41BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION
PLOT NO. 4, SHAILASHREE VIHAR, CHANDRASEKHARPUR
BHUBANESWAR-751023

CASE NO.
FILING NO. 1

IN THE MATTER OF: An application under condition 10 of License Conditions of Odisha Power Transmission Corporation Limited (OPTCL) approved by Odisha Electricity Regulatory Commission vide order dated 27.10.2006 passed in Case No.22 of 2006.

AND
IN THE MATTER OF: Investment proposal of OPTCL for seeking approval of Investment proposal taken up from FY 2026-27 to FY 2029-30 for 01 No.400 kV Pandiabil – Gopalpur D/C line project on availing equity/loan assistance from suitable funding agency.

AND
IN THE MATTER OF: Odisha Power Transmission Corporation Ltd.
Janpath, Bhubaneswar-751 007

--- Applicant/ Petitioner

Vs.

1. **The Chief Executive Officer**
   TP Western Odisha Distribution Ltd.
   At/PO: Burla, Dist: Sambalpur-768017

2. **The Chief Executive Officer**
   TP Southern Odisha Distribution Ltd.
   Kamapalli, Courtpeta,Berhampur, Ganjam, Odisha-760004

3. **The Chief Executive Officer**
   TP Northern Odisha Distribution Ltd.
   At/PO: Januganj, Remuna Golei, Dist. Balasore-756019

4. **The Chief Executive Officer**
   TP Central Odisha Distribution Ltd
   IDCO Tower, 2nd Floor, Janpath, Bhubaneswar-751022

5. **The Additional Chief Secretary to Government**
   Department of Energy, Government of Odisha,
   2nd floor, Kharavel Bhawan,
   Gopabandhu Marg, Keshari Nagar, Bhubaneswar-751001

--- Respondents

The above-named applicant, Odisha Power Transmission Corporation Ltd.

MOST RESPECTFULLY SHOWETH:

1. That Odisha Power Transmission Corporation Ltd. (hereinafter referred to as "OPTCL") is a deemed Transmission Licensee under fifth proviso of section 14 of the Electricity Act, 2003 (hereinafter referred to as the "Act") and as notified by the Government of Odisha in the Transfer Scheme vide Notification No. 6892 dated 09.06.2005.

2. That Odisha Electricity Regulatory Commission (hereinafter referred to as the "Commission") vide order dated 27.10.2006 passed in Case No.22 of 2006 approved the License Conditions of OPTCL, the deemed Transmission Licensee, which came into force from 1st November 2006.

3. That in terms of license condition 10.1 of the aforesaid licensee conditions, unless otherwise directed by the Commission, the licensee shall obtain prior approval of the Commission for making investment in the licensed business, if such investment is above the limits laid down at license condition 23.1.

As per license condition 23.1, the Hon'ble Commission has specified the term "Major Investment" as any planned investment in or acquisition of transmission facilities, the cost of which, when aggregated with all other investments or acquisitions (if any) forming part of the same overall transaction, equals or exceeds Rs.10 Crore.

4. That as mentioned under aforesaid license condition 7.1 and as per provisions contained in section 40 of the Electricity Act, 2003, OPTCL, as a Transmission Licensee, is duty bound to make investment to build, maintain and operate an efficient, coordinated and economical intra-state transmission system.

5. That in the above backdrop and in compliance of the requirement under license condition 10, OPTCL is filing this investment proposal before the Hon'ble Commission for approval towards following projects on availing equity/loan assistance from suitable funding agency.

6. The highlights of the proposal are given as under:

Transmission lines

- 400kV **Pandiabil-Gopalpur** Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers.

Conversion of Switching S/S to GSS

- Conversion of 220KV Switching S/S at **Landeihill** into a 2x100MVA 220/33kV Grid substation

Total investment of the above said projects **Rs. 781.37 Cr.** and the details of estimated cost, source of funding and OERC approvals in Transmission/ Business Plan are as under

SUMMARY OF INVESTMENT, COST AND SOURCE OF FUNDING

Sl. No.	NAME OF TRANSMISSION REINFORCEMENT WORKS	ESTIMATED COST (Rs. Cr.)	SOURCE OF FUNDING / SCHEME	Trans. Plan/ Other Approvals
1	400kV **Pandiabil-Gopalpur** Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers	718.05	Equity:Debt (30:70) (GEETC)	1. Revised 14th Intra-State Transmission Plan in case no. 08/2024. 2. 18th Meeting of Standing Committee on Power System Planning for Eastern Region.
2	Conversion of 220KV Switching S/S at **Landeihill** into a 2x100MVA 220/33kV Grid substation	63.32	Equity:Debt (30:70) (MMSBY- Upgradation/ Augmentation of Existing Sub-Stations/ Lines)	15th TP in case no. 71/2026
	TOTAL	**781.37**		

- Project at Sl. No. 1 is funded through 30% Equity support from GoO under Green Energy Evacuation Transmission Corridor (GEETC) scheme and remaining 70% will be availed through loan from funding agencies.
- Project at Sl. No. 2 is funded through 30% Equity support from GoO under MMSBY- Upgradation/ Augmentation of Existing Sub-Stations/

Lines scheme and remaining 70% will be availed through loan from funding agencies.

7. That the information on the above proposed investment with regard to the following:

a) Executive Summary
b) Technical Considerations
c) Techno-Economic justification
d) Implementation
e) Prior consultation with DISCOMs
f) Environmental Considerations
g) NPV & IRR

are filed along with this application as **ANNEXURE- 1 & 2 for** kind perusal and approval of the Hon'ble Commission.

8. That in compliance to the requirements under aforesaid license condition 10.4, the Detailed Project Report (DPRs) containing the relevant information related to the above mentioned projects are filed along with this application.

9. That, OPTCL hereby submits the justification for creation of each of the proposed **02 nos.** projects in the respective DPRs and in the information document filed along with this application.

PRAYER

The applicant, Odisha Power Transmission Corporation Ltd., Bhubaneswar most respectfully requests the Hon'ble Commission to approve the investment proposal filed herein for implementation of the projects.

By the applicant
Through

Bhubaneswar
Date: 10.2026

Sr.GM, RT&C

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   2nd floor, Kharavel Bhawan,
   Gopabandhu Marg, Keshari Nagar, Bhubaneswar-751001

--- Respondents

AFFIDAVIT VERIFYING THE APPLICATION

Sri Arup Kumar Banerjee, Son of Late Tulasi Das Benerjee, aged about 59 years, residing at Bhubaneswar, do solemnly affirm and say as follows:

1. I am the Senior General Manager, Regulation, Tariff and Commercial, OPTCL, duly authorized by the said applicant to make this affidavit on its behalf.
2. The Statements made in Paragraphs 1 to 9 herein above are based on official information and I believe them to be true.

Bhubaneswar **DEPONENT**
Date: 10.2026

ANNEXURE-1

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1. EXECUTIVE SUMMARY

OPTCL has technically and economically justified requirements for the immediate implementation of additional system reinforcement of its transmission network to meet the system needs for the years immediately beyond 2024. The proposed projects to be implemented by OPTCL on availing loan assistance from suitable funding agency is the immediate priority and long-term system reinforcement required for the State. The proposed addition will improve the security and supply standards of the OPTCL transmission network and reduce transmission loss. The requirement for OPTCL to undertake such investment to provide an efficient, coordinated and economical system of transmission is called for in condition 7.1 of license conditions of OPTCL (effective from 1st November 2006) approved by the Hon'ble Commission vide order dated 27.10.2006 passed in Case No.22 of 2006 and as per provisions contained in section 40 of the Electricity Act, 2003. The technical, economic and environmental aspects of the investment have been considered in compliance with condition 10 for major investments of aforesaid license conditions.
The proposed investment has been taken into account as regards the fundamental requirements to:

- Ensure that the quality of supply to consumers is maintained / improved.
- Enable OPTCL to receive an economic return.

In the light of the above requirements, the proposed investment has been developed and justified based upon:

- Comparative load flow studies using application of planning criteria to meet various combinations of load and generation patterns currently available and anticipated beyond 2024.
- Comparative loss evaluation and also comparison with the capital expenditure of the scheme proposed after capitalization.

A total investment of **Rs. 781.37 Cr.** for the transmission schemes is proposed as follows:

Transmission lines

- 400kV **Pandiabil-Gopalpur** Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers.

Conversion of Switching S/S to GSS

- Conversion of 220KV Switching S/S at **Landeihill** into a 2x100MVA 220/33kV Grid substation

SUMMARY OF INVESTMENT, COST AND SOURCE OF FUNDING

Sl. No.	NAME OF TRANSMISSION REINFORCEMENT WORKS	ESTIMATED COST (Rs. Cr.)	SOURCE OF FUNDING / SCHEME	Trans. Plan/ Other Approvals
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	TOTAL	**781.37**		

- Project at Sl. No. 1 is funded through 30% Equity support from GoO under Green Energy Evacuation Transmission Corridor (GEETC) scheme and remaining 70% will be availed through loan from funding agencies.
- Project at Sl. No. 2 is funded through 30% Equity support from GoO under MMSBY- Upgradation/ Augmentation of Existing Sub-Stations/ Lines scheme and remaining 70% will be availed through loan from funding agencies.

2. TECHNICAL CONSIDERATIONS

2.1 Planning Criteria

Maintenance of quality power supply to consumers and reduction of technical losses are achieved by application of appropriate planning criteria.

The following criteria have been considered when investigating the proposed new sub-stations as well as transmission lines with respect to the acceptable range of voltages permitted at different points of the system under both normal and contingency situation:

- At all loads under normal steady state operating conditions, the voltages at all points on the main nodal points of the interconnected system should be maintained within a tolerance of + 5% to -5% of the nominal voltage. At other locations and outgoing line circuits a higher voltage tolerance of +10% to -10% can be accepted.
- The loading of all elements should not exceed their rated values for steady state conditions.
- Under a single contingency outage i.e. under outage of any one of power element of the transmission system, the system voltage at any point should not fall below 90% of the nominal value without any immediate corrective action.
- After system re-adjustment, following any single element outage, without considering any load shedding at important load centers, the voltages and loading of all elements should return to normal acceptable levels.
- Under any low load or loss of load situation, the 400kV system voltage should not be allowed to exceed +5% of the nominal value, whereas the 220kV & 132kV system voltage can be permitted to rise to a maximum of +10%.

2.2 Overall conclusions of the studies performed with proposed schemes

The System Studies concluded that under the normal steady state conditions, the immediate implementation of the additional proposed sub-stations as well as transmission lines would:

- Improve the system voltage profile at all points of the transmission system.
- Reduce the loading on certain important line sections of the transmission network thereby avoiding overloading of lines or avoiding the line sections being loaded close to their respective capacities.
- Reduce the overall transmission system losses.

The single contingency outage scenario studies indicated certain line outage situations that could lead to potential problems related to overloading of remaining system lines and collapse of system voltages at locations close to the tripped line in the proposed case.

2.3 Review of scheme proposed

2.3.1 Construction of 400 KV Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers from 400/220 KV GIS Pandiabil to 400/220/33 KV GSS at TSSEZ, Gopalpur covering an approximate route length of 157.363 km with 02 (two) numbers of 400KV Feeder Bay extensions at 400/220 KV GIS Pandiabil (PGCIL).

NEED OF THE PROJECT

The project is required to establish a **high-capacity power network** to ensure uninterrupted and reliable power supply, sustaining long-term growth in the Berhampur periphery.

In recent years, power demand in and around Berhampur has increased substantially, driven by infrastructure development, A number of industries are expected for power supply in 400KV, 220KV voltage level and 33KV voltage level. This escalating demand necessitates the development of a high-capacity transmission network with uninterrupted and reliable power supply, which is critical for sustaining long-term economic growth in the region. N-1 reliability criteria can be achieved.

In view of the above, it is proposed for Construction of 400 KV Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers from 400/220 KV GIS Pandiabil to 400/220/33 KV GSS at TSSEZ, Gopalpur covering an approximate route length of 157.363 km with 2 numbers of 400KV Feeder Bay extensions at 400/220 KV GIS, Pandiabil (PGCIL).

Tentative power requirement for upcoming industrial consumers in TSSEZ, Gopalpur in 33KV voltage level is 51MVA and for 220KV voltage level is 733MVA. The details of load requirement is depicted below:

Power Requirement Projections – Company wise

Sl. No.	Company Name	Voltage level (kV)		Total Power (MVA)	Tentative	Remarks	Present Status
		33	220		Timeline from 17.05.2026		
		Load in MVA					
1	TSL Fr- Cr		24	24	Availing		
2	DMSL	5		5	Availing		
3	TSSEZL	0.5		4.5	Availing		
		4			May-27	Future Expansion plan	
4	Saatvik	-	64	154	Aug-26	Applied & Approved	Availing from 30MW Narendrapur GSS end (interim arrangement) final connectivity will be from Gopalpur GSS.
		-	50		Mar-28	Future Expansion plan (Phase wise requirement)	
		-	40				
5	World Green Solar	1				1 MVA Availing	Construction power in 33 kV

		-	35	35	May-27	Permission issued	Power released to the tune of 5 MVA through temporary T arrangement from LILO of 220 kV Narendrapur-TATA MRSS -II LILO to Gopalpur. Final connectivity will be from Gopalpur
6	Luminous	19		19	May-27	Condtional approval for given	Power released in 33 kV from TATA MRSS
7	UPL	0.5		110.5		Availed	
			60		May-27	Applied	Power released (60 MVA) from Proposed Gopalpur.
			50		Mar-28	Future Expansion plan	
8	TPREL	2		152		To be applied by industry for Construction power	
			70		Sep-27		Connectivity proposal under process from upcoming Gopalpur GSS
			80		Mar-28	Future Expansion plan	

9	SRF	7		97		To be applied by industry	Approved in HLCA/ SLSWCA
			30		Sep-27	To be applied by industry	
			20			Future Expansion plan	
			40			Future Expansion plan	
10	Yokohama	2		22		To be applied by industry for Construction power	Approved in HLCA/ SLSWCA
		-	20		Sep-27	To be applied by industry	
11	Other prospective customers	10		160			3 nos. Diamond Industries: 15 MW each in 33 kV Mar 2027 25 MW each in 220 kV subsequent/future requirement
			50				
			50				
		-	50				
	Power Requirement (tentative)	**51**	**733**	**783**			
Note :- 51 MVA in 33 KV Voltage level & 279 MVA at 220 kV Voltage level (within 12 Month)							

Benefits of construction of 400kV Pandiabil-Gopalpur D/C line:

- Mitigation of power outage at 400/220/33KV GSS, Gopalpur.
- Ability to cater an additional load to 400/220/33KV GSS Gopalpur.
- Provision of N-1 connectivity at 400/220/33KV GSS Gopalpur.
- Strengthening of the 400 kV system network.
- Enhancement of overall grid reliability and load handling capability with the addition of 400KV source.
- Uninterrupted power supply to 400/220/33KV GSS, Gopalpur during outage of 400KV other Circuit.
- Resolution of low voltage issues**.**
- Formation of 400KV ring system.

<u>The total scope of works includes:</u>

1. Construction of 400 KV Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers from 400/220 KV GSS Pandiabil to 400/220/33 KV GSS at TSSEZ, Gopalpur covering an approximate route length of 157.363 km.
2. Construction of 2 numbers of 400KV Feeder Bay extensions at 400/220KV GIS,Pandiabil (PGCIL).

The said project is approved in Revised 14th Intra-state Transmission Plan in case no. 08/2024. The working capital will be made available with 30% Equity support from Govt. of Odisha under GEETC scheme and remaining 70% will be met by taking loan from outside funding agencies.

2.3.2 Conversion of 220KV Switching S/S at Landeihill into a 2x100MVA 220/33kV Grid substation

<u>EXISTING SUPPLY SYSTEM</u>

220/33KV SWITCHING STATION, LANDEIHILL (U/C):

1. 220/33KV 40MVA, Power transformer.
2. 220KV LILO from exsiting 220KV Bhanjanagar- Nayagarh line.

NEED OF THE PROJECT

220 KV switching station is being developed at Landei hills, Ganjam for the evacuation of power from 40MW Solar PV plant with OPTCL Transmission system through LILO provision in the existing 220KV Bhanjanagar- Nayagarh line. This Project is being executed by M/s NHPC. The location of the proposed switching substations at Landei Hills is situated approx. 5 KMs from the Kadua area, as originally proposed by TPSODL for the establishment of the Grid Sub-station. Consequently as per the request of OPTCL, M/s. NHPC has allocated space within the current design to accommodate the future Conversion of the switching sub-station into a full-fledged GSS. Hence by considering the above scenario scope of Works are as follows. 1. 220KV Bays- Power Tfr-2 Nos, 1 spare bay (Unequipped Bay) 2. 33KV Bays- Feeder-5 Nos, Tfr-2 Nos, B/C-1 no, 1 spare bay 3. 2 X 100MVA 220/33KV Power transformer. 4. Considering the orientation of proposed GSS, 33KV UG cable laying from LV side of power transformer to 33 KV Bus.

The project is required to establish a high-capacity power network to ensure uninterrupted and reliable power supply, sustaining long-term growth in the Bhanjanagar, Belaguntha, Buguda and Jagannathprasad Block.

Seven 33KV Sub stations Viz. Banka, JN Prasad, BD Pur, Gallary, Gayaganda, Tilisingi and Buguda are suffering from low voltage problem due to long distance 33KV line from the source. The cumulative demand of these PSSs is around is around 21MW, which has overstressed the existing system and impacted supply quality.

At present NHPC is constructing a 40 MW, 220KV Pooling (Switching) Station at Landeihill. By upgrading Landeihill to 220/33KV GSS with 220KV LILO from 220KV Bhanjanagar – Nayagarh line will significantly improve the 33KV voltage profile enhancing reliability of supply. It will also relieve 11MW of load from Bhanjanagar GSS and 10MW from Aska New GSS, decongesting the upstream grid.

Benefits after **Conversion of 220KV Switching substation at Landeihill into a 2X 100MVA 220/33KV Grid sub-station :**

- Resolution of low voltage issues**.**

- Strengthening of the 220 kV system network.
- Enhancement of overall grid reliability and load handling capability with the addition of 220KV source.
- Reduction of interruption due fault, as 33KV line length will be reduced.
- Reduction of load in the existing 33KV line from GSSs to PSSs.

The total scope of works includes:

Conversion of 220KV Switching substation at Landeihill into a 2X 100MVA 220/33KV Grid substation with 220KV 100 MVA Trf bays-02 Nos., 220 KV Spare bay-01 No.,33KV Fdr. Bays- 5 Nos, I/C Tfr.Bays-2 Nos, B/C bay-01 No. and 33 KV spare bay-01 No. scope of work in Odisha on turnkey basis.

220KV system:

a. Supply of 2X100MVA Power transformer.
b. Construction of 220KV Power transformer bay 2 numbers.
c. Construction of 220KV Spare (unequipped) bay 1 number.

33KV System:

a. Construction of 33KV power transformer (Incomer) bay 2 numbers.
b. Construction of 33KV feeder bay 5 numbers.
c. Construction of 33KV Bus Coupler bay 1 number.
d. 33KV Spare (unequipped) bay 1 number.

The said project is a part of in 15th Intra-state Transmission Plan in case no. 71/2026. Above project is funded through 30% Equity support from GoO under MMSBY- Upgradation/ Augmentation of Existing Sub-Stations/ Lines scheme and remaining 70% will be availed through loan from funding agencies.

3. TECHNO-ECONOMIC JUSTIFICATION

3.1 Overall assessment of economic benefit

The financial analysis concludes that the immediate implementation of the proposed transmission schemes will involve additional capital expenditure (CAPEX) to the tune of **Rs. 781.37 Cr.** and generate additional revenue to the tune of **Rs. 98.63 Cr.** annually.

3.2 Capital Expenditure for the transmission scheme

The capital expenditure for the schemes has been estimated as **Rs 781.37 Cr.** and indicated in the Table below.

SUMMARY OF INVESTMENT, COST AND SOURCE OF FUNDING

Sl. No.	NAME OF TRANSMISSION REINFORCEMENT WORKS	ESTIMATED COST (Rs. Cr.)	SOURCE OF FUNDING / SCHEME	Trans. Plan/ Other Approvals
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2	Conversion of 220KV Switching S/S at **Landeihill** into a 2x100MVA 220/33kV Grid substation	63.32	Equity:Debt (30:70) (MMSBY-Upgradation/ Augmentation of Existing Sub-Stations/ Lines)	15th TP in case no. 71/2026
	TOTAL	**781.37**		

3.3 Transmission loss reduction

The loss reduction realizable by implementing the schemes is given in the table below.

SUMMARY OF SYSTEM LOSSES ON THE TRANSMISSION SYSTEM

Sl. No.	DESCRIPTION OF LOAD FLOW CASES	PEAK LOSSES IN MW
1	400kV **Pandiabil-Gopalpur** Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers	4.93
2	Conversion of 220KV Switching S/S at **Landeihill** into a 2x100MVA 220/33kV Grid substation	-1.08
	TOTAL	**3.85**

4. IMPLEMENTATION

The proposal for availing loan assistance towards execution of these proposed transmission schemes is being posed before a suitable funding agency.

5. PRIOR CONSULTATION WITH DISCOMS

The Hon'ble Commission invariably in each and every ARR order of OPTCL has directed that OPTCL should have prior discussion and coordination with the DISCOMs before submission of transmission project for approval of OERC in order to avoid idle investments. Accordingly, OPTCL has made prior discussions with DISCOMs.

6. ENVIRONMENTAL CONSIDERATIONS

Forest area of 78 Ha will be involved while executing the following work:

Sl. No.	DESCRIPTION PROJECT	FOREST AREA (Ha)
1	400kV **Pandiabil-Gopalpur** Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers	78
	TOTAL	**78**

Apart from above, there is no major environmental or resettlement issues are envisaged for these additional transmission schemes.

OPTCL's policy is to generally avoid social and environmental impacts. Where this is not possible, mitigation measures are designed and implemented. A detailed mechanism for suitable and adequate environmental mitigation by compensatory afforestation is well established and generally implemented.

The Environmental Impact Assessment Study has been made and annexed with the Detailed Project Reports.

7. NET PRESENT VALUE & INTERNAL RATE OF RETURN

The Net Present Value as well as the Internal Rate of Return of individual projects have been calculated and annexed with the respective Detailed Project Reports.

ANNEXURE-2

02 nos. of DPRs of the following Investment proposals are detailed below.

Transmission lines

- 400kV **Pandiabil-Gopalpur** Twin Moose DC Line on Quad Moose D/C Type Tower & Multi ckt Type Towers.

Conversion of Switching S/S to GSS

- Conversion of 220KV Switching S/S at **Landeihill** into a 2x100MVA 220/33kV Grid substation