well as on-ground experience of EPC Contractor. The same have been assessed after ensuring that consumption levels are controlled in a stringent, and efficient manner.

Useful life of equipment as stipulated in Tariff Determination has been accepted, and Asset Replacement plan has been reconfigured accordingly. Asset deployment is in-line with the useful life as stipulated in Tariff Determination. However, from 21st year of operations, stripping ratio increases to 8.1 m^3/t, thereby necessitating procurement of 180 sets of dump trucks, rather than the usual procurement of 166 dump trucks. Levelized cost for Asset Replacement has been proposed at USD 3.47 per ton in the review motion.

Finally, Royalty has been determined in-line with stipulations of Energy Department, Government of Sindh, vide letter no. SO(COORD)/ED(COAL).5-7/2015 dated 8th January, 2015. Royalty goes up as overall price increases. A break-down of all Variable O&M costs on a levelized basis is provided in the table below:

Variable O&M Costs	
	Levelized Cost per ton (USD)
Spares & Consumables	1.95
Fuel Costs	5.45
Lubricants Costs	0.86
Tyre Costs	0.52
Variable Operating Costs	8.78
Royalty	3.55
Asset Replacement	3.47
Total Variable O&M Costs	15.8

Fixed O&M Costs include Power Costs, Labor & Management Costs, Security Costs, Management Company (SSRL) Operating Expenses, and Other Costs. Power costs have been moved from Variable O&M to Fixed O&M primarily due to the nature of these costs. Power costs primarily pertain to generation of electricity for operations of pumping stations, which are utilized for dewatering. Regardless of production levels of the mine, the dewatering process will be ongoing on a continuous basis, thereby providing grounds for moving Power costs to Fixed O&M, rather than Variable O&M.

Power will be generated by RFO Generator with capacity of 17.23 MW, and would operate on RFO. Price for RFO is assumed to be USD 580 per ton, in-line with latest available prices on an Ex-Refinery basis (including all taxes). Furthermore, it is also estimated that 0.24 kilograms of RFO are required for every kWh of electricity produced, resulting in an electricity price of PKR 14.59 per kWh. After taking into consideration power requirements of various equipment, levelized Power cost is proposed to be USD 1.9 per ton in the review motion.

Labor & Management Costs are proposed at USD 5.39 per ton on a levelized basis. As iterated in Section 2 earlier, short deadlines necessitate deployment of human capital which has had extensive experience in development of mines of similar scale and scope. Despite such constraints, Labor & Management Costs have been reduced by 8 percent, relative to petition submitted earlier. Almost 73 percent of human capital deployed during the overburden removal period will be Chinese, resulting in higher labor costs during the first few years. However, following COD, the ratio of Chinese to locals would gradually reduce, resulting in overall reduction in Labour & Management Costs as well. Labor & Management Costs continue to decline from 2nd year onwards till the 10th year, as the proportion of local labor gradually increases.

It is essential to note here that challenging conditions of the area, and lack of availability of skilled local human capital which has experience with projects of such a scale, necessitates deployment of skilled labor force which can meet desired deadlines. It may also be noted that as per TCEB stipulations, all training and other ancillary costs associated with HR Development Cycle have been removed from the project, except those training costs which will be incurred to train local labor. Such training costs for local

labor are essential, as trained local labor will start replacing Chinese labor gradually from the 2nd year onwards.

Requirement of highly skilled human capital, which has had extensive experience in developing mines of similar scale and scope necessitates utilizing Chinese human capital, which already has extensive experience with projects of similar nature. During the construction period Chinese workers will make up about 73 percent of human capital deployed. However, the ratio would gradually reduce once COD is attained, and production operations are initiated.

Other Costs, which are also a part of Fixed O&M are proposed to be USD 2.55 per ton on a levelized basis. Other Costs includes Operating Expenses for Mine Service Facilities (MSF), Logistics, Land Lease costs, Additional Production Works, HSE, and Consultancies & Legal. MSF Operating Expenses and Additional Production Works are the two major expenses in Other Costs. MSF Operating Expenses primarily covers costs for fuel, lubricants, and spares. Similarly, Additional Production Works includes costs associated with drilling holes for supplementary exploration, relocation of coal handling system as the mine expands, land reclamation, as well as additional dewatering holes.

Fixed O&M Costs accumulate to USD 11.95 per ton, on a levelized basis. The costs have been increased relative to Tariff Determination, primarily due to inclusion of Power Costs as Fixed O&M, as well as some rationalization in Labor & Management Costs, considering the nature of project, and scope of work required. A break-up of Fixed O&M Costs is appended in the table below:

Fixed O&M Costs	
	Levelized Cost per ton (USD)
Power Costs	1.9
Labor & Management Costs	5.39
Security Costs	0.38
SSRL Operating Expenses	1.73
Other Costs	2.55
Total Fixed O&M Costs	11.95

Keeping in view challenging dynamics of the project, requiring deployment of skilled and experienced labor, coupled with a focus on stringent controls for utilization of spares and consumables, it is requested that a total operating cost (including Royalty & Asset Replacement) of USD 27.75 per ton is considered through this review motion.

9. PROPOSED TARIFF IN REVIEW MOTION

Coal Tariff Determination Order No. TCEB/Registrar/2-3/2015 determined a Levelized Tariff of USD 40.62 for the Project. The determined tariff was not economically feasible for the Project, considering the challenging dynamics of the Project, as well as tight deadlines. In view of absence of sound economic feasibility of the determined tariff, this review motion attempts to propose a higher tariff, in order to ensure that the Project remains financially feasible.

Proposed tariff in this review motion is USD 47.27 per ton, including Production Payment tariff of USD 15.8 per ton, and Capacity Payment tariff of USD 31.47 per ton – on a levelized basis.

Comparison of Tariff		
	Tariff Determination dtd. 9-Jan-17	Tariff for Review Motion
Variable O&M	9.54	8.78
Asset Replacement	2.54	3.47
Royalty	3.05	3.55
Total Production Payments	15.13	15.8
Fixed O&M	7.49	11.95
Insurance	1.32	1.23
Working Capital	0.46	0.4
ROEDC	2.31	2.54
ROE	6.12	6.91
Principal	5.71	6.5
Interest	2.17	1.94
Total Capacity Payments	25.58	31.47
Tariff	**40.62**	**47.27**

It can be seen from the table above that Variable O&M has actually declined as efforts were made to make operational process more efficient. Total production payments have only inched up slightly, given improvement in overall Variable O&M.

There has been an increase in Fixed O&M, mainly due to shift of Power to Fixed O&M, considering its relationship with dewatering, and minimal linkage with production levels. Another factor bumping up Fixed O&M is Labor & Management Costs, which are high initially, mainly due to deployment of skilled Chinese labor – but once production is initiated, the concentration of labor shifts towards local human capital, resulting in declining labor costs.

Similarly, in-line with stipulations of Tariff Determination, Insurance Cost and Working Capital have also declined on a per ton basis. Furthermore, increase in ROEDC, ROE, and Principal is primarily due to higher EPC Cost, relative to what was approved in Tariff Determination.

As has been iterated earlier, it is essential that an Overburden Removal Cost of at least USD 1.77 per bcm is approved, to ensure sustenance of the overburden removal process. In order to support this cost, through efficient deployment of equipment, and labor, overall EPC levels have increased, resulting in higher Project Cost. Furthermore, incremental investment associated with Disposal Pipeline, Rerouting of roads, etc., have also nudged up overall EPC Costs.

Keeping in view merits of the Project, and challenging circumstances, it is requested that TCEB allows an increase in overall Project Costs, so that the Project may be financially feasible. It is requested that a Levelized tariff of USD 47.27 is approved, after taking into consideration various cost challenges that have been identified.

Detailed Tariff Table is appended as Annexure-II.

ANNEXURE-I: OUTPUT ESTIMATES & CLASSIFICATION

Model Calculation Result 模型计算数据							Data Sheet 整理过程及数据												
Seam	VOLUME_BLOCK	Pp	Fac Pure	Fac C 05	Fac Mining Loss02	Fac P 05	volume of pure coal	Loss (minus mining thickness less than 0.5m)	loss of roof and floor	volume of pure coal (minus loss)	parting(thickness less than 0.5m)	Raw Density of coal seam	Raw Density of parting	pure coal mined	parting	ROM_mined (pure coal+ partings)	volume_big parting (>0.5m)	volume of OB_border blocks	OB_total overburden
Seam	VOLUME_BLOCK	Pp	Fac Pure	Fac C 05	Fac Mining Loss02	Fac P 05	纯煤体积	选采损失 0.5 煤量	顶底板损失煤量	采出纯煤量	0.5 矸石量	煤层容重	夹矸容重	纯煤 t	小夹矸 t	采出原煤量	大夹矸体积	边界块剥离	剥离量
	1725.02	0	0	0	0	0		2.71	5.01	190.38	2.79			228.99	5.17	**234.15**	86.66	20.77	**1840.18**
C	178.62	0.974	0.77	0.006	0.99	0.01	133.96	1.04	1.34	131.58	1.74	1.19	1.85	156.58	3.22	159.80	38.28	4.64	
B	76.57	0.899	0.534	0.021	0.953	0.014	36.76	1.45	1.73	33.59	0.96	1.24	1.85	41.65	1.78	43.43	31.11	7.73	
A	53.14	0.842	0.612	0.005	0.929	0.002	27.38	0.22	1.94	25.21	0.09	1.22	1.85	30.76	0.17	30.93	17.27	8.40	

Table 2 The OB Volume and ROM Coal Amount

表 2 32 年境界文件内原煤量与剥离量计算汇总表

原煤量 ROM_COAL (Mt)	剥离量 OVERBURDEN (Mbcm)	剥采比 STRIP RATIO (m^3/t)
234.15	1840.18	7.86

ANNEXURE-II: COAL TARIFF TABLE

Coal Tariff Table (USD per ton)											
Year	Variable O&M	Fixed O&M	Working Capital Interest	Insurance	Asset Replacement Reserve	Royalty	ROEDC	ROE	Principal	Interest	Tariff
2020	10.25	14.06	0.51	1.23	6.52	4.46	2.54	6.91	8.37	4.57	59.43
2021	9.51	13.93	0.47	1.23	3.55	4.14	2.54	6.91	8.76	4.19	55.23
2022	9.50	12.58	0.46	1.23	3.55	4.03	2.54	6.91	9.16	3.79	53.74
2023	8.97	12.22	0.46	1.23	3.55	3.96	2.54	6.91	9.58	3.37	52.78
2024	8.49	11.91	0.45	1.23	3.67	3.90	2.54	6.91	10.01	2.93	52.05
2025	8.86	11.73	0.45	1.23	3.67	3.92	2.54	6.91	10.47	2.48	52.26
2026	7.44	11.18	0.44	1.23	3.67	3.76	2.54	6.91	10.95	2.00	50.11
2027	8.13	11.18	0.44	1.23	3.61	3.81	2.54	6.91	11.45	1.50	50.79
2028	8.80	11.16	0.44	1.23	3.27	3.83	2.54	6.91	11.97	0.97	51.13
2029	8.49	11.16	0.44	1.23	3.26	3.81	2.54	6.91	12.52	0.43	50.79
2030	9.18	11.27	0.31	1.23	3.26	2.81	2.54	6.91	-	-	37.51
2031	8.76	11.15	0.30	1.23	3.30	2.77	2.54	6.91	-	-	36.96
2032	8.35	11.18	0.30	1.23	3.30	2.74	2.54	6.91	-	-	36.55
2033	8.75	11.38	0.31	1.23	3.30	2.79	2.54	6.91	-	-	37.20
2034	7.39	11.15	0.29	1.23	3.30	2.66	2.54	6.91	-	-	35.47
2035	8.10	11.16	0.30	1.23	3.30	2.72	2.54	6.91	-	-	36.26
2036	8.73	11.57	0.30	1.23	3.14	2.79	2.54	6.91	-	-	37.21
2037	8.48	11.19	0.30	1.23	3.22	2.75	2.54	6.91	-	-	36.61
2038	9.41	11.17	0.29	1.23	1.81	2.70	2.54	6.91	-	-	36.06
2039	8.90	11.32	0.29	1.23	1.81	2.67	2.54	6.91	-	-	35.66
2040	8.82	11.36	0.29	1.23	1.47	2.64	2.54	6.91	-	-	35.25
2041	9.37	11.37	0.29	1.23	1.47	2.69	2.54	6.91	-	-	35.86
2042	7.76	11.35	0.28	1.23	1.15	2.53	2.54	6.91	-	-	33.74
2043	6.60	10.56	0.26	1.23	1.15	2.37	2.54	6.91	-	-	31.61
2044	7.15	10.56	0.26	1.23	1.15	2.42	2.54	6.91	-	-	32.22
2045	6.73	10.55	0.26	1.23	0.85	2.36	2.54	6.91	-	-	31.42
2046	7.64	10.57	0.26	1.23	0.85	2.43	2.54	6.91	-	-	32.43
2047	7.26	10.59	0.26	1.23	0.85	2.40	2.54	6.91	-	-	32.04
2048	6.88	10.56	0.25	1.23	-	2.30	2.54	6.91	-	-	30.66
2049	7.27	10.56	0.25	1.23	-	2.33	2.54	6.91	-	-	31.08
Levelized Cost	**8.78**	**11.95**	**0.40**	**1.23**	**3.47**	**3.55**	**2.54**	**6.91**	**6.50**	**1.94**	**47.27**