



# National Electric Power Regulatory Authority Islamic Republic of Pakistan

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**Registrar**

No. NEPRA/R/ADG(Trf)/TRF-595/2555-59

February 20, 2024

**Subject: Decision of the Authority in the matter of Petition filed by Engro Powergen Qadirpur Limited for Modification in Fuel Cost Component allowed by NEPRA in the Reference Tariff at Commercial Operations Date for its 226.52 MW Project located at Qadirpur District Ghotki, Sindh**

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Dissent Note of Mr. Mathar Niaz Rana (nsc), Member (NEPRA) and Additional Note (alongwith Annexure) jointly signed by Mr. Rafique Ahmed Shaikh and Mr. Maqsood Anwar Khan, Members (NEPRA) and Mr. Waseem Mukhtar, Chairman (NEPRA) (total 20 Pages) in Case No. NEPRA/TRF-595/EPQL-2022.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official Gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 within 30 days from the intimation of this Decision. In the event the Federal Government fails to notify the subject tariff Decision or refer the matter to the Authority for reconsideration, within the time period specified in Section 31(7), then the Authority shall notify the same in the official Gazette pursuant to Section 31(7) of NEPRA Act.

Enclosure: As above

(Engr. Mazhar Iqbal Ranjha)

Secretary,  
Ministry of Energy (Power Division),  
'A' Block, Pak Secretariat,  
Islamabad

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.
3. Chief Executive Officer, Central Power Purchasing Agency Guarantee Limited (CPPA-G), Shaheen Plaza, 73-West, Fazl-e-Haq Road, Islamabad.
4. Chief Executive Officer, Engro Powergen Qadirpur Limited, 4th Floor, Harpor Front Building, HC-3, Marine Drive, Block 4, Clifton, Karachi.

**DECISION OF THE AUTHORITY IN THE MATTER OF PETITION FILED BY  
ENGRO POWERGEN QADIRPUR LIMITED FOR MODIFICATION IN FUEL  
COST COMPONENT ALLOWED BY NEPRA IN THE REFERENCE TARIFF AT  
COMMERCIAL OPERATIONS DATE FOR ITS 226.52 MW PROJECT LOCATED  
AT QADIRPUR DISTRICT GHOTKI, SINDH**

**1. INTRODUCTION**

- 1.1. Engro Powergen Qadirpur Limited (EPQL or "the company") has been operating a dual fuel 226.52 MW (net 217.3 MW) power generation facility, with permeate gas obtained from the Qadirpur gas field as its primary fuel and high-speed diesel ("HSD") as secondary fuel. The power plant is located at Ghotki, Sindh. EPQL was granted a Generation License bearing No. IGSPL/13/2017 dated 26.07.2007.
- 1.2. A Power Purchase Agreement dated 26.10.2007 (the "PPA") was executed between EPQL and the National Transmission and Despatch Company Limited through the Central Power Purchasing Agency ("CPPAG"). An Implementation Agreement dated 29.10.2007 (the "IA") was executed between EPQL and the Private Power Infrastructure Board ("PPIB") on behalf of the Government of Pakistan ("GOP").
- 1.3. EPQL was granted generation tariff vide decision dated 19.07.2007 and achieved commercial operations on 27.03.2010. Decision of the Authority in the matter of Adjustment of Tariff at COD was issued on 03.11.2010.

**2. FILING OF TARIFF PETITION**

- 2.1. EPQL vide its letter No. EPQL/HO/C/NEPRA/206 dated 18.11.2022 submitted the subject Tariff Petition for modification in the fuel cost component. The salient features of the Petition are as under:
  - i. The Petitioner requested to modify the fuel cost component (Gas) of the Energy Charge as contained in the Tariff Determination of the Company, such that it reflects the addition of Petroleum Exploration (Pvt) Limited (PEL) Gas as an additional fuel for the Company's project and together with the pertinent indexation for fuel price variation for PEL Gas.
  - ii. The Petitioner proposed the fuel cost component (PEL Gas) of Rs. 20.9027/kWh on Gas price of Rs. 2,514.526/mmbtu which is 70% of RLNG price of Rs. 3,592.1796/mmbtu being paid to National Power Parks Management Company (Private) Limited.

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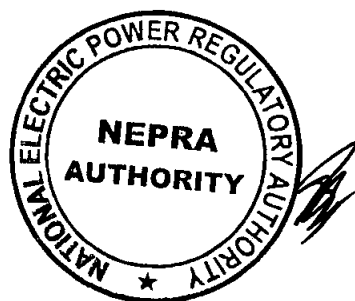


- iii. The Petitioner also requested fuel price indexation on the basis of revised PEL gas price which shall be 70% of RLNG price.

2.2. The Petitioner cited the following advantages for opting for PEL gas as an additional fuel for the project:

- i. EPQL has been exploring additional local fuel sources to supplement its existing Permeate Gas supply, to reduce the burden on the economy due to forex outflow associated with power generation from imported fuels. A feasible indigenous source of fuel as identified by EPQL is gas supply from Badar gas fields operated by PEL.
- ii. As per the Head of Terms executed between EPQL and PEL, the latter has agreed to supply to EPQL 8-13 mmcf/d of gas, which has a heating value of approximately 572 btu/scf. PEL Gas will be available for three years, although the term may be extended subject to the mutual consent of both PEL and EPQL.
- iii. Since PEL Gas is available in the vicinity of EPQL plant, the Company will be able to guarantee a very quick turn-around time for utilization, effective immediately. The required modifications, including laying down a pipeline and associated cost of implementation, will be incurred by both PEL and EPQL, thereby generating significant returns for the economy without any additional cost burden on end consumers. In the interest of time, both parties have initiated work on the required modification, as endorsement from CPPA-G has also been received vide its letter dated 17th October 2022.
- iv. PEL Gas is priced at a discount of 30% to the prevailing RLNG price being paid to National Power Parks Management Company (Private) Limited (NPPMCL). The prevailing RLNG price is a blended price of spot cargoes and long-term contract-based procurement. EPQL will buy the PEL Gas on "Take and Pay" basis and will not be under any obligation to buy any quantum of fuel at any time from PEL.
- v. The indigenous gas supply from PEL will also enable the Company to produce an additional power of over 20 MW, translating into generation of 600 million units over the period, which will substitute power generated from imported fuels. At prevailing RLNG prices applicable in Pakistan (USD 15.7/mmBtu), the fuel cost component of EPQL on PEL Gas will be PKR 20/ kwh, which will place EPQL higher in the Economic Merit Order as compared to imported fuel-based projects.

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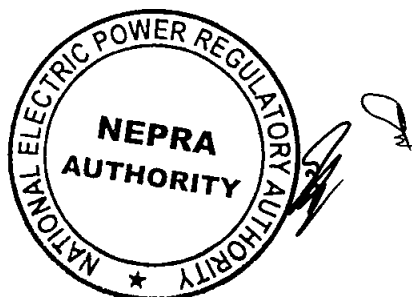


- vi. If EPQL generates electricity from PEL, the country will be able to substitute forex ranging from USD 19-30 million per annum, depending on gas supply and at prevailing RLNG price in Pakistan. It should be noted that due to market dynamics, the current international spot price for RLNG is over twice that of the prevailing contract price applicable for Pakistan and, based on expected RLNG spot rates, forex substitution can be as high as USD 36-59 million per annum.
  - vii. The sale and purchase agreement between PEL and EPQL with the price of PEL gas fixed at 70% of the prevailing RLNG gas price gives the government an opportunity to generate over 2-4 Mn USD per annum in revenue (via royalty) which can then be used for the benefit of countrymen. Had the agreement of the same nature been signed earlier, this benefit could have been reaped by the country already.
  - viii. Currently, EPQL is available on HSD to the extent of shortfall in Permeate Gas, while RLNG has been narrowed down as the most feasible option for Gas Depletion Mitigation Option (GDMO). Gas supply from PEL will also displace RLNG and HSD in EPQL plant, amounting to USD 26 Mn and USD 47 Mn, respectively.
  - ix. Energy prices have diverged widely and have remained extremely volatile over the ongoing year. Energy prices are expected to remain more than 50 percent above their five-year average through 2024. It is therefore vital that Pakistan reduces the dependence of its growing power sector on imported fuel and to seriously consider EPQL's readiness and ability to quickly and effectively utilize gas from local sources.
- 2.3. Notice of Admission along with salient features of the petition was made public on 8th January 2023 inviting comments/interventions from stakeholders.
- 2.4. EPQL vide letter dated 31.10.2022 also submitted a Licensee Proposed Modification (LPM), through which it has requested the Authority to grant approval for the addition of PEL Gas as an additional fuel for use in the Project. Decision in the matter was issued on 18<sup>th</sup> December 2023.

### 3. COMMENTS/INTERVENTIONS OF STAKEHOLDERS

- 3.1. In response to the notice of admission and individual notices, CPPA-G vide its letter dated 18-1-2023 submitted following comments:

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- i. Para 1 (i) of the Notice is supported.
- ii. Regarding Para 1 (ii) of the Notice, it is apprised that the explored possible option is buying from Petroleum Exploration (Pvt) Ltd (Badar Gas Field), which is an indigenous & low Btu resource whereas RLNG is an imported & high Btu resource. As such, making a comparison between an indigenous gas with the imported one may not be an 'apple to apple' comparison and establishing a correlation between the two may be somewhat misleading. The proposed price as indicated by EPQL for the indigenous gas is too high compared to its technical specifications, as mentioned in the following table:

| Fuel Source       | (BTU/SCF) | Rs./MMBTU |
|-------------------|-----------|-----------|
| Qadirpur Permeate | 654       | 950.64    |
| Badar Field       | 572       | 2,514.53  |
| RLNG              | 950       | 3,592.18  |

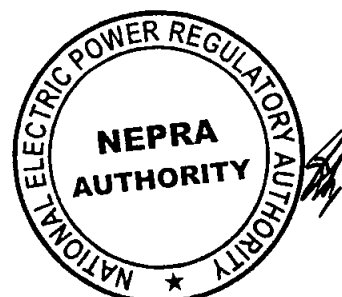
It is, therefore, proposed that the gas price needs to be reconsidered and fixed in vicinity of existing Low BTU indigenous resources.

- iii. Regarding Para 1 (iii) of the Notice, RLNG requires payment in Dollar terms whereas payment for local gas is always made in local currency viz Pak Rupees. It is, therefore, proposed that instead of indexation PEL Gas with the RLNG price (which is directly linked with USD indexation), its price should be indexed in line with local fuel cost indexation mechanism. Otherwise, the matter may be referred to the concerned regulatory body for gas price determination & indexation mechanism.

3.2. The above comments of CPPA-G were provided to the Petitioner for rejoinder, if any. EPQL vide letter dated 9<sup>th</sup> February 2023 submitted following comments on the matter:

- i. The Company expresses its gratitude that CPPAG has supported its Application for the inclusion of local gas, i.e. Petroleum Exploration (Pvt.) Limited gas ("PEL Gas") as an additional fuel for the Company's project.
- ii. Energy molecule is fungible regardless of source: Since any gas made available from local resources would replace the most expensive fuel, mostly imported, its comparison with an imported fuel like RLNG, with due regards, is apple-with-apple comparison. Since marginal fuel for the

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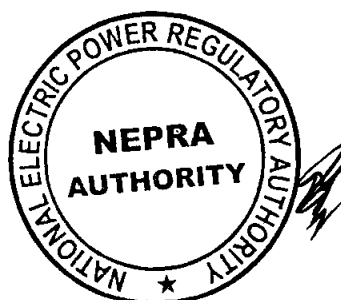
power system is RLNG, we have used this fuel as a basis of price competition for PEL gas.

With respect to the table that has been provided by CPPAG, the Company notes that CPPAG has detailed its price comparison based on heating value of the different fuels. The Company deems it imperative to clarify that gas prices are always based upon the energy (i.e. MMBTUs) being supplied, and not the volumetric heating value (Calorific Value). Therefore there is no rationale of using CV to determine fuel price discount. We think that appropriate discount is to make the price of electricity generated by two different power suppliers equal. Therefore we have agreed that PEL price should be at 70% of National Power Park Management Company. At this price, we are marginally cheaper than NPPMCL power plant. This makes power purchaser indifferent whether electricity is being produced using local PEL gas or imported gas. Additional benefits are royalty payments and corporate income tax payments by the gas supplier to GOS and GOP respectively in addition to saving scarce foreign exchange on the import of fuel.

The Company would also like to draw the attention of the Authority to the fact that the gas supply arrangement shall be on "Take-and-Pay" basis. Gas will be purchased and paid for when power plant is dispatched on PEL gas through Economic Merit Order. So in essence, Power Purchaser will only make payment for the gas when it would make economic sense. In summary, price is a risk towards the supplier not towards the power purchaser.

- iii. RLNG price is inked to Market Force in energy market. It is not indexed to USD as the impression given in the CPPA G comment (To sell any foreign product in Pakistan, its price has to be converted in PKR). Pakistan imports RLNG through long term contracts and Spot Cargoes. Long term contract is indexed with Brent Oil Price (Brent price is determined by Market Forces) and Spot Cargoes are subject to market forces as well. So RLNG price is linked/subject to market forces in energy markets. They are converted to PKR to enable sale in Pakistan.

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The Company also takes this opportunity to draw the attention of the Authority to the letter issued by the Ministry of Energy (Petroleum Division), Directorate General of Gas dated 01.10.2021 (the "Gas Allocation" Letter) and addressed to PEL, pursuant to which certain conditions were attached to the sale of gas by PEL to a third party (such as the Company), including the following: "Transaction of sale of gas at a negotiated price with selected buyer will be subject to signing of GSPA between the Seller and the buyer". The Petitioner also provided copy of the Gas Allocation Letter.

Our price negotiation basis is that it should make power purchaser indifferent to the price of electricity whether produced from PEL gas @EPQL or imported gas @NPPMCL. However, it would make them better off in comparison to more expensive imported fuels like RFO. Since its sale is on Take-and-Pay basis, it doesn't increase power purchaser risk and transfers this risk to gas supplier.

- In addition to the foregoing, the Company notes that CPPAG had earlier provided its support to the Company's proposed procurement of PEL Gas via its letters: (i) dated 17.10.2022 bearing reference number CTO/DGMT-C/MT-R&G/EPQL/18060-63; and (ii) dated 21.11.2022 bearing reference number DGMT-C/MT-R&G/EPQL/19529-39.
- It is therefore clear that, as per its own communications, CPPAG is cognizant of the advantages that would be brought about by allowing for the addition of PEL Gas as fuel for EPQL's Complex.
- In light of the foregoing, the company requests that the CPPAG comments be deemed closed and that its tariff petition be processed and notified in accordance with the applicable rules.

3.3. Since the Petitioner has also sought modification in the GL to include low BTU gas as an alternative fuel, comments were received in LPM proceedings from some of the stakeholders which are considered relevant and provided hereunder:

- Oil & Gas Development Company Limited (OGDCL) vide letter dated 17<sup>th</sup> November 2022 submitted that OGDCL carries 50% stakes in Badar Gas field and therefore has serious concerns on intent and purpose of notice published by NEPRA as M/s PEL, operator of Badar Gas Field violating the provisions of

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the Joint Operating Agreement (JOA)/Petroleum Concession from EPQL and any further processing on the subject proposal is likely to result in potential litigation between the parties. Furthermore, PEL being operator of Badar Gas Field is continuously violating JOA/PCA's various provisions and OGDCL's stance has repeatedly been conveyed to the operator under intimation to JV partners, DGPC (Petroleum Division) and the Secretary, Ministry of Energy (Petroleum Division). In view of aforementioned violations and contentions, OGDCL requested NEPRA to turn down EPQL request on LPM.

- OGDCL) vide letter dated 18<sup>th</sup> May 2023 submitted that OGDCL reiterates its earlier principled stance towards supporting the gas sale transaction between M/s PEL and third party (M/s EPQL or any other buyer). However it is again emphasized that such third party buyer will have to enter into a GSPA with M/s PEL (Operator) and OGDCL (50% working interest owner of Badar Field). In sequel to that, share of sales proceeds of each working interest owner must be deposited in the individual working interest owner's bank account in accordance with the applicable contractual/regulatory framework. OGDCL requested the relevant regulators/authorities to consider its submission to avoid any legal or regulatory complication or potential dispute in future, on this account.
- CPPA-G vide letter dated 21<sup>st</sup> November 2022 submitted that determination of gas price is the sole prerogative of OGRA, as such, requisite regulatory formalities may also be coordinated by EPQL accordingly. CPPA-G vide letter 23<sup>rd</sup> November 2022 further submitted that the price of low Btu gas should be around Rs. 831.44/MMBTU whereas the proposed contracted price comes to Rs. 2,514.53/MMBTU and it would be appropriate to decide the price mechanism issue before issuing the LPM.
- Private Power & Infrastructure Board (PPIB) vide letter dated 23<sup>rd</sup> November 2023 supported the utilization of locally available low BTU gas for power generation subject to obtaining approval, allocation and pricing of the PEL gas from relevant forums.

#### 4. HEARING

- 4.1. Hearing in the matter was fixed on 6<sup>th</sup> March 2023. Notice of Hearing along with issues framed was made public on 23<sup>rd</sup> February 2023. Individual notices were also sent to various stakeholders on 24<sup>th</sup> February 2023. The hearing was rescheduled to 15<sup>th</sup> March 2023 due to some urgent commitments. EPQL vide letter dated 7<sup>th</sup> March 2023 requested to reschedule the hearing between 20<sup>th</sup> to 24<sup>th</sup> March 2023. The hearing

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was rescheduled on 27<sup>th</sup> March 2023. Public notice and individual notices to relevant stakeholders were sent accordingly.

4.2. The following issues were framed for the hearing:

- i. Whether the proposed price of Rs. 2,514.526/mmbtu of low BTU local gas which is 70% of RLNG price is reasonable, justified and comparable with other power plants on low BTU gas?
- ii. Whether the proposed price is approved by OGRA or any other relevant forum/body?
- iii. Whether the proposed mechanism is applicable in any other Sector/industry in the Country?
- iv. Any other relevant issue arising during the proceedings.

4.3. The hearing was held as per schedule and was participated by representatives from the Petitioner, CPPA-G and PPIB. Re-hearing in the matter was also held on 26th December 2023.

5. **CONSIDERATION OF VIEWS OF THE STAKEHOLDERS, DISCUSSION, ANALYSIS AND DECISION ON IMPORTANT ISSUES**

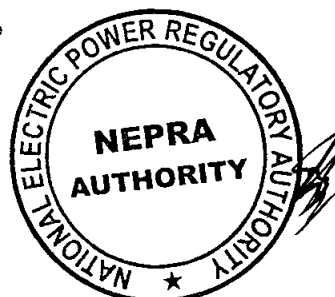
5.1. The issue wise discussion, submissions of stakeholders, analysis and decision is provided in the succeeding paragraphs.

**Whether the proposed price of Rs. 2,514.526/mmbtu of low BTU local gas which is 70% of RLNG price is reasonable, justified and comparable with other power plants on low BTU gas?**

**Whether the proposed price is approved by OGRA or any other relevant forum/body?**

5.2. The Petitioner requested to modify the fuel cost component (Gas) of the Energy Charge to reflect the addition of PEL Gas as an additional fuel for the project together with the pertinent indexation for fuel price variation. The Petitioner proposed the fuel cost component of PEL Gas of Rs. 20.9027/kWh on Gas price of Rs. 2,514.526/MMBTU which is 70% of RLNG price of Rs. 3,592.1796/MMBTU being paid to National Power Parks Management Company (Private) Limited. The proposed price/mechanism is not approved by OGRA which is a gas Regulator in Pakistan. OGRA was invited to participate in the proceedings and hearing, however, no representation was received. The comparison with other fuels is provided hereunder:

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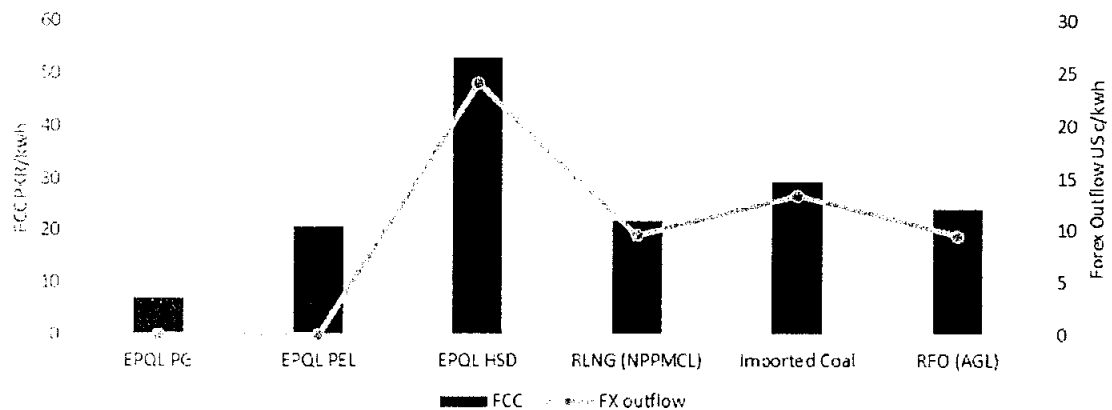
| Fuel    | Current Price       | Current FCC     |
|---------|---------------------|-----------------|
| Gas     | Rs. 1,050/MMBTU     | Rs. 8.7284/kwh  |
| HSD     | Rs. 248,476/Liter   | Rs. 52.6869/kwh |
| PEL Gas | Rs. 2,514.526/MMBTU | Rs. 20.9027/kWh |

5.3. According to the Petitioner, the indigenous gas supply from PEL will enable the Company to produce additional power of over 20 MW (600 million units over the period) which will substitute imported fuels. According to the Petitioner, the fuel cost component of EPQL on PEL Gas will be PKR 20/ kwh, which will place EPQL higher in the Economic Merit Order as compared to imported fuel-based projects. The Petitioner provided following merit order listing of EPQL on various fuels:

| Fuel    | FCC (Rs./kwh) | Merit Listing (Oct. 22) |
|---------|---------------|-------------------------|
| Gas     | 7.1           | 8                       |
| PEL Gas | 20.9          | 18 (above HBS)          |
| RLNG    | 29.9          | 29                      |
| HSD     | 53            | 83                      |

\*Exchange rate:220

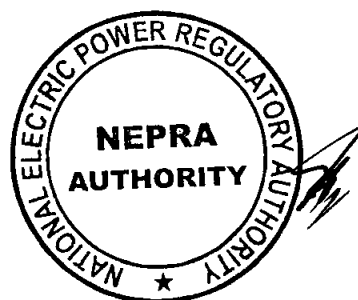
5.4. The Petitioner also submitted following chart showing comparative FCC of the other alternatives:



<sup>5</sup>Based on FCC from Sep 2022

5.5. According to the Petitioner, the country will be able to substitute forex ranging from USD 19-30 million per annum by using PEL gas in power generation, depending on gas supply and at prevailing RLNG price in Pakistan. Based on the expected RLNG spot rates, forex substitution can be as high as USD 36-59 million per annum.

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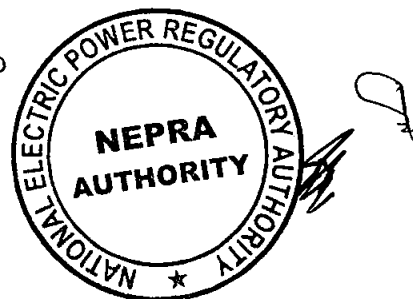


- 5.6. The submissions of the Petitioner have been examined. GoP through MoE (Petroleum Division) hereinafter "MoE (PD)" through Directorate General of Gas vide its letter No. NG (I)-2(43)/20-Badar dated 1<sup>st</sup> October 2021 allocated Badar-I gas and allowed the operator (PEL) to contact any third party for sale of gas subject to following:
- Third party/buyer will be selected through a competitive bidding process.
  - Transaction of sale of gas at a negotiated price with selected buyer will be subject to signing of GSPA.
  - Before proceeding with process of third party sale, the operator will get extension of lease from DGPC after payment/clearance of pending obligations on the part of the operator.
- 5.7. In pursuance of the above allocation and approval, PEL carried out competitive bidding through advertisement in the newspapers. Terms of Reference for Sale of Gas from Badar Gas Field were available on its website. The deadline for submission of bids were 1<sup>st</sup> March 2022. The deadline was extended to 21<sup>st</sup> March 2022. In response to the invitation to bid, bids were received from following three bidders:
- Shahzad Processing Solutions Private Limited (SPS)
  - Engro Powergen Qadirpur (EPQL)
  - I-Energy Private Limited (I-Energy)
- 5.8. SPS is a subsidiary company of PEL. The Petitioner did not provide bid evaluation report and instead provided summary of final Negotiated Bid Price in the name of Bid Evaluation Report. As per the Bid Evaluation Report dated 13<sup>th</sup> May 2022, the final price for purchase of natural gas from Badar-I Well as negotiated with each bidder is as follows:

| No. | Bid      | Final Negotiated Price  |
|-----|----------|---|
| 1   | SPS      | 75% of the prevailing RLNG distribution price for SSGC notified by OGRA in USD/MMBTU  |
| 2   | EPQL     | 70% of the prevailing RLNG price (fuel cost component) being paid to National Power Parks Management Company (Pvt) Limited under its PPA with CPPA. |
| 3   | I-Energy | USD 13.25/MMBTU   |

- 5.9. The Petitioner vide its email dated 6<sup>th</sup> May 2023 provided copy of its bid document submitted to PEL dated 21<sup>st</sup> March 2022. The bid was based on hybrid model (take or pay and take and pay structure) on the following basis:

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- up to 50% of the volume of gas will be purchased on take-or-pay basis, initially applicable for a period of 2 years, with an option of renewal at end of two years, at the rate of USD 3.6/MMBTU (Exchange rate PKR/USD: 180)
- remaining 50% volume of gas will be purchased on take-and-pay basis at the rates equivalent to 90% of price of imported coal delivered at Port Qasim Electric Power Company (Private) Limited (PQEPCL) (approved by NEPRA and subject to revisions) or 60% of price of RLNG/WACOG (if applicable) notified by OGRA and subject to revisions or 90% of price of RFO subject to revision, whichever is lowest.

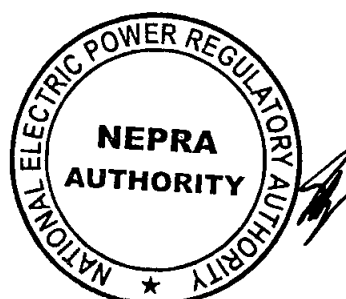
|  |            |
|--|------------|
| <b>Imported coal</b>   |            |
| Price USD/ton (Delivered at PQEPCL for Feb 2020)                   | 165.28     |
| Price USD/MMBTU (kcal/kg 5402)                                     | 7.71       |
| 90% of imported coal USD/MMBTU                                     | 6.94       |
| <b>RLNG</b>  |            |
| Price USD/MMBTU (SNGPL transmission for Feb 2022)                  | 11.8083    |
| 60% of RLNG Price  | 7.08       |
| <b>RFO</b>   |            |
| RFO price approved by NEPRA (Atlas Power Ltd) PKR/ton <sup>3</sup> | 107,264.75 |
| RFO Price (PLR/MMBTU) conversion factor: 40.792                    | 2,629      |
| RFO Price (USD/MMBTU) @ PKR/USD 180                                | 14.6       |
| 90% of RFO Price   | 13.14      |
| Applicable Price (Lowest)  | 6.94       |

5.10. The Petitioner did not provide the prices quoted/bid by other bidders. Engro and PEL executed the GSA Head of Terms (HOT) on 27<sup>th</sup> July 2022 (copy attached with the Petition on page 16-17). The Petitioner did not provide any documentation between submission of bid and signing of HOT particularly w.r.t. the price negotiation.

5.11. The Petitioner pleaded the case of PEL gas price comparing it with imported fuel alternatives without considering the price of low BTU gas being produced and paid to the exploration companies in the country. The price of low BTU gas being used by Foundation Power Daharki for power generation is Rs. 1,050/MMBTU and the price of UCH II low BTU gas is US\$ 6.06/MMBTU. Both of these prices are being regulated by OGRA.

5.12. It would be pertinent to refer the Low BTU Gas Pricing Policy 2012 notified on 12<sup>th</sup> April 2012 vide S. R. O. 369(I)/2012. According to Para 1(3) of the Policy, the normal economy context of the pipeline quality gas is considered to be anything above 900 BTU/SCFT. If the heating value is lower, the cost of producing energy increases

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manifolds for producing the same amount of energy. The producers are required to incur 'additional cost' on drilling of more wells and oversized gas gathering systems. In simple terms, in the case of a normal heating value gas containing 1000 BTU/SCfT, for producing 1 MMBTU energy, it will require production of 1 MCFT as against 2MCFF for 500 BTU/SCFT gas and 5 MCFT for a gas containing 200 BTU/SCFT. It is emphatically clear that the cost of producing and supplying energy from Low BTU Gas fields in any case is much higher than a normal gas field. Para 1(4) further provides that in addition to the cost of production, the adverse composition of gas renders it highly corrosive as well as poisonous and development of such gas fields requires special and costly equipment and materials for well completion/production and gathering systems. The best utilization of Low BTU Gas is for power generation near the gas field. It would, therefore, require a special pricing mechanism which is economically sustainable for the investors as well as the country.

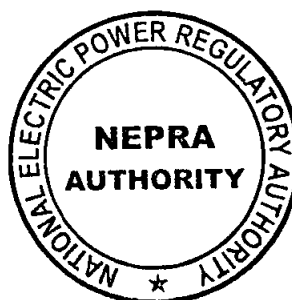
5.13. The Policy further provides that in view of the above, and in line with the Petroleum (Exploration and Production) Policy, 2009 (Para 7.1.5 Schedule III) additional financial incentives are required for the producers of Low BTU Gas to make their investment economically viable and to accelerate the E&P activities in the country. The purpose of this Policy is to establish a reasonable framework of policies, procedures and pricing to accelerate the exploration and production of Low BTU Gas in Pakistan.

5.14. The Policy defines the low BTU gas as "Gas produced from the well-heads in raw form which does not contain Methane as its primary constituent and has a gross heating value of less than 450 BTU/SCFT". The threshold of 450 BTU/SCFT has been selected on the basis of the definition of natural gas which is contained in various Laws /Rules as explained below:

"natural gas" means hydrocarbons or mixture of hydrocarbons and other gases which at sixty degrees Fahrenheit and atmospheric pressure are in the gaseous state (including gas from gas wells, gas produced with crude oil and residue gas and products resulting from the processing of gas) consisting primarily of methane, together with' any other substance produced with such hydrocarbons".

5.15. Regarding gas pricing, the Policy provides as "gas prices are always calculated on the basis of its BTU contents. The Low BTU Gas of 450 BTU/SCF has been assigned the price of US \$6 per MMBTU, which shall be increased by US \$ 0.01/MMBTU for each BTU/SCF reduction below 450 BTU/SCF upto 175BTU/SCF for making it Gas. The maximum price at 175 BTU/SCF shall be US \$ 8.75/MMBTU. Similarly the low BTU

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gas ranging from 400 to 600 MMBTU/SCF would also entail price of US \$6 per MMBTU for making it quality gas."

5.16. Regarding third party sale, the Policy provides as "-----the Government shall have the first right to purchase 90% of low BTU gas converted to pipeline quality gas by the Producer. However, the producer will be allowed to sell 10% of the remaining Gas on its own choice of consumer, for which the gas distribution companies will levy tolling charges if pipeline is used. In case indication about the specified buyer is not given within 2 months, the working interest owners will be free to sale it to the third party for which the gas distribution company will charge tolling charges, if any."

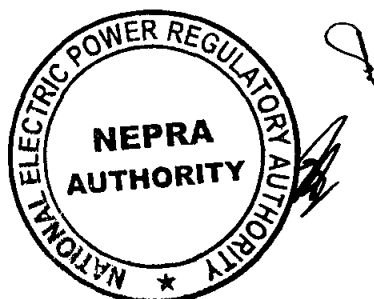
5.17. Some of the wellhead gas prices determined by OGRA for the period Jan-Jun 2023 are provided hereunder:

| Wellhead Name                   | Rate       |
|---------------------------------|------------|
|                                 | Per MMBTU  |
| Kalabagh 1a Karak Block         | USD 6.7255 |
| Rizq gas field of Kirthar block | USD 6.3022 |
| Thebo gas field Mirpur Khas     | USD 6.1144 |
| Miano Gas Field                 | USD 4.4243 |
| Sajwal X-1 Sujawal Block        | USD 3.5891 |
| Tando Allah Yar West-01         | USD 2.5793 |
| Chachar gas field               | USD 2.1635 |
| Pirkoh gas field                | PKR 314.25 |
| Adhi gas field Pothohar Region  | PKR 333.97 |
| Kandhkot gas field              | PKR 501.44 |
| Ratana field                    | PKR 956.83 |

5.18. Keeping in view the above discussion, it is established that the negotiated reference PEL gas price of 70% of RLNG price i.e. \$11.01/MMBTU (\$8.59/MMBTU w.e.f. April 2023) between the parties is higher than the price of gas being approved by OGRA for low BTU as well as for pipeline quality natural gas.

5.19. MoE (Petroleum Division vide its letter No. Ng (II)- 16(1)2022-RLNG-IPP-Vol-I-pt dated 31<sup>st</sup> January 2023 in a reply to PPIB stated that Badar GSA Head of terms and its pricing arrangement have been bilaterally agreed between both M/s PEL and M/s EPQL. and being a third party arrangement, the matter is required to be dealt solely between parties to the transaction. The parties may review the pricing mechanism for reduction in the fuel cost impact on power tariff.

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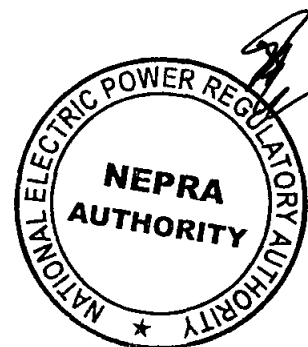


5.20. In order to make an informed decision, vide letter dated 16<sup>th</sup> June 2023 comments were sought in the subject matter from OGRA, DG (Gas) and DGPC with the observation that this does not fall under third party sale as generated electricity will be provided to regulated consumers and the gas price in the proposed mechanism needs to be approved by the Regulator/competent forum. In response OGRA vide its letter dated 3<sup>rd</sup> July 2023 submitted that the allocation or sale of gas to a third party is the exclusive domain of the Federal Government, therefore, the comments/views of Ministry of Energy (Petroleum Division) in the subject matter would only be relevant. Petroleum Division through DG (Gas) office submitted that gas from Badar field has been made available to PEL for third party sale subject to terms and conditions outlined in Annex-A under which GSPA must be signed between the buyer and seller for third party gas sale transaction. DG (Gas) was again requested vide letter dated 7<sup>th</sup> August 2023 for comments on the observation but no reply was received. DGPC did not reply in the matter even after the reminder.

5.21. In response to a query, the Petitioner provided following information of gas sale from Badar gas field:

| Year         | Badar-1      | Badar-2      | Total        |
|--------------|--------------|--------------|--------------|
|              | MMscf        | MMscf        | MMscf        |
| 2006         | 4130         | -            | 4130         |
| 2007         | 5576         | -            | 5576         |
| 2008         | 5396         | -            | 5396         |
| 2009         | 5086         | -            | 5086         |
| 2010         | 5021         | -            | 5021         |
| 2011         | 4919         | -            | 4919         |
| 2012         | 4881         | -            | 4881         |
| 2013         | 4589         | -            | 4589         |
| 2014         | 4293         | -            | 4293         |
| 2015         | 4096         | -            | 4096         |
| 2016         | 3241         | 1909         | 5151         |
| 2017         | 3611         | 2706         | 6317         |
| 2018         | 3640         | 2536         | 6176         |
| 2019         | 3639         | 2494         | 6133         |
| 2020         | 3481         | 2137         | 5618         |
| 2021         | 1883         | 1767         | 3650         |
| 2022         | -            | 1808         | 1808         |
| 2023         | -            | 597          | 597          |
| <b>Total</b> | <b>67483</b> | <b>15955</b> | <b>83438</b> |

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5.22. The price information provided by the Petitioner for above sale is provided hereunder:

| BADAR GAS PRICE SINCE INCEPTION |                 |
|---------------------------------|-----------------|
| PERIOD                          | PRICE USD/MMBTU |
| APRIL-JUNE 2006                 | 2.2715          |
| JULY-DECEMBER 2006              | 2.2595          |
| JANUARY-JUNE 2007               | 2.2502          |
| JULY-DECEMBER 2007              | 2.2319          |
| JANUARY-JUNE 2008               | 2.3352          |
| JULY-DECEMBER 2008              | 2.3573          |
| JANUARY-JUNE 2009               | 2.3630          |
| JULY-DECEMBER 2009              | 2.3432          |
| JANUARY-JUNE 2010               | 2.3432          |
| JULY-DECEMBER 2010              | 2.3432          |
| JANUARY-JUNE 2011               | 2.3432          |
| JULY-DECEMBER 2011              | 2.3432          |
| JANUARY-JUNE 2012               | 2.3432          |
| JULY-DECEMBER 2012              | 6.1333          |
| JANUARY-JUNE 2013               | 6.1394          |
| JULY-DECEMBER 2013              | 6.1284          |
| JANUARY-JUNE 2014               | 6.1143          |
| JULY- DECEMBER 2014             | 6.1186          |
| JANUARY-JUNE 2015               | 5.8974          |
| JULY- DECEMBER 2015             | 4.8226          |
| JANUARY-JUNE 2016               | 4.5633          |
| JULY- DECEMBER 2016             | 3.6741          |
| JANUARY-JUNE 2017               | 4.2454          |
| JULY- DECEMBER 2017             | 4.6054          |
| JANUARY-JUNE 2018               | 4.6016          |
| JULY- DECEMBER 2018             | 5.1438          |
| JANUARY-JUNE 2019               | 5.3428          |
| JULY- DECEMBER 2019             | 5.1194          |
| JANUARY-JUNE 2020               | 5.0595          |
| JULY- DECEMBER 2020             | 4.7315          |
| JANUARY-JUNE 2021               | 4.1504          |
| JULY- DECEMBER 2021             | 4.9644          |
| JANUARY-JUNE 2022               | 5.3622          |
| JULY- DECEMBER 2022             | 5.8989          |
| JANUARY-JUNE 2023               | 6.1140          |
| JULY- DECEMBER 2023             | 5.6127          |

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- 5.23. CPPA-G in its post re-hearing comments submitted cut-off price for PEL to be around Rs. 1015 / MMBTU (LHV) at minimum. The equivalent HHV dollar price of PEL gas as suggested by CPPA-G works out US\$ 3.25/MMBTU at exchange rate of Rs. 281/US\$. CPPA-G also suggested to link PEL gas prices either to Qadirpur or on average of all indigenous low BTU gas prices which are under regulated regime. The later works out US\$ 5.888 /MMBTU and US\$ 4.727/MMBTU with and without TNB Liberty.
- 5.24. Keeping all above in view and the prevailing price for Jul-Dec 2023 for low BTU gas in case of Badar-II well of the same exploration company, the Authority has decided to approve price of US\$ 5.6127/MMBTU for the sale of gas by PEL to EPQL from Badar-I which shall be subject to adjustment for applicable gas price for Badar-II for each period and exchange rate prevailing on the first day of each period or succeeding day if the exchange rate is not available on the stipulated date. On the basis of prevailing exchange rate for 4<sup>th</sup> July 2023 of Rs. 286.40/USD, the equivalent HHV gas price works out Rs. 1,607.48/MMBTU and accordingly the reference fuel cost component on low BTU PEL gas shall be Rs. 13.3626/kWh. The dispatch shall be on the basis of economic merit order as per grid code.

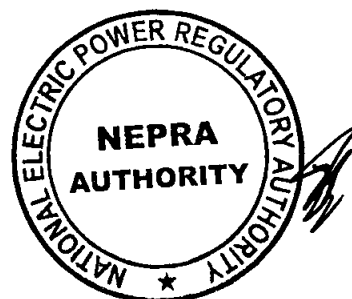
**Whether the proposed mechanism is applicable in any other Sector/industry in the Country?**

- 5.25. The proposed mechanism of 70% of RLNG price is not applicable in any other sector/industry in the country as of today.

## **6. ORDER**

- 6.1. The Authority has decided to approve reference gas price of US\$ 5.6127/MMBTU for sale of gas by PEL to EPQL from Badar-I which shall be subject to adjustment for applicable gas price for Badar-II for each period and exchange rate prevailing on the first day of each period. On the basis of prevailing exchange rate of 4<sup>th</sup> July 2023 of Rs. 286.40/USD, the equivalent HHV gas price works out 1,607.48/MMBTU and accordingly the reference fuel cost component on low BTU PEL gas shall be Rs. 13.3626/kWh. The approved fuel cost component shall be subject to adjustment as per following mechanism:

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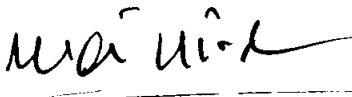
|               |   |   |
|---------------|---|---|
| $FCC_{(Rev)}$ | = | $FCC_{(Ref)} \times P_{(Rev)} / P_{(Ref)}$  |
| Where:        |   |   |
| $FCC_{(Rev)}$ | = | Revised Fuel cost component.  |
| $FCC_{(Ref)}$ | = | Reference Fuel cost component of Rs. 13.3626/kWh.   |
| $P_{(Rev)}$   | = | Revised delivered PEL gas price on the basis of revised rate and exchange rate prevailing on 1 <sup>st</sup> day of each month or succeeding day. |
| $P_{(Ref)}$   | = | Reference PEL gas price of Rs. 1,607.48/MMBTU   |

6.2. The dispatch shall be on the basis of economic merit order as per Grid Code.

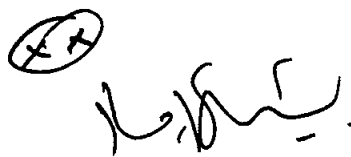
### 1. NOTIFICATION

The above Order of the Authority along with Annexes shall be notified in the official Gazette in terms of Section 31(7) of the Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997.


### AUTHORITY

  
Mathar Niaz Rana (nsc)  
Member

  
Engr. Maqsood Anwar Khan  
Member


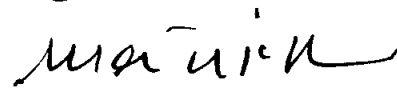
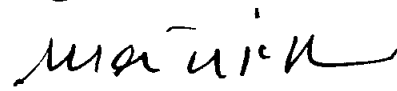
  
Engr. Rafique Ahmed Shaikh  
Member

  
Amina Ahmed  
Member

  
Waseem Mukhtar  
Chairman

17/20



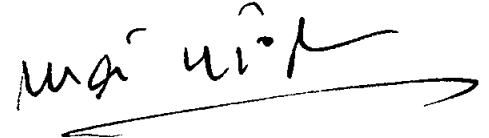
  
20/02/24  
  
Attached additional note. 

**DISSENT NOTE**

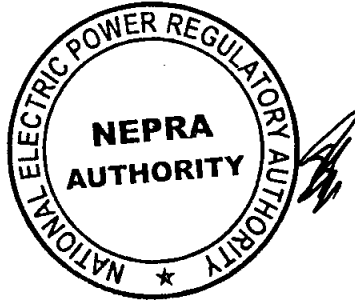
**RM 23-471**

1. I respectfully disagree with the decision of my colleague learned Members for the following reasons:

- i. Reportedly, the approval of the GDMO/GDMP is pending in the PPIB. It is imperative that PPIB grants approval for the GDMO in accordance with the executed Implementation Agreement (IA) before any submission is made to NEPRA. Furthermore, CPPA-G in their letters dated December 27, 2023 & January, 2023 has suggested a price of the Gas which is equivalent to 3.25 US \$/MMBTU and 4.73 US \$/MMBTU based on basket of low BTU gas of three power plants i.e. Engro Power Gen Qadirpur, Foundation, Uch I & Uch II. It was also discussed that the fixation of price of Gas does not fall within the mandate of NEPRA, as also highlighted by CPPA-G.
- ii. So in my opinion NEPRA need to direct PPIB & CPPA-G (as major stakeholders) to work out the acceptable price of low BTU gas from Badar I field in consultation with relevant stakeholders and regulatory body to be supplied to Engro Power Gen Qadirpur and convey to NEPRA for giving fuel cost component under section 7 of NEPRA Act, NEPRA may not allow price beyond the price proposed by power purchaser i.e. CPPA-G.



**Mathar Niaz Rana (nsc)**  
**Member (Tariff)**



## Additional Note


The EPQL, a dual-fuel 226.52 MW power plant, primarily relies on permeate gas from the Qadirpur gas field and uses High-Speed Diesel (HSD) as a secondary fuel. However, the depletion of permeate gas has resulted in a shortfall, necessitating the use of HSD to meet the operational needs of the power plant. While the option to operate on Re-Gasified Liquefied Natural Gas (RLNG) and HSD is available, it poses an increase in generation costs.

To address the gas shortage, EPQL proposed incorporating local fuel (8-13 MMCft/day) from the Badar gas fields operated by Petroleum Exploration (Pvt.) Limited (PEL) on a 'take and pay' basis, initially for three years. PPIB and CPPAG did not object to this proposition; however, CPPA expressed concern over the pricing of the local gas from PEL, which is agreed upon between the parties through a bidding process.

Facing the challenge of unregulated gas prices and the absence of regulatory agency pricing in the matter, the Authority explored options. Despite the difficulty in obtaining a regulated price, the consensus was either to disallow the use of local gas for EPQL due to the lack of regulatory determination of this price or to consider proposed prices to ensure the optimal functioning of the plant. This decision aimed at benefiting the country's economy, maintaining financial stability in the power sector, and serving the interests of electricity consumers in Pakistan. In this regard, the Authority asked for an analysis of potential losses in case of the non-operation of the EPQL power plant to meet system demand. The analysis conducted is attached as an annexure to this additional note.

In evaluating the potential losses and benefits to stakeholders in case of EPQL non-dispatch due to gas shortage, the Authority recognized the significance of a proactive decision. Despite the complexity of the situation, the Authority, exercising collective wisdom and considering all presented facts, chose not to prolong the decision-making process. The Authority took into account the latest applicable price for low BTU gas from the BadarII gas-well of the same exploration company, situated in the near vicinity. Consequently, the Authority opted to align the pricing of gas from the proposed gas well with that of Badar II for comparability.

Thus considering all above, and in the best interest of the nation's economy, the power sector, and electricity consumers, the Authority made a decisive resolution rather than allowing the issue to linger.



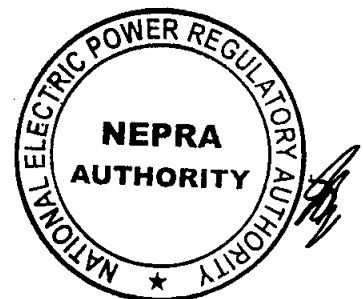
Rafique Ahmed Shaikh  
Member



Engr. Maqsood Anwar Khan  
Member



Waseem Mukhtar  
Chairman

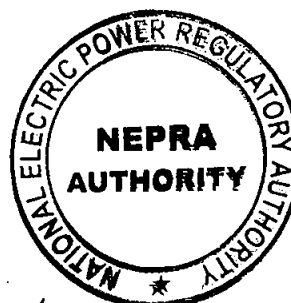


## Annexure

| Analysis of Utilizing of PEL Gas |                    |                        |                      |                    |            |                                 |                                 |
|----------------------------------|--------------------|------------------------|----------------------|--------------------|------------|---------------------------------|---------------------------------|
| Capacity                         | Annual Energy Lost | Incremental Fuel Cost* | Loss to Power Sector | Loss to Gas Sector | Total Loss | Incremental Impact of PEL Gas** | Net Saving by Utilizing PEL Gas |
| MW                               | GWh                | Rs./kWh                | Rs. In Mln           | Rs. In Mln         | Rs. In Mln | Rs. In Mln                      | Rs. In Mln                      |
| A                                | B=A*8.76           |                        | D= B*C               | E= B*8.7284        | F= D+E     |                                 | H= F-G                          |
| 90                               | 788.40             | 14.73                  | 11,617               | 6,881              | 18,498     | 1,502                           | 16,996                          |
| 80                               | 700.80             | 14.73                  | 10,326               | 6,117              | 16,443     | 1,502                           | 14,941                          |
| 70                               | 613.20             | 14.73                  | 9,035                | 5,352              | 14,387     | 1,502                           | 12,885                          |
| 60                               | 525.60             | 14.73                  | 7,744                | 4,588              | 12,332     | 1,502                           | 10,830                          |
| 50                               | 438.00             | 14.73                  | 6,454                | 3,823              | 10,277     | 1,502                           | 8,775                           |
| 40                               | 350.40             | 14.73                  | 5,163                | 3,058              | 8,221      | 1,502                           | 6,719                           |
| 30                               | 262.80             | 14.73                  | 3,872                | 2,294              | 6,166      | 1,502                           | 4,664                           |

\* Incremental Fuel Cost has been worked out on the basis of difference in Fuel Cost Components of permeate gas of Rs. 8.7284/kWh and HBS Plant of Rs. 23.4628/kWh .

\*\* Incremental Impact of PEL Gas has been worked out on the basis of gas price of US\$ 5.6127/MMBTU at applicable exchange rate of Rs. 286.4/US\$ for 37 MW.



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