

## PAKGEN POWER LIMITED

### APPROX. 365MW COAL CONVERSION OF EXISTING RFO BASED POWER PLANT MUZAFFARGARH, MULTAN

**Name of Petitioner:**

**Pakgen Power Limited (PGPL)**

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**Legal Basis:**

The Motion for Leave for Review by PGPL (the "**Review Petition**") is filed against the Tariff Determination # NEPRA/TRF-281/PGPL-2014/4551-4553 dated 31 March 2015 received on 2 April 2015 (the "**Impugned Determination**") under, *inter alia*, the National Electric Power Regulatory Authority ("**NEPRA**") Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of) 1997 (the "**NEPRA Act**"), Rule 16(6) of the Tariff Standards & Procedure Rules, 1998, NEPRA Review Procedure Regulations, 2009 and other applicable provisions of NEPRA laws.

**Policy Incentives:**

This Project is being developed with the active facilitation and support of Government of Pakistan's one window facilitator, the Private Power and Infrastructure Board. The Policy is designed to encourage investment and development of coal conversion project.

On 28 June 2013, a Memorandum of Understanding (MoU) was signed under the auspices of Ministry of Finance between the National Transmission and Despatch Company Limited (NTDC) and four IPPs i.e. Hub Power Company Limited (1,292 MW), Lalpir Power Limited (362 MW), Pakgen Power Limited (365 MW) and Saba Power Company (Private) Limited (134 MW) for conversion of their plants with cumulative capacity above 2,000 MW from furnace oil to coal.

The Project is being developed on the basis of, inter alia, the incentives available to the investors under 2002 Power Policy and subsequent modifications favorable to the investors.

**Petitioner & the Group:**

PGPL is an independent power producer set up pursuant to the Power Policy of 1994 ("1994 Policy") and is owned and controlled by Nishat group of companies ("the Group"), operating primarily in 5 core businesses, namely textile, cement, banking, power generation and insurance. The Group has assets of over Rs. 500 billion (US\$ 5 billion) and ranks amongst the top five business houses of Pakistan. The Group acquired PGPL from AES Corporation, USA. In addition to PGPL, the Group also owns two (2) plants namely, PakGen Power Limited which is also a 1994 Policy IPP and Nishat Power Limited which is set up under the Power Policy 2002. PGPL is a *bonafide* generation licensee as defined in the NEPRA Act, bearing generation license # IPGL/06/2003 dated 26 August 2003 for a term of twenty four (24) years.

**Incorporation by Reference:** On 24 July 2014, PGPL filed its tariff petition for coal conversion of its existing power plant of 365 MW from RFO to coal. The Authority through its Impugned Determination has determined the aforesaid tariff petition of PGPL.

The Company would like to incorporate by reference the its tariff petition, Impugned Determination and related correspondence, letters etc. and requests the learned Authority that the same may kindly be read as integral part of this Motion for Leave to Review.

## GROUNDS AND THE FACTS FORMING THE BASIS FOR FILING THE MOTION FOR LEAVE FOR REVIEW BEFORE THE LEARNED AUTHORITY

At the very outset, the members of Board of Directors and management team of the Petitioner would like to express their sincere thanks and deepest gratitude to the Honorable Authority for their continuous support to the Project. The Petitioner's management is enthusiastically committed to the Project and seeks the kind consideration of the Authority on the following:

1. The Petitioner's project is front runner and one of its kind coal conversion project in Pakistan. The learned Authority would appreciate that the dynamics and contours of a coal conversion project are substantially similar in scope but with added complexity to greenfield projects with the exception of a turbine, generator and other related auxiliaries. The complexity arises since the Petitioner is required to work within the constraints of existing infrastructure. In the Impugned Determination, the learned Authority has imported and utilized certain parameters and factors which do not fully cater the unique requirements the coal conversion project. Resultantly, the learned Authority has arrived on incorrect conclusions by adopting a relatively simplistic approach as certain specific requirements and critical distinctions of a coal conversion project *vis a vis* greenfield coal power project were ignored and were not adequately and comprehensively understood and addressed. It is respectfully submitted that the Petitioner decision to undertake the coal conversion project is not solely motivated on commercial considerations but also in a spirit of playing a role which is in national interest and to benefit the citizens/consumers.
2. The Petitioner has submitted a CAPEX price of US\$262 million in its tariff petition based on a firm EPC price of \$248 million which was revised downwards by the learned Authority and determined at US\$195 million. This reduction of US\$67 million has rendered the project unviable. However in the given scenario the Petitioner has decided to approach the EPC contractor to renegotiate the terms of the EPC price in order to make it closer to the Impugned Determination of the Authority. In the preliminary discussion the EPC contractor has indicated its willingness to explore the possibility of a reduction on account of the following revision in the scope of works:
  - (i) The requirement to have Flue Gas Desulphurization (FGD) equipment in order to meet the guidelines of the World Bank have been removed and the EPC contractor is now required to carry out its work in compliance with the National Environmental Quality Standards (NEQS) prescribed under the laws of Pakistan. In this way the Petitioner is able to seek a substantial reduction of US\$25 million in the EPC price and thereby reduce the delta from US\$67 million to US\$42 million;

- (ii) Further, after hectic rounds of negotiations with the EPC Contractor the Petitioner has successfully managed to seek a serious commercial discount in the EPC Price amounting to US 24 million. This reduction is a reflection of the Petitioner's firm resolve to develop the project and a demonstration of the EPC Contractor which has gone out of its way in accepting reductions in its profits and revenues in the wake of regulatory constraints. Through this reduction (in addition to the reduction on account of FGD) the differential between NEPRA determined EPC price and the current EPC price of the Petitioner is now US\$ 18 million. It may be emphasized here that there is no room for any further reduction in the EPC price and any further reduction might be perceived as a deal-breaker for EPC Contractor.

3. The learned Authority in its impugned determination has revised and determined the heat rate efficiency to be 36.63%. It is respectfully submitted that as the plant is expected to operate on a base load, this efficiency benchmark can be obtained on more reliable and sustainable basis if the project company elects to procure European technology equipment for which an incremental cost is required, as has been granted in the upfront tariff determination for Coal Power Projects dated 26 June 2014. It is submitted that the determined efficiency of 36.63% which the learned Authority has assumed on the basis of original efficiency parameters of the existing plant has been worked out taking into consideration the brand new boilers, turbine and related equipment. However, as the learned Authority is aware, in the case of Petitioner the project is being converted to coal and the existing infrastructure is being utilized to reduce the cost. The turbine which is being utilized for the coal conversion plant is already in operation since 1997 and at the contemplated COD it would have completed its 20<sup>th</sup> operation year. While the Petitioner has diligently operated and maintained the turbine during its operational life, the degradation and natural wear and tear will have an impact on the performance of turbine and will not be comparable with brand new equipment. In addition to that, the coal conversion plant would utilize the existing infrastructure, technology, design, metallurgy which are not comparable with brand new installation. Consequently the determined efficiency of 36.63% calculated on the basis of a brand new equipment needs to be appropriately revised allowing the natural wear and tear and degradation factor. Having consulted this matter with its technical advisor, CDF a leading German power consultant, the Petitioner submits that project company elects to procure European equipment it will be better able to rely on increased boiler efficiency from the petition's level of 89% to 91.25% under average ambient site conditions and its turbine cycle efficiency ( inclusive of the impact of losses in generator and transformer) being at a level of 43.94% thereby leading to a net efficiency of 36.49%, assuming the auxiliary load at 9%. In light of the aforesaid it is respectfully submitted that the benchmark efficiency calculated by the

learned Authority may kindly take into consideration the fact that this plant is being converted to coal and will utilize certain equipment which would already in operation for past 20 years (at time of contemplated COD).

4. The efficiency benchmark required to be achieved needs to take into consideration the degradation and necessary adjustments which on account of partial loading. It is a globally accepted phenomenon that the benchmark efficiency at full load cannot be maintained if the plant is operated at part load. The degradation of efficiency is inherent to the technology and can be supported by the curves provided or verified by OEM/EPC/independent third party. In the event the adjustment in the efficiency benchmarks is not allowed the same may render the projects unviable and unbankable. The learned Authority has allowed the degradation in the efficiency to other thermal projects recognizing the operational and technical requirements. Recognizing the merits of the aforesaid argument the learned Authority in its determination in Review Petition filed by Fazal-e-Akbar & Company on behalf of Asad Umer (Member National Assembly) under NEPRA (Review Procedure) Regulations 2009 with respect to the Upfront Tariff of Coal dated 21 November 2014 stated that:

*"...The Authority also recognizes that the requirement of heat rate testing is not a part of present power purchase agreement (PPA), therefore the Authority intends to direct the power producer and purchaser to include such tests as part of their PPA. The necessary protocols for conducting such tests and appointment of independent engineers should also be defined in the PPA after getting the approval of NEPRA. The PPA should also include the applicable annual degradation curves, partial load adjustment curves and start-up costs as per standard practices."*

[Emphasis Added]

Clarification is sought from the Authority that the annual degradation curves, partial load adjustment curves and start-up costs as per standard practices have been allowed to the Petitioner pursuant to Paragraph VII(ix) of the Impugned Determination which states that:

*"General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the Power Purchase Agreement".*

5. It has been noted in the unnumbered bullet point (IV) of Paragraph 12.4.8 of the Impugned Determination that NEPRA has calculated the tariff adopting US\$279 million for 220MW power project. The aforesaid translates into total CAPEX of US\$1.27 million/MW. Later in Paragraph 12.4.10 the Authority recorded that it "...has decided



that 46% of the capital cost of US\$ 1.16 million/MW allowed in the upfront tariff (excluding the cost for European boiler) is a reasonable estimate of cost of coal conversion and assessed US\$ 195 million (US\$ 0.533 million/MW) as capital cost of coal conversion for 365 MW PakGen Power Limited". Given that the learned Authority has revised the heat rate efficiency claimed by the Petitioner from 35.60% to 36.63%, the Petitioner is entitled to seek from the Authority the incremental cost of European Technology Boilers to the tune of US\$0.1 million/MW as has been allowed to new coal power projects adopting the upfront tariff. This will enable the Petitioner to ensure better reliability and availability parameter as per the standard terms of the PPA for imported coal based power projects. Attention is drawn to Paragraph II(vii)(c) of the Authority's decision in respect of reconsideration request filed by GoP in the matter of upfront tariff for Coal Power Projects dated 26 June 2014 where it was observed that:

*"Incremental cost of European boiler @ US\$ 0.1 million per MW has been assumed in the overall project cost on account of capital cost, financing fees & IDC. The sponsor will submit verifiable documentary evidence at the time of COD regarding installation of European boiler for entitlement of this cost. The projects which do not install European boiler will not be eligible for this cost."*

6. The Authority would appreciate that with the incremental cost allowed for European premium, the Petitioner is willing to accept increase in the efficiency from 35.6% to 36.49% by reverting to European Technology Boilers.
7. In the tariff petition the Petitioner has sought Non-EPC costs in respect of procurement of land, project development etc. These costs amount to US\$14 million comprising of US\$4 million for land procurement and development and US\$10 million for project development and construction management etc. On review of the Standard Module approach adopted in the determination, it appears that the Authority has inadvertently ignored to determine the Non EPC cost which constitute inevitable component of the CAPEX. Further, in addition to the aforesaid, in its tariff petition the Petitioner has inadvertently omitted to seek insurance cost in the Non EPC costs. It is submitted that a sum of US\$ 3 million may be allowed to the Petitioner to cover the engineering risk of the project as well as the business interruption risk (to a reasonable extent) for the continuing operations of the existing power plant during construction. It may be pertinent to highlight that the current insurance coverage of the existing facility does not address the risks associated with the erection and commissioning of the new boiler within the complex.

8. In its tariff petition the Petitioner inadvertently omitted to seek cost for fuel during commissioning tests. These costs are required to carry out the commissioning and testing of the various project components/processes at both prior and post grid synchronization stages. The aforesaid cost is estimated to be US\$10 million which may be allowed and made subject to adjustment at the time of commercial operation date. It may be pertinent to highlight that NEPRA has allowed similar costs to all comparable IPPs and it is kindly requested that the same may also be allowed in this Review Petition.
9. In its tariff petition the Petitioner has also inadvertently omitted to allocate costs for emergency spares. The same is required to minimize the time of forced outages and unforeseen events. This will also reduce the risks which may have serious cost implications on insurance component during operations and ensure better plant availability. It may be pertinent to highlight that NEPRA has allowed similar costs to comparable IPPs and it is, therefore, kindly requested that a sum equivalent to 2.5% of the EPC Costs may kindly be allowed to the Petitioner.
10. The Authority had allowed twenty four (24) months of construction period including the down time of six (6) months. This requirement of limiting the construction period to twenty four (24) months was in terms of the Paragraph no. 2 of the Memorandum of Understanding (MoU) executed by the National Transmission Dispatch Company with the group of IPPs comprising of Hubco, Lalpir, Pakgen and Saba Power. It is respectfully submitted that the construction period has no scientific or technical basis and was imposed upon the aforesaid IPPs perforce in unusual circumstances without any prior meaningful consultation. The Authority fully recognizes that the Petitioner is among the few IPPs who are for the first time establishing coal conversion projects in Pakistan. The upfront tariff for coal IPPs allow forty (40) months for construction period whereas the Petitioner has been allowed only twenty four (24) months. Such a requirement to complete the coal conversion in a limited timeframe is unrealistic and will render the project execution unviable and expose the Petitioner to undue risk of completion which may also impact the bankability of the project. Consequently the Petitioner requests that the commissioning period of thirty six (36) months may kindly be allowed to the Petitioner as stated in the EPC bids.
11. While allowing the indexation on IRR on equity and the debt servicing components, the Petitioner also requests the learned Authority to allow for true up in the USD amount of ROE component and the debt servicing components at commercial operation date based on a) actual drawdowns b) project cost and c) Debt Equity ratio ranging from a minimum leverage of 70:30 to a maximum of 80:20 as allowed by the Authority in upfront tariff determination for coal power projects.

12. The Petitioner has sought the incremental Fixed O&M cost component of PKR0.0438/kWh during the term of its existing Power Purchase Agreement (PPA) and thereafter PKR0.3070/kWh assuming the Fixed O&M component allowed in the upfront tariff. The learned Authority has disallowed the Fixed O&M component of PKR0.0438/kWh during the term of its existing PPA and has retained the same at PKR0.3070/kWh for the period post expiry of existing PPA. It is submitted that the Fixed O&M component for coal conversion power projects cannot be made comparable to O&M component of RFO based facility due to the change in the operational dynamics of the project due to the nature of the fuel. The incremental Fixed O&M cost is sought to cover the additional costs associated with the coal handling and various stages of solid fuel processes before it is conveyed to the boiler for combustion involving the blending of coal stockpiles, maintenance of mechanized equipment for coal stacking, reclaiming, conveying, sampling, crushing into grade size, screening, gravity separation etc. Further the coal power plants require more frequent cleaning for soot and ash slagging. Also, by virtue of signing the new PPA, the older equipment is being committed to continue in operations for fifteen (15) additional years beyond their design life of thirty (30) years (i.e. forty five (45) years in total). The Authority and the consumers would appreciate the fact that such an extended life commitment of a base load power project is unprecedented in the industry's history which has been a result of resolute commitment & philosophy to follow best utility practices as an operator by AES and the Group. As a result certain equipment being put to operations beyond their design life would require extra repairs, refurbishments and replacements. Needless to state it will require the Petitioner to deploy extra human resource and mechanized equipment to ensure reliable and seamless operations for a base load plant. Consequently the Fixed O&M cost component of PKR0.0438/kWh during the term of its existing PPA and thereafter PKR0.3070/kWh is just and reasonable in the given circumstances and may kindly be allowed. It may be pertinent to add that the learned Authority has recognized that the auxiliary requirements of the coal conversion plant are considerably higher than those of a RFO based facility and has therefore allowed the same to be at 9% however the same has not been translated in determining the incremental costs for the Fixed O&M component for the additional machinery, processes and extra sizing of the equipment etc.
13. The deductions in insurance cost component from 0.0617/kW/hour on account of incremental insurance to secure the two streams of revenues under two separate tariff components of PPA i.e. capacity charges for new investment and capacity charges for existing PPA. The two revenue streams are perceived by the insurance provider as an incremental risk for which additional amount is required to obtain and maintain bankable insurance coverage. The learned Authority has disallowed the insurance cost component sought by the Petitioner thereby restricting it to the insurance cost already allowed in the tariff. In its effort to reconcile the costs to make it more palatable to the Authority and



after having discussed with the insurance provider, the Petitioner has revised its request for insurance cost component from 0.0617/kW/hour and now seeks 0.0208/kW/hour. It is respectfully submitted that the learned Authority will appreciate the efforts of the Petitioner and will take into consideration the added risk which, if not covered under the insurance component, will inevitably exposes the Petitioner to bear such cost from its equity returns.

14. The Petitioner in its tariff petition request the learned Authority to determine the insurance component of PKR 0.1152kW/hour which is consistent with the insurance component determined by the learned Authority in its upfront tariff determination for 350MW coal power projects on supercritical technology, wherein the Authority has capped the insurance component with 1% of 70% of the Capital Cost (in the upfront determination). On the analogy that the insurance component of the subcritical technology, being 95% of the supercritical insurance cost component, as allowed in the Authority in the upfront tariff determination, becomes PKR 0.1096kW/hour. Further, it is pertinent to mention that the upfront determination does not make any condition to the origin of the boiler. On the contrary, however, in case of the Petitioner, the insurance costs component has been linked with the Chinese boiler and *vide* Paragraph 12.10.3 of the Impugned Determination, the Authority has approved the insurance component of PKR 0.0988kW/hour post existing PPA, on the basis of reference insurance premium of US\$ 2.9358 million. It is respectfully submitted that Petitioner may be allowed the insurance component at actuals subject to the maximum of 1% of 70% of the Capital Cost (and not the EPC Cost) , which is consistent with its order of the upfront tariff determination dated 26 June 2014 for 220MW.
15. In the matrix provided in the Paragraph 12.11.2 of Impugned Determination, for the calculation of the cost of working capital, the learned Authority has approved the adjustment in the escalable component of the existing capacity charge to be Rs. 0.4300kWh/hour. This calculation has been arrived at assuming the fuel price of Rs. 70,000/Ton. It is respectfully submitted that the escalable component of the existing capacity charge may kindly be adjusted with reference to the base fuel price of Rs. 2,843.50/ton provided in the Schedule-6 of the existing PPA. Further the adjustment of the aforesaid fuel price may kindly be linked with IET factor as provided in Section 15.1 of the existing PPA which in effect is the actual driver of the escalation of the working capital cost component and not the fuel price.
16. In respect of the existing capacity charge allowed by the learned Authority it is respectfully submitted that the same does not factor in the non escalable component of the tariff amounting to 0.0066kW/hour which was inadvertently omitted in the tariff petition. It may be pertinent to highlight in its determination at Paragraph 6.4 the

Authority has restricted the existing capacity payment to constitute the escalable component only. It is requested that the learned Authority may kindly allow the aforesaid cost covering the both the escalable and non escalable components of the existing capacity payment.

17. Paragraph-56(II)(ix) of the upfront tariff determination for coal power projects dated 26 June 2014 states, *inter alia*, "no withholding tax on local foreign contractors, sub-contractors, supervisory services and technical services provided by foreign (non-residents) entities has been assumed. Actual expenditure, if any, on this account will be included in the project cost at the time of COD on the basis of verifiable documentary evidence." It is respectfully submitted that the learned Authority may also clarify/allow the same to the Petitioner.
18. Given the fact that the Petitioner has sought revision of the construction period and other components of the project, it is respectfully submitted that appropriate adjustments may kindly be granted which are inherently linked with the construction time period including but not limited to the adjustment in the ROE, IDC, project cost and insurance costs.
19. It is respectfully mentioned that in the Impugned Determination the learned Authority has adopted and applied the parameters of the upfront tariff for coal power projects. However these parameters have been selectively applied and as a result of this cherry picking the Petitioner has suffered, as certain parameters which benefit the Petitioner have been denied.
20. The Petitioner has filed the tariff petition on certain specific assumptions. An explicit clarification is however required from the learned Authority that the Impugned Determination has been made on the basis of specific assumptions stated in the tariff petition and other general assumptions, which are not covered in this determination, will be granted as per the standard terms of the PPA and IA approved by the ECC and such other documents executed with the government entities as part of the security package for inland coal power projects.
21. It need not be over emphasized that the Petitioner's is firmly resolved to develop the project and has so far expended approx. US\$ 1 million, towards the project development costs out of its equity which amply demonstrate its commitment and interest in the development of the project.
22. The Petitioner has collaborated with highly reputable professional firms which are committed to develop and commission the project on fast-track basis. Collectively, the

**DETERMINATION SOUGHT**

In light of the aforesaid, it is respectfully prayed that the learned Authority may kindly:

- (i) accept the Review Petition; and
- (ii) accordingly modify the Impugned Determination

Any other relief which is just, proper & better may also be awarded.



For and on behalf of  
**PAKGEN POWER LIMITED**

Dated: 11 April 2015