

KERALA STATE ELECTRICITY REGULATORY COMMISSION THIRUVANANTHAPURAM

Present : Shri T K Jose, Chairman
Adv. A.J Wilson, Member
Shri B Pradeep, Member

OP No. 52/2022

In the matter of : Petition seeking approval of Capital Investment projects for the Control Period 2022-27.

Petitioner : M/s Thrissur Corporation Electricity Department.

Petitioner represented by : Shri Jose T.S, Electrical Engineer
Shri Jayaraj, Asst: Engineer

Respondent : Kerala State Electricity Board Ltd (KSEB Ltd)

Respondent represented by : Shri. Shine Raj, Asst: Executive Engineer

First hearing on : 03.03.2023, 11.00 AM
Second hearing on : 05.10.2023, 10:30 AM

Venue : Court Hall of the Commission

Order dated 16.08.2024

1. M/s Thrissur Corporation Electricity Department (hereinafter referred as M/s TCED or Petitioner) on 15.01.2022 has filed a petition before the Commission for the approval of Capital Investment projects for the Control Period 2022-27.
2. The summary of the petition filed by M/s TCED is given below;

TCED has proposed the CAPEX for the MYT period 2022-23 to 2026-27 under the following heads.

- (i) Revamped Distribution Sector Scheme- Rs 134.73 crore,
- (ii) Installation of 200 kW Solar plant- Rs 1.33 crore,
- (iii) Renovation of office –Rs 31.35 lakh
- (iv) Kannankuzhy SHP scheme- 7 MW, Rs 93.75 crore

Brief description of the each item of capital works proposed by M/s TCED is given in the following paragraphs.

I. Revamped Distribution Sector Scheme (RDSS)

3. The RDSS scheme with the Central Government Budgetary Support includes the works under the following heads;
- (A) Loss Reduction
 - (B) Modernization
 - (C) SCADA and GIS
 - (D) Smart Metering

Its summary is given below;

Capital Investment Scheme proposed under RDSS Scheme

| SL No | Details of Works | Amount (Rs. Cr) |
|----------|--------------------------------------|-----------------|
| A | Loss- Reduction | |
| 1 | Cabling related Works HT (16.613 kM) | 2.885 |
| 2 | HVDS | |
| | (a) New DTR 25 & 63 KVA | 0.645 |
| | (b) 11 kV UG & ABC cable with poles | 0.716 |
| | Sub total | 1.361 |
| 3 | Feeder Bifurcation | |
| | (a) HT Cabling works | 4.535 |
| | (b) LT Cabling and other works | 12.061 |
| | (c) Replacement of old Transformers | 0.863 |
| | Sub total | 17.458 |
| 4 | IT & OT services | 7.396 |
| 5 | APFC at DTR Locations | 0.375 |
| | Sub total | 29.475 |
| B | Modernization | |
| 1 | New 110/11 kV Substation | 37.753 |
| 2 | Augmentation of 33 kV existing works | 2.800 |
| 3 | New 11 kV line | 4.830 |
| 4 | New LT Distribution Board | 1.875 |
| 5 | Installation of main Feeder Pillar | 0.300 |
| | Sub total | 47.558 |
| | SCADA and GIS | |
| 1 | SCADA/DMS | 30.000 |
| 2 | GIS | 1.821 |
| | Sub total | 31.821 |
| C | Smart Metering | |
| | Metering | 25.880 |
| | Grand Total | 134.733 |

A. Loss-Reduction

(1) Cabling related works -HT

This works includes the reconductoring of old frayed 11KV HT lines (16.613 km) in main road areas for loss reduction, increasing safety and reduce supply interruption due to damage in lines. This will also help for ring connection feeders to RMUs and reduce electrical accident due to conductor snapping, touching and overloading.

150sqmm UG cable work is proposed for connecting distribution transformers to RMUs for the emergency tripping of DTs in case there is a fault and also for the safety of employees engaging in shutdown works.

Total cost of the scheme is Rs 288.47 lakh.

(2) High Voltage Distribution System (HVDS)

(a) New DTR 25 &63 KVA

TCED submitted that, ₹ 64.5 Lakhs would be incurred for providing new DTRs of 25 and 63 KVA. These are proposed as part of HVDS for decreasing the distribution length of long feeders by inserting pole mounted DTS at different points.

(b) 11 KV UG and ABC cable with Poles

Quantity – 4.32 ckt.km
Cost- Rs 71.60 lakh

TCED proposed to use UG cables in place of 11kV lines. AB cables proposed for reconductoring old frayed 11 kV HT lines in the long feeders for loss reduction. New poles inserted in locations where DTS are installed.

(3) Feeder Bifurcation

(a) HT cabling works (Total cost- Rs 4.53 crore)

This work is proposed for reconductoring of old frayed 11KV HT lines for loss reduction, increasing safety and reduce supply interruption due to damage in lines.

(b) LT cabling and other works (Rs 12.06 crore)

This work is proposed for reconductoring old frayed LT lines with AB cables for loss reduction, increasing safety and reduces supply interruption due to short circuiting. This is mainly proposed in Swaraj Round which will mainly provide less obstruction during the Thrissur

Pooram Festivals. The project is proposed for the improvement of power factor. APFC are proposed to be installed at DT locations where power factor correction is essential. It may increase safety of employers who are engaged in LT maintenance works.

(c) Replacement of old transformers.

TCED submitted that, ₹86.30 lakhs would be incurred for the replacement of 19 nos of old transformers. The main objective of this proposal is to replace the old transformers which are more than 30 years old with latest star rated transformers. This will significantly reduce the iron losses.

(4) IT/OT initiatives (excluding SCADA & DMS) (Rs 7.3956 crore)

The project is proposed for enabling provisions for enterprise resource planning in areas of **material, finance, account and human resources**. Moreover customer care center, GIS etc are also proposed in ICT enabled distribution Utility management.

B. Modernization

(1) New 110/11 KV Substation & Augmentation of 33 kV existing substation works (Total cost Rs 45.38 crore)

TCED proposed a new 110 kV substation at Thrissur west with 2x20 MVA capacity with 8 nos 11kV outgoing feeders for sufficient reliability and N-1 requirement.

At present TCED has only one power source from Viyyoor 110/11 kV substation through a single circuit line. Hence to increase reliability and avoid supply interruption due to maintenance work in this line, a new substation from a different source is proposed.

Existing 33kV s/s capacity is proposed to increase with adding 1 nos of additional 8 MVA transformer. It is also propose to change the old 11KV feeder panel to new one, for the purpose to balance the load and increase the reliability of supply.

C. SCADA/DMS

TCED further submitted that ₹3000 lakhs would be incurred for the SCADA/DMS. TCED propose to implement the scheme through KSEBL. According to TCED., establishment of SCDA for distribution network management will enable automatic system operation and feeder circuit switching that will enable most reliable supply management and highly efficient network routing to avail the benefit of loss reduction.

GIS (Rs 1.8205 crore)

According to the TCED, GIS provides foundation layer for effective asset management, mapping field operations. It is crucial to have an accurate asset mapping for electric poles, transformers, lines, substation, etc, up to consumer meter along with unique numbering. At present TCED is using five digit number with an alpha numeric number as consumer number and this will be changing into unique numbering system.

D. Smart metering

Quantity – 40975 Nos

Cost- Rs 25.88 crore

TCED submitted that ₹2588 Lakhs would be incurred for providing 40975 No's of smart meters. According to the TCED, providing smart meters enable real-time and online billing/ payments options. It helps consumers to compute its consumption with remote mobile based consumption/ account balance information. It is beneficial to utilities in terms of real-time and automated energy audit reports. Timely availability of accurate accounts will be possible. It will also reduce electrical thefts considerably. It will enhance the sale of energy due to the improved reliability.

4. The summary of the capital cost under different head of RDSS is given below.

| Sl | Particulars | Amount (Rs. Cr) |
|----|----------------|-----------------|
| 1 | Loss reduction | 29.475 |
| 2 | Modernisation | 47.558 |
| 3 | SCAD/ GIS | 31.821 |
| 3 | Smart metering | 25.880 |
| | Total | 134.733 |

5. The phasing of the loss reduction works proposed by TCED under RDSS is given below.

Phasing of loss reduction works

| WORKS | PHYSICAL TARGETS | | | | | Rs.lakh |
|----------------------------------|---|-----------|----------|----------|---------|----------------|
| | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | |
| Cabling related works | 6ckm | 6ckm | 1.463ckm | 3.15ckm | - | 288.47 |
| HVDS | 10ckm | 10ckm | 6ckm | 5ckm | - | 136.08 |
| Feeder Bifurcation | 37.87ckm | 37.164ckm | 36.72ckm | 36.27ckm | - | 1745.80 |
| IT/OT | Complete billing system with Smart meter systems ERP, CCC, MM, SRM, HR, Field survey digitization, mapping of assets , FAT etc. | | | | | 739.56 |
| APFC installation at DT location | 20 Nos | | | | - | 37.50 |
| Total | | | | | | 2947.41 |

6. Phasing of modernization works proposed by TCED is given below.
Phasing of modernization works

| WORKS | PHYSICAL TARGETS | | | Rs. Lakh |
|-------------------------------------|------------------|--------------|-----------|----------|
| | 2022-23 | 2023-24 | 2024-25 | |
| New 110/11KV substation | - | 1 Ls | - | 3775.25 |
| Augmentation of 33/11 KV Substation | - | 1 Ls | - | 280.00 |
| NEW 11 KV line | - | 15.691Ckt Km | 10 Ckt Km | 482.84 |
| New LT Distribution Board | 150 Nos | 50 Nos | 50 Nos | 187.50 |
| Installation of Main Feeder Pillar | | 20 Nos | | 30.00 |
| Total | | | | 4755.59 |

In addition to the above, TCED proposed 31.82 crore towards SCADA and DMS, as detailed below.

| Work | Rs. Lakh |
|---|----------------|
| SCADA (Supervising Control and Data Acquisition) and DMS (Distribution Management System) | 3000.00 |
| GIS | 182.05 |
| | 3182.05 |

7. The implementation plan of Smart Meter is given below.

| Type of meter (A) | Total Lifecycle Cost Benchmark (B) | Phase I | | Phase II | | Total | |
|--|------------------------------------|-------------------|--------------------------|-------------------|--------------------|------------------|-------------------------|
| | | Nos. covered (C1) | Estimated cost (D1) (Rs) | Nos. covered (C2) | Estimated GBS (D2) | Nos. covered (C) | Estimated cost (D) (Rs) |
| Single phase whole current Smart Meter – Consumer Meter | 6,000 | 13124 | 78744000 | 11490 | 68940000 | 24614 | 147684000 |
| Three Phase whole current Smart Meter – Consumer Meter | 6,000 | 3715 | 22290000 | 11465 | 68790000 | 15180 | 91080000 |
| Three phase LT-CT operated Smart Meter – Consumer Meter | 6,000 | 406 | 2436000 | 110 | 660000 | 516 | 3096000 |
| Three phase LT-CT operated Smart Meter – DT Meter | 23,000 | 447 | 10281000 | | | 447 | 10281000 |
| Three phase CT/PT operated Smart Meter – HT Consumer Meter | 42,000 | 128 | 5376000 | | | 128 | 5376000 |
| Three phase CT/PT operated Smart Meter – Boundary Meter | 42,000 | 6 | 252000 | | | 6 | 252000 |
| Three phase CT/PT operated Smart Meter – Feeder Meter | 42,000 | 16 | 672000 | | | 16 | 672000 |
| | | 17842 | | 23065 | | 40907 | |
| Sub-Total GBS | | | 120051000 | | 138390000 | | 258441000 |
| PMA Charges @2.5% of Sub-Total GBS | | | 3001275 | | 3459750 | | 6461025 |
| Total GBS (incl. PMA charges) | | | 123052275 | | 141849750 | | 264902025 |

8. The Central Government vide the letter dated 25.04.2022, has approved the RDSS proposed by TCED. Summary of the projects cost and GBS for projects and PMA is given in the Table below.

| Sl No | Name of the project | Approved project cost | Gol grant sanctioned | Addl incentive (Gol grant) | Grant as (%) of approved cost |
|-------|---|-----------------------|----------------------|----------------------------|-------------------------------|
| | | (Rs. Cr) | (Rs. Cr) | (Rs. Cr) | |
| | Metering Works | | | | |
| 1 | RDSS Smart Metering works | 25.38 | 3.81 | 1.82 | 15% |
| 2 | RDSS PMA grant for Smart Metering Works | 0.1 | 0.06 | NA | 60% |
| | <u>Total metering works</u> | <u>25.48</u> | <u>3.87</u> | <u>1.82</u> | <u>15%</u> |
| | Loss Reduction works | | | | |
| 1 | RDSS Loss reduction works | 76.35 | 45.81 | NA | 60% |
| 2 | RDSS PMA grant for Loss reduction works | 1.15 | 0.69 | NA | 60% |
| | Total loss reduction works | 77.50 | 46.50 | | 60% |
| | Grand Total | 102.98 | 50.37 | | 49% |

9. TCED proposed to install 200kW Solar PV at vadakke bus stand at a total cost of Rs 1.3340 lakh.

TCED also proposed to renovate the office buildings at a total cost of Rs 30.10 lakh.

Though the TCED has submitted the Techno Economic Feasibility Report of Kannankuzhy SHP (7MW), the petitioner has not submitted further details regarding the execution of the project.

10. KSEB Ltd vide the counter affidavit dated 15.03.2023 had submitted the following;

- (1) As per the Regulation 71 of the KSERC (Terms and Conditions for Determination of Tariff) Regulation 2021 stipulates that the Capital Investment Plan shall be accompanied by all such information, particulars and documents as may be required by the Commission to substantiate the investment, justification of the proposed investments, project wise Detailed Project Report, basis of estimate, alternate solutions considered, and shall also include the capitalization schedule and financing plan.

However, the petitioner has not provided any details. Hence KSEBL is not in a position to evaluate the prudence of investment, especially in the case of substation investments.

- (2) M/s TCED has not submitted the year wise financial outlay and GFA additions of the proposed investment plan.
- (3) TCED has proposed installation of 200 kW Grid connected solar power plant with a cost of 133.41 lakh at vadakke bus stand during the MYT Control Period. As per the RE regulation, the normative capital cost for

Solar PV project commissioned during the Control Period shall be limited to Rs 4.00 crore/ MW. Hence the cost of solar power plant shall be limited to the prevailing norms.

- (4) Further M/s TCED has proposed a 7 MW Kannankuzhy SHEP during this control period, but the date of commencement and completion of the project is not mentioned in the petition and the same is also not considered in the asset addition details furnished by the petitioner.
- (5) As per the Order of the Commission dated 16.01.2023 in petition OP No. P 72/2021 has approved cumulative revenue surplus of Rs. 16910.50 lakh till 2020-21. Hence the commission may direct the licensee to meet the investment cost, apart from the grant, from regulatory surplus.
- (6) TCED had proposed a new 110 kV substation with a capacity of 2*20 MVA capacity. At present TCED is having a 110KV substation at Patturaikkal having 2 x 12.5 MVA 110/11 kV transformer and 1 x 16 MVA 110/33kV transformer; also the same premises is occupying with 3 x 10 MVA 66/11 kV transformer. The 33 kV substation of TCED is feeding from 110 kV substation Patturaikkal. The average maximum demand on 110kV side for the last two years is found as 21 MVA.
- (7) The 110 kV Thrissur Corporation Substation is feeding from 110 kV Substation Viyyur through 1VIPL feeder by tapping and 66 kV supply is from 110 kV Substation, Viyyur by 1 x 63 MVA, 110/66 kV transformer 6 CHVI I and II feeders from 220 kV substation chalakudy is tied at 66 kV bus of 110 kV Substation Viyyur. The upgradation of the 66 kV feeder from Chalakkudy to Viyyur is necessary for which DPR is submitted. STU needs development of 110 kV substation, Viyyur by upgrading the 66 kV system, but the feeding of Trissur Corporation substation is the major hurdle for that.

KSEB Ltd submitted that this situation can be overcome by making LILO arrangement at 1 VIPL feeder to Thrissur Corporation Substation, feeding from 110 kV Substation Viyyur and 110 kV substation Pullazhy.
- (8) KSEB Ltd further submitted that they put an additional proposal for 33 kV ring main system with 33 kV RMU substation feeding from KSEB substation in the vicinity of corporation for meeting additional load requirement and anticipated supply to the consumers. This will reduce the loss of existing 11 kV system when 33 kV system materializes.
- (9) Hence, KSEB Ltd requested before the Commission to have a prudence check on capital investment plan and may approve only reasonable levels, in accordance with the relevant regulations.

11. The Commission admitted the petition as OP No. 52/2022. First hearing on the petition was held on 03.03.2023 at the Conference Hall, Government Guest House Ramanilayam, Thrissur. Shri Sreenath K, Consultant and Shri Jose T.S, Electrical Engineer, TCED appeared on behalf of the Petitioner. Shri. M.P.Rajan, Deputy Chief Engineer and Shri Shine Raj, Asst: Executive Engineer presented the comments on behalf of the respondent KSEBL. The deliberations during the hearing are summarized below;

(1) The petitioner M/s TCED submitted the following;

- M/s TCED had presented a brief background of the petition. The Capital expenditure proposed for the distribution business by M/s TCED from 2022-27 is about ₹ 137 Crores. The proposed investments include loss reduction works, modernization and system augmentation works, SCADA/DMS, Smart Meter, 200kWp solar plant, Renovation of section office.

TCED has also proposed to construct the Kannankuzhy SHP (7MW) at a total cost of Rs 93.75 crore. However, DPR of the SHP is yet to be prepared. Hence TCED shall take separate approval once the DPR is finalized.

- The estimated cost for the proposed loss reduction works is ₹27.67 Crores and Modernization, system augmentation works is ₹48.69 Crores.

The loss reduction works consists of cabling related works- Rs 2.88 Cr, HVDS works – Rs 1.36 Cr, Feeder bifurcation works – Rs 16.03 Cr and IT/OT works- Rs 7.4Cr.

The modernization works includes New 110KV substation- Rs.37.75 Cr, Augmentation of 33 kV substation and new 11 kv UG cable works- Rs.7.63 Cr, LTDB Installation, Main, Mini feeder and transformer installation works- Rs.3.31 Cr.

- TCED submitted that the proposed cost for the smart meter is 25.38 Crores, out of it 15 percentage of the cost will be grant to be received under RDSS scheme.
- M/s TCED has proposed an amount of 32.39 Cr for the SCADA/DMS implementation through KSEBL.
- The estimated cost for the installation of 200kWp solar plant is ₹1.30 Cr. M/s TCED further submitted that they had proposed to renovate the existing office buildings at a total cost of about Rs 33 lakh.

- TCED submitted that 60 percentage of the proposed cost of Loss reduction works, Modernization and system augmentation works is sanctioned as grant under RDSS.

TCED also expect to receive 60% of the SCADA/ DMS works also as GBS from Central Government under RDSS.

TCED requested before the Commission to approve the capital investment proposals as detailed in the petition, as discussed above.

- (2) KSEB Ltd submitted the following during the hearing;
- (i) The estimated cost for the proposed installation of 200 kW Grid connected solar power plant with a cost of 133.41 lakh is on the higher side. As per the RE Regulations 2020 and its amendments the cost shall be limited to Rs 4.00 crore/ MW.
 - (ii) The petitioner has not proposed the source of fund for meeting the 40% of the cost covered under RDSS works and 85% of the capital investment for the implementation of smart metering in excess of the RDSS grants.

As per the Truing up Orders, M/s TCED has a cumulative revenue surplus of Rs. 169.10 Cr till 2020-21. Hence the commission may direct the M/s TCED to meet the investment cost, apart from the grant, from regulatory surplus available with them.

- (iii) KSEB Ltd submitted that, the breakdown of power supply in the licensed area of TCED can be solved by LILO arrangement at 1 VIPL feeder to TCED substation, feeding TCED substation from 110 kV Substation Viyyur and 110 kV substation Pullazhy; also, the 12.5 MVA 110/11 kV transformer has to be enhanced to 2 x 20 MVA 110/11kV. This project can be carried out in a phased manner by installing 1x20 MVA 110/11 kV transformer to the existing system initially and eliminating 66kVsystem.
- (3) The Commission during the deliberations noted that M/s TCED has not submitted the detailed cost benefit analysis of the proposed projects as mandated under Annexure-4 of the Tariff Regulations,2021. Hence, the Commission directed the petitioner to submit a revised Capital plan.

12. In compliance with the direction of the Commission, M/s TCED vide the submission dated 03.05.2023 had submitted the revised capital expenditure proposal. However, M/s TCED had made some cosmetic changes only in the revised plan submitted before the Commission. The petitioner failed to submit the

detailed cost benefit analysis including the source of funding for the projects, the impacts of the investments in the ARR etc.

The summary of the revised estimate is given below.

| Sl No | Particulars | Amount (Rs. Cr) |
|-------|----------------------------------|-----------------|
| 1 | Loss reduction | |
| | Total estimate approved | 27.69 |
| | PMA charges | 0.42 |
| | Sub total | 28.11 |
| 2 | Modernization | |
| | Total estimate approved | 48.69 |
| | PMA charges | 0.73 |
| | Sub total | 49.42 |
| 3 | SCADA/ DMS | 32.39 |
| 4 | Smart Meter | |
| | Total estimate approved | 25.38 |
| | PMA charges | 0.10 |
| | Sub total | 25.48 |
| 5 | Grand total includig PMA charges | 135.40 |

Installation of 200 kWp solar power plant

TCED proposed to install 200 kWp grid connected solar power plant at the vadakke bus stand Thrissur at a revised cost of 119.16 lakhs. The revised estimate submitted by M/s TCED for the installation is given below;

| Sl. No | Item | Quantity | Amount (Lakh) |
|--------------------|---|----------|---------------|
| 1 | Supply of 200kW on Grid solar at north bus stand above the waiting shed @ 41700/-kw | 1 Set | 83.400 |
| 2 | Additional structure work, Ladder, cable, cleaning provision etc | 1 Set | 6.343 |
| 3 | HT cable works 3C*300sq.mm 11kv upto RMU & Transformer | 1 Set | 2.249 |
| 4 | Supply & installation of RMU with FRTU | 1 Set | 10.543 |
| 5 | Installation of Transformer | 1 set | 7.717 |
| 6 | LT cabling works | 1 set | 5.912 |
| 7 | LT panel boards, Electrical Inspectorate approval, net meter | 1 set | 3.000 |
| Total Basic Cost | | | 119.163 |
| Total Project Cost | | | 119.163 |

However, M/s TCED has not proposed the mode of execution of the proposed 200kWp at Vadakke bus stand.

Office renovation

M/s TCED proposed a cost of ₹0.3135 crores towards the office renovation works of its existing office buildings.

13. The second hearing of the petition was conducted on 05.10.2023. Shri. Jose T.S, Electrical Engineer and Shri Jayaraj, Assistant Engineer, appeared on behalf of the Petitioner. Shri Shine Raj, Asst: Executive Engineer, presented the comments of KSEBL. The summary of the deliberations during the hearing is summarised below.

(1) TCED submitted the following;

- (i) The SCADA works in the capital expenditure is proposed to be implemented through KSEB Ltd as part of the RDSS works. KSEBL has already initiated steps to tendering the works.
- (ii) 60% cost of the loss reduction and modernisation works under RDSS is grant from Central Government. The Commission has to approve the investment approval for the balance cost.
- (iii) TCED had revised the cost of the proposed 200 kWp grid connected solar plant to be installed at at the vadakke bus stand at Thrissur as per the prevailing Renewable Energy Regulations issued by the Commission.
- (iv) The investment approval of the proposed SHP (7MW) at Kannankuzhy may be taken by Commission only after the finalisation of DPR and cost benefit analysis.

(2) KSEB Ltd submitted the following;

- (i) KSEB Ltd submitted that the petitioner has not submitted the sufficient details along with the revised proposal for verifying the prudence of the investment proposed by the TCED. The petitioner M/s TCED has also not submitted the year wise outlay of their proposed capital expenditure plan.
- (ii) The per MW cost in the revised estimate for the installation of the installation of the 200 kWp grid connected solar plant is on the higher side as per the prevailing Renewable Energy Regulations issued by the Commission.

- (iii) The petitioner M/s TCED is holding huge regulatory surplus with. The fund for the capital investment over the grant to be received under RDSS may be allowed to met from the regulatory surplus with M/s TCED.
- (iv) M/s TCED had filed a separate petition for the approval for the construction of a new 110kV substation at Laloor, at the land owned by M/s TCED. Hence the approval of the same may be considered separately.

Analysis and Decision of the Commission:

- 14. The Commission having examined in detail, the petition filed by M/s TCED for the approval of Capital Investment Plan for the Control Period 2022-27, comments of KSEBL, the provisions of the Electricity Act,2003 and other Rules and Regulations in force, decided as follows;
- 15. M/s Thrissur Corporation Electricity Department (TCED) is one of the small distribution licensee in the State of Kerala.

TCED has been distributing electricity to 12.65 sq.km out of the total area of 101.42 sq.km of the area of Thrissur Corporation, by purchasing power from KSEBL. The electricity distribution to the consumer in the balance area of Thrissur Corporation is being done by the incumbent licensee KSEBL.

TCED has been supplying electricity to about 40000 consumers and the annual energy is about 150MU. Out of the total energy sale, about 65% of the energy is being consumed by the commercial categories under LT-VI and LT-VII groups.

The Commission has been following uniform retail tariff across the State to avoid differential treatment for the consumers of small licensee and that of the incumbent licensee KSEBL, who are directly serving 98% of the total electricity consumers of the State.

The Commission has been regulating the expenses of TCED as per the provisions of the Tariff Regulations, 2021 and its amendments. All the prudent expenses including Return on Equity/ Return on Net Fixed Assets is allowed to TCED. As per the latest Orders on Truing Up, the average per unit cost of distribution of TCED is about Rs 1.50/unit (excluding the cost of Bulk Supply Tariff payable to KSEBL for purchasing power from KSEBL).

As on 31.03.2023, the total Gross Fixed Asset of TCED is about Rs 69.88 crore. In the instant petition, TCED has proposed a total capital investment for Rs 136.60 crore, including Rs 135.40 crore under RDSS and Rs 1.19 crore for the installation of the 200kWp Solar Plants.

Out of the total investment, the MoP, GoI sanctioned a grant of Rs 50.37 crore under RDSS for the 'loss reduction works' and 'smart metering works'. Further, TCED expect to have a RDSS grant of Rs 19.43 crore for SCADA works implemented through KSEBL. Thus, out of the proposed capital investment plan of Rs 136.60 crore, balance fund requirement of about Rs 66.80 crore excluding RDSS grant have to be funded by TCED from its own sources.

Considering the present level of GFA of 69.88 crore as on 31.03.2023, the GFA addition of Rs 136.60 proposed in the current MYT period from 2022-23 to 2026-27, which is about 195% higher the present GFA of TCED. The Commission is duty bound to ensure the prudence of the capital investments proposed by the licensee.

With the above background, the Commission has examined in detail the capital investment proposed by TCED for the MYT period 2022-23 to 2026-27 and the details are discussed in the subsequent paragraphs.

16. The Regulation 71 of the KSERC(Terms and Conditions for the Determination of Tariff) Regulations, 2021 deals with Capital Investment Plan and related matters. The relevant Regulation is extracted below;

“71. Capital Investment Plan. –

- (1) It is the primary responsibility of the distribution business/ licensee to ensure optimum utilization of the capital expenditure in its projects to enhance economy, efficiency and productivity and to meet the Performance Standards specified by the Commission.*
- (2) The distribution business/ licensee shall, along with the petition for determination of aggregate revenue requirements for the Control Period, file to the Commission for its approval, a detailed yearly capital investment plan, financing plan and the physical targets for meeting the requirement of load growth, reduction in distribution losses, improvement in the quality of supply, reliability, metering, consumer services etc., in accordance with the ‘Guidelines for Provisional Clearance of Capital Investment’ specified in Annexure 4 to these Regulations.*
- (3) The Capital Investment Plan shall be accompanied by all such information, particulars and documents as may be required by the Commission to substantiate the investment, justification of the proposed investments, project wise Detailed Project Report, basis of estimate, alternate solutions considered, and shall also include the capitalization schedule and financing plan.*
- (4) The Commission may approve the capital investment plan of the distribution business/ licensee, with appropriate modifications, if required, or reject the same: Provided that the Commission shall afford to the distribution business/ licensee, a reasonable opportunity of being heard, before rejecting the proposal for approval of the Capital Investment Plan.*

(5) *The costs corresponding to the capital investments which are capitalised as per the approved Capital Investment Plan of the distribution business/ licensee for a given financial year shall be considered for its revenue requirement.”*

17. M/s TCED has filed the instant petition for the approval of the Capital expenditure for the Control Period 2022-27. TCED has proposed the major part of the capital investment plan for the MYT period 2022-23 to 2026-2027 under the Revamped Distribution Sector Scheme (RDSS) with the Government Budgetary Support under following heads.

- (A) Loss reduction works,
 (B) Modernisation,
 (C) SCADA and GIS,
 (D) Smart Metering.

The details are discussed in the following paragraphs.

(A) Loss reduction works

18. The details of the capital works of TCED approved by the Ministry of Power, Government of India vide the notification dated 25.04.2022 under loss reduction, the Gross Budgetary Support and the balance to be met by M/s TCED from its own fund is given below.

| SL No | Details of Works | Amount (Rs. Cr) | RDSS Grant (60% of the amount) (Rs.Cr) | Own fund (Rs. Cr) |
|-------|--------------------------------------|-----------------|--|-------------------|
| A | Loss- Reduction | | | |
| 1 | Cabling related Works HT (16.613 kM) | 2.89 | 1.73 | 1.15 |
| 2 | HVDS | | | |
| | (a) New DTR 25 & 63 KVA | 0.65 | 0.82 | 0.54 |
| | (b) 11 kV UG & ABC cable with poles | 0.72 | | |
| | Sub total | 1.36 | | |
| 3 | Feeder Bifurcation | | | |
| | (a) HT Cabling works | 4.54 | 9.39 | 6.26 |
| | (b) LT Cabling and other works | 11.12 | | |
| | Sub total | 15.65 | | |
| 4 | IT & OT services | 7.40 | 4.44 | 2.96 |
| 5 | APFC at DTR Locations | 0.38 | 0.23 | 0.15 |
| 6 | PMA Charges | 0.42 | 0.25 | 0.17 |
| | Sub total | 28.09 | 16.85 | 11.23 |

The Commission has examined capital works proposed for loss reduction under RDSS as above. Out of the total cost of R 28.09 crore, the MoP, Gol has sanctioned the grant of Rs 16.85 crore. The balance cost of Rs 11.23 has to be met by M/s TCED from its own resources.

Since the works proposed under loss reduction are approved by MoP, GoI, as part of the implementation of the distribution projects under RDSS, the Commission is not inclined to examine the prudence of these capital works at this advanced stage. However, the approval of this Commission is required for sourcing the fund for meeting the 40% of the capital cost of these projects excluding RDSS grant.

As per the Orders on Truing Up for the year 2021-22 dated 21.11.2023 in petition OP No. 33/2023, the total accumulated / accrued revenue surplus approved as on 31.03.2022 allowed to retain with TCED is Rs 163.51 crore. M/s TCED is allowed to utilize from this accrued surplus as on 31.03.2022 the 40% of the approved capital cost for the loss reduction works, which is over and above the RDSS grant. The Commission hereby clarify that, the assets created using these regulatory surplus with the licensee are not eligible for claiming interest, and depreciation.

(B) Modernisation works- 49.42 Crores

19. The summary capital expenditure works proposed by the TCED under the Modernization works with RDSS grant is given below;

| B | Modernization | Amount (Cr) | RDSS Grant (60% of the amount) | Own fund |
|---|---|-------------|--------------------------------|----------|
| 1 | New 110/11 kV Substation | 37.75 | 22.65 | 15.10 |
| 2 | Augmentation of 33 kV existing works | 2.80 | 1.68 | 1.12 |
| 3 | New 11 kV line | 4.83 | 2.90 | 1.93 |
| 4 | New LT Distribution Board | 1.88 | 1.13 | 0.75 |
| 5 | Installation of main Feeder Pillar/mini feeder pillar | 0.57 | 0.34 | 0.23 |
| 6 | Replacement of old Transformers | 0.86 | 0.52 | 0.35 |
| 7 | PMA Charges | 0.73 | 0.44 | 0.29 |
| | Sub total | 49.42 | 29.65 | 19.77 |

The Commission examined the details of capital works proposed by the licensee under the **Modernization works**.

Out of the total capital cost of Rs 49.42 crore, Rs 37.75 crore is earmarked for the construction of the new 110kV substation and associated 110kV lines at Thrissur. The Commission vide the Order dated 08.07.2024 in OP No. 53/2023 had granted approval for the implementation of the proposed 2x 20MVA 110kV substation at Laloor and allied EHT line and other associated works under RDSS. In the said Order, the Commission has directed TCED to seek formal approval for investing balance amount of Rs 15.10 crore excluding RDSS grant from its internal accrued surplus. Hence, the Commission has not considered the capital investment plan of 110kV s/s at Laloor in the scope of the approval of capital investment of the modernization works given under this Order.

The total capital cost of modernization works excluding new 110kV s/s approved under RDSS is Rs 11.67 crore. Out of the approved estimated cost, the budgetary support under RDSS is Rs 7.002 Crore (60%) and balance amount of Rs 4.67 crore has to be met TCED as its own.

As mentioned earlier, M/s TCED has an internal accrued surplus of Rs 163.51 crore. M/s TCED is allowed to utilize the accrued regulatory surplus approved by the Commission as on 31.03.2022 for meeting the additional fund of Rs 4.67 crore for the modernization works excluding the 110kV s/s. As already clarified, the assets so created is not eligible for claiming depreciation and interest & finance charges.

(C) SCADA/DMS- 32.39 Crores

20. It is reported that, as part of the implementation of SCADA/DMS under RDSS project, KSEBL has included the Thrissur Town also in the final DPR under Group-A town submitted to Power Finance Corporation (nodal agency). Out of the total project cost of Rs 534.15 crore, the project cost of SCADA DPR of TCED is Rs. 32.39 crore. The 7th monitoring committee of the MoP for RDSS, have approved the proposal for implementation of SCADA project of Kerala through KSEBL. 60% of the total cost of Rs 534.15 crore will be RDSS grant.
21. Summary of the proposed RDSS SCADA pertaining to TCED are given below:

| SCADA/DMS Control Center | RTUs in Substations (Nos.) | Outgoing 11kV feeders (Nos.) | FRTU integrated RMUs (Nos.) | SCADA integrated FPIs(Nos.) |
|---|----------------------------|------------------------------|-----------------------------|-----------------------------|
| Combined for KSEBL& TCED at VidyuthiBhavanam Thrissur | 2 | 24 | 287 | 186 |

The total proposed cost of Rs 32.39 crore earmarked for SCADA/DMS of TCED includes the cost of RTUs, FRTU integrated RMSs, SCADA integrated FPIs, project management, auxiliary power supply, integration charges, FMS cost for 2 years etc.

It is also reported that, the SCADA of TCED is also implemented through KSEBL. However, TCED is yet to sign the MOU/ Agreement with KSEBL for the implementation of the SCADA in Thrissur Town through KSEBL.

22. As per the scheme of RDSS, 60% of project cost of Rs 32.39 crore pertaining to SCADA/DMS of TCED, amounting to Rs 19.434 crore will be grant from MoP, Gol under RDSS. The balance cost of Rs 12.956 crore has to be met by TCED as its own and has to be reimbursed to KSEBL for the implementation of the SCADA/DMS of TCED.

23. KSEBL has submitted the petition for the approval of the capital investment plan of SBU-D during the control period from 2022-23 to 2026-27, including the works proposed under 'Centrally aided project RDSS', along with the ARR&ERC petition for the MYT period from 2022-23 to 2026-27 in January 2022. Though the Commission has given consent to proceed with the works under RDSS excluding the 'Smart metering and related works', the Commission is yet to grant formal approval of the Capital Investment proposals of KSEBL including the RDSS works.
24. Considering these aspects in detail, the Commission has decided to grant provisional approval to TCED to implement the SCADA/DMS work of TCED with a total cost of Rs 32.39 crore through KSEBL. TCED may be permitted to meet its own contribution of Rs 12.956 crore from the accumulated approved surplus of Rs 163.51 crore as on 31.03.2022, and to transfer the amount to KSEBL for implementing the said works. As already clarified the assets will not be eligible for claiming depreciation and interest & finance charges.

(D) SMART Metering

25. M/s TCED proposed to replace the entire consumer meters in its licensed area of 40975 nos , with a total cost of 25.88 crore under RDSS. Out of the total cost of Rs 25.88 crore, 15% of the cost is grant under RDSS and the balance amount of Rs 22.00 crore has to be met by TCED as its own. TCED proposes to implement the smart metering through TOTEX mode, as proposed by Central Government. TCED requested to grant approval for implementing the smart metering under TOTEX mode as proposed by TCED.
26. Regarding the implementation of the 'Smart Metering' in the State under TOTEX mode under RDSS, the meeting chaired by Hon'ble Chief Minister on 25.08.2023 has directed KSEBL to propose an alternate proposal for implementation of smart metering instead of TOTEX mode and to revise the phasing out of the programe.

Subsequently, based on the proposal of KSEBL, the Distribution Reforms Committee (DRC) of RDSS, Kerala under the chairmanship of Chief Secretary held on 23.01.2024, has decided to implement the smart metering in Kerala under CAPEX mode instead of TOTEX mode. As a first phase, it has decided to install 3 lakh smart meters for Government consumers (1,65,000), HT consumers (about 7500), distribution transformer meters (87200), boarder meters etc (4200) etc, following the RDSS guidelines.

In the said meeting, the implementation of smart metering proposal of TCED also discussed. It is decided to entrust Addl Chief Secretary (Power) to hold a meeting with Thrissur Corporation, KSEBL and LSGD to explore the possibility of implementing the smart metering works of TCED under CAPEX mode by the

same agency to be appointed by KSEBL. However, a decision on the same is yet to be taken.

Under these circumstances, the Commission has decided to defer the approval of implementation of 'smart metering' under RDSS in TOTEX mode. However, once the TCED submit necessary proposal for implementation of the same in CAPEX mode as decided in the DRC meeting held on 23.01.2024 under the chairmanship of Chief Secretary, the Commission may grant approval of the same after detailed appraisal of the same. Since the cost of the project is significantly high and the grant component is negligible, the licensee is advised to implement the program in a phased manner, focusing first on system meters, high consuming consumers and government consumers.

Investment approval for the installation of 200 kWp Solar Power Plant

27. M/s TCED proposes to install 200 kWp grid connected Solar power plant at the Vadakke bus stand at Thrissur, at a total cost of Rs 119.16 lakh. The abstract of the estimate for the installation of the solar plant is given below.

| Sl. No | Item | Quantity | Amount (Lakh) |
|--------------------|---|----------|---------------|
| 1 | Supply of 200kW on Grid solar at north bus stand above the waiting shed @ 41700/-kw | 1 Set | 83.400 |
| 2 | Additional structure work, Ladder, cable, cleaning provision etc | 1 Set | 6.343 |
| 3 | HT cable works 3C*300sq.mm 11kv upto RMU & Transformer | 1 Set | 2.249 |
| 4 | Supply & installation of RMU with FRTU | 1 Set | 10.543 |
| 5 | Installation of Transformer | 1 set | 7.717 |
| 6 | LT cabling works | 1 set | 5.912 |
| 7 | LT panel boards, Electrical Inspectorate approval, net meter | 1 set | 3.000 |
| Total Basic Cost | | | 119.163 |
| Total Project Cost | | | 119.163 |

It was submitted that, M/s TCED is responsible for execution of the Solar plant, on a lump-sum, fixed fee, turn key basis.

28. The Commission has noted the proposal of M/s TCED. The licensee had already installed 500kWp Solar PV plants and it has been functioning from 2019-20 onwards. However, the actual CUF of the Solar PV plants installed by TCED is less than 13% till date. The maximum CUF so far achieved is 12.80% only. Even the roof top solar plants installed in the State since year 2020-21 yields an

annual CUF of 20% and above. However, M/s TCED has to submit the reasons for the very low CUF of the Solar plants installed by the licensee.

In the present petition, TCED proposes to implement the proposed 200kWp Solar plant on EPC basis. However, considering very low CUF of 500 kWp Solar PV already installed by TCED, recent developments and competition among the solar developers in the Country, and also due to the limited technical knowhow of TCED on the installation, operation and maintenance of Solar plant, it is better to execute the project on RESCO model, through competitive bidding route at a levelised tariff for the entire life of 25 years as per the Section 63 of the EA-2003.

Once such tariff is arrived through competitive bidding route as per Section 63 of the EA- 2003, the Commission may adopt the tariff for the procurement of power from the solar plant, after prudence check.

With the above observation, the Commission hereby direct M/s TCED to revise the proposal suitably.

Office Renovation

29. M/s TCED proposes to renovate its four section offices of M/s TCED at a total cost of Rs 30.10 lakh during the MYT period 2022-23 to Rs 2026-27. However, TCED has not submitted the proper justification on the urgent need for the office renovation proposed.
30. The Commission further noted that, M/s TCED has incurred about Rs 98.23 lakh during the previous MYT periods from 2016-17 to 2021-22 towards office equipments, IT equipment etc. Out of the above, Rs 49.17 lakh is incurred for the office equipment. The Commission has approved the said amounts as part of licensee's assets addition in the Truing Up of accounts of the respective years. The details are given below.

Year wise details of the cost incurred and approved for procuring office equipment, furniture, IT equipment during the period from 2016-17 to 2021-22

| Year | Office Equipment | Furniture | IT Equipment | Total |
|-------------|------------------|------------|--------------|------------|
| | (Rs. Lakh) | (Rs. Lakh) | (Rs. Lakh) | (Rs. Lakh) |
| 2016-17 | 2.46 | 0.42 | 19.78 | 22.66 |
| 2017-18 | 20.96 | 1.08 | 5.90 | 27.94 |
| 2018-19 | 5.73 | 4.64 | 7.27 | 17.64 |
| 2019-20 | 8.96 | 1.00 | 1.20 | 11.16 |
| 2020-21 | 8.91 | | 1.50 | 10.41 |
| 2021-22 | 2.15 | 0.78 | 5.49 | 8.42 |
| Grand Total | 49.17 | 7.92 | 41.14 | 98.23 |

31. M/s TCED has to submit the abstract details of the office equipment, furniture and IT equipment procured and installed at its office buildings in the previous MYT periods from 2016-17 to 2021-22 by incurring the expenses as above.

TCED has to submit proper justification for the renovation of its section offices with the total cost of Rs 31.35 lakh during the current MYT period, in addition to the amount incurred in the previous MYT periods. The Commission also noted that, presently the offices of TCED has been functioning in the buildings owned by Thrissur Corporation on rental basis.

Considering the facts and circumstances as above, the Commission hereby reject the proposal of TCED to renovate its office building at a total cost of Rs 31.35 lakh.

32. As discussed in the preceding paragraphs, the total funds required by TCED for the Scheme of works under RDSS over and above the RDSS grant is Rs 28.856 crore excluding the proposed 110kV s/s at Laloor, and its summary is given below.

Own funds required for completing the RDSS works

| Sl No | Particulars | Own fund (Rs. Cr) |
|-------|-----------------|-------------------|
| 1 | Loss reduction | 11.230 |
| 2 | Modernisation | 4.670 |
| 3 | SCADA DSM works | 12.956 |
| | Total | 28.856 |

The Commission has allowed M/s TCED to meet the own fund requirement for the RDSS works by utilizing the internal accrued surplus as on 31.03.2021 amounting to Rs 163.51 crore approved vide the Order dated 21.11.2023 in petition OP No. 33/2023. The Commission has been allowing all reasonable and prudent expenses including RoE/ Return on net fixed assets to TCED over the years for carrying out its electricity distribution activities. The accrued regulatory surplus approved and allowed to be retained with M/s TCED is the amount arrived after allowing all the prudent expenses including statutory returns and which is in excess over the revenue collected from the consumers.

As per the principles followed by the Commission for the determination of BST and as per the provisions of the Tariff Regulation,2021, the Commission has to factor the regulatory surplus approved as above, while determining the BST of TCED. Thus, these surplus funds has to be utilized for the benefits of the consumers of the State. Accordingly, the Commission has permitted to retain the accrued surplus with TCED and to utilize the same as per the directions and orders issued by the Commission from time to time.

Considering these aspects in detail, the Commission hereby clarify that, the assets created using the internal accrued regulatory surplus as approved by the Commission, is not eligible for 'interest charges', depreciation and RoE/RoNFA.

Orders of the Commission

33. The Commission after examining the petition filed by M/s TCED for the approval of Capital Investment projects for the Control Period 2022-27, comments of KSEB Ltd, the provisions of the Electricity Act,2003 and other Rules and Regulations in force, hereby Orders that;
- (1) Approve the loss reductions works of TCED under RDSS for an amount of Rs 28.09 crore, as detailed in the paragraph-18 above.
 - (2) Approve the modernization works of TCED under RDSS for an amount of 11.67crore excluding the capital investment of 110kV substation at Laloor, as detailed under paragraph-19 above.
 - (3) Grant provisional approval to implement the SCADA/DMS works of TCED for an amount of Rs 32.39 crore through KSEBL, as detailed under paragraph-24 above.
 - (4) M/s TCED has to submit revised proposals for implementing the 'smart metering works' under CAPEX mode instead of TOTEX mode, as per the decisions of the Distribution Reforms Committee (DRC) of RDSS dated 25.08.2023, as detailed under paragraph-26 above.
 - (5) M/s TCED shall submit the proposals to implement the 200kWp Solar plants in RESCO model instead of EPC model, due to the reasons given under paragraph-28 above.
 - (6) Reject the proposal of renovation of its office building at a total cost of Rs 31.35 lakh due to the reasons given under paragraph-31 above.
 - (7) M/s TCED is not eligible to claim 'interest charges, depreciation and RoE/RoNFA' on the assets created by utilizing the approved regulatory surplus with TCED due to the reasons given in paragraphs 32 above.

The petition is disposed of. Ordered accordingly.

Sd/-
T K Jose
Chairman

Sd/-
Adv. A J Wilson
Member

Sd/-
B Pradeep
Member

Approved for issue

Sd/-
C R Satheesh Chandran
Secretary