



National Electric Power Regulatory Authority
Islamic Republic of Pakistan

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No. NEPRA/PAR-168/15538-15540
October 9, 2018

Subject: Decision of the Authority in the matter of Application filed by Lotte Chemicals Pakistan Limited for Change in Fuel from Natural Gas to RLNG [Case # NEPRA/PAR-168]

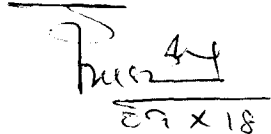
Dear Sir,

Please find enclosed herewith the subject Decision of the Authority (07 pages) in Case No. NEPRA/PAR-168.

2. The Decision is being intimated to the Federal Government for the purpose of notification in the official gazette in accordance with the provisions of Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

3. The Order of the Authority is to be notified in the official Gazette.

Enclosure: As above


(Syed Safer Hussain)

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

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.



DECISION OF THE AUTHORITY IN THE MATTER OF APPLICATION FILED BY LOTTE CHEMICALS PAKISTAN LIMITED FOR CHANGE IN FUEL FROM NATURAL GAS TO RLNG

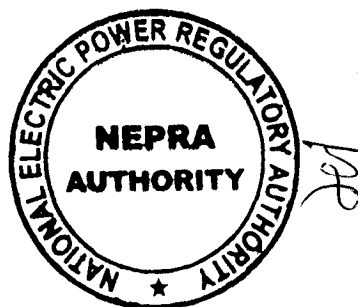
1. INTRODUCTION

- 1.1. Lotte Chemicals Pakistan Limited (hereinafter referred as “LCPL”) is a captive power plant located at Port Qasim, Karachi, having generation capacity of 48.1 MW (gross capacity at ISO). The plant achieved commercial operations on July 17, 2012.
- 1.2. The Authority approved the Power Acquisition Request (PAR) submitted by K-Electric for purchase of power from LCPL vide decision dated August 29, 2017. While approving the subject PAR, the Authority considered that since the subject PAR was based on committed gas quota from the gas supplier, therefore, the use of RLNG for power generation for sale of surplus power to KE shall not be allowed.
- 1.3. Subsequently, KE submitted a Power Acquisition Contract (PAC) in the matter on November 29, 2017. The Authority vide letter dated March 26, 2018, approved the subject PAC with the following conditions relevant to use of RLNG:

“the fuel for the Facility shall be indigenous natural gas. In the event that the supply of indigenous gas to the Facility is disconnected by SSGC during the Term and SSGC commits to replace indigenous gas with RLNG, LCPL shall, in consultation with KE, apply to NEPRA for prior permission to use RLNG as fuel and for determination of a new fuel price for RLNG and a revised thermal efficiency as determined by NEPRA.”

2. FILING OF REQUEST FOR CHANGE OF FUEL FROM GAS TO RLNG

- 2.1. In accordance with the above directions of the Authority, LCPL vide letter dated April 6, 2018, requested permission of the Authority to use RLNG as fuel to generate surplus power to sell to KE.
- 2.2. Along-with its application, LCPL also submitted Sui Southern Gas Company Limited’s (SSGCL) letter No. Sales/RLNG/PG-1421, dated November 22, 2017, according to which SSGCL has informed LCPL that from December 2017 onwards, 3.5 MMCFD will be billed on RLNG tariff and the remaining volume will be billed on indigenous gas tariff.
- 2.3. Pursuant to the requirement of the PAC, LCPL also submitted KE’s letter No. BD/AR/LCPL-0227/2018-0604, dated April 6, 2018, wherein KE has communicated its consent in the matter.



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2.4. The Authority admitted the application of Lotte Chemicals on April 25, 2018, and decided to hold a hearing in the matter.

3. ISSUES FRAMED FOR HEARING

3.1. Following issues were framed for the hearing:

- i) Whether use of RLNG is justified in the instant case?
- ii) Whether the revised gas supply agreement (GSA) or any interim arrangement with SSGC is in place which includes specifications of delivered RLNG like pressure, quota and duration of agreement etc?
- iii) Whether the use of RLNG shall have an impact on the thermal efficiency, net capacity and auxiliary consumption of the power plant?
- iv) Whether the use of RLNG has an impact on the conversion factor (HHV to LHV) i.e., 1.1076?
- v) Depending on the tenure of the GSA, whether the option of allocation of RLNG from private fuel supplier on competitive rates as compared to SSGC has been explored?
- vi) Currently, existing interconnection network of SSGC is being utilized for provision of fuel. Whether the techno-economic analysis regarding installation of dedicated RLNG pipeline for the power plant has been carried out?
- vii) Whether the power plant should be allowed the use of two different prices of fuel for self-generation and for sale of surplus power to KE in the same premises?

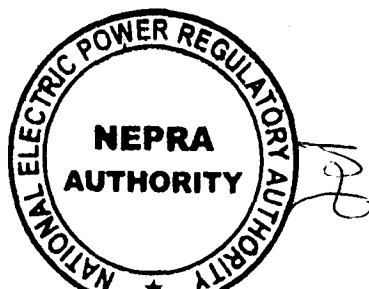
4. NOTICE OF HEARING

4.1. Hearing in the matter was fixed for June 27, 2018 and was held as per schedule. Notice of Admission/Hearing along with issues framed for Hearing was made public on June 7, 2018. Individual notices were also sent to various stakeholders on June 11, 2018, inviting comments in the subject matter.

5. COMMENTS

5.1. In response to Notice of Admission/Hearing, comments from the following were received:

- i. Lotte Chemical Pakistan
- ii. K-Electric
- iii. Mr. Arif Bilwani



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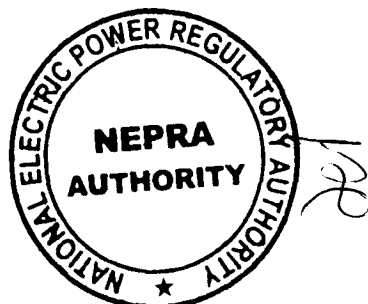


6. CONSIDERATION OF THE VIEWS OF THE STAKEHOLDERS, ANALYSIS, FINDINGS AND DECISIONS ON ISSUES

6.1. Comments of the stakeholders, analysis, findings and decisions of the Authority on important issues are provided in the following paragraphs:

Whether use of RLNG is justified in the instant case?

- 6.2. LCPL in its comments submitted that there is no availability of Natural Gas from SSGC for sale of surplus power, therefore, they have no choice but to use RLNG. LCPL also submitted that surplus power will help in reducing shortage problem in Karachi. KE in its comments submitted that power demand has registered high growth in recent years and there is an urgent need to tap into available sources of supply to be able to serve consumers. KE further submitted that SSGC is not ready to increase supply of gas to LCPL for production of surplus power for onward delivery to K-Electric, unless LCPL purchases such incremental gas at a price charged for RLNG. According to KE, cost of supply on RLNG from LCPL is expected to be marginally lower than the cost of power produced using furnace oil at K-Electric's BQPS I.
- 6.3. According to the commentator, Mr. Arif Bilwani, RLNG is a very expensive fuel and its use in obsolete, inefficient and uneconomical power plants for generating electric power must not be allowed as a matter of policy. The commentator further submitted that the use of RLNG be allowed only in new power plants of high thermal efficiency (exceeding 62%) set up under the power policy, which intend to sell their total production of electricity to CPPA/NTDC/KE, so that the cost of expensive fuel be compensated. The use of RLNG in inefficient plants negates the very cardinal principal of the Authority's Act/charter of providing power at reasonable and affordable cost.
- 6.4. The comments of the stakeholders have been examined carefully. Given the increasing demand-supply gap in KE system, non-availability of natural gas for power generation in the instant case, the fact that dispatch shall be based on economic merit order and that dispatch shall result in lower marginal cost as compared to some of the power generating units in KE system on RLNG/ RFO, the Authority considers that the request of LCPL for generating electricity from RLNG for sale of surplus power to KE is justified.
- 6.5. The Authority considers that purchase of electricity from LCPL by KE will be in the interest of the consumers of Karachi. Due to take and pay based nature of tariff, the plant shall bear no fixed charges. Further, since the plant shall be operated on economic merit order, it shall only be dispatched when no other economical source of



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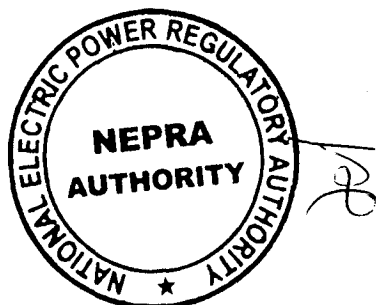
electricity is available. Therefore, the Authority has decided to allow use of RLNG in the instant case.

Whether the revised gas supply agreement (GSA) or any interim arrangement with SSGC is in place which includes specifications of delivered RLNG like pressure, quota and duration of agreement etc?

- 6.6. According to LCPL, SSGC is not planning to supply RLNG as a separate connection as there is no separate distribution network for RLNG. LCPL further submitted that RLNG is already being injected into SSGC system and is being consumed in Karachi, therefore, there is no change in specification or pressure and only pricing will be changed.
- 6.7. SSGC in its comments submitted that both parties need to sign an agreement for new RLNG connection subject to fulfillment of all formalities. SSGC further submitted that LCPL is located at SSGC existing distribution network as such RLNG main extension shall be planned from existing distribution network to install separate metering station after receiving formal application and relevant drawings from LCPL for supply of 3.5 MMCFD RLNG. Similarly RLNG tariff for distribution network shall be applicable.
- 6.8. LCPL was directed to submit comments on the above submissions made by SSGC. LCPL via email dated 11th July 2018 submitted that discussion has been held with SSGC on the issue and SSGC has agreed that since LCPL has only one turbine for power generation, therefore, no separate RLNG connection/metering station will be required. The existing connection/meters will be used with possible enhancement of the existing meter. New terms for the purchase of RLNG will be agreed and signed with SSGC. The billing mechanism will be managed by SSGC and any gas consumed for the sale of electricity shall be charged on RLNG basis.
- 6.9. In the light of the above, the Authority directs LCPL to execute a revised gas supply agreement with SSGC, including specifications of delivered RLNG on priority and submit the same for consideration of the Authority.

Whether the use of RLNG shall have an impact on the thermal efficiency, net capacity and auxiliary consumption of the power plant?

- 6.10. LCPL, in its request submitted that as per the understanding with SSGC, there will be no change in the gas quality or connection. The additional gas drawn for sale of power will be swap gas which will be billed at RLNG price. LCPL in its comments



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reiterated that since there is no change in the gas specifications, there will be no impact on efficiency of gas turbine and auxiliary consumption.

- 6.11. Considering the replies of LCPL and in line with the earlier decisions in the matter of IPPs, the Authority has decided that no further deliberations are required on the issue.

Whether the use of RLNG has an impact on the conversion factor (HHV to LHV) i.e., 1.1076?

- 6.12. According to LCPL, there will be no impact on the HHV – LHV conversion factor due to reasons explained under comments on the previous issues.
- 6.13. The HHV – LHV conversion factor of 1.1076 has been allowed by the Authority to many IPPs operating on RLNG. Keeping in view the reply of LCPL and similar conversion factor for IPPs operating on RLNG, the Authority has decided to maintain the HHV – LHV conversion factor of 1.1076 for LCPL on RLNG.

Depending on the tenure of the GSA, whether the option of allocation of RLNG from private fuel supplier on competitive rates as compared to SSGC has been explored?

- 6.14. LCPL in its comments submitted that the RLNG required volume is insignificant and therefore it is not feasible to have separate supplier connection. The agreement with KE for surplus power sale is on take and pay basis, no supplier will agree to provide RLNG on take and pay basis.
- 6.15. In view of the reply of LCPL, the Authority has decided that no further deliberation is required on the issue.

Currently, existing interconnection network of SSGC is being utilized for provision of fuel. Whether the techno-economic analysis regarding installation of dedicated RLNG pipeline for the power plant has been carried out?

- 6.16. LCPL in its comments submitted that the quantity is very small to justify a separate pipeline. Furthermore this is a take and pay arrangement for short term therefore further CAPEX is not feasible.
- 6.17. Keeping in view the reply of LPCL, the Authority has decided that no further deliberations are required on the issue.

Whether the power plant should be allowed the use of two different prices of fuel for self-generation and for sale of surplus power to KE in the same premises?





- 6.18. According to LCPL, they understand from SSGC that there are similar arrangements already with few SSGC consumers. LCPL was asked to quote the name of SSGC consumers having similar arrangements. In reply LCPL named KE who has both gas and RLNG supply from SSGC. However, there is no captive power plant who is supplying surplus power and using RLNG as fuel for generation and selling of such surplus power and simultaneously using gas for electricity generation for self-consumption.
- 6.19. Ministry of Petroleum and Natural Resources vide letter No. NG(1)/16(4)/16 RLNG-IPP-P1-5 dated 16th March 2016 allocated 3.5 MMCFD RLNG on as and when available basis to M/s Lotte Chemical. SSGC vide its letter No. Sales/NOC-PG-1421 dated 15th November 2016 issued NOC to sell surplus power to KE from approved load of 9 MMCFD subject to the condition that LCPL will take/utilize RLNG volume for surplus power generation. SSGC vide its letter No. Sales/NOC-PG-1421 dated 22nd November 2017 informed LCPL that they are now offering RLNG to its customers in the franchise area and formalities for supply of RLNG to prospective customers/applicants are being completed. SSGC further informed that LCPL would be billed 3.5 MMCFD on RLNG out of the previous approved indigenous gas load of 9 MMCFD from December 2017 onward.
- 6.20. It is evident from the above that the issue of two different fuel prices pertains with the relevant government agencies who have allocated gas/RLNG quotas for consumption. In order to protect the interest of consumers, the Authority hereby directs that while submitting energy sale invoices to KE, LCPL shall also submit evidence of the monthly billing and payment record of RLNG. Before making any payment, KE shall carry out due diligence that the surplus electricity for sale was generated by using RLNG supplied and billed by SSGC. KE is further advised to prepare reconciliation statement of RLNG billing by SSGC and resultant generation and sale of surplus electricity by LCPL. In case the sale of surplus power exceeds 3.5 MMCFD quota, the excess shall be charged at gas tariff instead of RLNG tariff.

7. ORDER

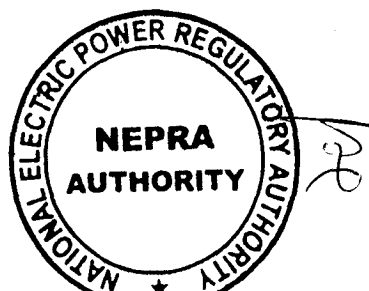
- 7.1. The Authority hereby approves the use of RLNG for sale of surplus power to KE and determines the following revised mechanism for adjustment of fuel cost component for variation in gas/RLNG price:

$$\text{FCC(Rev)} = \text{FCC(Ref)} \times \text{FP(Rev)} / \text{FP(Ref)}$$

Where:

FCC(Rev) = Revised Fuel Cost Component applicable for the billing cycle

FP(Rev) = Revised gas/RLNG price, excluding General Sales Tax applicable



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for the billing cycle as notified by OGRA for new captive power
FP(Ref) = Reference Ex-GST HHV Gas and RLNG price is Rs. 600 /MMBTU
& Rs. 1,615.99/MMBTU*, respectively
FCC(Ref) = Reference FCC on Gas & RLNG is Rs. 5.9674/kWh & Rs.
16.0718/kWh, respectively.

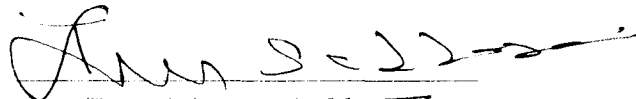
* Provisional distribution RLNG Price for the month of August 2018 of US\$ 13.0185 at Exchange rate
of Rs. 124.1302/US\$.

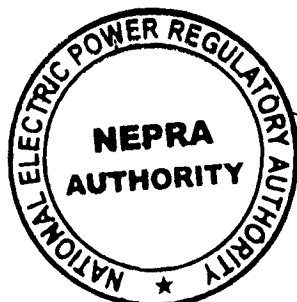
- 7.2. The Authority hereby directs that while submitting energy sale invoices to KE, LCPL shall also submit evidence of the monthly billing and payment record of RLNG. Before making any payment, KE shall carry out due diligence that the surplus electricity for sale was generated by using RLNG supplied and billed by SSGC. KE is further advised to prepare reconciliation statement of RLNG billing by SSGC and resultant generation and sale of surplus electricity by LCPL. In case the sale of surplus power exceeds 3.5 MMCFD quota, the excess shall be charged at gas tariff instead of RLNG tariff.
- 7.3. The Authority has decided to grant permission for generation and sale of surplus power on RLNG. Parties are directed to incorporate the same in the Power Acquisition Contract and submit the modified PAC for approval in line with the Regulation 5(1) of the IPPR 2005.
- 7.4. The above Order is to be notified in the official gazette in accordance with the provisions of Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997

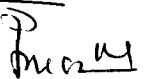
AUTHORITY


(Saif Ullah Chattha)
Member 5.10.2018


(Rehmatullah Baloch)
Vice Chairman 8/10/2018


(Brig. (R) Tariq Saddozai)
Chairman




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