

No.: N/111/16

**BEFORE THE KARNATAKA ELECTRICITY REGULATORY COMMISSION,
BENGALURU**

Dated : 2nd February, 2017

Present:

Shri M.K. Shankaralinge Gowda	..	Chairman
Shri H.D. Arun Kumar	..	Member
Shri D.B. Manival Raju	..	Member

OP No.78 / 2016

BETWEEN:

Welspun Renewables Energy Pvt. Ltd.,
3rd Floor, PTI Building,
4, Parliament Street,
New Delhi – 110 001 ..

PETITIONER

[Represented by Navayana Law Offices, Advocates]

AND:

- 1) Bangalore Electricity Supply Company Limited,
K.R. Circle,
Bengaluru – 560 001.
- 2) Karnataka Renewable Energy Development Limited,
No.39, "SHANTHIGRUHA"
Bharath Scouts & Guides Building,
Palace Road,
Bengaluru – 560 001. ..

RESPONDENTS

*[Respondent-1 represented by Just Law, Advocates,
Respondent-2 represented by Shri G.S. Kannur, Advocate]*

ORDERS

- 1) In this Petition, the Petitioner has prayed for the following reliefs:
 - “(a) To issue directions to the Respondent to purchase additional energy produced in the initial years of the PPAs at the rate of Rs.6.51 per unit in accordance with the tariff order passed by this Hon’ble Commission dated 30.07.2016.*
 - (b) To issue directions to the Respondent to procure the additional power generated by the Petitioner’s Projects for the initial years beyond 91.980 MUs per annum. While operating at more than 21% CUF; and to enter into a suitable arrangement with the Petitioner in the form of supplementary PPA to formalize such procurement,*
 - (c) Pass such other and further order or orders as this Hon’ble Commission deems appropriate in the facts and circumstances of the present case.”*

- 2) The material facts required for the disposal of the present Petition may be stated as follows :
 - (a) The Petitioner has entered into two Power Purchase Agreements (PPAs), both dated 14.1.2015, with the 1st Respondent – Bangalore Electricity Supply Company Limited (BESCOM) for sale of Solar energy from its two Solar Photo Voltaic (PV) Plants of 50 Mega Watts (MWs) each, as described in the respective PPAs. In both the PPAs, Article 5.6, which deals with the ‘Right to Contracted Capacity and Energy’, reads thus :

“5.6 Right to Contracted Capacity & Energy

5.6.1 *BESCOM, at any time during a Contract Year, shall not be obliged to purchase any additional energy from the Developer beyond 91.980 Million kWh (MU) (Insert value of energy generated corresponding to a maximum CUF of 21% for solar PV (new projects) and maximum CUF of 24% for solar thermal projects (new projects). Provided that in case of solar projects using advanced technologies, the value of CUF shall be the average CUF committed by the Developer at the point of signing the PPA). If for any Contract Year, it is found that the Developer has not been able to generate minimum energy of 52.56 Million kWh (MU) (Insert value of energy generated corresponding to a CUF of 12% for solar PV (new projects) and CUF of 16% for solar thermal projects (new projects) and further provided that in case of solar projects using advanced technologies, the value of CUF shall be 7% below the average CUF committed by the Developer at the point of signing the PPA), on account of reasons solely attributable to the Developer, the non-compliance by Developer shall make Developer liable to pay the compensation provided in the Agreement as payable to BESCOM. This compensation shall be applied to the amount of shortfall in generation during the Contract Year. This amount of compensation shall be computed at the rate equal to the compensation payable by the BESCOM, towards non-meeting of RPOs subject to a minimum of 25% of the applicable tariff.”*

- (b) The Petitioner has not opted for increase of the Capacity Utilization Factor (CUF) at the time of executing the PPAs, intending to use the advanced technology for solar power generation in its Projects. Therefore, the 1st Respondent (BESCOM) at any time during a

Contract Year shall not be obliged to purchase any additional energy from the Petitioner beyond he contracted 91.980 MUs from each of the Petitioner's Projects, as provided under Article 5.6 of the PPAs.

- (c) While implementing the Projects the Petitioner installed certain additional advanced modules of the Solar PV Plants over and above the contracted capacity of 50 MW under each PPA. Therefore, the Petitioner is expecting additional energy generation over and above the contracted energy of 91.980 MUs from its Projects. The reasons stated by the Petitioner, in its letter dated 20.5.2016, to install the additional and advanced modules for its Project are as follows :

- “1. Degradation: Solar PV modules due to their I-V graph characteristic are bound to degradation to the tune of 2.3% per year in the initial years...which then stabilizes at 0.3-0.5% per year later. To factor in for this, an upward DC capacity (and hence no. of modules) has been considered in the designing of the project and hence an increased output of 3% is envisaged.*
- 2. Enhanced Module Output: Module technology is upgrading regularly and du to this, the output from the same size/configuration module has increased. A 72 cell of rating 305 Wp is now providing output of 315 Wp. Hence within the same structure and module table, an increased output of 3% is envisaged.*
- 3. Enhanced Performance Ratio: There are losses between the DC output of the solar modules and the AC power delivered to the grid, due to a wide range of factors such as light absorption losses, mismatch, cable voltage drop, conversion efficiencies, and other parasitic losses. The consideration of above factors leads to a parameter called the 'performance ratio' to evaluate the total value of these losses. With technological advancement and increased on field*

experience the above ratio has now bettered to 80% range compared to a 75% range earlier (considered in designing of the plant).

4. *Irradiation:* *Due to variability of real irradiation compared to metronome / MNRE data as considered while designing, there is a possibility of 1-2% actual generation vs considered generation.*

The first 2 parameters have now led to a dual effect on the output. No. of modules were increased to accommodate the initial degradation and further these modules are at a higher output. This combined with enhanced performance ratio and better irradiation, may actual lead to an output 12-15% higher than actually considered in initial years. Hence the plant designed for 21% CUF may with same components, give CUF in range of 24-25% in initial years."

The Petitioner wrote letters to the 1st Respondent (BESCOM) to make suitable provisions in the PPAs for purchase of the additional energy generated by its Solar Plants beyond the contracted energy.

- (d) The 1st Respondent (BESCOM) was of the opinion that, purchase of additional energy at a higher rate would be a financial burden on it and that, if the proposal of the Petitioner was agreed to, the other Solar Power Developers might also request to allow the increase in the CUF at actuals, every year, by providing additional and advanced Solar PV Modules. Therefore, the 1st Respondent (BESCOM) replied to the Petitioner expressing its unwillingness to purchase the additional energy from the Petitioner. In its Statement of Objections filed in this case, the 1st Respondent (BESCOM) has offered, as a last resort, to purchase the additional energy from the Petitioner at the Average

Power Purchase Cost of ₹4.11 per unit, as approved by this Commission in its Tariff Order, 2016.

3) We have heard the learned counsel for the parties on their respective contentions.

4) The following issues would arise for our consideration :

(1) Whether this Commission can determine the rate payable by the 1st Respondent (BESCOM) to the Petitioner for the additional energy beyond 91.980 MUs from each of the Petitioner's Projects?

(2) If Issue No.(1) above is held in the affirmative, what shall be the rate payable for the additional energy supplied?

(3) What Order?

5) **ISSUE No.(1)** : *Whether this Commission can determine the rate payable by the 1st Respondent (BESCOM) to the Petitioner for the additional energy beyond 91.980 MUs from each of the Petitioner's Projects?*

(a) In Paragraph-24 of the Petition, the Petitioner has stated that, the PPAs entered into between the parties do not address themselves for purchase of any additional energy beyond the contracted capacity and energy. Further, the Petitioner states that, the PPAs have to be

construed in a manner, to make the same commercially efficacious. In Paragraph-27 of the Petition, the Petitioner has stated that, there is no express prohibition in the PPAs for upward revision of the CUF. The 1st Respondent (BESCOM) has not specifically denied these facts. A perusal of the Request For Proposal (RFP) or the PPAs does not contradict the above statements of the Petitioner. The 1st Respondent (BESCOM) has expressed its unwillingness to purchase the additional energy for the reasons stated above. However, the 1st Respondent (BESCOM) has stated in its Statement of Objections that, the additional energy, if any, to be injected may be paid at the Average Power Purchase Cost of ₹4.11 per unit, as approved by this Commission in its Tariff Order, 2016. In its Rejoinder the Petitioner has stated that, the 1st Respondent (BESCOM)'s offer at ₹4.11 per unit is completely illogical. The Petitioner has stated that, the Central Electricity Regulatory Commission (CERC), in its generic Tariff Order for FY 2016-17 dated 30.3.2016, has determined a levelized tariff for FY 2016-17 for Solar PV Plants at ₹5.68 per unit. The Petitioner in its Petition has requested to allow a tariff of ₹6.51 per unit as applicable to its Projects.

- (b) On the facts and in the circumstances of the case narrated above, we are of the considered view that, this Commission has jurisdiction to determine a rate at which the additional energy injected by the Petitioner shall be purchased by the 1st Respondent (BESCOM).

(c) Under Section 86(1)(b) of the Electricity Act, 2003, this Commission has to regulate the electricity purchase and the procurement process of the Distribution Licensees, including the price at which the electricity shall be procured from the Generating Companies. The PPAs provide for an option for the 1st Respondent (BESCOM) to purchase the additional energy. The difference between the parties is regarding the rate at which the additional energy is to be purchased. Hence, we answer Issue No(1) in the affirmative.

6) **ISSUE No.(2):** *If Issue No.(1) above is held in the affirmative, what shall be the rate payable for the additional energy supplied?*

The question of generation of additional energy may occur only during the initial few years from the commissioning of the Plants. The Petitioner itself has stated that, the additional modules have been installed over and above the contracted capacity of 50 MWs in each of the Projects. The terms of the PPAs do not permit or authorize the Petitioner to install additional modules exceeding the contracted capacity. The Petitioner is permitted only to install the advanced modules so as to achieve higher CUF than the 21% CUF agreed in the PPAs. If the 1st Respondent (BESCOM) had refused to purchase the additional energy, this Commission could not have compelled it to purchase the additional energy. In the Bid proceedings relating to the Solar power concluded in January, 2016, the lowest rate discovered was ₹4.69 per unit relating to a 20 MW Project. This Commission has adopted the said tariff. For the above reasons, we are of the

considered view that, for the additional energy, if any, supplied by the Petitioner, a tariff of ₹4.11 per unit offered by the 1st Respondent (BESCOM) appears to be a reasonable price and shall be the rate payable for the additional energy supplied during the term of the PPAs. Therefore, we answer Issue No.(2), accordingly.

7) **ISSUE No.(3)** : *What Order?*

For the foregoing reasons, we pass the following :

ORDER

- (1) The above Petition is partly allowed;
- (2) The 1st Respondent (BESCOM) is directed to purchase the additional energy, if any, injected from the Petitioner's Projects at ₹4.11 (Rupees Four and Paise Eleven) only per unit during the term of the PPAs; and
- (3) Accordingly, Supplemental Agreements incorporating the additional term in the two Power Purchase Agreements dated 14.1.2015, regarding the purchase of additional energy, be entered into by the parties.

Sd/-
(M.K. SHANKARALINGE GOWDA)
CHAIRMAN

Sd/-
(H.D. ARUN KUMAR)
MEMBER

Sd/-
(D.B. MANIVAL RAJU)
MEMBER