

**KERALA STATE ELECTRICITY REGULATORY COMMISSION  
Thiruvananthapuram**

**Present : Sri. T. M. Manoharan, Chairman  
Sri. K. Vikraman Nair, Member**

**OP 11/2016**

In the matter of Implementation of Unnat Jyothi by Affordable LED's for All (UJALA) and Energy Efficient Fans Programme (EEFP) in the areas of operation of Thrissur Corporation Electricity Department in the state of Kerala under Demand Side Management programme

Petitioner : Thrissur Corporation Electricity Department

Represented by Sri. J Jose, Electrical Engineer  
Sri. B Nikhil, Assistant Engineer  
Sri. Francis P X, Assistant Engineer

**Order 21.12.2016**

1. Thrissur Corporation Electricity Department (herein after referred to as the petitioner or TCED) filed a petition on 16.8.2016 before the Kerala State Electricity Regulatory Commission for Implementation of the Unnat Jyothi by Affordable LED's for All (UJALA) and the Energy Efficient Fans Programme (EEFP) in the areas of operation of TCED in the State of Kerala, under Demand Side Management programme (DSM), with the following prayers:
  - a. *Allow TCED to implement the Energy Efficient Fans Programme (EEFP) as part of DSM measures, with the support of M/s. Energy Efficiency Services Limited, New Delhi.*
  - b. *Allow TCED to implement the Unnat Jyothi by Affordable LED's for All (UJALA) as part of DSM measures, with the support of M/s. Energy Efficiency Services Limited, New Delhi.*
  - c. *In order to recover cost from consumers through their electricity bill, allow TCED to make necessary modifications/additions in electricity bill of consumers by adding one line item.*
  - d. *Authorize TCED to treat default in payment by consumers as "default of payment" under sec 56 of the Electricity Act, 2003 read with Kerala Electricity Supply Code (i.e. disconnection of supply in default of payment) or as amended from time to time and recover such charges by suit, cut-off the supply of electricity.*
  - e. *To provide irrevocable and revolving Letter of Credit (LC) in favor EESL*

f. Pass necessary orders as deem fit by the Hon'ble Commission.

2. In the petition, TCED submitted the following :

(1) TCED propose to implement the Unnat Jyothi by Affordable LED's for All (UJALA), and the Energy Efficient Fan Programme (EEFP) in the TCED service area through an Energy Service Company (ESCO) namely, M/s. Energy Efficiency Services Limited, New Delhi.

(2) **Outline of UJALA Programme**

TCED with the project consultancy support of M/s. Energy Efficiency Services Limited has intended to.

(i) provide up to 2 LED bulbs each to all the domestic consumers in the entire license area TCED at a rate to be decided based on the procurement of LED bulb on open competitive bidding.

(ii) The TCED has envisaged the energy savings on account of distribution of LED bulbs as under:

<i>Particulars</i>	<i>Unit</i>	<i>Total</i>
<i>Number of Bulbs offered under this Scheme</i>	<i>Number</i>	<i>40000</i>
<i>Average Wattage of Conventional Lights</i>	<i>Watt</i>	<i>40</i>
<i>Wattage of LED bulb</i>	<i>Watt</i>	<i>9</i>
<i>Power saving</i>	<i>Watt</i>	<i>31</i>
<i>Hours of Usage</i>	<i>Hrs/Day</i>	<i>4</i>
<i>Operating days per year</i>	<i>Days / Year</i>	<i>300</i>
<i>Energy saved per bulb per Day</i>	<i>KWH</i>	<i>0.124</i>
<i>Energy saved per bulb per year</i>	<i>KWH</i>	<i>37.2</i>
<i>Energy Demand Saved per year</i>	<i>Million KWh</i>	<i>1.5</i>

The annual saving of energy estimated under UJALA is around 1.5 Million units

The expected cost of this Scheme is given below in the table:

	<i>Particulars</i>	<i>Components of Programme Cost per LED Bulb</i>	<i>Price per LED bulb</i>
1	<i>Cost of the LED Bulb (inclusive of CST)</i>	<i>As determined through competitive bidding.</i>	<i>73.85</i>
2	<i>Project Management Consultancy charges</i>	<i>3% of the Sum of Sl. 1 + Tax @ 15%</i>	<i>2.55</i>
3	<i>Programme cost per LED bulb</i>	<i>Sum of Sl . No 1 and 2</i>	<i>76.4</i>
4	<i>Programme cost of the project assuming 20000 consumers opt for scheme</i>	<i>Per bulb cost * total bulbs</i>	<i>3056000</i>

**Note 1: \* VAT@ 5% is not included in the Cost of the bulb. In case of any change therein or applicability of any other taxes will be charged on actual basis which is not included in these amounts.**

**(3) EEFP Programme Outline**

TCED with the project consultancy support of M/s. Energy Efficiency Services Limited has envisaged to.

(i) Distribute up to 2 BEE Five star rated Energy Efficient Fans each to all TCED's domestic consumers in the entire TCED's license area on upfront payment of the cost, which will be based on the procurement cost of the fans on open competitive bidding.

(ii) The TCED has estimated the energy savings of 2.84MU on account of implementation Energy Efficient Fans programme as under:

<i>Particulars</i>	<i>Unit</i>	<i>Total</i>
<i>Number of Fans offered under this Scheme</i>	<i>Number</i>	<i>30000</i>
<i>Wattage of Zero Star rated fan</i>	<i>Watt</i>	<i>75</i>
<i>Wattage of Five Star rated Efficient Fan</i>	<i>Watt</i>	<i>50</i>
<i>Power saving</i>	<i>Watt</i>	<i>25</i>
<i>Hours of Usage</i>	<i>Hrs/Day</i>	<i>14</i>
<i>Operating days per year</i>	<i>Days / Year</i>	<i>270</i>
<i>Energy saved per Fan per Day</i>	<i>KWH</i>	<i>0.35</i>
<i>Energy saved per Fan per year</i>	<i>KWH</i>	<i>94.5</i>
<i>Energy Demand Saved per year</i>	<i>Million KWh</i>	<i>2.84</i>

(iii) TCED has submitted the estimated cost of the programme as under.

<i>Sl No.</i>	<i>Particulars</i>	<i>Components of Programme Cost per EE Fan</i>	<i>Price per EE Fan</i>
<i>1</i>	<i>Cost of the BEE 5 star rated EE fan (inclusive of CST)</i>	<i>As determined through competitive bidding.</i>	<i>1100.00</i>
<i>2</i>	<i>Project Management Consultancy charges</i>	<i>3% of the Sum of Sl. 1 + Tax @ 15%</i>	<i>37.95</i>
<i>3</i>	<i>Programme Cost per EE Fan</i>	<i>Sum of Sl. No. 1 and 2</i>	<i>1137.95</i>
<i>4</i>	<i>Programme cost of the Project assuming 15000 consumers opt for scheme</i>	<i>Per fan cost* total fans</i>	<i>34138500.00</i>

**Note 1:** \* VAT@ 5% is not included in the Cost of the fan. In case of any change therein or applicability of any other taxes will be charged on actual basis which is not included in these amounts.

- (4) **Procurement of LED bulbs and Energy Efficient Fans**  
EESL will follow an open competitive bidding process to procure the LED bulbs and 5 star rated fans, to ensure competition in price discovery. The LED bulb of high quality with 3 year technical warranty, and fans with technical specifications of BEE 5 star rated Fans and 2 year technical warranty will be procured.
- (5) **Distribution of LED bulbs and Fans**  
The LED bulbs and Fans will be distributed from counters of TCED in Thrissur Corporation.
- (6) **Payments to EESL**
- (i) EESL shall be paid 100% of the Total Cost of the LED bulbs & fans and the project management consultancy charges on receipt of LED bulbs and 5star rated Fans at TCED.
- (7) **Technical Aspects - TCED submitted that,**
- (i) *M/s. Energy Efficiency Services Limited will ensure that the BEE 5 star rated ceiling fans used under this project complies the BEE 5 star ceiling fan standards and LED bulbs used under this project complies the technical specifications.*
- (ii) *The sample testing may also be carried out in any laboratory accredited by NABL jointly by M/s. Energy Efficiency Services Limited and TCED as part of this programme, in order to ensure compliance to the standards.*
- (iii) *EESL agrees to extend guarantee for replacement of the faulty fans due to technical defects at free of cost for 2 years, faulty bulbs due to technical defects at free of cost for 3 years, commencing after implementation of the project. Technical defects excludes physical damage, etc.*
- (8) **Other Benefits-** TCED has submitted the accrued benefits of implementation of UJALA and EEFPS Scheme as below.
- (i) House Hold Sector - Helps to reduce their energy consumption and its cost.
- (ii) Distribution Utility
- Aids the department in reducing the demand & Supply gap.
  - Minimize load shedding during peak hours.

- To meet demands of other cross subsidizing consumers like commercial and industrial establishment.
  - Generate additional revenue through sale of saved energy to cross subsidizing consumers and thereby helps to bridge the gap between the Average Cost of supply and the cross subsidizing tariff rates.
- (iii) Cross Subsidizing Category
- The tariff rates for the cross subsidizing categories will be progressively reduced due to reduction in cross subsidy.
- (iv) Society
- Energy security.
  - Mitigation of climate changes and protection of environment.
3. The petition was heard on 5.9.2016 at 2.30PM at Government Guest House, Thrissur. Sri. B Nikhil, AE presented the petition on behalf of the petitioner. Sri. B Nikhil and Sri. J. Jose, Electrical Engineer responded to the queries of the Commission.
4. Si Manoj G, Assistant Executive Engineer (TRAC), representing KSEB Ltd appreciated the efforts taken by TCED for initiating the DSM program and stated that since no cost is involved in the program which may affect the Bulk supply Tariff, KSEB Ltd has no further comments to offer.
5. During hearing, the Commission directed TCED that;
- (i) The proposal contains only EMI facility in the case of fans. The Commission is of the opinion that consumers may be given option either to purchase fans by remitting total cost of fans or to purchase fans availing EMI facility.
  - (ii) TCED may explore the possibility of extending the program to consumers other than domestic also. Option of distributing more than two bulbs to the consumers may also be looked into.
  - (iii) While implementing the program, care should be taken to immediate replacement of the faulty bulbs and fans. Sufficient stock of the fans and bulbs may be kept to achieve the same.
6. On analyzing the facts and details submitted by TCED, the Commission had, vide the daily order dated 07-09-2016, given the following directions;
- (i) For approval of EMI to be collected through monthly/bimonthly bills, TCED has to submit the details of the proposal including cost of fans,

interest rates, period of repayment and the monthly installment, modification suggested in the bills etc.

- (ii) TCED has stated that the payment is made up front and hence necessity of Letter of Credit (LC) may be negotiated with EESL and reported.
- (iii) TCED to report whether any expenses is to be accounted in the ARR.

The Commission had directed to submit the above details on or before 25<sup>th</sup> of September, 2016.

7. In compliance of the direction issued by the Commission in the daily order dated 7-9-2016, M/s TCED has vide the letter dated 18-10-2016 submitted that:

- (1) Considering the observations made by the Hon'ble Commission during the Public hearing, TCED is not planning to provide EMI facility during the first phase of the implementation of EEFP. The cost of fan as per EESL report is Rs. 1390/- (This including the cost of EESL and the expenses of TCED).*
- (2) TCED will be making the payment, to EESL immediately upon the receipt and random testing of LED bulbs and Energy Efficient Fan.*
- (3) TCED will report in time if at all any expenses is to be accounted in the ARR.*
- (4) TCED will take sufficient care for the immediate replacement of the faulty bulbs and fans by keeping reserve stock of both the items.*
- (5) TCED will try to extend the program to all its consumers as directed by the Commission.*

TCED has further submitted that :

*TCED has received the price of LED Tube light (20 W), which comes to Rs.280/- approximately, TCED is planning to distribute LED tube lights to all its consumers in a phased manner after evaluating the response received from the consumers during the first phase. As the implementation of EEFP, EETP, and UJALA and its expenses will not reflect in ARR, permission may kindly be granted for implementing the same.*

8. Further, vide letter dated 1.11.2016, TCED made additional submission that;
- i. TCED is not planning to give installment facility to its consumers, while implementing the scheme.
  - ii. The price of LED bulb, LED tube and Energy Efficient Fan is proposed to be determined as

*(1) Cost of LED Bulb/Tube/EE Fan (Inclusive of CST) as determined through the competitive bidding - [a]*

(2) *Consultancy charge 3% of SL.#01+Tax at 15% - [b]*

(3) *SOC - 16% [Storage-3%,Contingency-3%,Overhead charge-10%]  
- [c]*

(4) *Labour and Transportation - 5%*

*Total Price - [a] + [b] + [c] + [d]*

### **Analysis and Decision**

9. The Commission has examined in detail the proposals for implementation of Unnat Jyothi by Affordable LED's for All (UJALA), Energy Efficient Fans Programme (EEFP) and the Energy Efficient Tubelight Programme (EETP).
10. Unnat Jyoti by Affordable LEDs for All (UJALA) was launched by Ministry of Power, Government of India, replacing the "Bachat Lamp Yojana". Reports in the media indicate that within 1 year of its launch, 9 crore LED bulbs have been sold in the country, reducing their electricity bills by ₹55 billion.
11. Energy Efficiency Services Limited (EESL) is promoted by Ministry of Power (MoP), Government of India as a Joint Venture company of four Central Power Sector undertakings viz. NTPC Ltd, PFC, REC, and Power Grid Corporation of India Ltd. EESL was set up to create and sustain markets for energy efficiency in the country. EESL works closely with the Bureau of Energy Efficiency (BEE) and is leading the market related activities of the National Mission for Enhanced Energy Efficiency (NMEEE), one of the 8 national missions under National Action Plan on Climate Change.
12. TCED is implementing the energy efficiency programmes, UJALA, EEFP and EETP through EESL as envisaged by the MoP.
13. The petitioner has proposed to provide 2 LED bulbs, and 2 fans each to the domestic consumers, by collecting the cost upfront. The implementation of EETP will be undertaken after evaluating the response of the consumer in UJALA & EEFP.
14. While analyzing the cost of bulb & fan, the Commission observed that, TCED has proposed 16% of the cost of LEDs/ Fan/ Tube as SOC (storage, overhead and contingency) charges. The SOC charges proposed is over and above the 3% consultancy charges and 5% labour and transportation charges. It is noted that, the bidding is being done by EESL and only distribution of bulb/tube/ fan and collection of cost is done by TCED. The Commission is of the view that, the SOC charges of 16%, over and above the consultancy charge of 3% and labour and transportation charge of 5% will increase the cost to the consumers. Further, the entire scheme is part of the DSM activity of the licensee. Considering all these, the Commission is not approving the SOC charges. Hence

the TCED shall determine the price of LED bulb, LED tube and Energy Efficient Fan as follows.

TCED Price =

- (1) Cost of LED Bulb/Tube/EE Fan (Inclusive of CST) as determined through the competitive bidding - [a]
- (2) Consultancy charge 3% of SL.#01+Tax at 15% - [b]
- (3) Labour and Transportation 5% - [c]

Total Price - [a] + [b] + [c]

15. The Commission is of the view that, the scheme would reduce the energy consumption of the consumers and thereby there will be reduction in their electricity bills. The Commission therefore, decides to grant 'in principle' approval for providing LED bulbs under Unnat Jyothi by Affordable LED's for All (UJALA), tubes under Energy Efficient Tubes Programme (EETP) and fans under Energy Efficient Fans Programme (EEFP), subject to the following conditions.
- a. The petitioners shall procure the LED bulbs/ tubes / Energy Efficient Fan through open competitive bidding, with the assistance of EESL.
  - b. TCED should ensure that the price discovered in the bidding process should be competitive compared to the procurement price of bulbs and fans by EESL in previous programmes.
  - c. TCED shall submit the details of the price of LED/tube and fans arrived through the competitive bidding before the Commission.
  - d. The distribution cost of LED bulb, LED tube and Energy Efficient Fan shall be determined as per the formula under para 14 above
  - e. The scheme shall be optional at the discretion of the consumers.
  - f. Ceiling fans used under this project complies the BEE 5 star ceiling fan standards and LED bulbs / tubes used under this project complies latest technical specifications stipulated by the Indian/International Standards.
  - g. The sample testing of the LED bulbs shall be carried out in any laboratory accredited by NABL jointly by EESL and TCED
  - h. TCED shall put in place an efficient mechanism for immediate replacement of defective LED bulbs/ tubes/ energy efficient fans supplied under the programme during the warrantee period.

- i. Expenses, if any, in connection with the programme will not be allowed in the ARR.

**16. Order of the Commission**

The Commission has duly examined the entire proposal of the TECD for the implementation of Unnat Jyothi by Affordable LED's for All (UJALA) and Energy Efficient Fans Programme (EEFP) in the area of operation of Thrissur Corporation Electricity Department in the state of Kerala under Demand Side Management programme, and to grants in principle approval of the scheme subject to the terms and conditions as detailed under paragraph -15 above.

The petition is disposed of. Ordered accordingly.

**Sd/-**

**K.Vikraman Nair**  
Member

**Sd/-**

**T.M. Manoharan**  
Chairman

Approved for issue

**Santhosh Kumar.K.B**  
Secretary