

**PUNJAB STATE ELECTRICITY REGULATORY COMMISSION  
SCO NO. 220-221, SECTOR 34-A, CHANDIGARH**

**Petition No. 44 of 2012  
Date of Order: 17.10.2012**

In the matter of : Petition under Section 86 of the Electricity Act, 2003 for fixation of tariff for Biogas Based Power Plants based upon Biomethanation technology  
(The petitioner is in the process of erection & commissioning of 4 MW capacity Biogas based Power Project at Village Binjon, District Hoshiarpur, therefore, for the purpose of payment of fee, the applicable capacity of the Project is 4 MW)

AND

In the matter of: Green Planet Energy (P) Ltd. having its Corporate at ENPAR HOUSE, Ambika Mills Compound, 11-12, Senapati Bapat Marg, Mahalaxmi, Mumbai-400013 and Project office at SCO 142-143, 2<sup>nd</sup> Floor, Sector 34-A, Chandigarh.

Versus

1. State of Punjab through the Secretary to Govt. of Punjab, Department of Science, Technology, Environment and Non-Conventional Energy, Civil Secretariat, Chandigarh.
2. Punjab State Power Corporation Limited (formerly known as Punjab State Electricity Board) having its Head Office at the Mall, Patiala through its Chairman.
3. Punjab Energy Development Agency (PEDA) under the Department of Science, Technology, Environment and Non-Conventional Energy having its Office at Plot No.1 & 2, Sector 33-D, Chandigarh.

Present: Smt. Romila Dubey, Chairperson  
Shri Virinder Singh, Member  
Shri Gurinderjit Singh, Member

**ORDER**

1. This petition has been filed by Green Planet Energy (P) Ltd. having its Corporate office at Enpar House, Ambika Mills Compound, 11-12, Senapati Bapat Marg, Mahalaxmi, Mumbai-400013 and registered office at Village Bir Pind, Tehsil Nakodar, District Jalandhar, in the State of Punjab, under section 86 of the Electricity Act, 2003

(Act) for revision of tariff in respect of its 4 MW bio-gas based power plant (Otto cycle) under erection and commissioning at village Binjon, Tehsil Garhshankar, Distt. Hoshiarpur, Punjab. The total capacity of the generating facility is stated to be 10 MW and tariff for the 6 MW bio-mass based power plant/unit based on Rankine cycle was allowed by the Commission in its Order dated 13.01.2011 in petition no. 29 of 2010 filed by the petitioner wherein petitioner is stated to have reserved the right to file a separate petition for the above said biogas based power project.

2. It has been averred that the Central Electricity Regulatory Commission (CERC) determined the generic tariff w.e.f 01.04.2012 for renewable energy power projects (RE projects) vide which tariff for biogas based power projects has been fixed as Rs. 6.44 per kWh with base year as FY 2012-13. The petitioner has pleaded for higher tariff over and above allowed by CERC and brought out the following for consideration of the Commission:

i) Project Capital Cost:

The capital cost considered by CERC for above projects is Rs. 800 lac per MW, net of subsidy but it has to incur higher capital cost to set up the plant as explained hereunder:

a) As per MNRE norms, maximum subsidy per location is fixed at Rs. 600 lac even if the capacity exceeds 2MW. Therefore, for 4 MW capacity biogas based power project, the subsidy shall be Rs.600 lac only. However, CERC norms have considered the subsidy of Rs.300 lac per MW as per MNRE circular F.No.10/1/2011-U&I dated 02.05.2011.

b) The plant(s) are being set up with state of the art technology from Envitec Biogas AG, Germany and are technologically superior in feedstock mixing and gas generation, which is one of the factors responsible for higher capital cost.

c) The state of the art Digestate treatment system is equipped to re-circulate the water back to the system for reuse after it is separated from the solids and 50% of the total water requirement shall be met by re-circulated water. The capital cost of the Digestate treatment is Rs.3.00 crore approximately including installation.

ii) Operation & Maintenance Cost:

CERC Order mentions Rs.40 lac per MW as the O&M Cost. Bio-gas power plants incorporate Gas Engines, which have significantly higher maintenance

cost. Also large number of rotating machinery in feedstock input & mixing system, digester mixing system, digestate transportation and treatment systems increase the O&M costs substantially. Feedstock as well as digestate is corrosive and this necessitates extensive use of stainless steel and hermetically sealed devices which increases spares and repairs cost.

Haryana Electricity Regulatory Commission in its tariff order dated 21.09.2010 related to Poultry litter based biogas power plant of Green Indus Bio Energy has approved 6% as O & M cost. For the plants being set up by the petitioner, the O & M cost works out to be Rs.45 lac per MW.

iii) Fuel Cost:

For biomethanation technology (bio-gas based power project), biomass has to be used with high percentage of moisture for efficient digestion and therefore biomass needs to be shredded immediately on receipt at the storage area and silaged for retaining moisture and enhancing lactation for better gas yield. This involves handling and transportation of 48,000 MT of biomass over a period of just 30-40 days for meeting the annual requirement. Also, 36,000 MT of cattle dung per year would be collected and transported from near and far away villages in customized spill free containers. For the purpose, tractors, trolleys, shredders, containers etc. would be needed and the cost of these equipments will have to be amortized over a period of 5 years which works out to about Rs.90 per MT. Accordingly, the fuel cost has been worked out as Rs.1080 per MT (Rs.990 per MT as per CERC norms + Rs.90 per MT as amortization).

3. The petitioner has submitted that the project specific tariff has been worked out as Rs.6.93 per kWh as per details in Annexure VI of the petition. The petitioner has further submitted that it had signed the Power Purchase Agreement (PPA) (Annexure VII of the petition) with the erstwhile Punjab State Electricity Board (PSEB, now Punjab State Power Corporation Limited; PSPCL) for sale of power from its 10 MW power project (6 MW Rankine cycle + 4 MW Otto Cycle i.e biomethanation). The petitioner has averred that initially the PPA was signed with PSEB and at that time generic tariff for Biomethanation project (bio-gas based power project) had not been determined by CERC. The petitioner has submitted that initially the PPA with the erstwhile PSEB was signed under compulsion for raising finances from financial institutions. The said PPA has already been amended in terms of the Commission's Order dated 13.01.2011 for

tariff in respect of 6 MW Rankine cycle based unit. Copy of the Amendment 1 of the PPA signed with PSPCL is attached as per annexure VIII.

4. The petitioner has submitted that with respect to biomethanation project (bio-gas based power project), even PSPCL vide their letters attached as Annexure IX (a) & IX (b), has asked the petitioner to get the tariff re-determined from the Commission by filing the Petition.

5. The petitioner prayed for revising the tariff rate in respect of bio-gas based power plant(s) (Otto cycle) as Rs.6.93 per kWh with 5% escalation per year with direction to PSPCL to re-open the PPA and allow revised tariff as determined by the Commission.

6. The petition was heard on 11.09.2012 and admitted vide Order dated 13.09.2012 and the respondents Government of Punjab, Punjab State Power Corporation Limited and Punjab Energy Development Agency were directed to file their replies by 27.09.2012.

7. The petitioner in the hearing on 11.09.2012, voluntarily agreed to accept generic levelled tariff as per Commission's Order dated 19.07.2012 in petition no. 35 of 2012 (Suo-motu) vide which tariff for bio-gas based power projects has also been fixed as Rs.6.44 per kWh for projects to be commissioned in FY 2012-13.

8. The petitioner, further, vide its submission dated 13.09.2012 has prayed that tariff rate of Rs.6.44 per kWh applicable for FY 2012-13 in respect of bio-gas based projects (Otto cycle) may be allowed in terms of the Order of the Commission dated 19.07.2012 while further reiterating its earlier prayer in the petition for directing PSPCL to reopen the PPA and allow revised tariff as determined by the Commission.

9. PEDDA in its reply dated 03.10.2012 submitted that it concurs with the prayer of the petitioner vide submission dated 13.09.2012 for grant of generic tariff determined by the Commission for the project as per the revised prayer of the petitioner and further informed that Ministry of New and Renewable Energy, in response to PEDDA's letter, extended the date of commissioning of the project upto 31.10.2012 [Annexure III (b) of the petition]. In the para wise reply, PEDDA has submitted that there is no justification in the reasoning given by the petitioner for allowing higher capital cost, O & M cost and fuel cost stating that these have already been considered by CERC while determining the generic tariff.

10. Further, PEDDA vide its submission dated 08.10.2012 requested that the reply filed by PEDDA dated 03.10.2012 be considered as joint reply of PEDDA and Government of Punjab in terms of letter dated 27.09.2012 from the State Government.

11. PSPCL in its reply dated 08.10.2012 brought out verbatim the sections 61, 62 and 86 of the Electricity Act, 2003 stating that the said provisions provide that the Commission is empowered to determine/re-determine the tariff for supply of power though such determination is not discretionary and is guided by certain provisions of the Act. PSPCL further submitted as under:

- i) The petitioner entered into a Power Purchase Agreement with the respondent on 14.10.2009 for the purchase of power from the 10 MW project located at village Binjon, Tehsil Garhshankar, District Hoshiarpur. The generating facility of 10 MW comprised of one unit of 6 MW based on Rankine Cycle and another unit of 4 MW capacity based on Otto cycle. The Commission determined the tariff for purchase of power as applicable to biomass based power projects as per its Order dated 13.12.2007 applicable to project implemented under the NRSE policy 2006 with no differentiation of tariff for purchase of power from Rankine Cycle or Otto cycle based units as per clause 2.1.1 of the Power Purchase Agreement.
- ii) The Commission vide its Order dated 13.01.2011 in petition no.29 of 2010 filed by the petitioner, approved that the petitioner will be entitled to generic tariff determined by the Commission for the year in which each of its generating units achieve COD for the three biomass based power plants of 6 MW each located at village Binjon, District Hoshiarpur, village Bir Pind, District Jalandhar and village Manuke Gill, District Moga.. The Commission determined the tariff after considering the relevant factors including the subsidy etc. for the 6 MW project in its Order dated 13.01.2011 and as such the tariff was not determined for the 4 MW project and in case of any such issue, the determination of the tariff would be done only by the Commission.
- iii) Amendment No.1 of the PPA for Binjon project was signed on 27.07.2012 with the petitioner wherein, the tariff applicable for biomass based power projects as per generic tariff order passed by the Commission for the project to be commissioned in the year 2012-13 was incorporated for purchase of power from 6 MW Rankine cycle unit only.

- iv) The instant petition has been filed by the petitioner for determination of tariff for its 4 MW capacity unit at village Binjon based on Otto cycle claiming tariff of Rs.6.93 per kWh with 5% escalation per year till the matter of further revision of rates is reconsidered by the Commission. The Commission has determined the tariff of Rs.6.44 per kWh vide tariff Order dated 19.07.2012. The petitioner may seek the determination of tariff for the 4 MW project since the same had not been determined for the instant project. The petitioner has admitted to being granted the tariff of Rs.6.44 per kWh determined by the Commission and as such higher tariff would not be justified.
- v) Perusal of the Order dated 13.09.2012 also shows that the petitioner voluntarily agreed to accept generic levellised tariff as per the Commission's Order dated 19.07.2012 in petition no.35 of 2012 vide which tariff for bio-gas based projects has been fixed as Rs.6.44 per kWh. The demand for tariff of Rs.6.93 per kWh is thus unsustainable and liable to be rejected.
- vi) There are certain factual aspects that are essential to be brought to the notice of the Commission. The Central Electricity Regulatory Commission, vide notification no. L-1/94/CERC/2011 dated 06.02.2012 notified Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 wherein besides specifying norms for the technologies covered in CERC RE Regulations 2009 i.e. Biomass, Non-fossil fuel based co-generation, Small Hydro, Solar (PV & Thermal) & Wind, norms had also been specified for two more RE Technologies i.e. Biomass gasifier and Biogas. These Regulations are effective from 01.04.2012 and shall remain in force for a period of 5 years subject to certain proviso specified in the Regulation 5. Subsequently, CERC determined the generic levellised tariff for the renewable energy power projects for FY 2012-13.
- vii) The Punjab State Electricity Regulatory Commission in its Order dated 19.07.2010 in petition no.35 of 2012 (Suo-motu) had, in order to formulate its own Regulations on Terms and Conditions for tariff determination from renewable energy sources as also to determine generic levellised tariff for the renewable energy power Projects for FY.2012-13, directed that a Staff Paper on the same be prepared. Accordingly, the Staff Paper was prepared and a Public Notice was published on 14.04.2012 in the leading newspapers inviting comments /suggestions from various stakeholders by 15.05.2012 .The

Commission took on record and considered all the objections received. A public hearing was also held by the Commission in this regard on 08.06.2012 after issuing a public notice in newspapers on 19.05.2012. The firms/developers who submitted their comments included the petitioner. Therefore a fair opportunity of being heard has already been awarded to the petitioner on the question of determination of Tariff. The Commission had, after taking into account all relevant factors had provided the generic levelled tariff for the various types of renewable energy projects/technologies to be commissioned during the year 2012-13. The factors influencing the cost of generation of power like the technology used, fuel cost or fuel cost escalation were considered by the Commission while determining the generic levelled tariff for the RE projects. The petitioner has failed to illustrate any such factor which has been approved/authorized by the appropriate authority/Commission so as to entitle it to a tariff over and above the tariff determined by CERC and/or this Commission. Therefore, the contentions raised by the petitioner are liable to be rejected.

- viii) The Net Applicable Tariff rate for the biogas based power projects (as that of the petitioner) after taking into effect the benefit of accelerated depreciation if availed by the developer was determined as Rs.6.23 per kWh. As such the generic tariff for the biogas based power projects to be commissioned in the year 2012-13 as of the petitioner's biogas based power plant has already been determined by the Commission. Therefore, the prayer of the petitioner to re-determine the tariff for its 4 MW project as Rs. 6.93 per kWh based on specific project costing data is not sustainable and is liable to be rejected.
- ix) The Commission determined the tariff after considering the relevant factors including the subsidy etc. for the 6 MW project in its Order dated 13.01.2011 in petition no. 29 of 2011 filed by the petitioner and as such the tariff was not determined for the 4 MW project and in case of any such issue, the determination of the tariff would be done only by the Commission.
- x) The communications have been exchanged between the petitioner and the respondent vide letters as annexed by the petitioner to the effect that since the executed PPA dated 14.10.2009 incorporated the tariff for 10 MW project and tariff having been determined by the Commission for 6 MW unit only of the project vide Order dated 13.01.2011, the tariff for 4 MW unit(s) would be either as

per the PPA or else needed to be approved by the Commission as determined for such category of projects.

- xi) There is no strength in the contention raised by the petitioner that the PPA was signed under compulsion with the erstwhile PSEB. There was no occasion or reason for the respondent to exercise any compulsion and there was no occasion for petitioner to accept the same. In case the petitioner was aggrieved on the same, the remedy for the petitioner was to challenge the provision of the PPA.

The Commission notes that in the para wise reply, PSPCL has reiterated its aforementioned submissions.

12. The Commission after the hearing the views of the petitioner, PEDDA and PSPCL on 10.10.2012 closed further hearings in this petition and reserved the final Order vide its Order dated 11.10.2012. The Commission notes that the petitioner prayed for fixation of tariff in respect of its bio-gas (Otto cycle) based generation power plant of capacity 4 MW under erection and commissioning at village Binjon, Tehsil Garhshankar, Distt. Hoshiarpur, Punjab. As per the petition, the total capacity of the project is 10 MW, out of which tariff for 6 MW plant based on Rankine cycle (bio-mass based power plant) was decided by the Commission in its Order dated 13.01.2011 in petition no. 29 of 2010 filed by the petitioner. The Commission notes that though in the petition, the petitioner had prayed that the tariff for the said 4 MW bio-gas based plant may be fixed at Rs. 6.93 per kWh with 5% escalation per year, however, in its submission dated 13.09.2012, the petitioner has voluntarily agreed to accept the generic tariff for bio-gas based power projects fixed vide Commission's Order dated 19.07.2012.

13. The Commission observes that in the PPA, the tariff provided under clause 2.1.1 is applicable for the generating facility of the petitioner i.e. 10 MW comprising 6MW based on Rankine cycle and 4MW based on Otto cycle as per the Commission's Order dated 13.12.2007. In the PPA, there is no distinction of tariff for 6 MW unit based on Rankine cycle or 4 MW unit based on Otto cycle. The relevant extract of the PPA is as below:

“Rs.3.84/- per unit (for the year 2008-09) with 5% annual escalation upto 2011-12. At the end of the above specified escalation period, the tariff payable shall be the last escalated tariff for the year 2011-2012 and shall remain in force during the remaining

term of the PPA. Any enhancement in tariff after the last escalation shall be as determined and approved by the Commission.”

The Commission further observes that in terms its Order dated 13.12.2007, the tariff provided in the PPA is for biomass based power projects.

14. The Commission notes that both the parties signed an Amendment to the PPA on 27.07.2012 to incorporate the tariff for purchase of power from 6MW Rankine cycle unit of the project, pursuant to and in terms of its Order dated 13.01.2011. The Commission further notes that PSPCL, in para 2 of its letter dated 09.11.2011 [Annexure IX(a) of the petition], has stated

“The tariff determined by PSERC as per tariff Order for Renewable Energy Projects for the commissioning year of the projects of M/s Green Planet Energy Pvt. Ltd. shall be applicable for Rankine Cycle Units only. Whereas tariff for Otto Cycle Units shall have to be got determined by filing a petition by you before the PSERC.”

Further in para 7 of the same letter PSPCL stated

“The tariff payable for Otto Cycle Units shall be as per the rates in the original PPA till it is determined by the Commission on filing of Petition by the developer and signing of amendment to this effect between the parties.”

15. The Commission observes that PSPCL, in its reply dated 08.10.2012 to the petition, reiterated the above submissions and did not object to the petitioner’s prayer as per its submission dated 13.09.2011 to allow generic tariff in this petition as per Commission’s Order dated 19.07.2012 for bio-gas based power plants for FY 2012-13.

16. The Commission also observes that PEDDA in its submission dated 03.10.2012 concurred with the prayer of the petitioner for grant of generic tariff for the said 4 MW biogas based generating unit as per Commission’s *ibid* Order. The Commission also takes note of the submission made by PEDDA that Ministry of New and Renewable Energy has extended the date of commissioning of the project upto 31.10.2012. The Commission notes that the same is with respect to extension in respect of the subsidy sanctioned for the petitioner’s project. Further, the Commission notes that *vide* letter dated 08.10.2012, PEDDA has requested that the reply filed by PEDDA dated 03.10.2012 be considered as joint reply of PEDDA and Government of Punjab in terms of letter dated 27.09.2012 from the State Government.

17. In view of the observations of the Commission in the foregoing paras 12 to 16, there appears no doubt that, in so far as the tariff for 4 MW bio-gas based generating unit (Otto cycle) of the petitioner's project in the said petition is concerned, the same has not been determined so far and would need to be determined by the Commission.

18. With regard to the tariff provision existing in the PPA as per the Commission's Order dated 13.12.2007, the Commission notes that, in the same Order, it observed

"These rates will be considered the minimum rates that a NRSE developer can claim. It is entirely possible that NRSE projects adopting different technologies and/or fuels might need enhanced rates for their encouragement. Therefore, individual developers would be free to approach the Commission for determination of such rates. The Commission will, at that stage, decide whether rates are to be approved individually in each case or generically for a category of cases."

19. The Commission feels that there should normally be no occasion to revisit a PPA duly executed between the parties. However, the Commission takes note of the observations of the Hon'ble Appellate Tribunal for Electricity in the case of Rithwik Energy Systems Ltd. and others versus Transmission Corporation of Andhra Pradesh Ltd. and others. In its judgment, the Hon'ble Tribunal was pleased to observe that

"A distinction, however, must be drawn in respect of a case, where the contract is re-opened for the purposes of encouraging and promoting renewable sources of energy projects pursuant to the mandate of section 86(1)(e) of the Act, which requires the State Commission to promote cogeneration and generation of electricity from renewable sources of energy."

In para 35 of the order, the Hon'ble Tribunal further observed that it is bounden duty of the Commission to incentivize generation of electricity from renewable sources of energy and that PPAs can be reopened only for the purposes of giving thrust to non-conventional energy projects.

20. The Commission is also mindful of several provisions in the Act, the Tariff Policy and the National Electricity Policy framed under section 3 of the Act, which enjoins the Central Govt. to prepare the National Electricity Policy and the Tariff Policy with a view to

developing the power system based on optimal utilization of resources such as coal, natural gas, nuclear substances, hydro and renewable sources of energy. Sections 61 and 86 (1) (e) of the Act further mandate that the Commission while determining tariffs would be guided by the need to promote co-generation and generation of electricity from renewable sources of energy. Furthermore, para 6.4 of the Tariff Policy provides for preferential tariffs to be determined by the Commission for renewable energy projects while para 5.2.20 of the National Electricity Policy requires adoption of suitable promotional measures for encouraging higher generation from renewable energy sources.

21. In the light of the above discussion, the Commission feels that even though not objected to by the respondents, PPA signed between the respondent and the petitioner would not stand in the way of considering appropriate tariff for the said project.

22. Accordingly, the tariff for the 4 MW bio-gas based power project (Otto cycle) of the petitioner's said generating plant to be commissioned/commissioned in FY 2012-13 would be the generic tariff for such power projects as per Commission's Order dated 19.07.2012, which is as under:

Levelling Fixed Cost (Rs./kWh)	Variable Cost (FY 2012-13) (Rs./kWh)	Applicable Tariff Rate (Rs./kWh)	Benefit of Accelerated Depreciation, if availed (Rs./kWh)	Net Applicable Tariff Rate upon adjusting for Accelerated Depreciation benefit (3-4) (Rs./kWh)
1	2	3	4	5
3.06	3.38	6.44	0.21	6.23

23. The tariff period shall be for a minimum period of thirteen (13) years as per Regulation 6 of the Central Electricity Regulatory Commission (Terms & Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 (RE Regulations, 2012) adopted by the Commission with State specific modification(s) in its Order dated 19.07.2012. The levelling fixed component will remain the same during the tariff period. However, the variable component will change each year based on whether the petitioner opts for fuel price indexation or normative escalation factor of 5% as per RE Regulations 2012.

24. Further, in accordance with Regulation 22 of the said Regulations, any incentive or subsidy offered by the Central or State Govt. if availed by the generating company for the renewable energy power plant(s), is to be deducted while determining tariff. Although the per unit reduction on account of accelerated depreciation benefit has been quantified, reduction in tariff on account of other incentives and subsidies has not been specified. In the circumstances, the Commission directs that PSPCL will work out subsidy/incentive, if any availed by the petitioner but not already accounted for, as per the scheme(s) of the Ministry of New and Renewable Energy/Govt. of Punjab etc. and reduce the tariff to that extent for a period of 12 years.

The petition is disposed of accordingly.

Sd/-  
**(Gurinderjit Singh)**  
**Member**

Sd/-  
**(Virinder Singh)**  
**Member**

Sd/-  
**(Romila Dubey)**  
**Chairperson**

**Chandigarh**  
**Dated: 17.10.2012**