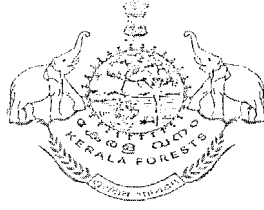


FC2- 1005/2021

(27267/2018)



Forest Headquarters,  
Vazhuthacaud,  
Thiruvananthapuram - 14.  
Ph: 0471-2529243, 2529325  
E-mail: apccf-sa.for@kerala.gov.in  
**Date :15.02.2022**

From

The Additional Principal Chief Conservator of Forests,  
Nodal Officer, F(C)Act &  
Chief Executive Officer, CAMPA,  
Forest Headquarters, Vazhuthacaud,  
Thiruvananthapuram.

To

The Principal Secretary,  
Forest & Wildlife Department,  
Secretariat, Thiruvananthapuram.

Sir,

**Sub :-** Forest & Wildlife Department – Diversion of 0.7945 ha of forest land for laying 220 KV Double Circuit line from Thottiyar Hydro Electric Power House to 200 KV LP Madakkathara line for evacuating power from Thottiyar Hydro Electric Project – reply submitting off - regarding.

**Ref :-** Letter No. F-KLB1315/2021-BAN dated 30.11.2021 of Assistant Inspector General of Forests, Ministry of Environment, Forest & Climate Change, Bangalore.

Kind attention is invited to the reference. The Executive Engineer, KSEBL, Transmission Division, Kothamangalam has furnished the details sought by Ministry of Environment, Forest & Climate Change based on the Regional Empowered Committee Meeting deliberations regarding the proposal for diversion of 0.7945 ha of forest land for laying 220 KV DC Power evacuation line from Thottiyar Hydro Electric Project. The details furnished by KSEBL are logical and

apt for the field situation and hence the response from KSEBL may be accepted and necessary action may be taken for the onward transmission to Government of India.

Yours faithfully,

Enclosure: As above.

Additional Principal Chief Conservator of Forests  
Nodal Officer, F(C) Act &  
Chief Executive Officer, CAMPA

Copy to the Inspector General of Forests (Central), Government of India, Ministry of Environment, Forest & Climate Change, Integrated Regional Office (Southern Zone), Kendriya Sadan, IVth Floor, E&F Wings, 17th Main Road, IInd Block, Koramangala, Bangalore - 560034.

16.02.2022.

Fr. 22262/18

203



**KERALA STATE ELECTRICITY BOARD LIMITED**  
(Incorporated under the Indian Companies Act, 1956)  
Office of the Executive Engineer, Transmission Division  
College P.O. Kothamangalam, Ernakulam, Kerala - 686666  
Phone: 0485 2825573, CUG - 9446008369 FCT - 9496009120  
[eedklm@gmail.com](mailto:eedklm@gmail.com) [www.kseb.in](http://www.kseb.in) CIN-U40100KL2011SGC027424

TDKM - DB 77/2021-22/1096

Date : 17.01.2022

To

The Additional Principal Chief Conservator of Forests  
Nodal Officer (FCA)  
Government of Kerala  
Vanalakshmi  
1<sup>st</sup> Floor,  
Forest Headquarters, Vazhuthacaud  
Thiruvananthapuram 695 014

Sir,

Sub:-Diversion of 0.7945 Ha of forest land for laying 220kV Double Circuit line from Thottiyar Hydro Electric Power House to 220kV LP Madakkathara line for evacuating power from Thottiyar Hydro Electric Project - details for further consideration of the proposal-reply submitting of- reg:-

- Ref:-1. Letter No F.No.4-KLB1315/2021-BAN dtd 30.11.2021 of Assistant Inspector General of Forest, Ministry of Environment, Forests & Climate Change, Regional Office, Kendriya Sadan, IV<sup>th</sup> Floor, E&F Wings, 17<sup>th</sup> Main Road, II<sup>nd</sup> Block, Koramangala, Bangalore addressed to the Principal Secretary
2. Letter No.PM/THPE/DB-7/2021-22/496 dtd 28.12.2021 of Project Manager, Thottiyar HEP, Karimanal

The proposal for Diversion of 0.7945 ha of forest land for laying 220 kV DC Power evacuation line from Thottiar HEP was considered by the Regional Empowered committee (REC) in its meeting held on 23.11.2021 and REC requested to the Principal Secretary to Government to furnish certain details for further consideration of the proposal vide ref(1) cited above. In this regard I may submit the following details for consideration of the proposal.

1. Whether the existing 66 kV line can be upgraded to 220 kV for evacuation of power from the hydel project. If so what will be the extend of forest area required for upgrading the transmission line as well as the substation. If not the reason for the same.

For the up-gradation of 66 kV line route, the option considered is connecting from 220 kV Lower Periyar- Madakkathara Line.

The said 66 kV line is passing 97 m away from the tapping tower of the 220 kV Lower Periyar-Madakkathara Line. For deviating towards the existing 66 kV RoW, 122 m of new 220 kV line is required. An additional Multi Circuit Multi Voltage (MCMV) tower is to be inserted along the RoW of the existing 66kV line for connecting the 220 kV line to the nearest tower of the 220 kV Lower Periyar-Madakkathara Line. This 122 m of new 220 kV line connecting between tapping tower and new MCMV tower will pass through the forest land and diversion is required only for this portion of the line will be

0.4270 Ha. The RoW width for the existing 66 kV line is only 18m. Hence additional 17m of RoW is required for another 261m of 220 kV line from the new Tower to the Terminal Tower near Thottiar HEP. Hence additional diversion of forest land required for additional RoW is 0.4437Ha. Hence the total diversion of forest land required is 0.8707 Ha in this option which is higher than the required area of diversion in the existing proposal. These areas are shown in Fig-2.

Up gradation of the existing 66 kV Substation to 220 kV substation is not required if we can retain the 66 kV line by using MCMV Towers. This option is analyzed in such a way that the existing 66 kV lines are retained by using MCMV Towers. Hence no additional forest land is not required for the up gradation of the 66 kV Substation. The area of diversion of forest land will be further more if we consider the dismantling of existing 66 kV line and upgrading the existing 66 kV Substation to 220 kV level.

Hence the alternate option suggested to upgrade the existing 66 kV line can be ruled out due to the following.

- (a) Diversion of Forest land required is more than that in the existing proposal.
- (b) Number of Towers to be constructed in the forest land will be three in place of two in the existing proposal.
- (c) The construction of this line along the existing line which is presently feeding a substation will cause extremely long interruptions to approximately 20000 people in the locality.
- (d) The Constructional cost also will be on the higher side by around 100% increase with the existing proposal due to the additional MCMV Tower and additional length of line.

## **2. Possibility of laying 220 kV Underground cable either partially or completely.**

Laying of UG cable Completely is not possible due to the presence of the river. Laying of 220 kV UG cable partially is also practically not recommended due to the following reasons

- (i) Safety concerns in laying of 220 kV UG cables and constructing cable termination yard in the inhabited properties. No road is available to the tapping tower and hence laying only through the road is not possible in this case.
- (ii) Technical concerns in inserting additional fault points like cable end terminations, Lightning arrestors, Isolators etc in Power evacuation lines from Two major Generating stations ( Thottiar HEP in future and Lower Periyar HEP which is in service).

Even though it is not recommended considering the safety and technical aspects the option of partial laying of UG cable is also examined. A line of length 261m across the river is needed with two numbers of Towers on either bank of the river. The location of the second tower from Thottiar HEP and the route is selected exactly the same as described in point (1) above. The diversion of forest land required for this portion of the line is 0.4437 Ha.

The 220 kV cables cannot be connected to the Towers directly. A 220 kV yard of min size of 50m x 23 m is required at either side of the cables for the termination of the cables with isolators and lightning arrestors as per standards. A short span of 50m 220 kV line also required to connect the Cable yard to the respective towers at both ends. 50 m is the minimum requirement to maintaining the standard skew angle between the Tower and Cable yard Gantry. The RoW requirement of this short span line will become 52m considering the horizontal formation on the standard gantry dimension of 34m for 220 kV Double Circuit line. This is shown in Fig-3 Hence the area of the diversion of forest land required for the one number cable yard along with the short span line is 0.3750 Ha. Three orientations of the cable yards are examined as per Fig-4, Fig-5 and Fig-6. Options vide Fig-4 and Fig-5 are not possible due to space constraints for the second cable yard. Only Fig-6 with two numbers of cable yard with an area of 0.75 Ha ( 2 x 0.375) is the possible alternative. Hence the total area of Forest land required for diversion is 1.1937 Ha which is higher than the existing proposal.

Moreover this option requires construction of yard in the inhabited area forcing evacuation. Also the terrain is not supporting for construction of two numbers of cable yard. Intensive earth work required for the construction of cable yard in this terrain. Also Cable yard construction is almost similar to the substation yard construction which requires complete removal of flora unlike the transmission line where growth of trees and plants are possible to a certain height. Additional tree cutting may also be required for maintaining falling distance for a yard which is having less height than a transmission line. Due to the above said practical difficulties the cable option is not adopted for such shorter spans. Hence the alternate option suggested for laying 220 kV Underground cable either partially or completely also can be ruled out due to the following.

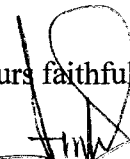
- (a) Laying of 220 kV UG cable through the inhabited properties is not possible due to safety reasons. No road is available to the tapping tower and hence laying only though the road is not possible in this case.
- (b) Technical concerns in inserting additional fault points in Power evacuation lines from two major Generating stations
- (c) Diversion of Forest land required is more than that in the existing proposal
- (d) Tree cutting will be more to maintain falling distance to cable yard.
- (e) Number of Towers to be constructed in the forest land will be three in place of two in the existing proposal.
- (f) Two numbers of Additional 220 kV cable yard also to be constructed in the forest land.
- (g) Requires construction of yard in the inhabited area forcing evacuation.
- (h) The terrain is not supporting for construction of two numbers of cable yard.
- (i) Complete removal of flora in the area for cable yard unlike the transmission line where growth of trees and plants are possible to a certain height
- (j) The end termination of the 220 kV cable require certain instruments and machineries and transportation of the same require road access. This is also a limitation. In order to overcome this limitation access roads are also to be constructed in the forest land for the transportation of the instruments and machineries.
- (k) Cost of construction will be very high compared to the existing proposal as 220 kV cable is very expensive.

**3. Measures proposed to be taken by the user agency to address the issues that may arise due to the laying of over head high power transmission line over the houses constructed by the occupants of the forest lands proposed for diversion.**

KSEBL already obtained written no objection declaration for the line construction from the concerned.

Hence as a conclusion the alternate options suggested by point (1) and point (2) having no technical, ecological, social and financial benefits over the existing proposal. The existing switch yard alignment at Thottiar HEP is also supporting the present proposal. Since the mother project has already been sanctioned and which is nearing completion, sanction may kindly be accord for this proposal. It may kindly be noted that these are the only power evacuation lines proposed from this HEP and generated Power cannot be transmitted without these Power evacuation lines.

Yours faithfully

  
Executive Engineer

Acc:- 1. Fig 1 to 6

2. Copies of Ref (1), (2) & No Objection Declaration from the occupants of Forest land



  
**Executive Engineer**  
**Transmission Division**  
**Kothamangalam**

Fig-2 option for upgrading existing 66 kV line

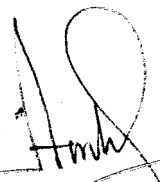
Additional ROW 17 m width and 261 m length (0.4437 Ha)

Proposed 220 kV tower  
New ROW of 35 m width and 122 m length ( 0.44270 Ha)

Taping tower

Existing 66 kV tower

Image © 2021 Maxar Technologies

  
**Executive Engineer**  
**Transmission Division**  
**Kothamangalam**

Key plan of cable yard

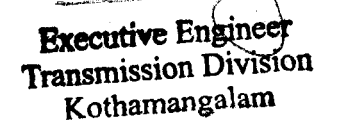




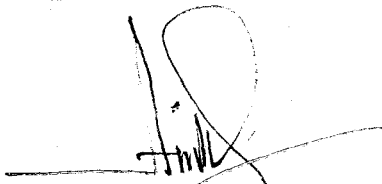
Fig-4

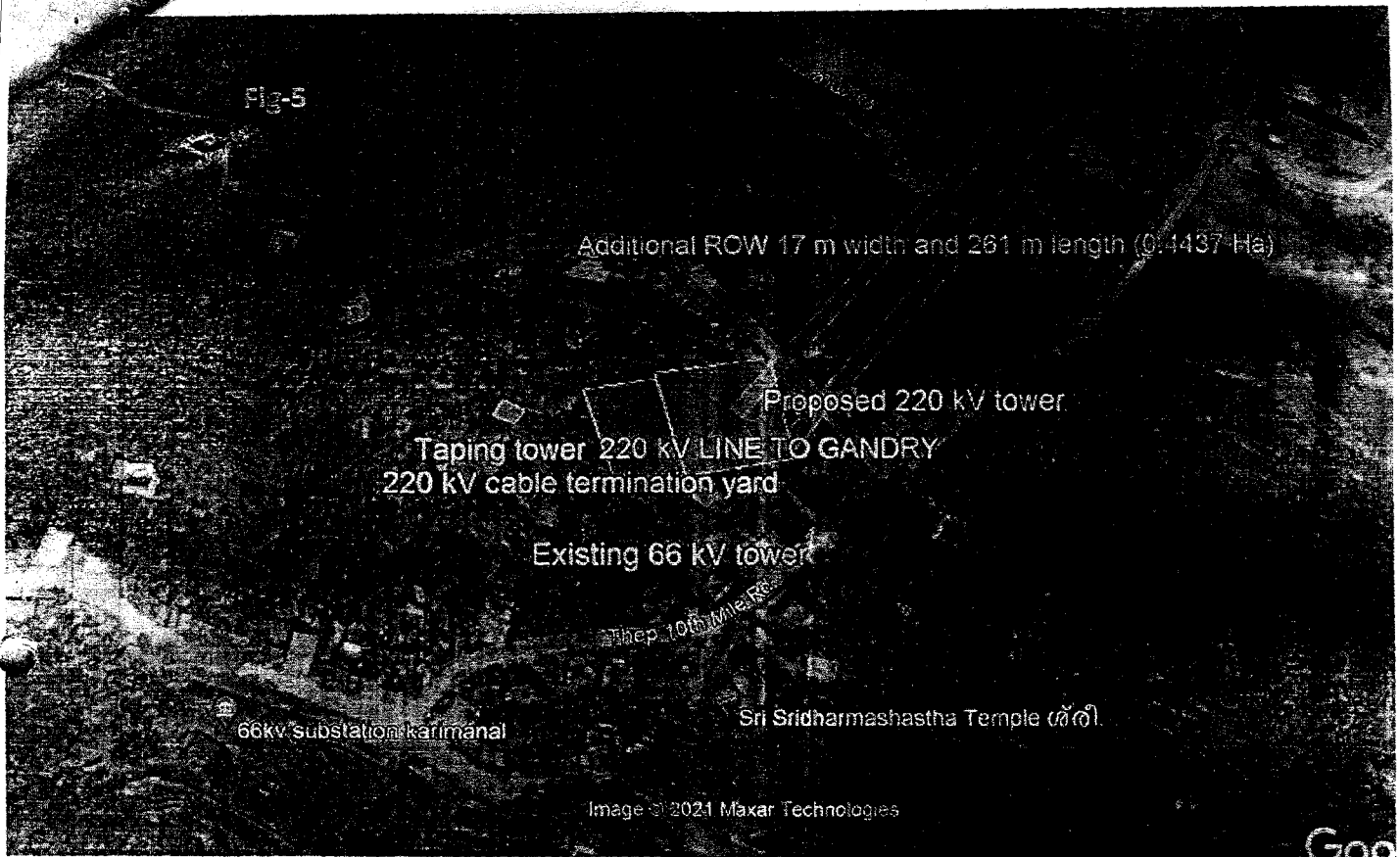
Additional ROW 17 m width and 261 m length (0.4437 Ha)

Proposed 220 kV tower  
Cable yard

Taping tower Existing 66 kV tower

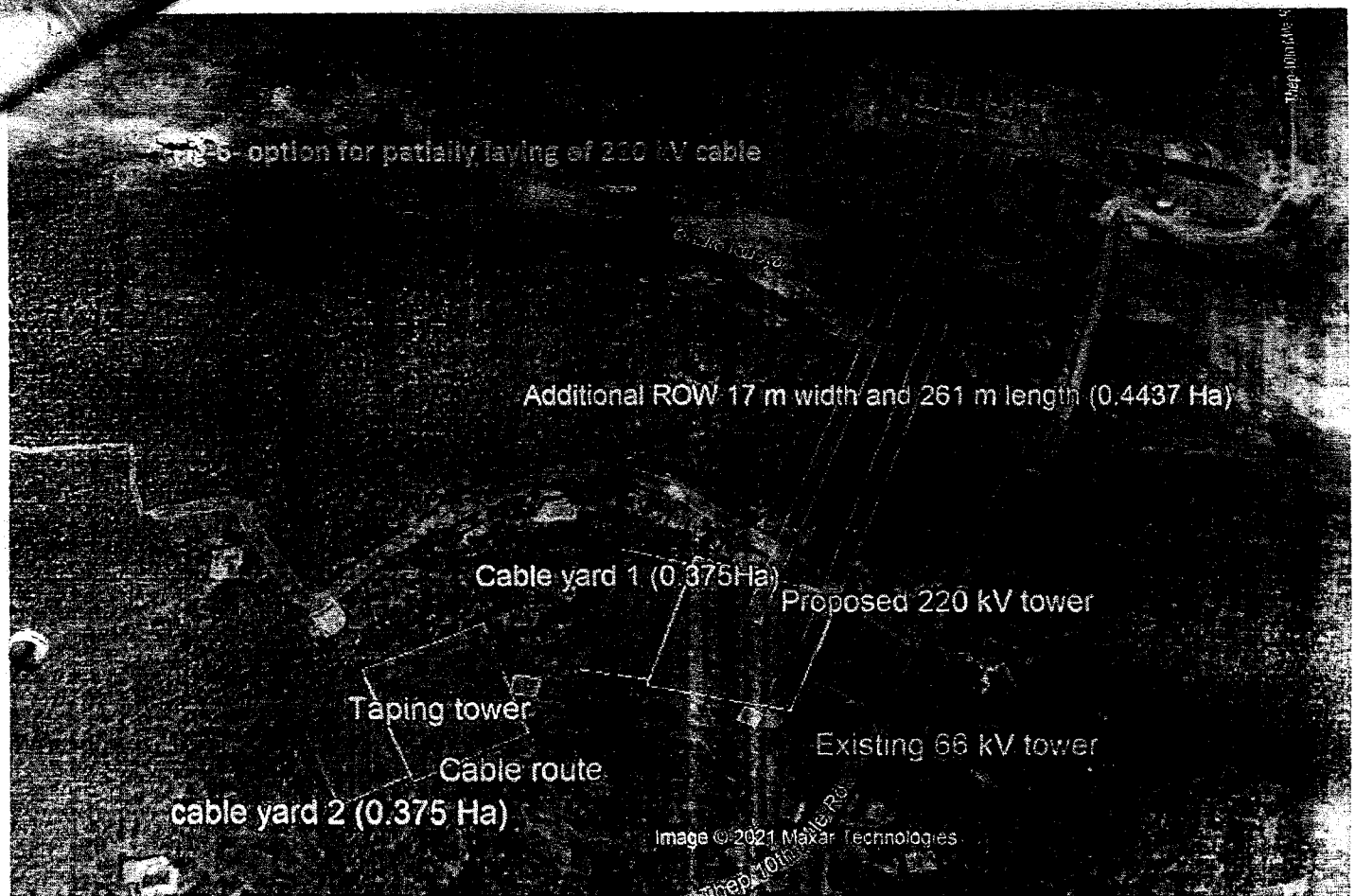
Image © 2021 Maxar Technologies

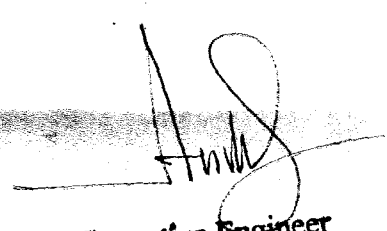
  
Executive Engineer  
Transmission Division  
Kothamangalam



**Executive Engineer**  
**Transmission Division**  
**Kothamangalam**

Fig 6.JPG



  
**Executive Engineer**  
**Transmission Division**  
Kothamangalam



# KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956)

Registered Office: Vidyuthi Bhavanam, Pattom, Thiruvananthapuram-695004  
Web site : [www.kseb.in](http://www.kseb.in). CIN: U40100KL2011SGC027424

Office of the Project Manager, Thottiyar HEP, Karimanal  
Thattakkanni. P.O, Idukki (Dist), Kerala State, PIN – 685606  
Telephone No/Fax No: 0485 – 2969406  
E- mail – [pmthep@hotmail.com](mailto:pmthep@hotmail.com)

No: PM/THPE/DB-7/2021-22 /A96

Dated: 28.12.2021

From

The Project Manager  
Thottiyar HEP.

To

The Executive Engineer  
Transmission Division  
Kothamangalam

TRANSMISSION DIVISION K.S.E.B. KOTHAMANGALAM		
30 DEC 2021		
INWARD: 973		
EE <i>ju</i>	AE <i>ka</i>	File

*As per  
Answer to the  
question to be  
prepared & in compliance  
with 007/1999/11*

Sir,

Sub: - Diversion of 0.7945-Ha of forest land for laying 220kV Double Circuit line from  
Thottiyar HE Power house to 220kV L.P Madakkathara line for evacuating of  
power from Thottiyar Hydro Electric Project – forwarding of - Reg.

Ref: - Letter No. F No. 4-KLB 1315/2021/BAN 1098 dtd.30.11.2021 of Assistant Inspector  
General of Forest (Central), Ministry of Environment, Forest and climate change  
addressed to the Principal Secretary to Govt., Secretariat, TVM.

I am forwarding here with a copy of letter under reference above for favour of further  
necessary action.

Yours faithfully

Acc: - As above

Project Manager

F/c to file.

77/2021-22/1098 30-12-  
End on TEL 77/2021-22/1098  
Copy forwarded to  
1. The Asst. Secy. to Govt.,  
Trans Sub Div., Thiruvananthapuram  
2. The Asst. Secy. to Govt.,  
220kV/220kV.

For Information

*1*

സമർപ്പണം

നിലവിലുള്ള 220kv ലോവർപെരിയാർ-മടക്കത്തറ  
വൈദ്യുതിലൈനിൽ നിന്നും തൊട്ടിയർ പവർഹൗസിലേക്ക്  
എൻഐ കൈവശമുള്ള വസ്തുവിൽ കൂടി പുതിയ  
വൈദ്യുതിലൈൻ സ്ഥാപിക്കുന്നതിന് എനിക്ക് യാതൊരുവിധ  
ആക്ഷേപവും ഇല്ലെന്നു അറിയിക്കുന്നു. ഇതുമൂലം  
കാർഷികവിളകൾക്കും മറ്റും ഉണ്ടാകുന്ന കഷ്ടനഷ്ടങ്ങൾക്ക്  
അർഹതപ്പെട്ട നഷ്ടപരിഹാരം നൽകണമെന്ന്  
അപേക്ഷിക്കുന്നു.

എന്ന്



അൽഫോൻസാ സുധീഷ്  
പുൽപ്പറമ്പിൽ  
നീണ്ടപാറ

നീണ്ടപാറ


07/12/21



## സമർപ്പണം

നിലവിലുള്ള 220kv ലോവർപെരിയാർ-മടക്കത്തറ  
വൈദ്യുതിലൈനിൽ നിന്നും തൊട്ടിയർ  
പവർഹൗസിനിലേക്ക് എൻറെ കൈവശമുള്ള  
വസ്തുവിൽ കൂടി പുതിയ വൈദ്യുതിലൈൻ  
സ്ഥാപിക്കുന്നതിന് എനിക്ക് യാതൊരുവിധ  
ആക്ഷേപവും ഇല്ലെന്നു അറിയിക്കുന്നു. ഇതുമൂലം  
കാർഷികവിളകൾക്കും മറ്റും ഉണ്ടാകുന്ന  
കഷ്ടനഷ്ടങ്ങൾക്ക് അർഹതപ്പെട്ട നഷ്ടപരിഹാരം  
നൽകണമെന്ന് അപേക്ഷിക്കുന്നു.

എന്ന്

  
7-12-2021

ചാക്കോ ജോസഫ്

കച്ചിറയിൽ

നീണ്ടപാറ

നീണ്ടപാറ

07/12/21

## സമർപ്പണം

നിലവിലുള്ള 220kv ലോവർപെരിയാർ-മടക്കത്തറ വൈദ്യുതിലൈനിൽ നിന്നും തൊട്ടിയർ പവർഹൗസിലേക്ക് എൻറെ കൈവശമുള്ള വസ്തുവിൽ കൂടി പുതിയ വൈദ്യുതിലൈൻ സ്ഥാപിക്കുന്നതിന് എനിക്ക് യാതൊരുവിധ ആക്ഷേപവും ഇല്ലെന്നു അറിയിക്കുന്നു. ഇതുമൂലം കാർഷികവിളകൾക്കും മറ്റും ഉണ്ടാകുന്ന കഷ്ടനഷ്ടങ്ങൾക്ക് അർഹതപ്പെട്ട നഷ്ടപരിഹാരം നൽകണമെന്ന് അപേക്ഷിക്കുന്നു.

എന്ന്

Devi  
കൗസല്യ പ്രസാദ്  
ചുങ്കത്തുവെളിയിൽ  
നീണ്ടപാറ


നീണ്ടപാറ

07/12/21

## സമർപ്പണം

നിലവിലുള്ള 220kv ലോവർപെരിയാർ-മടക്കത്തറ വൈദ്യുതിലൈനിൽ നിന്നും തൊട്ടിയർ പവർഹൗസിലേക്ക് എൻറെ കൈവശമുള്ള വസ്തുവിൽ കൂടി പുതിയ വൈദ്യുതിലൈൻ സ്ഥാപിക്കുന്നതിന് എനിക്ക് യാതൊരുവിധ ആക്ഷേപവും ഇല്ലെന്നു അറിയിക്കുന്നു. ഇതുമൂലം കാർഷികവിളകൾക്കും മറ്റും ഉണ്ടാകുന്ന കഷ്ടനഷ്ടങ്ങൾക്ക് അർഹതപ്പെട്ട നഷ്ടപരിഹാരം നൽകണമെന്ന് അപേക്ഷിക്കുന്നു.

എന്ന്

  
എം.ൻ. തങ്കപ്പൻ  
മണ്ണാത്തിപ്പാറയിൽ  
നീണ്ടപാറ

നീണ്ടപാറ

07/12/21



Translation of No Objection Declaration from the occupants

Submission

*I have no objection in drawing power evacuation line to Thottiyar Power House from the existing 220kV Lower-Periyar Madakkathara line through the land in my possession. Also requested to sanction and disburse the eligible compensation to the damages including crop damage.*

Place

Date

(Signature)

(Name & Address of the Occupant)