

ODISHA ELECTRICITY REGULATORY COMMISSION
BIDYUT NIYAMAK BHAWAN
PLOT NO.4, CHUNOKOLI, SHAILASHREE VIHAR,
BHUBANESWAR - 751021

*** **

Present : Shri U. N. Behera, Chairperson
Shri G. Mahapatra, Member

Case No. 57/2021

OPTCL	Petitioner
Vrs.		
TPCODL & Others	Respondents

In the matter of: **Application under condition 10 of license conditions of OPTCL for Investment proposal of OPTCL to be taken up from the current FY 2021-22 for construction of 220/33 kV and 132/33 kV Sub-stations along with associated transmission lines on availing loan assistance from suitable funding agency.**

For the Petitioner: Shri B.K.Das, GM(RT&C) and Asst.GM(Construction), OPTCL.

For the Respondents: Shri Vidyadhar Wagle, the representative of TPCODL, Shri K. C. Nanda, DGM (Fin.), TPWODL, Shri Binod Nayak, Asst. GM (Comm.), TPSODL, Ms. Malancha Ghose, Asst. GM (RA), TPNODL, Shri R. P. Mahapatra and Ms. Sonali Pattnaik, ALO, DoE, GoO.

Date of hearing: 07.12.2021

Date of Order:12.01.2022

ORDER

1. OPTCL, the State Transmission Utility, the petitioner in this case has submitted an application for approval for setting up of Grid substations at Meramudali(B), Paradeep, Hinjlicut, Bhatli, Tarbha, Brundabahal and Jayanagar-Tentulikhunti SC line & Jayapatna- Junagargh DC line. OPTCL has estimated Rs. 1099.32 Cr. of investment for execution of the said projects. As per the Licence Condition 10 read with Condition 23.1 of OPTCL, the petitioner is required to take approval of the Commission, if the proposed investment is Rs.10.00 Cr. or beyond that level. The present investment proposal exceeds the said limit. As per the Licence Condition, the Commission is to be satisfied about need of such investment and is also to examine the economic, technical system and environmental issues attached to such investment. The details of investments are as follows:
2. OPTCL has proposed the construction of new 2X500MVA, 400/220/33kV Gas (SF6) Insulated Sub-Station at Meramundali (B) along with 400kV DC line from Meramundali-B to 765/400kV Angul pooling station, 400kV bay extension at Angul

pooling station and 400kV DC line from TTPS expansion to Meramundali-B. OPTCL has also proposed for installation of 80 MVAR bus reactor so that reactive power can be absorbed to decrease the probability of voltage rise during off peak load hours. OPTCL has estimated an expenditure of 224.34 Cr. for execution of this project with funding of 30% from Government as equity and 70% by availing loan from other funding agencies depending upon the feasibility of loaning. The proposed Sub-Station has already been approved by the Commission in its Case No. 05/2016. OPTCL submitted that as per the report of the 18th meeting of the standing committee of the CEA on power system planning of eastern region held at Kolkata, 400/220kV Substation at Meramundali-B is to be implemented by OPTCL as a part of transmission system strengthening. The standing committee of the CEA has also decided to shift 400kV Duburi – Meramundali DC line from Meramundali to Meramundali-B, to shift 400kV GMR- Meramundali SC line from Meramundali to Meramundali-B and to shift 220kV Duburi – Meramundali DC line from Meramundali to Meramundali-B. OPTCL has projected reduction of average annual loss to the extent of 2.93 MW, which with consideration of Rs.2.78/kWh, comes to Rs.282.01 lakh in monetary term. Expectation of 70% utilization of 2x500 MVA capacity at the proposed grid S/S with 3% transmission loss shall make available additional 32119.42 LU, which shall cause OPTCL to earn additional annual revenue of Rs 8029.85 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 8311.86 lakhs. The average rate of return and IRR has thus been found to be 37.05% and 123.80% respectively.

3. OPTCL has proposed the construction of new 2X500MVA, 400/220/33kV Gas (SF6) Insulated Sub-Station, Paradeep at Ersama in the district of Jagatsinghpur with associated 400 kV transmission line connectivity with New Duburi GSS, 220 kV transmission line connectivity between Paradeep and Pratapsasan GSS along with bay extension works at the aforesaid substations with an estimated cost of Rs. 634.95 crores with funding of 30% from Government as equity and 70% loan from outside financial institutions depending upon its viability. The proposed Sub-Station has already been approved by the Commission in its Case No. 18/2017. OPTCL submitted that the existing 220/132kV Grid S/s at Paradeep is supplying power to the Paradeep command area, having one 220kV DC line from New Duburi to Paradeep whose maximum loading is 360MW. This Grid is also supplying Power to Grid Sub- stations such as Kendrapada, Pattamundai, Marshaghai, Olaver with Industrial loads like IOCL,

Paradeep Phosphate Ltd etc. There is an additional load requirement of 533 MW for the proposed Petroleum Chemicals & Petrochemical Investment Region (PCPIR) in the districts of Jagatsinghpur & Kendrapada to promote Petrochemical Investments in the State. Therefore OPTCL submitted proposal for establishment of a 400/220KV Grid Sub-Station at Paradeep in order to meet the future load requirement with stable, quality & reliable power to the Industries & Consumers. OPTCL has projected the reduction of average annual loss to the extent of 8.01 MW, which with consideration of Rs.2.78/kWh, comes to Rs.771.90 lakh in monetary term. Expectation of 70% utilization of 2x500 MVA capacity at the proposed grid S/S with 3% transmission loss shall make available additional 32119.42 LU, which shall cause OPTCL to earn additional annual revenue of Rs 8029.85 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 8801.75 lakhs. The average rate of return has and IRR thus been found to be 13.86% and 16.53% respectively.

4. OPTCL has proposed the construction of new 2X40MVA, 132/33kV Gas (SF6) Insulated Sub-Station at Hinjilicut (Ganjam) along with about 0.44 KMs of LILO line from 132kV Berhampur-Aska SC line with an estimated cost of Rs. 45.23 crores with funding of 30% from Government as equity and 70% loan from other funding agencies depending upon the feasibility of loaning. The survey in respect of transmission line and possession of land for this project has already been completed. OPTCL submitted that the GIS substation work is in progress. OPTCL submitted that the existing 33/11kV Hinjilicut Distribution Sub-Station is availing power at 33kV voltage level both from 2x40 + 1x20 MVA, 132/33kV Grid Sub-Station, Berhampur and 2x12.5 MVA + 1x20 MVA, 132/33kV Grid Sub-Station, Purusottampur. The length of the feeder is around 26 kms and 24kms from Grid Sub-Stations at Purusottampur and Berhampur respectively. Due to long length of the line and more numbers of connected Distribution Sub-Stations, the voltage profile is very low near Hinjilicut. Therefore, in order to eradicate the low voltage profile of Hinjilicut and nearby areas, OPTCL has proposed the 2x40 MVA, 132/33kV Grid Sub-station at Hinjilicut. This will also act as an alternative supply to the distribution sub-stations thereby making the Distribution system more stable and reliable. The consumers under rural electrification scheme like ODSSP, Saubhagya are likely to be benefited by the proposed project. The proposed 132/33kV GIS at Hinjilicut will feed 3 nos. of existing 33/11 kV substations and 4 nos. of 33/11 kV substations coming up under ODSSP & CAPEX. OPTCL has projected

reduction of average annual loss to the extent of 0.28 MW, which with consideration of Rs.2.78/ kWh, comes to Rs.26.96 lakh in monetary term. Expectation of 70% utilization of 2x40 MVA capacity at the proposed grid S/S with 3% transmission loss shall make available additional 2569.55 LU, which shall help OPTCL to earn additional annual revenue of Rs 642.39 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 669.35 lakhs. The average rate of return and IRR has thus been found to be 14.80% and 22.87% respectively.

5. OPTCL has proposed construction of new 2X20 MVA, 132/33kV Sub-Station at Bhatli(Bargarh) along with 40.57 KMs of 132 kV DC line from 220/132/33 kV new Baragarh grid substation with an estimated cost of Rs. 51.94 crores with funding of 30% from Government as equity and 70% loan other funding agencies depending upon the feasibility of loaning. OPTCL submitted that the survey in respect of associated transmission line has already been completed and finalized the route. Government land has also been identified for the purpose and land alienation completed and the substation work is in progress. OPTCL submitted that at present 33/11kV Bhatli Distribution Sub-Station is availing power from 3x40MVA, 132/33kV Grid Sub-Station, Bargarh through 33kV Bhatli feeder. The length of the feeder is around 25kms. The present length of 33kV line is around 20kms from existing 33/11kV Bhatli distribution S/s to the nearest distribution S/s and the total length of the 33kV feeders in Bhatli command area is about 107kms. Due to long length of the line and more numbers of connected Distribution Sub-Stations, the voltage profile is very low near Bhatli. The areas under these Distribution Sub-Stations are also facing frequent power interruption due to the single feeder. The PHED intake point of Bhatli is facing low voltage problem also. OPTCL has proposed this substation to eradicate the low voltage profile and frequent power interruption of Bhatli and nearby areas. Further, the proposed 2x20MVA, 132/33kV Grid Sub-station at Bhatli will share the load of Bargarh and act as an alternative supply to the distribution sub-stations making the Distribution system stable and more reliable. The proposed 132/33kV Grid Sub-station at Bhatli will feed the (3x5 MVA) 33/11kV Existing Distribution Sub-Station at Bhatli, (2x5 MVA) 33/11kV Distribution Sub-station at Raisobha, (1x5MVA+1x3.15) 33/11kV Distribution Sub-station at Bhukta, (2x3.15MVA) 33/11kV Distribution Sub-station at Dunguri and (2x5 MVA) 33/11kV Distribution Sub-station at Udeyapalli with improved voltage profile. OPTCL has projected the reduction of average annual loss to the extent of 0.64MW, which with consideration of Rs.2.78/ kWh, comes to Rs.61.82

lakh in monetary term. Expectation of 70% utilization of 2x20 MVA capacity at the proposed grid S/S with 3% transmission loss shall make available additional 1284.78 LU, which shall cause OPTCL to earn additional annual revenue of Rs 321.19 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 383.02 lakhs. The average rate of annual return and IRR has thus been found to be 7.37% and 2.15% respectively. The project is not economically viable but OPTCL may be allowed to take up the project for socio-economic development of that area.

6. OPTCL has proposed construction of new 2X20 MVA, 132/33kV Sub-Station at Tarbha (Subarnapur) along with 3 KMs of 132 kV LILO line from 132 kV Bolangir-Sonepur Ckt-I with an estimated cost of Rs. 31.69 crores with 100% equity support from the Government. OPTCL submitted that the survey in respect of associated transmission line has already been completed and finalized the route. Government land has also been identified and steps have been initiated to acquire the required patch of land. OPTCL submitted that the existing 33/11kV Tarbha Distribution Sub-Station is availing power from 2x40+1x20 MVA, 132/33kV Grid Sub-Station, Sonepur through 33kV Dumerbahal feeder. The length of the feeder is around 30 KMs. Further, 33/11kV Charbhata Distribution Sub-Station, which is located at a distance of 30 KMs from 33/11kV Tarbha Distribution Sub-Station is getting supply from the same Dumerbahal feeder. The same Dumerbahal feeder is also feeding Dumerbahal and Khari Distribution Sub-stations. Due to long length of the line and more numbers of connected Distribution Sub-stations, the voltage profile is very low near Tarbha. The voltage profile at Charbhata is even lower than that of Tarbha. The areas under these Distribution Sub-Stations are also facing frequent power interruptions due to the single feeder. The PHED intake point of Bolangir is also facing low voltage problem. OPTCL therefore suggested for one 2x20MVA, 132/33kV Grid Sub-station at Tarbha in order to eradicate the low voltage profile and frequent power interruptions of Tarbha and its nearby areas. The proposed 2x20MVA, 132/33kV Grid Sub-station at Tarbha will also act as an alternative supply to the distribution sub-stations making the Distribution system stable and more reliable and share the load of Sonepur and Bolangir. OPTCL has submitted this proposal in the Business Plan of OPTCL for the control period FY 2019-20 to FY 2023-24. The proposed 132/33kV Grid Sub-station at Tarbha will feed 33/11kV existing Distribution Sub-Stations at Tarbha, 33/11kV Existing Distribution Sub-Stations at Charbhata, 33/11kV Existing Distribution Sub-Stations at Khari,

33/11kV Existing Distribution Sub-Stations at Dumerbahal and 33/11kV Existing Distribution Sub-Stations at Dubla. OPTCL has projected the reduction of average annual loss to the extent of 0.41MW, which with consideration of Rs.2.78/ kWh, comes to Rs.39.86 lakh in monetary term. Expectation of 70% utilization of 2x20 MVA capacity at the proposed grid S/S with 3% transmission loss shall make available additional 1284.78 LU, which shall cause OPTCL to earn additional annual revenue of Rs 321.19 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 361.05 lakhs. The average rate of annual return and IRR has thus been found to be 11.39% and 13.14% respectively.

7. OPTCL has proposed construction of new 2X20 MVA, 132/33kV Sub-Station at Brundabahal (Kalahandi) along with 32.48 KMs of 132 kV LILO line from 132 kV Jaipatna-Junagarh line with an estimated cost of Rs. 52.92 crores with 100% equity support from the Government. OPTCL submitted that the survey in respect of associated transmission line has already been completed and finalized the route. Government land about 25kms distance from the 132/33kV Junagarh Grid Sub-Station and 60kms from the 220/132/33kV Jaipatna Grid Sub-station [centrally located between the Golamunda (~10kms) and Dharamgarh (~15kms) blocks] has been identified and steps have been initiated to acquire the required patch of land. Presently, there are four numbers of 33/11kV Sub-stations under Dharamgarh i.e Dharamgarh having capacity of 13.15MVA (2x5MVA+1x3.15MVA), Keygaon having capacity of 6.3 MVA (2x3.15MVA), Behera having a capacity of 10MVA (2x5MVA) and Golamunda having a total capacity of 6.6 MVA(1x5MVA+1x1.6MVA). Additional two nos. of 33/11kV substations namely, Daspur and Kasibahal having capacity of 16MVA (2x8MVA) and 10MVA (2x5MVA) respectively are coming up in this area. Hence, the collective capacity of the 33/11kV substations will be around 63MVA. Further, the L.I and bore well points of Golamunda block and Dharamgarh block are unable to function properly due to the low voltage and power interruptions. Furthermore, in case of breakdown, the line maintenance is very difficult during rainy seasons as the connecting line from Junagarh Grid Sub-Station is passing through cultivated land and lightning prone areas. Therefore, the commissioning of the proposed 132/33kV Grid Sub-Station at Brundabahal is necessary and will also ensure steady and reliable power supply and eradicate low voltage problem of the Golamunda block, Dharamgarh block and other nearby areas and will benefit around 85000 consumers, 900 L.I & bore well points, 54 nos of small industries and 10 nos. of medium industries. OPTCL has submitted that the

proposed Sub-Station at Brundabahal, being a part of 14th Transmission Plan of OPTCL for the FY 2022-23, has been incorporated in the Business Plan of OPTCL for the control period FY 2019-20 to FY 2023-24. OPTCL has projected reduction of average annual loss to the extent of 0.30MW, which with consideration of Rs.2.78/ kWh, comes to Rs.28.49 lakh in monetary term. Expectation of 70% utilization of 2x20 MVA capacity at the proposed grid S/S with 3% transmission loss shall make available additional 1284.78 LU, which shall cause OPTCL to earn additional annual revenue of Rs 321.19 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 349.69 lakhs. The average rate of annual return and IRR has thus been found to be 6.61% and 0.47% respectively. The project is not economically viable but OPTCL may be allowed to take up the project for socio-economic development of that area.

8. OPTCL has proposed construction of 132kV SC line on DC tower from 220/132/33kV Sub-Station at Jayanagar (Jeypore) to 132/33kV Sub-Station at Tentulikhunti with an estimated cost of Rs. 21.79 crores with funding of 30% from Government as equity and 70% by availing loan from other funding agencies depending upon the feasibility of loaning. OPTCL submitted that the survey in respect of associated transmission line has already been completed and finalized route. Bay extension at both Jayanagar and Tentulikhunti grid substation have been charged and transmission line work is under progress. OPTCL submitted that 132/33kV Grid Sub-station, Tentulikhunti is connected to 220/132/33kV Grid Substation Jayanagar (Jeypore) through a single 132kV SC line of line length of about 56.4 Kms.. Subsequent substations Dabugaon and Umerkote are dependent on a single feeder from Jayanagar to Tentulikhunti and any interruption on 132kV Jayanagar-Tentulikhunti SC line leads to power interruptions in Nabrangpur district. OPTCL therefore proposed the 2nd SC line between Jayanagar and Tentulikhunti, which will create a ring network and increase the stability & reliability of the network. OPTCL further submitted that construction of the 2nd SC line will decrease power interruptions to the areas fed through Tentulikhunti, Dabugaon and Umerkote grid Sub-stations. The Commission has already approved the same in the Business Plan of OPTCL for the control period FY 2014-15 to FY 2018-19. OPTCL has projected reduction of average annual loss to the extent of 0.58MW, which with consideration of Rs.2.78/ kWh, comes to Rs.55.59 lakh in monetary term. Expectation of availability of additional 14.18 MW with 3% transmission loss shall make available additional 722.69 LU, which shall cause OPTCL to earn additional annual revenue of

Rs 202.35 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 257.96 lakhs. The average rate of annual return and IRR has thus been found to be 11.84% and 11.55% respectively.

9. OPTCL has proposed for construction of 132kV DC line on DC tower from 220/132/33kV Sub-Station at Jaipatna (Baner) to 132/33kV Sub-Station at Junagarh with an estimated cost of Rs. 36.46 crores with funding of 30% from Government as equity and 70% by availing loan from other funding agencies depending upon the feasibility of loaning. OPTCL submitted that the survey in respect of associated transmission line has already been completed and finalized the route. The foundation work for the transmission line and bay extension works are under progress. Presently, Keshinga area is getting power supply through a single 132kV Therubali-Kesinga feeder of about 106.425kms length from 220/132/33kV Grid Sub-Station at Therubali. Aforesaid line is being overloaded due to the increase in load during peak time. Therefore, the voltage profile near Junagarh and Bhawanipatna is low and any interruption in the line leads to load shedding in Kalahandi district. OPTCL submitted that one 132kV DC line on DC tower from 220/132/33kV Grid Sub-Stations at Jaipatna (Baner) to 132/33kV Grid Sub-Station at Junagarh (Line Length: 46.459km.) is very much necessary for reduction of overloading of the existing 132kV Therubali-Kesinga SC line and also to maintain the voltage profile of nearby areas of Junagarh and Bhawanipatna within the permissible limit. OPTCL has submitted that proposed DC line from Jaipatna to Junagarh will create a ring network, thereby increase stability & reliability of the network and will facilitate uninterrupted power supply to the nearby villages. OPTCL has considered this project in its Business Plan for the control period FY 2019-20 to FY 2023-24. OPTCL has projected the reduction of average annual loss to the extent of 0.46MW, which with consideration of Rs.2.78/ kWh, comes to Rs.44.46 lakh in monetary term. Expectation of availability of additional 37.80 MW with 3% transmission loss shall make available additional 1927.16 LU, which shall cause OPTCL to earn additional annual revenue of Rs 481.79 lakhs at the wheeling cost of 25 paise. Thus, OPTCL expects total annual revenue from this investment to the tune of Rs. 526.25 lakhs. The average rate of annual return and IRR has thus been found to be 14.43% and 27.98% respectively.
10. The total investment has been estimated to be Rs. 1099.32 cr. The investment proposal in brief is mentioned below:

Sl. No.	<u>DESCRIPTION</u>	CAPITAL EXPENDITURE (Rs. Cr.)
1	2X500 MVA, 400/220/33 kV Gas (SF6) Insulated Sub-Station at Meramundali (B) along with associated transmission line	224.34
2	2X500 MVA. 400/220/33kV Gas (SF6) Insulated Sub-Station at Paradeep along with associated transmission line	634.95
3	2X40MVA, 132/33kV Gas (SF6) Insulated Sub-Station at Hinjilicut along with associated transmission line	45.23
4	2X20MVA, 132/33kV Sub-Station at Bhatli along with associated transmission line	51.94
5	2x20MVA, 132/33kV sub-station at Tarbha along with associated transmission line	31.69
6	2x20MVA, 132/33kV sub-station at Brundabahal along with associated transmission line	52.92
7	132 KV SC line on DC tower from 220/132/33kV Sub-Station at Jayanagar (Jeypore) to 132/33kV Sub-Station at Tentulikhunti.	21.79
8	132kV DC line on DC tower from 220/132/33kV Sub-Station at Jaipatna (Baner) to 132/33kV Sub-Station at Junagarh	36.46
TOTAL		1099.32

11. OPTCL submitted that as per the System Studies conducted under the normal steady state conditions, implementation of the aforesaid additional proposed sub-stations as well as transmission lines would improve the system voltage profile, reduce the loading on certain important line sections of the transmission network improve system security and also reduce the overall transmission system loss. Further, in the scenario of single contingency outage in the existing condition, OPTCL may experience potential problems like overloading of remaining system lines and collapse of system voltages at locations close to the tripped line. Therefore, OPTCL proposed the investment proposal of above mentioned substations and transmission lines for additional reinforcement of its transmission network to meet the system needs in future years. OPTCL envisages the reduction of average annual loss of 13.61 MW after executing of the above projects.
12. OPTCL has submitted that prior discussion has been made with the concerned DISCOMs as regards to the proposal in their respective area. As stated by OPTCL, no major environmental or resettlement issues are envisaged for these projects. OPTCL has also submitted the Environmental Impact Assessment (EIA) Study for the projects. OPTCL has stated that the procurement of materials and services shall be taken up

through National Competitive Bidding. The entire work for these proposed projects shall be treated as single packages separately and the award would be made on Turn-key basis for the individual proposals.

13. One of the respondents, TPSODL agreed for the execution of the projects in their area of operation and suggested for inclusion for construction of 33 kV feeders from the grid sub-station of OPTCL to their 33/11 KV sub-station. TPNODL agreed to the proposals and requested the Commission for a decision considering the aspects of network stability & impact on tariff. TPWODL has raised queries about the variance in the estimated cost of Bhatli and Tarbha grid substation with that of earlier proposal of OPTCL in their Business Plan.
14. Respondent, Sri R. P. Mohapatra has raised queries about the anticipated load, additional quantum of energy expected to be handled in the proposed substations, validity of the cost estimates, operating cost & reliability of GIS substation etc. Sri Mohapatra has also stated that the submission for approval of investment proposals after the issuance of LOA is a gross violation of the Licence Condition. The approval of BoD of OPTCL should not by-pass the statutory requirement of the approval of the Commission. The expenditure incurred should not be considered while determining the ARR of OPTCL. The Commission may consider the proposal of Meramundali (B) sub-station if it is meant for evacuation of state share of 660 MW from TTPS stage –III. The GIS substation at Paradeep has been proposed on the request of the Industries Department, Government of Odisha and is required to meet the upcoming industrial load of about 533 MW in Jagatsinghpur /Kendrapara Districts. Sri Mohapatra further submitted that OPTCL should take up projects on the basis of commercial viability and development of the socio-economic condition of the people is the duty of the Government. Therefore, the gap must be supported by the Government in shape of financial grant instead of infusing equity since the Return on Equity will unnecessarily increase the transmission tariff. Sri Mohapatra has also pointed out about the consideration of higher expected load and anticipated revenue due to sale of additional energy from the 1st year of commissioning of the proposed projects.
15. OPTCL in its reply has submitted that about 17 MW, 18 MW, 27 and 36.5 MW of load is anticipated in the proposed substations at Brundabahal, Tarbha, Bhatli and Hinjlicut respectively. However, exact loading can be known after commissioning of the substations. OPTCL has submitted that erstwhile SOUTHCO (now TPSODL) had

proposed for the substations and DPRs have been prepared accordingly. The variance of cost as pointed out by TPWODL is due to consideration of OPGW and SAS and the detailed estimate so arrived after survey was duly approved by BoD of OPTCL.

16. OPTCL in its rejoinder has submitted that Meramundali grid substation is meant for evacuation of state share of 660MW from TTPS stage-III. Further, OPTCL has considered this project since the fault level of the existing Meramundali (A) is more than 40 kA and CEA has finalised the connectivity & considered it in the transmission strengthening scheme after conducting a study on 30th June, 2016. However, OPTCL will ensure prior discussion with GRIDCO/NTPC before implementation of the project for evacuation of state share of power from TTPS state-III in order to have least cost generation nil ISTS – POC charges. OPTCL has proposed GIS substation at Paradeep to save the substation equipments from deterioration due to saline effect and also due to fertilizer plant. Further, the cost of GIS substation is around 1.2 times to that of AIS and this project is economically viable and cater the need of large industries coming in that area in next 10 to 15 years. OPTCL submitted that the loading of grid substations shown in the cost benefit analysis is average loading for the span of 25 years considering reduction factor (0.7), load factor (0.6) and power factor of 0.9. OPTCL submitted that under loading in substations persists because of absence of downward evacuation system.
17. Heard the parties at length. On examination of the application of OPTCL, it is found that earlier the Commission had accorded in-principle approval of the proposed substations and transmission lines. OPTCL has now approached the Commission with the DPR along with the cost benefit analysis for approval of the investment proposals for those projects. It is found that the investments have been justified for improvement of power supply system, reducing loading on certain line section of OPTCL's network, reducing the overall transmission losses and improvement of voltage profile. OPTCL has made the system study with the existing arrangement and the proposed arrangement for the eight investment proposals. As submitted, the BoD of OPTCL has accorded administrative approval for the aforesaid projects. OPTCL has submitted that investment has been made taking into account the fundamental requirement to (i) ensure quality of supply, minimize interruption of power supply, enhance security / reliability of power system, strengthening of transmission system, availability of alternative power supply and (ii) enable OPTCL to receive an economic return.

18. From the submission of OPTCL, it is understood that OPTCL has already started the execution of the aforesaid projects for improvement of power supply system, reduction in loading on certain line section of OPTCL's network and reduction of the overall/ transmission losses and improvement of voltage profile. OPTCL has submitted the technical and economic justification as regards to the requirement for the proposed projects to meet the system need for the future years. The proposed infrastructure addition by OPTCL will be adequate for smooth flow of power without constraint/congestion in the system.

19. The Commission studied the technical and commercial viability of the projects as submitted by OPTCL. These are summarized below:

Sl No	Name of the Project	Project Cost (Rs. Cr)	Net Cash flow (Rs. Cr)	Period of Benefits (in Yrs)	Avg. Return estimated by OPTCL (%)	Payback period (in Yrs)	NPV estimated by OPTCL @ 9.86% Dis. Factor (Rs. Cr)	IRR estimated by OPTCL (%)	Viability
1	2X500 MVA, 400/220/33 kV GIS at Meramundali (B) with trans. line	224.34	1716.92	25	37.05	2.7	454.90	123.80	Viable
2	2X500 MVA, 400/220/33 kV GIS at Paradeep with trans. line	634.95	994.49	25	13.86	7.86	109.67	16.53	Viable
3	2X40MVA, 132/33kV GIS at Hinjilicut along with trans. line	45.23	93.84	25	14.80	6.76	14.54	22.87	Viable
4	2X20MVA, 132/33kV S/S at Bhatli with trans. line	51.94	11.63	25	7.37	13.56	-12.34	2.15	Not Viable
5	2x20MVA, 132/33kV S/S at Tarbha with trans. line	31.69	39.49	25	11.39	8.78	2.68	13.14	Viable
6	2x20MVA, 132/33kV S/S at Brundabahal with trans. line	52.92	2.53	25	6.61	15.13	-14.91	0.47	Not Viable
7	132 KV SC line on DC tower from Jayanagar S/S(Jeypore) to Tentulikhunti S/S.	21.79	47.96	35	11.84	8.44	1.19	11.55	Viable
8	132kV DC line on DC tower from Jaipatna S/S(Baner) to Junagarh S/S	36.46	117.05	35	14.43	6.92	14.14	27.98	Viable

20. The above table shows that apart from 2X20MVA, 132/33kV S/S at Bhatli with the associated transmission lines and Brundabahal with the associated transmission lines, all other projects are economically viable. We observe that OPTCL has started the execution of some of the projects prior to the approval of the investment proposal by the Commission. This violates the provisions of the Licence Condition and is improper. OPTCL should therefore stop such practices in future. Henceforth, non-adherence of the statutory provisions will be viewed seriously. However, since most of the projects are required in the larger interest of the society for improvement in socio-economic conditions of the people of that area, extending reliable power to the upcoming industries and the stake holders have given their consent to implement these projects, and OPTCL has started executing the projects, therefore, in line with the prayer made by OPTCL, the Commission in the instant case is inclined to give in-principle approval of the projects.
21. The Commission further observe from the submission of OPTCL that the State Government wants to support the projects coming up in the remote areas for the larger interest of the people of the state and to cater the additional demand requirement by the upcoming industries, etc. However, in this type of funding arrangement, OPTCL may pay more in terms of Return on Equity, which will ultimately burden the consumers of the State. In the above back drop, we are of the opinion that State Government may give grant instead of equity support for taking up such projects.
22. The Commission hereby directs OPTCL to take up the matter with Government. of Odisha to support the economically unviable projects and the other projects that are required for the larger interest of the State through grants. Further, OPTCL should take the help of the Government to resolve the issues on forest clearance, RoW, if any encountered during the execution of projects.
23. OPTCL should ensure that the projects are completed in time. In case the projects go beyond their schedule as given by them, the Commission may not allow the cost overrun of the same in the ARR of the Petitioner. OPTCL is also directed to delegate adequate technical, administrative and financial power to those officers entrusted with timely completion of the proposed projects. A committee may be constituted with the concerned officials of OPTCL and DISCOMs for each project to prepare and subsequent adherence to the timeline of project execution schedule. OPTCL is required to submit a report on the progress of the execution of the above projects to the

DISCOMs with a copy to the Commission so that adequate downstream infrastructure can be built up for evacuation of power by DISCOMs to avoid asset being stranded and under utilization of assets created by OPTCL. Managing Director, OPTCL should conduct monthly coordination meetings with CEO's of DISCOMs, CLDC, SLDC, etc. for resolution of issues on connectivity and evacuation of power. In no case, the investment should remain idle because of deficiency in downstream evacuation arrangement.

24. With the above directions, the case is disposed of.

Sd/-
(G Mahapatra)
Member

Sd/-
(U.N.Behera)
Chairperson