

**KERALA STATE ELECTRICITY REGULATORY COMMISSION**  
**THIRUVANANTHAPURAM**

Present:        **Shri. Preman Dinaraj, Chairman**  
                         **Shri. K. Vikraman Nair, Member**

**Petition No. OP 10/2017**

In the matter of                                 : Petition for Tariff for Sale of Power to the distribution licensee (KSEB Ltd) from 10 MW MSW based Waste to Energy (WtE) Plant located at Brahmapuram, Cochin

Petitioner   : Kochi Municipal Corporation

**Daily Order dated 30.08.2017**

1. The Kochi Municipal Corporation, on 20.01.2017, filed the petition for determining the tariff for electricity generated from the 'waste to energy project' at Brahmapuram, with the following prayers.

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- (i) *Take the accompanying Tariff petition of Kochi Municipal Corporation on record and treat it as complete. It is further requested that the Hon'ble Commission may specify the levelized tariff for the proposed MSW power project for 20 years tariff period which is useful life of the plant;*
- (ii) *Considering the base year's tariff of Rs. 15 per unit and Rs. 2 per kWh agreed to be borne by Kochi Municipal Corporation, approve the first year's tariff of Rs.13 per unit (base rate) indexed to inflation to an extent of 60% of variation in Wholesale Price Index with reference to the base year ending on 31<sup>st</sup> December 2014 on an annual basis for the Net Electricity Limited of 250 kWh/tonnes of MSW, (**“Net Electricity Limited”** shall mean the maximum limit of Net Electricity up to which the Concessionaire is entitled to receive payment at Power Tariff Rate, as set in Schedule 7 of concession agreement, from the Authority/Power Procuring Agency) for 20 years for sale of power to KSEB Ltd;*
- (iii) *Approve a Levelised cost of Rs.13.80 per unit for Net Electricity Excess (**“Net Electricity Excess”** shall mean the Net Electricity in excess of Net Electricity Limited, which the Concessionaire is free to sell to the Power Procuring Agency and share the proceeds with the Authority as set forth in Schedule 7) for 20 years for sale of power to KSEB Ltd;*
- (iv) *Grant exemption from Merit Order Dispatch Principles for the Project;*

2. The Commission vide its letter dated 18.05.2017 had sought additional details from Kochi Corporation. The Commission admitted the petition as 10/2017 and uploaded the details of the petition at its website inviting comments on the proposals from the stakeholders. The Commission has conducted the public hearing on the petition at Ashirbhavan, Kacheripady, Ernakulam on 25.8.2017. The deliberations during the hearing is summarized below.
- (1) Smt. Anuja, A.S, the Secretary, Kochi Municipal Corporation outlined the necessity of the proposed waste treatment plant at Brahamapuram. She also explained the procedure adopted to select the M/s GJ Nature Care and Energy Pvt Ltd to establish the project using thermal gasification technology. Kochi Municipal Corporation handed over 20 acres of land to the developer for establishing the plant on lease. The period of construction is 18 months and the developer has to operate the plant for 18 years.
  - (2) Sri. Giby George, the Managing Director, G.J. Nature Care briefly presented the technical and commercial aspects of the project, as given below.
    - (i) Though the developer has no previous experience in establishing 'waste to energy plants' in India, they had appointed eminent experts in this field as its consultants.
    - (ii) Gasification technology was adopted for the conversion of the MSW to electricity. The residual waste after conversion will be very little.
    - (iii) MSW available in the Kochi corporation area having high moisture content and low calorific value.
    - (iv) The project is executed under PPP mode with zero investment from the Corporation. The State Government has extended full co-operation and support for executing the project.
    - (v) The Corporation has agreed to supply about 300 tonnes of MSW per day at project site, collected from Kochi Corporation area and also from nearby Municipalities and Panchayats.
    - (vi) The electricity generated from the project is proposed to be supplied to KSEB Ltd.
    - (vii) As per the agreement, the rate of power will be Rs 15.00/unit for the first 250 units generated from per ton of MSW and the rate for the balance energy generated from per ton of MSW will be at the tariff approved by the Commission. 20% of the revenue earned for the electricity generated above 250 units/ton has to be shared with the Corporation.

- (viii) The waste to energy plant was proposed as a social venture, but has to be commercially viable.
  - (ix) The contribution of power generated from the plant and its impact on tariff on KSEB Ltd is too negligible.
- (3) About 51 participants attended the hearing and their comments are given below. Some of them are expressed their wholehearted support for the project, however few of them expressed critical comments against it.

#### **Views expressed in favour of establishing the plant**

- (i) The disposal of the municipal waste is one of the difficult task of the Kochi Municipal corporation.
- (ii) The inhabitants surrounding the present waste dumping yard at Brahmapuram has been facing severe difficulties, including various infectious diseases.
- (iii) If the proposed waste disposal plant is established, it will be great relief to the peoples surviving in the Kochi Municipal corporation and its surrounding Municipalities and Panchayath.
- (iv) Even if the cost of the power generated from the waste disposal plant is high, KSEB Ltd may purchase the power from the project considering its social importance.
- (v) Comparing with the annual energy requirement and cost of power purchase, the quantum of energy available from the proposed waste disposal plant and its cost is negligibly small.
- (vi) Kochi Corporation may avoid levying lease rent from the developer and also avoid sharing of profit, so that cost of electricity generated from the waste disposal plant may become more viable.

#### **Views expressed against the plant**

- (i) The selection of the developer M/s G.J. Nature Care, with no previous experience, for establishing the plant by the Kochi Corporation is not transparent.
- (ii) At present the Commission and KSEB Ltd is not providing subsidy to other waste treatment plants.
- (iii) The estimate of the availability of municipal waste in the Kochi Municipal Corporation area is much less than the quantum of 300 Ton/day agreed to supply by Kochi Corporation.
- (iv) The policies of the State and Central Government is for disposing the waste at origin itself. The proposed plant may encourages the

waste generation and hence the proposal is against the policies of the State and Central Government.

- (v) The capital cost of the project at Rs 295.00 crore is excessively high. As per the details available, the estimate of the project cost is not vetted by auditors/ any statutory agencies/ expert consultants in this field.
  - (vi) The KSERC do not have any social obligation to promote such plants by directing KSEB Ltd to purchase power from the project at the excessive cost proposed by the consultant.
  - (vii) There was only single offer and the corporation entrusted the work to GJ nature care without assessing their capability and experience.
- (4) Chief Engineer (Commercial & Tariff) on behalf of KSEB Ltd submitted the following.
- (i) KSEB Ltd is not against establishing the waste to energy plant by the Kochi Corporation at its land at Brahmapuram, but the only concern of KSEB Ltd is its excessive cost of generation.
  - (ii) Since the proposed plant is for the disposal of the waste in the Kochi Municipal Corporation, the Corporation has to bear a part of the cost of project instead of recovering the entire cost through electricity tariff.
  - (iii) The Commission in its earlier order dated 24.11.2016 clarified that, the Corporation has selected the developer not as per the bidding guidelines issued by the Ministry of Power, GOI for procuring power through bidding route, hence the cost of power offered by the developer in the bidding process initiated by the Corporation cannot be binding on KSEB Ltd.
  - (iv) The project cost proposed by the developer @Rs 29.5 core/MW is excessively high compared to the norms fixed by CERC, other SERC and also similar MSW projects established in other parts of the country, which is in the order of about Rs 12.00 crore /MW to Rs 18.00 crore/MW.
  - (v) The claim of the petitioner on interest rate, RoE, operation and maintenance cost etc also on the higher side.
  - (vi) KSEB Ltd had submitted the written comments in detail and the Commission may consider the same while determining the tariff of the project.
  - (vii) MNRE has been offering Central Financial Assistance for MSW based power projects. It seems that, the developer has not proposed to avail such benefits.

- (viii) The developer also has not proposed to avail tax holiday benefits and the benefit of accelerated depreciation while proposing the tariff.
  - (ix) The Commission may adopt the normative capital cost, and other parameters as per the regulations notified by the KSERC and CERC.
- 3. During the hearing the Commission has clarified that, the purpose of the public hearing is for inviting the comments of the stakeholders on determining the tariff of the MSW based waste to energy project at Brahmapuram proposed by Kochi Corporation. However, some of the comments from the stakeholders is against the selection of the developer for the project, the technology adopted for waste treatment and that the proposal is against State Government policies that the waste shall be disposed at the origin itself. The Commission directed the Secretary, Kochi Municipal Corporation to provide clarifications on such issues separately through the website of the corporation, print media or any such public awareness process.
- 4. The Commission allowed, time till 13.09.2017 to all the stakeholders to submit any additional specific information/comments impacting the tariff of the proposed MSW project. The Commission also directed the Kochi Municipal Corporation to submit the following additional details/ clarifications.
  - (i) The details of the cost incurred by the Kochi Municipal Corporation at present for collecting the waste from the inhabitants in the Corporation area, during the last three years i.e., since 2014-15.
  - (ii) The Corporation may also provide the budgetary provisions for waste disposal and allied activities during the last three years.
  - (iii) The details of the fees/charges at present levied from the inhabitants (from domestic populations and others separately) for collecting and disposing the waste.
  - (iv) The fees proposed to be charge from nearby Municipalities and Panchayaths for collection and disposal of waste from their areas.
  - (v) The amount proposed to collect from the developer as lease rent for allocating the land for the project.
  - (vi) As per the details of the cost estimate, about Rs 7.40 crore per MW is for pre-processing activities. Hence, the details of the composition of MSW available in the Kochi Municipal corporation area has to be submitted.
  - (vii) Why the petitioner has not considered the tax holiday/ income tax exemption etc available in determining the tariff. The developer has also not examined if excise duty exemption etc is available for this project.

- (viii) Whether the benefit of accelerated depreciation has been considered in determining the tariff of the project.
- (ix) In the report submitted by the petitioner, it is stated that the conventional waste to energy plant that uses standard combustion converts one ton of MSW to 550 kWh, while with gasification technology the same can be enhanced to 1000 kWh/ MT. However, in the bid offered and accepted by Kochi Corporation, the net electricity generated from the plant is limited to 250/kWh/tonne of MSW for fixing the tariff of Rs 15.00/unit in the year 2014. A clarification may be submitted on this aspect. Also confirm the heat rate of the system.
- (x) The corporation also has to provide the details of the cost estimate of the 'gasification system', 'bio-dryer, material recovery system etc', and 'power island including evacuation and cooling water system' within the stipulated time period.

Sd/-  
**K. Vikraman Nair**  
**Member**

Sd/-  
**Preman Dinaraj**  
**Chairman**

Approved for issue

Santhosh Kumar.K.B  
**Secretary**

## Annexure 1

### List of Participants

1. Smt. Anuja A S, Secretary, Corporation of Kochi
2. Shri. G. Sudeeshkumar, Health Officer i/c , Corporation of Kochi
3. Shri. Naushad M.N, Health Inspector, Corporation of Kochi
4. Shri. Aji, Corporation of Kochi
5. Smt. Renuka, Corporation of Kochi
6. Shri. Joseph V.K, CE(C&T), K S E B Ltd.
7. Shri. K G P Nampoothiri, EE(TRAC), K S E B Ltd.
8. Smt. Latha S V, AEE(TRAC), K S E B Ltd.
9. Smt. Sreelatha. J. Nair, Principal Consultant, KITCO Ltd.
10. Shri. Sanjeev Prabhu, G.J.Eco Power
11. Shri. Sooraj K .S, G.J.Eco Power
12. Shri. Mahesh P.K, G.J.Eco Power
13. Shri. Amith Viswanath, GJ Eco Power
14. Shri. Subin, GJ Eco Power
15. Shri. Abhilash Abel, Business Head, GJNCE
16. Shri. Sudeep Nair, GJNCE Finance
17. Shri. Giby George, MD, GJNCE
18. Shri. Sathish Babu, HR, GJNCE
19. Shri. O.A Kurian
20. Shri. Harinarayanan, DEO, Parakkadavu
21. Shri. K.A. Francis, EDRAAC
22. Smt. Manila .M, Puthuvana (H)
23. Shri. P. A.Uthup, 12A Centre Court, Kaloor
24. Shri. Chacko George
25. Smt. Lisna Ismail, 83, Link Valley, Kakkanad
26. Shri. Akash George Zacharia, 13.J ..Kacheripady
27. Shri. Pramod Korula, Rajagiri College
28. Shri. Suresh George
29. Shri. Thomas Abraham
30. Shri. Manoj Joseph Kapaty
31. Shri. Josy Thomas
32. Shri. John
33. Shri. Asif
34. Shri. Purushan Eloor, Periyar Malinikarana Virudha Samithi
35. Shri. Jacob Lazer. V
36. Shri. N.K.Pillai, Kerala Enviro. Infrastructure Ltd.
37. Shri. Renjith M.K
38. Shri. John Nanpeli Junior
39. Shri. Reji Varghese, L&T , Associate Consultant
40. Shri. Anil Nair, JRSL Co.
41. Shri. N. Dharmajan, VRA Vennala
42. Shri. Shaji Sebastian, IECC (Ekm)

43. Shri. Swaroop Archibald
44. Shri. Raju Xavier, Secretary, Voice of Kochi
45. Shri. Samshudh Abel
46. Shri. Adharsh Abel
47. Shri. Santhriphth Abel, Ganakiya Kuttayma, Vypin
48. Smt. Neenu Skaria, IECC, Kalamassery
49. Shri. Samuel Mathew
50. Smt. Nidhi Ann Jose, Student , Rajagiri College
51. Shri. Hanan Saleem, Student, Rajagiri Business School
52. Shri. Ramesh. R, Student, Rajagiri Business School
53. Shri. Abey James Biju, Rajagiri Business School
54. Shri. Joyal Johnson, Rajagiri Business School
55. Dr. George Sleeba, K.Chittilappilly Foundation
56. Shri. K.K.Abdul Rafeek, Masafi Group, Ernakulam
57. Shri. Biju John M, Aam Aadmi Party
58. Shri. Baby Joseph, Aam Aadmi Party
59. Shri. C.N Manoj
60. Dr. C M Joy, President, Kerala Nature Protection Forum
61. Shri. Rajesh
62. Shri. Bijo Tony, Deepika Newspaper
63. Shri. P. Rangadasa Prabhu, EDRAAC
64. Shri. Sasidharan .G, Independent Consultant
65. Shri. M.T. Vargehese, EDRAAC
66. Shri. C.N. Manoj, Scientist
67. Shri. Fasaludeen V.I, Kadambayar Samrakshana Samithi
68. Shri. P.N. Anoop
69. Dr. Poornima Narayan R