



KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated Under the Companies Act, 1956 (No.1/1956))

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ABSTRACT

Procurement of additional quantity of Distribution Transformers for the replacement of aged transformers installed before the year 2000 - Sanctioned - Orders issued.

CORPORATE OFFICE (SCM)

B.O.(FTD)No. 681/2022 (SCM/XD/AE3/Trfr Procurement/2022-23) Thiruvananthapuram, Dated 02.08.2022

- Read: 1. B.O(DB) No.278/2022(KSEB/SCM/XM/AEEVR/2021-22) PP-2022-23) dtd Tvpm 04/04/2022
2. B.O(DB) No.621/2022(SCM/XM/AE(A)/PP-2022-23) dtd Tvpm 16/07/2022
3. Note No. SCM/XD/AE3/Trfr Procurement/2022-23 dated 12.07.2022 of the Chief Engineer(SCM) & CSC submitted to the Full Time Directors (Agenda 74/7/22).

ORDER

As per "Guidelines for Specifications of Energy Efficient Outdoor type Three phase and Single phase Distribution Transformers" by Central Electricity Authority, life of transformers is 25 years. The Chief Engineer(SCM), submitted a proposal for purchasing additional quantity of efficient low loss transformers for replacing the distribution transformers in our system which are in service for more than 25 or 20 years. The proposal is submitted based on a study of transformer failure analysis conducted during 2020-21 in the O/o the Chief Engineer(SCM). The advantages are the savings and reliability.

As per the above report, the following observations were made:

- It will be economical for KSEBL to replace the 100kVA and 160kVA Distribution transformers which are in service for more than 25 or 20 years with new transformers, rather than repairing and keeping the old ones in service, as the old transformers are having higher losses compared to the new transformers.
- From the data it is observed that replacement of 160kVA transformers which are older than year 2000 will result in a very high net savings and it will be prudent to scrap such 160kVA transformers.

Hence, considering the savings obtained & more reliability, it is recommended as per note read as 3rd above, to replace the 100 kVA & 160 kVA transformers in our

system installed before 2000 and requested sanction for the purchase of following quantities of distribution transformers with **upgraded specification of Energy efficiency level 2 with amorphous core.**

11kV/433V, 100kVA - 400 nos

11kV/433V, 160kVA - 250 nos

The existing rating of transformers being purchased in KSEBL is **1 star (as per BEE 2017) , Energy efficiency level 2 as per IS 1180 (Part 1) : 2014.** But as per the recent amendment, (Amendment No.4, March, 2021), the old 1 star level 2 transformers are rated presently as 1 star level 1.

In future, in order to improve the quality & efficiency of transformers, KSEBL have to go for higher standard transformers -2 star level 2/ 3 star level 3, as notified in the latest amendment. The CEA guidelines also recommended utilities to migrate to low loss transformers in a phased manner. For obtaining lower level of losses corresponding to level 2 & level 3 transformers, amorphous core has to be used instead of CRGO or else transformers will be bulky and with more weight.

The Chief Engineer(SCM), also requested sanction for the purchase of 50 Nos., 11kV/433V, 250kVA transformer with the upgraded specification.

The Financial commitment involved based on the updated basic price as on May 2022, as per IEEMA price variation schedule is as follows:

SI NO	Rating of DTR in kVA	Qty required (Nos.)	Basic rate (Rs.)	AIR (Rs.)	Total amount (Rs.)
1	100	400	1,74,917	2,08,172	8,32,68,800
2	160	250	2,92,460	3,47,345	8,68,36,250
3	250	50	3,84,979	4,57,225	2,28,61,250
Total Amount					Rs. 19,29,66,300/-

(Rupees Nineteen Crore Twenty Nine Lakhs Sixty six thousand Three hundred only)

The purchase of the above transformers can have the added advantage of using in RDSS project if warranted, since the specifications match.

The matter was placed before the Full Time Directors as per the note read as 4th above.

Having considered the matter in detail, the Full Time Directors in its meeting held on 15.07.2022, Resolved to accord sanction to purchase the following quantities of distribution transformers with upgraded specification, for replacing the aged transformers installed before the year 2000.

11kV/433V, 100kVA - 400 nos

11kV/433V, 160kVA - 250 nos

11kV/433V, 250kVA - 50 nos

Further resolved to include the expenditure in the purchase plan 2022-23.

Orders are issued accordingly.

By Order of the Full Time Directors,

sd/-

**LEKHA.G
COMPANY SECRETARY**

To

The Chief Engineer (SCM)

Copy to:-

1. The Legal Advisor & Disciplinary Enquiry Officer.
- ✓ 2. The Deputy Chief Engineer (IT), KSEB Limited.
3. The TA to Chairman & Managing Director/ Director (D, SCM & IT)/ Director (T,SO,P&S)/ Director (G-E) / Director (G-C) / Director (REES incl. SOURA, Nilaavu, S&W)
4. The Company Secretary
5. The PA to Director (Finance & HRM)/Senior C.A. to Secretary(Administration)
6. The Fair Copy Superintendent, Board Secretariat
7. The Library, KSEB Limited/Stock file.

Forwarded/ By Order


Assistant Engineer