K.I.PRADEEP KUMAR IFS
Divisional Forest Officer

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G3- 278/2021

Dated : 19.06.2023.

To

Chief Conservator of Forests
Southern Circle,
Kollam.

Sir,

Sub: Thiruvananthapuram Division- Diversion of forest land for the up gradation of 9.93 Km existing 66 KV Attingal – Palode SC feeder to 110 KV double circuit from Mithirmala to Palode in Palode Range – forest clearance – reg.

Ref: 1. Online proposal No. FP/KL/TRANS/50187/2020.
2. Letter No.FC2-3774/2022 dated 24.04.2023 of APCCF (SA) & Nodal Officer, F(C) Act & CEO,CAMPA.
3. Letter No. DB3A/TDP/Palode upgradation/ 2023-24/128 dated 19.04.2023 of Executive Engineer, KSEB Transmission Division Kazhakuttom.

Kind attention is invited to the subject and reference cited. The reply to the EDS raised in the PARIVESH portal in the online proposal cited reference (1) above is submitted below.

The Executive Engineer, KSEB Transmission Division, Kazhakuttom has submitted the clarification sought by Govt. of India during the meeting held on 28.03.2023 vide reference (3) cited. The Executive Engineer has reported that the construction of underground cable would cause more environmental damage than overhead lines since it requires extensive excavation and backfilling, which would lead to soil erosion, deforestation and habitat fragmentation. It is also reported that according to the board principles followed for undergrounding of power lines, "Undergrounding of transmission lines of 66 KV and above voltage level is not technically feasible for evacuation of bulk power". The letter submitted vide reference (3) cited is enclosed for further necessary actions.

Yours faithfully,

Divisional Forest Officer,
Thiruvananthapuram

KERALA STATE ELECTRICITY BOARD LIMITED
(Incorporated under the Indian Companies Act, 1956) CIN:U40100KL2011SGC027424
Office of the Executive Engineer, Transmission Division, Kazhakuttom
Thiruvananthapuram – 695 582.
Telephone: +91 471 2994838, 9446008107
E-mail: eetdptvm@gmail.com

No. DB 3A/TDP/Palode upgradation/2023-24/ 128 Date: 19.04.2023

From

The Executive Engineer

To

The Divisional Forest Officer,
Thiruvananthapuram.

Sir,

Sub: Upgradation of 9.93 km existing 66 kV Attingal Palode SC feeder to 110kV Double circuit using ACSR Wolf conductor from Mithirmala to Palode – Forest clearance – additional details - reg.

Ref: 1. AS No. BO (FTD) 216 /2020/(D(T&SO&S/T1/Palode) dated 19.03.2020.
2. Online Proposal No. FP/KL/TRAN/50187/2020 dated 10.11.2020.
3. Letter No 4-KLC1436/2023-BAN/93 dated 29-03-2023 of the Assistant Inspector General of Forest (Central), Integrated Regional Office, MoEF&CC, Bangalore dated 14.03.2023
4. Letter No. DB 07/TSD-NDD/TCS-NDD/23-24/11 dated 01-04-2023 of the Assistant Executive Engineer, Transmission Sub Division, Nedumangad

KSEBL had applied online for Forest Clearance for Right Of Way (ROW) for the work of Upgradation of 9.93km existing 66kV Attingal Palode line as per proposal no. FP/KL/TRANS/50187/2020 dated 10.11.2020. The 70th Regional Empowered Committee (REC) meeting held on 28.03.2023 has requested information / clarification on the technical details / feasibility of shifting the overhead transmission line to underground cable and details of other alternatives examined.

In this regard, it is submitted that while an underground cable may seem to be a viable alternative, laying seven runs of 110 kV, 630 mm^2 underground cable using concrete cable trench and construction of seven nos of concrete cable jointing chambers, each of size 12m x 2m x 2m along the 4 km of forest land would cause more environmental damage than constructing an overhead line. It requires extensive excavation and backfilling, which would lead to soil erosion, deforestation and habitat fragmentation. Additionally, the construction of cable trench would be a complex and expensive process and future maintenance of the underground cable could also pose challenges. Also at the tapping point, construction of an isolator station would be required, which would necessitate acquisition of more forest land. On the other hand, drawing 110 kV Overhead line would require construction activities only at the existing 13 tower locations.

Moreover, the Ministry Of Power, Government of India has issued Techno-economic norms on undergrounding of power lines vide Circular No. 25-7/42/2019-PG dated 01.08.2022, specifying the broad principles which should be followed for undergrounding of power lines. It states that *"Undergrounding of transmission lines of 66 kV and above voltage level is not technically feasible for evacuation of bulk power. The power evacuation lines shall be allowed to be constructed over ground as any outage in*

the underground line due to any fault / damage would require much longer time for restoration compared to overhead line and would amount to huge generation losses."

In view of the above and considering the increasing demand for electricity in Palode and nearby villages, it is very much essential to upgrade the existing 66kV substation, Palode to 110kV by drawing overhead line. It is pertinent to note that since the substation lies within the Reserve forest area, there is no other alternative for feeding 110kV supply to Palode substation. KSEBL undertakes to strictly adhere to environmental regulations and guidelines during and after the construction process.

It is once again requested that necessary sanction may be granted for carrying out the upgradation work of the existing 66kV Attingal – Palode line to 110 kV from Mithirmala to Palode by drawing overhead line through forest area at the earliest in order to provide reliable and quality power to the north eastern region of Thiruvananthapuram District.

OFFICE OF THE EXECUTIVE ENGINEER
KSEB KAZHAKUTTOM
KAZHAKUTTOM P.O.
THIRUVANANTHAPURAM-695 582
Ph:No:0471 2167878
Date:
TRANSMISSION DIVISION, KAZHAKUTTOM

Yours faithfully,

Executive Engineer

Copy submitted to:-

The Deputy Chief Engineer, Transmission Circle, Thiruvananthapuram.

Copy to:-

The Assistant Executive Engineer, Transmission Sub Division, Nedumangad.

No.25-7/42/2019-PG
Government of India
Ministry of Power

Shram Shakti Bhawan,
Rafi Marg, New Delhi
Dated, the 1st August, 2022

To,

Chairperson
Central Electricity Authority
Sewa Bhawan, R K Puram
New Delhi-110066

Subject: Techno-economic norms on under-grounding of power lines

Sir

I am directed to say that of late, number of issues related to undergrounding of power lines had arisen and accordingly, a Technical Expert Committee (TEC) under Member (Power System), Central Electricity Authority (CEA), with representatives of Central Transmission Utility of India Ltd and Ministry of Environment Forest and Climate Change, was constituted to clearly lay down the techno-economic norms on under-grounding of power lines, so that adhoc decision on case to case basis is replaced by decision making based on transparently announced norms framed by the TEC.

2. The Committee had examined the Technical feasibility of under-grounding of transmission lines and submitted their report. The report has been approved and based on recommendation of the Committee, it has been decided that following broad principles for undergrounding of power lines should be followed:

a) Undergrounding of transmission lines of 66 kV and above voltage levels is not technically feasible for evacuation of Bulk power on account of the different constraint as mentioned in the report. The power evacuation lines be allowed to be constructed over ground as any outage in the underground line due to any fault/damage would require much longer time for restoration that compared to overhead line and would amount to huge generation losses.

b) In respect of 33 kV and below rated lines, which are used for transfer of lower volumes of power over shorter distances, the undergrounding of transmission lines is technically feasible and can be adopted, keeping in view local circumstances.

c) The following guidelines may be followed for installation of bird diverters, wherever felt necessary:

i) In respect of EHV transmission lines with two or more conductors per phase (bundle conductors), placement of bird diverters on the Earth wire(s)/ OPGW may suffice.

ii) In respect of transmission lines with single conductor in each phase, the bird diverters can be placed on the phase conductors as well as on the Earthwire(s)/ OPGW.

iii) The bird diverters shall be placed on central 80% span of the line and at an interval of 10 m.

iv) Technical specification for Bird Diverters as finalized by the Hon'ble Supreme Court appointed Committee in consultation with CEA shall be followed.

3. This issues with the approval of the Hon'ble Minister of Power and New and Renewable Energy.

Yours faithfully,

(Sanjeev Jain)
Under Secretary to the Govt. of India
Tel. 23710264
E-mail: pgdesk-mop@gov.in

Copy to:

1. Secretary, Ministry of New & Renewable Energy, New Delhi
2. Secretary, Ministry of Environment Forest and Climate Change, New Delhi
3. Chief Operating Officer, Central Transmission Utility of India, Gurugram
4. Managing Director, Solar Energy Corporation of India Ltd, Gurugram
5. CMD, Power Grid Corporation of India Ltd, Gurugram
6. All Transmission Developers
7. Director, NIC, Ministry of Power -for uploading the same in the Ministry of Power's website.