Registrar

National Electric Power Regulatory Authority

Islamic Rebublic of Pakistan

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No.NEPRA/PAR-78/10922-10924
December 14, 2012

Subject: **Decision of the Authority in the matter of Power Acquisition Request filed by Faisalabad Electric Supply Company Ltd. (FESCO) for 2 MW Power Procurement from Shakarganj Sugar Mills Limited (SSML) under NEPRA Interim Power Procurement (Procedures and Standards) Regulations, 2005 [Case # PAR-78]** - Intimation of Decision of Tariff pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997)

Dear Sir,

Please find enclosed herewith the subject Decision of the Authority along with Dissenting Note of Mr. Shaukat Ali Kundi, Member NEPRA (08 pages) in Case No. NEPRA/PAR-78.

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. Please note that only Order of the Authority at para 8 of the Decision relating to the reference tariff etc. needs to be notified in the official gazette.

Enclosure: As above

(Syed Safeer Hussain)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY

Secretary
Ministry of Water & Power
'A' Block, Pak Secretariat
Islamabad

CC:
1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, Islamabad.

National Electric Power Regulatory Authority

(NEPRA)

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Approval of

Power Acquisition Request filed by

Faisalabad Electric Supply Company Limited (FESCO)

For 2 MW Power Procurement from Shakarganj Sugar Mills Limited (SSML)

Under

Interim Power Procurement (Procedures & Standards) Regulations 2005

Islamabad

~~November~~ December 14th, 2012

AUTHORITY

For the reasons recorded in [illegible] of [illegible] 7.2012, I respectfully differ with the majority [illegible] and decline [illegible] for the purchase of power [illegible]

Kundi

11.12.2012

21.11.12

(Khawaja Muhammad Naeem)
Member

(Shaukat Ali Kundi)
Member

21/11/2012

(Habibullah Khilji)
Member

(Retired)

(Ghiasuddin Ahmed)
Acting Chairman

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

NEPRA AUTHORITY

14.12.12

1. Background:

1.1 Faisalabad Electric Supply Company Limited (FESCO) vide its letter No.1595/CSD dated 31-01-2012 filed Power Acquisition Request (PAR) for acquisition of 2 MW Baggase based power from Shakarganj Sugar Mills Limited (SSML) under Regulation 3(2) of NEPRA Interim Power Procurement (Procedures & Standards) Regulations 2005 (hereinafter referred as "IPPR Regulations").

1.2 Considering the acute shortage in power sector and widening gap in the demand supply of electricity, NEPRA vide its advertisement dated 15-06-2007, allowed the Captive Power Producers having capacity less than 50MW to sell electricity to Distribution companies on mutually agreed rates. In this regard NEPRA vide letter dated 28-04-2008 issued guidelines according to which the CPPA and DISCOs were required to file a Power Acquisition Request to NEPRA under IPPR Regulations.

1.3 Taking notice of the fact that DISCOs had not submitted PARs in respect of power purchases from CPPs/SPPs/NCPPs, the Authority vide its letter dated 27-01-2012 directed all DISCOs to file power acquisition requests in respect of energy purchased from all CPPs/ SPPs/ NCPPs, existing or new, in the prescribed manner as laid down in the IPPR Regulations.

1.4 NEPRA noted that permission granted through notice published on 15-06-2007 and subsequent communications were misinterpreted and the relevant Rules and Regulations were not being followed by the DISCOs. In view thereof NEPRA vide advertisement dated 01-02-2012 modified its decision with respect to permission granted through advertisement dated 15-06-2007 and other communications to the extent that all SPPs/ CPPs who intend to sell electric power to DISCOs/ CPPAs/ BPCs will need to either approach NEPRA directly for determination of tariff under NEPRA Tariff (Standards & Procedure) Rules, 1998 or through DISCOs/ CPPA under NEPRA Interim Power Procurement Regulations-2005 ("IPPRs").

1.5 NEPRA vide letter dated 09-02-2012 again advised all DISCOs to submit the requisite PARs to NEPRA duly supported by the information/ documents prescribed under IPPRs. Further, the DISCOs had been informed that any purchase of power by DISCOs/ CPPA without prior permission/ authorization of NEPRA is violation of NEPRA's applicable documents and the licensee shall be liable to be proceeded under the relevant rules for any such violation.

2. Shakarganj Sugar Mills Ltd (Power Producer)

2.1 Shakarganj Sugar Mills Limited (SML) is a Captive Power Producer (CPP). The term Captive Power Producer (CPP) has been defined as "Industrial undertaking or other businesses carrying out the activity of power production for self consumption, who intends to sell the power, surplus to their requirement, to a Distribution Company or bulk-power consumer".

2.2 SSML has the generation license for 12MW bagasse-based thermal generation facility consisting of 2 engines/generators of 6 MW each. The power plant was commissioned in 2005

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY
14.12

and is located at Jhang Sargodha Road, Bhone, Distt Jhang. The plant has already completed 7 years of useful life and has a remaining life of about 43 years; therefore, the term of its generation license is also 43 years.

3. Proceedings:

3.1 The Authority on April 19, 2012 admitted the PAR submitted by FESCO, pursuant to Regulation 4(1) of the IPPR Regulations. Although the IPPRs do not require for giving public Notice of Admission of PAR seeking comments/replies but in order meet the ends of natural justice, notice of admission with the title and brief description of the PAR was published in the leading newspapers on April 28, 2012. Comments/replies were desired from any interested/affected person/parties within 14 days of the publication. In response thereof, no comments were received.

3.2 Pursuant to regulation 5(1) of the IPPRs, before executing a power acquisition contract, a DISCO is required to file its proposed contract for its approval by the Authority. FESCO, along with the above PAR also submitted the proposed Power Purchase Agreement (PPA) for the approval of the Authority. Salient features are as under;

i. SSML commissioned a Captive Power Plant (CPP) of 12 MW capacity located at 57 km, Jhang Sargodha Road, Bhone, Jhang in 2005.

ii. SSML has offered 2 MW Bagasse based redundant/ surplus power to FESCO and FESCO intends to purchase this power from SSML.

iii. FESCO has submitted a proposed agreement to be executed between FESCO and SSML as per clause 5(1) of the IPPR 2005. The draft agreement is based on PEPCO approved sample PPA on bagasse based power.

iv. After signing of agreement, 1 MW power will be immediately available for dispersal into the FESCO system being the redundant/ surplus power available with SSML.

v. The interconnectivity setup of 11 kV voltage will be through existing 11 kV Shakarganj Mills Feeder meant for supplying power to sugar mills during non crushing/ non power generating period.

vi. SSML will provide up to 2 MW of power on Take-and-Pay basis at 11 kV and at 50 HZ frequency with a tolerance of ±2.5% in nominal voltage and ±1% in nominal frequency.

vii. Cost of synchronization arrangement will be borne by the power producer while the cost of connectivity at 11 kV will be borne by the Power Purchaser.

viii. The initial term of the PPA will be one year from the date of signing of the agreement which could be extended with mutual consent of both the parties.

4. Requested Tariff:

4.1 FESCO in its PAR stated that the tariff proposed in the PPA was introduced by CPPA in accordance with NEPRA memo No. NEPRA/R/LAG-60/7320 dated 28th April, 2008, in which NEPRA issued guidelines for generating company to sell power (surplus or installed) to a

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
14.12.12
NEPRA
AUTHORITY

distribution company provided that the generating company is a licensee of NEPRA and DISCOs are required to file a power acquisition request to NEPRA as per NEPRA Interim Power Procurement Regulations. The guideline regarding generation tariff is reproduced as under:

> "A person with an installed capacity less than 50 MW can sell power to a DISCO or a power purchaser at mutually agreed rates. In case of a DISCO, a certificate is required confirming that consumer-end tariff will not be increased".

4.2 FESCO further stated that CPPA approved tariff was Rs.5.15 /kWh on energy delivered basis comprising of Fuel Cost Component of Rs.3.62/kWh, based upon Reference Gas Price of Rs.238.38 / MMBTU and Fixed Cost Component of Rs.1.53/kWh excluding General Sales Tax (GST). As per the mechanism provided in the PPA, the Fuel cost component is adjustable as per the following formula:

$$FCC_{(Rev)} = GP_{(Rev)} / GP_{(Ref)} * FCC_{(Ref)}$$

Where:

$FCC_{(Rev)}$	=	Fuel Cost Component applicable for the Billing Cycle
$GP_{(Rev)}$	=	Revised Gas Price, excluding GST for the Billing Cycle as notified by OGRA for WAPDA power stations
$GP_{(Ref)}$	=	Reference Gas Price i.e Rs. 238.38 / MMBTU (HHV)
$FCC_{(Ref)}$	=	Rs. 3.62/ kWh

4.3 According to the PPA submitted by FESCO, the Power Purchaser will pay the company (SSML) the Fuel Cost Component and Fixed Cost Component against the delivered kWh on Take-and-Pay basis.

5. Prudency of Requested Tariff:

5.1 In order to examine the prudency of the power acquisition and the agreed terms and conditions as per the Section 7(3)(a) of NEPRA Act read with the provisions of IPPRs a detailed exercise was carried out by the Authority. In this regard the tariffs of the regional countries were also compared in addition to the benchmarks established by the Authority in similar technology.

5.2 The findings, analysis and decisions of the authority on different aspects / ingredients of the tariff, negotiated and agreed between FESCO and SSML is as under:

5.2.1 Fuel Cost Component

5.2.1.1 In order to analyze the prudency of the tariff requested by FESCO, the fuel cost component as approved by CPPA and agreed in the PPA, (At Reference Gas Price of Rs. 238.38/MMBtu = Rs.3.62/kWh and at current gas price of Rs. 460/MMBtu worked out as Rs. 6.9855/kWh) was analyzed to assess the efficiency at which this component was calculated. Accordingly, a

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
NEPRA
AUTHORITY
14.12.12

detailed study of the cogeneration bagasse-based power plants based on the available information in the neighboring countries was carried out.

5.2.1.2 The Authority has noted that the sugar industry across the world has traditionally used bagasse-based cogeneration for achieving self-sufficiency in steam and electricity as well as economy in operations. Technologies are now available for high-temperature/high-pressure steam generation using bagasse as fuel. These technologies make it possible for sugar mills to operate at higher levels of efficiency and generate more electricity than what they require. All over the world the sugar industry is in the process of installing high pressure boilers and extractions condensing or straight condensing machines with the view of selling excess power to the grid or to a third party. Sugar Industry has been witnessing significant advancement in boilers used for cogeneration. This advancement is primarily in the Pressure and Temperature ratings of steam along with Steam Generation capacity for more output with reduced bagasse consumption.

5.2.1.3 The studies indicate that the efficiency for bagasse based co-generation plant in the range of 11% to 36% is achievable. The Authority, however, considers that such high efficiency can be achieved only in the case of new projects. Since the instant tariff is being considered for the project which is already installed with the low pressure boilers and in the instant case such a high efficiency of may not be achievable. The Authority has also noted that the agreed efficiency of 22.49% is very close to the efficiency to the efficiency of 23.89% fixed by Electricity Regulator in the neighboring country. Further, this efficiency is also very close to the efficiency of 24.5% determined by the Authority in the case of SSJD Bio-mass project. The main reason for 2% low efficiency as compared to determined efficiency of 24.5% in the case of SSJD is that SSML power plant is 7 years old and based on low pressure boiler.

5.2.1.4 In view of the aforementioned reasons the Authority has decided to accept the efficiency level of 22.49% of the bagasse based co-generation power plants which are already in operation. The fuel cost component shall be adjusted according to the following formula:

$FCC_{(Rev)} = GP_{(Rev)} / GP_{(Ref)} * FCC_{(Ref)}$

Where:

$FCC_{(Rev)}$	=	Fuel Cost Component applicable for the Billing Cycle
$GP_{(Rev)}$	=	Revised HHV Gas Price per MMBtu excluding Gas Development Infrastructure Cess (GDIC) net of GST for the Billing Cycle as notified by OGRA for Captive power stations
$GP_{(Ref)}$	=	Reference Gas Price i.e Rs. 238.38 / MMBTU (HHV)
$FCC_{(Ref)}$	=	Rs. 3.62/ kWh

5.2.2 <u>Fixed Cost Component</u>

5.2.2.1 In the PPA, FESCO and SSML have agreed Rs. 1.53/kWh as fixed cost component. In order to assess the reasonability of the fixed charges requested by the FESCO the agreed fixed cost component has been compared with the fixed cost component allowed/determined by the Authority in comparable projects. While comparing the fixed cost component, the Authority

POWER REGULATORY
14.12.12
NEPRA
AUTHORITY
NATIONAL ELECTRIC

noted that in the case of baggase based CPPs, the crushing season is about four months. Since the operating time for baggase based Co-generation plant is less than the normal generation projects, therefore, the fixed cost component has to be recovered from lesser units generated due to which the per unit fixed cost component would be on higher side. Keeping in view the aforesaid reason, the Authority after consideration of fixed cost component in comparable cases, is of the opinion that the agreed fixed cost component of Rs.1.53/kWh is reasonable therefore has decided to allow as such.

5.2.2.2 The Authority while going through the PPA submitted by FESCO, observed that under Fixed Cost Component, the validity of this component is fixed till 31-12-2008 which is incorrect and needs to be corrected. Therefore, FESCO is directed to make following amendment in the proposed PPA under Fixed Cost Component clause:

"Fixed Cost component" *– The tariff component payable @ Rupees 1.53 per kWh delivered, by the Company which included but not limited to O&M cost, tax on income of the Company, insurance cost, return on investment, duties, etc. This component will remain fixed till the expiry of the terms of this contract."*

6. The Authority also directed FESCO to provide the information on Form II of Schedule-I as per Rule 3(4) of the Regulations as well as certificate confirming that "as a result of the above power acquisition from SSML, the consumer-end tariff of FESCO will not increase." Accordingly FESCO provided the relevant information.

7. In light of the above discussion, the Authority has decided to approve the Power Acquisition request and Power Acquisition Contract filed by FESCO for acquisition of 2 MW power from Shakarganj Sugar Mills subject to amendment indicated at para 5.2.2.2 of the above decision.

8. ORDER

8.1 In pursuance of the Regulation 4(1) of the NEPRA Interim Power Procurement (Procedure & Standards) Regulations 2005, Faisalabad Electric Supply Company (FESCO) is granted permission for power acquisition from Shakarganj Sugar Mills Ltd. (SSML) on take and pay basis. In pursuance of Regulation 5 of the Regulation of IPPR-2005 read with Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, 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
Fuel Cost Component (Gas Price Rs. 238.38/MMBTU)	3.62
Fixed Cost Component	1.53
Total Generation Cost of delivered unit	**5.15**

8.2 The fuel cost component shall be adjusted according to the following formula:

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY NEPRA AUTHORITY 14.12.12

$$FCC_{(Rev)} = GP_{(Rev)} / GP_{(Ref)} * FCC_{(Ref)}$$

Where:

$FCC_{(Rev)}$	=	Fuel Cost Component applicable for the Billing Cycle
$GP_{(Rev)}$	=	Revised HHV Gas Price per MMBtu excluding Gas Development Infrastructure Cess (GDIC) net of GST for the Billing Cycle as notified by OGRA for Captive power stations
$GP_{(Ref)}$	=	Reference Gas Price i.e Rs. 238.38 / MMBTU (HHV)
$FCC_{(Ref)}$	=	Rs. 3.62/ kWh

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

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
14.12.12
NEPRA
AUTHORITY

DISSENTING NOTE OF MR SHAUKAT ALI KUNDI, MEMBER NEPRA IN THE MATTER OF POWER ACQUISITION REQUEST FILED BY FESCO FOR ACQUISITON OF 2 MW POWER FROM SHAKARGANG MILLS LIMITED (REGULATORY MEETING 12-350) HELD ON JUNE 07, 2012

I respectfully differ with the decision of the Authority on the following grounds and decline the PAR of Fesco in the matter of M/S Shakarganj Mills Limited:

a) The PAR has not been filed competently for the reason that the POA by the BOD of Fesco authorizing FESCO Chief to file this PAR on behalf of FESCO has not been filed along with the petition.

b) The PAR has not been filed in accordance with express provisions of IPPR Regulations, 2005. Since it is Power Acquisition Request (PAR) it is required to be processed strictly.

c) More importantly, the sponsor in the working paper has calculated efficiency of the plant as 22.4%, whereas the authority has already determined efficiency as 24.5% for the plants operating on baggase. The efficiency of SML is about 2% less than what has been already determined by the Authority for the plants operating on baggase. The benchmark already established by the Authority must be followed.The FESCO and M/s Shakargang Sugar Mills Limited is therefore required to provide evidence that how this efficiency has been worked out.

Shaukat Ali Kundi

(Shaukat Ali Kundi) 04.07.2012

Member (Licensing)

NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
14.12.12
NEPRA
AUTHORITY