



National Electric Power Regulatory Authority Islamic Republic of Pakistan

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad
Ph: +92-51-9206500, Fax: +92-51-2600026
Web: www.nepa.org.pk, E-mail: registrar@nepa.org.pk

No. NEPRA/PAR-60/5292-5294

April 14, 2017

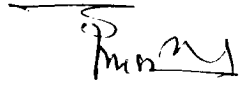
Subject: **Decision of the Authority in the matter of Power Acquisition Request of Faisalabad Electric Supply Company Ltd. for Purchase of 25.5 MW RFO Based Power from Sitara Energy Limited [Case # PAR-60]**

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority (08 pages) in Case No. NEPRA/PAR-60.

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(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).
3. The Order of the Authority's Decision is to be notified in the official Gazette.

Enclosure: As above


14.04.17
(Syed Safer Hussain)

Secretary
Ministry of Water & Power
'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 POWER ACQUISITION REQUEST OF
FESCO FOR PURCHASE OF 25±5 MW RFO BASED POWER FROM SITARA ENERGY
LIMITED**

1. Filing of the Power Acquisition Request

1.1. FESCO vide letter No. 127/CSD dated 17th August 2011 filed Power Acquisition Request (PAR) in respect of purchase of 25±5 MW HFO based power from Sitara Energy Limited (SEL) under NEPRA's Interim Power Procurement (Procedures & Standards) Regulations 2005 (hereinafter "the Regulations"). According to FESCO it was already purchasing power from SEL under an agreement which was going to expire on 7th September 2011 and it intended to regularize the power purchase as per NEPRA Rules & Regulations before renewal of the agreement. FESCO had also submitted the copy of proposed Power Purchase Agreement as per PEPCO approved sample PPA.

1.2. According to FESCO, the tariff was introduced by CPPA in accordance with NEPRA memo No. NEPRA/R/LAG-60/7320 dated 28-4-2008 in which NEPRA allowed DISCOs to directly purchase power less than 50MW from captive power producers (CPPs) on mutually agreed tariff. The tariff structure is as under:

Description	Rs./kWh
Fuel Cost Component (Ref. RFO Price Rs. 22,096/ton)	5.41
Fixed Cost Component	1.53
Total Generation Cost of delivered unit	6.94

1.3. The fuel cost component was based on 245 grams/kWh of furnace oil and was required to be adjusted on the basis of revised RFO price during the billing period according to the following formula:

$$FCC_{(Rev)} = 5.41 \times RFO_{(Rev)} / RFO_{(Ref)}$$

Where:

$FCC_{(Rev)}$ = Fuel cost component applicable for the billing cycle.

$RFO_{(Rev)}$ = Revised price per Metric Ton of RFO delivered to the Company by road excluding GST applicable for the Billing Cycle.

$RFO_{(Ref)}$ = Reference Fuel Price of Rs. 22,096 per Metric Ton.

1.4. FESCO submitted that the subject power procurement would be an economic one and would not adversely affect the transfer price/power purchase of FESCO. According to





FESCO, the voltage level shall be 132 KV. The evacuated power would be injected into FESCO system at 132 KV Bandala Grid Station Sheikhupura Road Faisalabad.

1.5. FESCO was of the view that tariff determination is the prerogative of NEPRA in this case; however, if NEPRA has no objection on the tariff approved by CPPA, FESCO can adopt and own the tariff. FESCO requested for approval of PAR along with endorsement of tariff or tariff determination be made by NEPRA.

1.6. The previous agreement between the parties was entered into on 8th September 2007 for 3 years on the rates approved by WAPDA Authority/CPPA. The Agreement was extended for further 1 year with the mutual consent of the parties.

2. Admission of the PAR

2.1. The Power Acquisition Request was admitted by the Authority on 31st October 2011. Notice of admission/public hearing along with salient features was published in the leading national newspapers on 21st January and 28th January 2012 inviting comments/participation from the general public and other stakeholders. Individual letters were also sent to all concerned.

3. Filing of intervention request/comments

3.1. In response to the notice of admission and advertisement thereof, M/s Precision Advocates & Consultant filed comments. The comments were of general nature regarding NEPRA's role in ex-ante regulation and NEPRA's response to power shortages. The commentator did not comment on the said power acquisition by FESCO from SEL.

4. Hearing

4.1. The hearing in the matter was held on 9th February 2012 which was participated by FESCO, CPPA, SEL and MW&P and media. Brief proceedings of the hearing are as under:

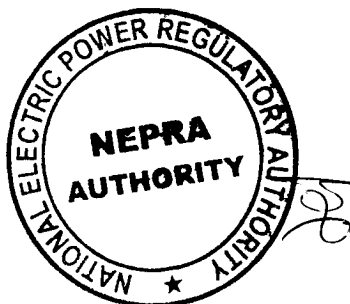
i. SEL objected that the proceedings were not according to NEPRA law. In SEL's opinion public hearing could not take place in relation to power acquisition request under the Regulations. The objection was overruled by the Authority.

ii. According to FESCO, the approved tariff by CPPA was not fair because 245 grams of RFO was agreed to generate one kWh. It was stated that the basis of the tariff was not known to them.





- iii. In SEL's opinion it was an abuse of the process of this Authority. SEL stated that the petitioner had submitted a bilateral contract and now it was going out of it. According to SEL the contract was mutually agreed and therefore its sanctity was required to be upheld.
 - iv. Responding to SEL's objections, FESCO stated that it had submitted a draft contract asking the power producer to negotiate the terms. The power producer had agreed to some of them. FESCO further stated that the BOD had allowed purchasing energy from SEL till the decision by NEPRA in this regard.
 - v. CPPA referred a meeting held between APTMA and CPPA for negotiating the tariff wherein 245 grams of RFO per kWh was agreed and that was the basis of the tariff.
 - vi. The Authority observed that the petitioner was not satisfied with the basis of the proposed tariff. The Authority further observed that in this case either we had to use our benchmarks or the petitioner must satisfy the Authority regarding the basis of the tariff.
- 4.2. The Authority conducted another hearing in the matter on 18th June 2013 in the context of inquiry regarding generation on gas and selling of electricity on RFO and recycling of DISCO's power through generation facilities for obtaining difference of rates of purchase/sale of power. The hearing was participated by FESCO and CPPA. SEL was not invited in the hearing.
- 4.3. The FESCO representative categorically said in the hearing that as far as FESCO is concerned since 2007 till to-date, they do not have any evidence that SEL has done this. According to the representative of FESCO, they kept on checking the premises on number of times, two times by himself and many times by specially assigned personnel because there were complaints of such practices. The engines are dual fired gas/RFO but that had been sealed by FESCO since 2007 and that was being checked periodically. They do have gas generation in the adjacent premises for which they have license and gas quota and electricity generated is provided to the sister companies. However in the premises where electricity is produced on RFO number of inspections were done and found no evidence of mixing electricity generated by gas and RFO. Previously there was gas arrangement in these premises; however, the pipes were removed subsequently and pipes cannot be installed/removed in a day or night. It was further added that a lot of time and arrangements were required for use of gas in the premises of RFO generation. FESCO also stated in its letter dated 17-6-2013 that SEL had no supply from FESCO and confirmed that all preventive measures had been taken to avoid recycling of power.





5. Undertaking/declaration by Sitara Energy Limited

- 5.1. The Authority vide its letter dated LAG-41/10903-05 dated 14th December 2012 allowed SEL to continue supply of power to FESCO subject to an undertaking from SEL that the final decision of NEPRA shall be binding on both parties as and when announced.
- 5.2. SEL vide its letter dated 20th December 2012 submitted an undertaking duly signed by CEO SEL dated 18th December 2012 wherein SEL undertook that any final decision of NEPRA shall be binding on SEL as and when announced.
- 5.3. NEPRA vide its letter No. NEPRA/R/PAR-100/3085-94 dated 1st April 2013 directed CPPA/DISCOs to take a declaration on legal paper from power seller (CPPs/SPPs) that it will settle the claims of its sold electricity as per the rate and terms and conditions as approved by the Authority.
- 5.4. SEL vide its letter No. SEL/FIN/13/213 dated 24th May 2013 requested to extend time of submission of said declaration/undertaking till 10th June 2013 to seek approval from the BoD as the matter of undertaking might have material financial impact on the Company. SEL also provided the copy of the notice of Board meeting. The agenda of the meeting was as under:
- To confirm the minutes of the BoD.
 - Approve the undertaking on legal paper as required by NEPRA as "Power Producer will settle the claims of its sold electricity as per rate, terms and conditions as approved by the Authority in the PAR/Tariff determination pending with NEPRA"
- 5.5. Accordingly, SEL vide its undertaking dated 7th June 2013 submitted that SEL will settle the claims of its sold electricity as per rate, terms and conditions as approved by NEPRA in the PAR pending with NEPRA.

6. Analysis of Tariff

- 6.1. The proposed tariff of Rs. 6.94/kWh was payable on unit delivered basis and comprised of fuel cost component of Rs. 5.41/kWh and fixed O&M of Rs. 1.53/kWh. Component wise analysis of the tariff is provided in the succeeding paragraphs.

7. Fuel Cost Component

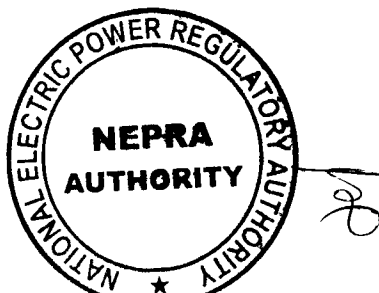
- 7.1. The fuel cost component was subject to adjustment on the basis of actual delivered RFO price against the reference RFO price of Rs. 22,096/ton. Assuming HHV calorific value of





18,364/lb. (40,486/kg.), LHV-HHV factor of 1.05, fuel cost component of Rs. 5.41/kWh and HHV RFO price of Rs. 22,096/ton, the net LHV thermal efficiency works out 36.13%.

- 7.2. SEL has nine diesel engines of Niigata origin out of which eight diesel engines, each of 5.96 MW, are of model 18V32CLX commissioned in 1995 and one diesel engine is of model 12V32CLX commissioned in 2014.
- 7.3. In order to address the major issue of thermal efficiency of the subject power plant, following information was reviewed:
- i. OEM broucher.
 - ii. EPC Guarantees.
 - iii. SEL efficiency calculations along with operational records.
 - iv. SEL audited annual report 2013.
 - v. SEL modified Licenses.
 - vi. Regional benchmarks for degradation factors.
 - vii. Partial usage of steam as produced by waste heat recovery boiler.
 - viii. Regional benchmarks for auxiliary consumption.
 - ix. Comparison with other oil based reciprocating engines operating in NTDCL system.
- 7.4. According to the EPC guaranteed values, LHV gross thermal efficiency is 41.84%. After applying 3.3% auxiliary consumption as per generation license, the net LHV thermal efficiency works out 40.43% for SEL.
- 7.5. While reviewing the available literature in respect of permanent degradation in efficiency on various fuels along with several technologies, it is noted that permanent degradations does happen to a varying degrees in different technologies. The subject power plant has been in operation since 1995, an allowance of 2% for permanent reduction (degradation) in efficiency for 21 years has been considered and allowed. Accordingly, the net LHV thermal efficiency of 38.43% is being approved. Based on the revised efficiency of 38.43%, furnace oil price of Rs. 22,096/ton and HHV calorific value of 40,486 BTUs/Kg., the reference fuel cost component of Rs. 5.09/kWh is being determined against Rs. 5.41/kWh agreed in the draft PPA.
- 7.6. All invoices raised w.e.f. 8-9-2011 shall be recalculated on the basis of revised fuel cost component and FESCO shall recover the excess amount in accordance with the undertakings provided by SEL dated 18-12-2012 and 7-6-2013.





7.7. The reference fuel cost component is based on reference calorific value of 40,486 BTUs/Kg. (18364 BTUs/lb.). The actual calorific value might vary, therefore, SEL shall submit information for adjustment of calorific value and increase/decrease on account of calorific value shall also be adjusted against the revised energy bill. The adjustment in calorific value shall not be allowed below 18,200 BTUs/lb.

8. Fixed Cost Component

8.1. Fixed Cost Component has been defined in the draft PPA as *"The tariff component payable per kWh delivered by the company which includes but not limited to O&M cost, tax on income of the company, insurance cost, return on investment, duties etc."*.

8.2. In the previous agreement period started from 8th September 2007, fixed cost component of Rs. 1.26/kWh was agreed which was later revised to Rs. 1.53/kWh w.e.f. 1st January 2009. Detailed breakup of the fixed cost component was not provided.

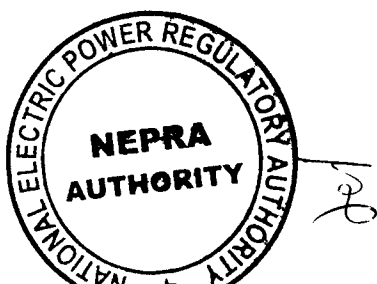
8.3. The Authority has considered the fixed cost component allowed to different technologies under captive utilization. In case of bagasse based captive power plants and gas based captive power plants, fixed cost components of Rs. 1.53/kWh and Rs. 1.17/kWh respectively have been determined. Furnace oil is a dirty fuel and requires more O&M as compared to gas based power generation. The Authority while assessing the variable O&M cost of gas based captive power plants determined a ratio of 2:1 for furnace oil and gas based power plants. Keeping in view the higher O&M cost for furnace oil based captive power generation, the Authority considers that the agreed fixed cost component of Rs. 1.53/kWh is reasonable and is being approved as such.

9. Summary of Tariff

9.1. Summary of the revised tariff is as under:

Description	Rs./kWh
Reference Fuel Cost Component (Ref. RFO Price Rs. 22,096/ton)	5.09
Fixed Cost Component	1.53
Total Generation Cost of delivered unit	6.62

9.2. It is pertinent to mention here that due to certain issues the decision on the instant PAR could not be issued by the Authority. After filing of the PAR by FESCO, M/s SEL filed a Licensee Proposed Modification in the generation license, which was pending adjudication before the Authority. The processing of LPM has its own legal requirements without which it cannot be decided upon. In fact, the decision of the instant PAR was contingent upon the decision of the LPM as the LPM envisaged inclusion of FESCO as a consumer of M/s





SEL. The LPM was finally decided on 12-12-2013. In the meanwhile, the Authority initiated proceedings under the NEPRA (Fines) Rules, 2002 with respect to violation of the terms and conditions of the Generation License and the Distribution License granted to M/s SEL. The opportunity of hearing was provided to M/s SEL and the violations were extensively investigated which consumed much time. Further, there were various other issues involved as FESCO filed the PAR and later on they took a stance against the Power Purchase Agreement which was in contradiction to its previous stance. Disputed facts and stance were submitted by the parties, which made it difficult to adjudicate upon the matter effectively. Further, the afore-referred factors constrained the Authority to issue a decision in the instant PAR earlier.

10. Order

- 10.1. In pursuance of the Regulation 4(1) of the NEPRA Interim Power Procurement (Procedure & Standards) Regulations 2005, Faisalabad Electric Supply Company Limited (FESCO) is granted permission for power acquisition from M/s Sitara Energy Limited (SEL) on take and pay basis. In pursuance of Regulation 5 of the Regulation of IPPR-2005, the power acquisition contract is hereby approved subject to the amendments / changes in the relevant section as per the decision of the Authority.

Reference Tariff

Description	Rs./kWh
Reference Fuel Cost Component (Ref. RFO Price Rs. 22,096/ton)	5.09
Fixed Cost Component	1.53
Total Generation Cost of delivered unit	6.62

10.2. Tariff Adjustments

The reference tariff is subject to following adjustments:

10.2.1 Adjustment on account of Fuel Price Variation

The fuel cost component is subject to adjustment for variation in the furnace oil price from time to time according to the following mechanism:

$$FCC_{(Rev)} = 5.09 \times RFO_{(Rev)} / RFO_{(Ref)}$$

Where:

FCC_(Rev) = Fuel cost component applicable for the billing cycle.





RFO_(Rev) = Revised price per Metric Ton of RFO delivered to the Company by road excluding GST applicable for the Billing Cycle.

RFO_(Ref) = Reference Fuel Price of Rs. 22,096 per Metric Ton.

- 10.3 All invoices raised w.e.f. 8-9-2011 shall be recalculated on the basis of revised fuel cost component and FESCO shall recover the excess amount in accordance with the undertakings provided by SEL dated 18-12-2012 and 7-6-2013.
- 10.4 The reference fuel cost component is based on reference calorific value of 40,486 BTUs/Kg. (18364 BTUs/lb.). The actual calorific value might vary, therefore, SEL shall submit information for adjustment of calorific value and increase/decrease on account of calorific value shall also be adjusted against the revised energy bill. The adjustment in calorific value shall not be allowed below 18,200 BTUs/lb.
- 10.5 FESCO is directed to adjust payments made to SEL in the light of the above order of the Authority w.e.f. 8-9-2011.
- 10.6 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

(Maj (R) Haroon Rashid)
Member

(Syed Masood ul Hassan Naqvi)
Member

(Himayat Ullah Khan)
Vice Chairman

(Brig. (R) Tariq Saddozai)
Chairman



Present
14.04.17