
2004, at Appendix 4B issued u/S.16 of the Act, as modified by Commission's Order dated 27th October 2006.

2. In compliance to Regulation 4 of OERC (Terms and Conditions for determination of Transmission Tariff) Regulations 2014, the Transmission Licensee shall file Business Plan for approval of the Commission before commencement of the control period. The Commission had directed OPTCL to prepare the Business Plans targeting the objective set out in the regulations as well as National Electricity Policy, Tariff Policy notified by Govt. of India. The Commission had also directed that the Business Plans should also be in conformity with National Electricity Plan notified by Central Electricity Authority.

➤ **First Control Period of MYT Order ended on March 2008**

In line with the Long Term Tariff Strategy (order dated 18.06.03 for FY 2002-03 to 2006-07) passed by OERC in Case No. 8/03 followed by Second Order on dtd. 12.11.03 (extension of one more year 2007-08), enunciating the guiding principles for determination of Annual Revenue Requirement, the first Control Period under the Multi-Year Tariff framework of the OERC ended in March 2008. Following this, the Commission, vide its letter no. 1036 dated 26.06.07, had directed to all the licensees, including the State transmission licensee (OPTCL) to submit their Business Plans, along with their suggestions on the design of the next Control Period.

➤ **Second Control Period of Business Plan- 2008-09 to 2012-13**

OERC in Case No. 51/2007 had disposed of the Business Plan application of OPTCL vide order dated 19.07.2010 for the second control period for FY 2008-09 to 2012-13. OERC approved the application with certain directives for compliance by OPTCL.

➤ **Third Control Period of Business Plan- 2013-14 to 2017-18**

As per direction of the Commission vide letter No.3277 dt.07.05.12, OPTCL has submitted the 5-year Business Plan for the 3rd control period starting from FY 2013-14 to FY 2017-18 on 24.05.2014 for consideration. It has taken up for hearing on 30.09.2014. The Commission in its Order dtd.11.05.2015 in case No.39/2014 directed OPTCL to resubmit the revised plan on or before 31.07.2015 incorporating all the issues raised by the Commission and taking into account of new Transmission Tariff Regulations 2014 already notified. OPTCL prayed for extension of time upto 21.11.2015 for submission of revised Business Plan.

3. In view of the above, OPTCL had prepared its revised Business Plan for the next 5 years i.e. from the year FY 2014-15 to FY 2018-19 and submitted before the Commission on dt.22.01.2016 which was registered as case No- 05/2016. In the revised Business Plan, the audited figures for financial year 2014-15 have been taken into account while preparing the projected financial and other statements. OPTCL had prepared the Business Plan with an objective of improving the long term financial viability of the power sector in Odisha and also with a view to fulfilling the objectives of National Electricity Policy and Rural Electrification Policy to supply quality and reliable power to all.

Strengthening of SLDC as an Independent System Operator

4. As per Section 31(2) of the Act, Govt. of Odisha has vested the State Load Despatch functions in OPTCL until further orders. The Act also provides for financial independence of SLDC under sub-section 3 of Section 32 by way of levy and collection of fees and charges from generating companies and the licensees engaged in intra-state transmission of electricity. The Commission vide letter No.1313 dated 04.08.2007 issued the Road Map for implementation of Annual Fees and Charges for SLDC functions in Odisha in order to separate SLDC Charges from the Transmission Charges of OPTCL with effect from 01.04.2008 to make it self-reliant.
5. The Commission had framed Orissa Electricity Regulatory Commission (Fees and Charges for SLDC and other related matters) Regulations, 2010 which came into force with effect from 18.11. 2010. As per Regulation 3 of the said Regulations, as well as in conformity with OERC (Conduct of Business) Regulations, 2004, the Commission directed OPTCL to file two separate applications as mentioned below before the Commission by 30.11.2011.
- An application for approval of ARR and determination of Transmission Tariff for Intra-State Transmission Network of OPTCL for FY 2012-13; and
 - An application for approval of ARR & Annual Fees and Charges for SLDC functions of Odisha SLDC for FY 2012-13.
6. The Chairperson, OERC vide D.O. Letter No. 1765 dated 22.09.2011 addressed to the Chief Secretary to Govt. of Odisha had also requested his personal intervention and expeditious actions for establishment of Odisha Power System Corporation Limited (OPSCCL) to allow Odisha SLDC to function as an Independent System Operator in post Intra State ABT regime in the State.

7. OPTCL in its Business Plan submitted that significant developments have occurred and progress has been achieved by OPTCL in its continuous endeavour to strengthen SLDC as an Independent System Operator.

The achievements as stated are as under:

- A. Presently, SLDC is functioning autonomously as an independent system operator under the direct administrative control of the Chairman-cum-Managing Director of OPTCL. Sr. G.M. (PS) is functioning as Chief Load Despatcher.
- B. SLDC has become financially independent from OPTCL and has been meeting its own expenses out of the revenue generated from its fees and charges based on ARR approved by OERC since FY 2010. Surplus funds accumulated through revenue streams approved by the OERC could be used for meeting CAPEX requirements of SLDC.
- C. All assets pertaining to SLDC & Sub-LDCs have been identified and used exclusively by SLDC personnel. Transfer of assets shall be done through a 'Transfer Scheme' by Government of Odisha after due notification.
- D. OPTCL is filing separate application for Annual Revenue Requirement and determination of Fees and Charges for SLDC functions before OERC each year.
- E. SLDC has been an independent decision making body for allowing/according consent to intra/inter-state Open Access transactions as per the relevant provisions of Act & Rules.
- F. Availability of real time data through reliable communication system.
- G. Functioning of Energy Accounting & Settlement System Centre (EASSC)
 - (i) EASSC is functioning at SLDC for State Energy Accounting and UI charges / Deviation charges billing on receipt of energy meter data from field.
 - (ii) Schedule based energy accounting and un-scheduled inter-changes/ deviation charges billing are being prepared by SLDC with effect from 01.04.2012.

The data centre is presently being operated and maintained by M/s WIPRO, the Facility Management Contractor (FMC).
- H. Posting of Executives and Staff: At present 64 nos. of Executives & staff including contractual staff have been posted at SLDC. Further, more numbers of Executives

are expected to be posted at SLDC during FY 2016-17 pending finalization of the organization structure by the Government.

I. SLDC is having its own website (www.sldcorissa.org.in).

Filing of the Licensee:

8. OPTCL had requested the Commission to approve the Business Plan of OPTCL for the next 4 years (FY 2015-16 to FY 2018-19) along with submission of actual data for FY 2014-15.
9. OPTCL owns Extra High Voltage Transmission system and operates about 12828.32 Ckt kms of transmission lines at 400 kV, 220 kV, 132 kV levels and possesses about 15142 MVA transformation capacity at 125 nos. of EHT Substations as on 01.04.2016. The details of Transmission Lines and Substations are given in table below:

Table - 1
Transmission Lines and Sub-Stations

Sl. No.	Item	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
A	Transmission lines									
1	400 kV lines	Ckm	443	446	522	522	518	532	728	1130
2	220 kV lines	Ckm	4937	5165	5517	5484	5520	5705	5730	5877
3	132 kV lines	Ckm	4880	5008	5208	5288	5305	5490	5629	5821
B	Sub-stations									
4	400 kV	Nos.	1	1	2	2	3	3	3	3
5	220 kV	Nos.	19	20	20	20	19	21	21	23
6	132 kV	Nos.	66	70	75	78	78	83	89	99
C	Transformation Capacity	MVA	7805	8833	9595	10323	11554	12837	13692	15142

Transmission Projects

10. OPTCL has carried out a detailed transmission planning exercise for the State of Odisha with the help of the consultant, PRDC. Projects identified as part of the transmission plan for the 12th Five Year Plan i.e. up to FY 17 and last two years of Business Plan period i.e. FY 18 and FY 19 has been factored into this Business Plan. The investment proposal has been prepared based on the comprehensive transmission study of the system considering the load growth, generation addition and other technical requirements. The study was carried out by modelling of the Odisha transmission system from 400kV upto 33kV buses and considering the Eastern Region 400kV transmission network upto 220kV bus of 400kV Sub-stations, Load flow studies and short circuit studies have been conducted along with the transient stability studies and off-peak load flow analysis. Accordingly, OPTCL has proposed to add the following nos. of GRID sub-stations in the Business plan period.

Table - 2

Voltage Level (kV)	Existing as on March- 16	2016-17 (Addition)	2017-18 (Addition)	2018-19 (Addition)	Total in 2018-19
400/220	3	0	2	2	7
220/132	18	8	8	3	37
132/33	99	31	11	9	150
220/33	5	6	3	3	17
Total	125	45	24	17	211

Technological Advancement

11. OPTCL submitted that they have undertaken the following Key Technological advancements.

- Integrated ERP system
- Use of HTLS conductor
- Implementation of SCADA and Automation system
- Gas Insulated Switchgear (GIS) sub-station
- Implementation of Geographical Information System (GIS)
- Smart Grid
- Underground cables & Digitisation of Bays

In addition to above, OPTCL is planning to introduce automation of existing sub-stations, Fiber optics cable, underground EHV cables etc.

Capital Expenditure:

12. OPTCL has prepared the comprehensive capital expenditure plan for the Business Plan period for construction of sub-stations and lines, improving IT effectiveness, building infrastructure for telecommunication, civil work and Operation and Maintenance.
13. OPTCL recognizes that the growth in demand will follow its trajectory along with the implementation of schemes like Rajib Gandhi Gramin Bidyut Yojana (RGGVY) and Biju Jyoti Yojana programme (BGJY). Due to rapid industrialisation, growth of complex transmission system, voltage regulation and outages are expected to cross the limits. OPTCL has prepared its capital expenditure plan considering all these factors and is fully committed and geared to strengthen the capacity of the transmission system of the state by employing innovative and modern technologies, judicious use of IT to improve system efficiency, proper recording and monitoring, better maintenance of lines and transformers to reduce outages and increase system availability.

14. The abstract of Capital expenditure and source of funding submitted by OPTCL are given in the table below, the details which are at **Annexure-A**.

Table - 3

Investment Heads	FY 2015	FY 2016 (Estimate)	FY 2017 (Estimate)	FY 2018 (Estimate)	FY 2019 (Estimate)
IT investment	1.43	24.94	30.64	8.66	9.86
Civil works	4.40	15.93	17.67	21.14	21.93
Operation & Maintenance	80.41	99.06	119.40	71.14	48.18
Construction	807.45	606.69	689.70	1241.41	1256.16
Telecom	57.29	60.80	101.25	82.31	83.96
Total Investments	950.98	807.42	958.66	1424.66	1420.09
Funding Scheme					
Investment Funded by Debt	77.25	340.95	531.46	538.32	500.02
Investment Funded by Equity	50.00	57.20	50.00	60.00	60.00
Investment Funded by Grants and Internal Reserves	823.73	409.27	377.2	826.34	860.07

Transmission Loss (%)

15. OPTCL submitted that the transmission loss in OPTCL system has been reduced substantially in the last few years and achieved 3.73% in 2014-15. For reducing the losses, OPTCL has taken various measures like addition of capacitor bank, load bifurcation, modification in system configuration, procurement of more efficient equipment, conductor augmentation and replacement etc. The details of Transmission loss of past years are given below.

Table - 4

Parameter	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Approved losses (%)	5.00	4.50	4.00	4.00	3.90	3.80	3.8	3.75
Actual loss(%)	4.82	4.52	4.11	3.93	3.88	3.84	3.79	3.73

16. It is evident from the above loss figures that there is a limited control of OPTCL to manage losses beyond a certain level. Considering the findings from the PRDC study and evaluating the present loss level, OPTCL proposes the following loss trajectory for the transmission system during the Business Plan period.

Table - 5

Parameter	2015-16	2016-17	2017-18	2018-19
Transmission loss	3.75%	3.70%	3.50%	3.00%

System Availability

17. As per the Regulation 6.4 of OERC Regulations, 2014, Normative Annual Transmission System Availability Factor, (NATAF) for AC system is 98.5%. Based on the actual

performance and the projected system improvement works, OPTCL has proposed to consider system availability of 99.95% for the Business Plan period.

Demand Forecast of Distribution Companies:

18. The growth in demand from DISCOMs has been estimated considering the increase in demand due to implementation of RE scheme like RGGVY Scheme, BGJY Scheme etc. growth in large industry and addition of new heavy industries. In this regard OPTCL has been conducting detailed discussions with the stakeholders while preparing the Capital Investment Plan and Business Plan. As such, for forecasting the demand projections in the Business Plan, OPTCL has taken the figures projected in the LTDF application for FY 2017-18 and FY 2018-19. However, for FY 2014-15, OPTCL has considered the actual demand data and for FY 2015-16, the demand projections approved by the Commission in the tariff order for FY 2015-16 has been considered. Similarly, for FY 2016-17, the demand projections considered in the ARR application of FY 2016-17 has been considered.
19. The summary of system demand projection of distribution companies is given below:

Table - 6

(Fig. in MU)

Description	2014-15	2015-16	2016-17	2017-18	2018-19
CESU	8,542	8,780	8,905	11,781	12,451
SOUTHCO	3,182	3,420	3,530	4,079	4,213
WESCO	6,978	7,350	7,450	8,221	8,406
NESCO	5,214	5,250	5,583	6,097	6,401
System Demand	23,916	24,800	25,468	30,178	31,471
Emergency Sale to CGPs	10	10	10	10	10
Wheeling to industries from CGPs	450	450	450	450	450
Total	24,376	25,260	25,868	30,638	31,931

20. **New Generation Capacity Addition:** Govt. of Odisha has signed MoUs with 30 nos. IPPs (3 nos. have been cancelled) for setting up of coal based thermal power plants in Jharsuguda, Dhenkanal, Angul, Cuttack, Sambalpur, Sonepur, Kendrapada, Puri, Kalahandi and Bolangir districts. These IPPs shall have unit sizes varying from 30 MW to 660 MW. Total installed capacity of the proposed IPPs will be about 39,410 MW, out of which Odisha share will be about 5,254 MW. Out of the 27 nos. IPPs, 3 nos., viz., M/s. Sterlite Energy Ltd., M/s. GMR Kamalanga Energy Ltd. and M/s. Jindal India Thermal Power Ltd. have commissioned their plants having capacities of 2,400 MW, 700 MW and 1200 MW respectively.
21. Govt. of Odisha has proposed that the IPPs would provide 14% of the power sent out at variable cost if Coal Block(s) are allocated within the State. Otherwise, the IPPs shall provide 12% of the power sent out at variable cost. According to the proposal of the Govt.,

the IPPs are also required to deliver the State share of power at the nearest Grid sub-station of OPTCL. The Installed Capacity of some of the IPPs ,which are in pipeline, are as under:

Table - 7

Sl. No.	Name of IPP	Installed Capacity (MW)
1.	Aarati Steel, Ghantikhal	1x50
2.	Meenakshi Power Ltd	3x4+2x12.5
3.	Odisha Power Consortium Ltd., Samal	4x5
4.	Sterlite Energy Ltd., Jharsuguda	4x600
5.	GMR Kamalanga Energy Ltd., Kamalanga	4x350
6.	Jindal India Thermal Power Ltd., Derang	2x600
7.	Ind-Barath Energy (Utkal) Ltd.	2x350
8.	Monnet power company Ltd.	2X525
9.	Lanco Babandh power Ltd.	2X660
	Total	8527

Apart from the above IPPs, some PSUs like OPGC, NTPC, UMPP, OTPCL have also proposed to set up coal based thermal power plants in the State with a total installed capacity of 12,490 MW, out of which Odisha will have a share of 5,445 MW.

Projected Energy Requirement (in MU)

22. Based on demand projections and loss reduction target as mentioned above, the summary of the system demand during the Business Plan Period is as shown below:

Table – 8
Projected Energy Requirement (MU)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Total Energy Availability	25694	25286	31606	37571	47497
Less – Transmission Losses	1064	1055	1169	1315	1425
Net Availability	24813	24411	30437	36256	46072
Energy Requirement	Actual	Actual	OERC approval in ARR	Projected as per LTDF order	Projected as per LTDF order
CESU	8287	8368	8570	11781	12451
NESCO	5007	5195	5450	6097	6401
WESCO	7067	6898	7050	8221	8406
SOUTHCO	3195	3279	3470	4079	4213
Total DISCOMs	23556	23740	24540	30177	31471
Sale to CPP	44	72	10	10	10
State Surplus for Trading	1213	599	5887	6069	14591

Aggregate Revenue Requirement (ARR)

23. Based on the estimated revenue realization and expenses as detailed in various sections of Business Plan, the estimated Revenue Gap/ Surplus are summarized below:

Table – 9

(Rs. Cr.)

Particulars	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Employee Cost	313.85	306.71	399.63	522.17	592.33
R&M costs	98.24	136.79	170.66	164.81	175.86
A&G Expenses	32.47	24.37	24.88	25.09	25.30
Expenses related to Auxiliary Consumption			3.82	4.20	4.62
Miscellaneous Expenses	-	0.52	2.41	2.53	2.66
Depreciation	118.67	119.12	159.21	178.10	192.65
Interest and finance charges					
- On old Loans	59.60	63.08	63.08	63.08	63.08
- On new Capex loans	-	16.62	59.15	109.64	154.35
less: Interest During Construction	(10.19)	(15.10)	(18.46)	(22.37)	(27.44)
Finance Charges	2.72	13.99	19.08	22.74	25.44
Rebate to Consumers	11.95	11.09	14.64	17.71	20.05
Net Interest chargeable to ARR	64.08	89.69	137.49	190.79	235.47
Return on Equity with Tax	57.46	57.46	68.67	78.48	90.25
Incentive from Transmission System Availability	5.00	5.00	9.19	14.37	17.38
Total ARR required	689.77	739.66	975.96	1,180.54	1,336.53
Less: Inter-state wheeling revenue and SLDC and Open access Revenue and other income	65.85	48.93	30.45	52.50	73.13
Net ARR required	623.92	690.73	945.51	1,128.04	1,263.39
Proposed Transmission Tariff (Paise./Unit)	25.60	27.34	36.47	36.82	39.57

COMMISSION'S OBSERVATIONS:

General Observations on Business Plan

24. Heard the parties at length. During the hearing on 24.05.2016, the CMD, OPTCL has presented the background, inputs and assumptions and the projections made in the Business Plan emphasising on developmental objective of OPTCL. The Commission has directed OPTCL to further clarify on certain related issues. On this, discussions were held by Officers of the Commission with the concerned officials of OPTCL on 08.06.2016 & 20.06.2016. The information / data submitted by them during the discussion and through e-mail thereafter have been taken into record.
25. The Commission, for approval of Business Plan of OPTCL for the period from FY 2014-15 to 2018-19 is guided by the provisions of the OERC (Terms and Conditions for determination of Transmission Tariff) Regulations, 2014, National Electricity Policy (NEP), 2005, Tariff Policy (TP), 2016 as well as other statutory notifications and directives, while giving due considerations to the complexities of the Odisha Power Sector.

Fixation of Reference Year/Base Year:

26. OERC vide its order dated 18.06.2003 in Case No. 8/2003 had enunciated a Long Term Tariff Strategy (LTTS) for the licensees for a period of 5 years starting from FY 2002-03 and ending in FY 2006-07. However the Commission extended the control period by one year covering the FY 2007-08. The Control Period has, therefore, come to an end in March 2008. Further, OERC vide its order dated 19.07.2010 in Case No. 51/2007 had approved the Business Plan application of OPTCL for the second control period starting from FY 2008-09 to 2012-13. Due to delay in submission of Business Plan by OPTCL and notification of new Transmission Tariff Regulations by OERC, the Business Plan submitted by for FY 2013-14 to 2017-18 was returned with the observations for filing of the same afresh. The Commission has notified OERC (Terms and Conditions for determination of Transmission Tariff) Regulations, 2014, which was effective from October, 2014. Based on OERC Transmission Tariff Regulations, 2014, OPTCL has filed 5 year Business Plan starting from FY 2014-15 to 2018-19. Since, the audited accounts for FY 2013-14 was available with the Commission and the Commission has already trued up the accounts of OPTCL for the FY 2013-14 in its ARR & Tariff order for the FY 2015-16, there is no need for approval of the Business Plan of OPTCL for FY 2013-14 at this stage. Considering the provisions in the OERC (Terms and Conditions for determination of Transmission Tariff) Regulations, 2014, Tariff Policy, 2016 and based the submission of OPTCL, the Commission directs for control period of five years starting from FY 2014-15 to 2018-19 as follows.

Transmission Loss Reduction

27. OPTCL stated that Transmission loss is purely technical in nature and it has no control over the transmission loss due to several factors, which is evident from the fluctuation of transmission loss derived for different years. However, there is a limited control of OPTCL to manage losses beyond a certain level. The Commission does not accept this view. Considering the findings from the PRDC study and evaluating the present loss level, the Commission approves the following loss trajectory for the transmission system of OPTCL during the present Business Plan period.

Table –10

Parameter	2015-16	2016-17	2017-18	2018-19
Transmission loss	3.75%	3.70%	3.50%	3.00%

28. Further, the Commission directs that OPTCL shall continuously monitor the operation of the transmission system, prevent overloading by load diversion wherever possible and take up advanced practices for improving system loading of the existing network. Effective

utilization of new lines and their impact on transmission loss need to be intimated to the Commission along with reduction strategies.

Demand Projections:

Forecast for DISCOMs' Requirements

29. OPTCL submitted that the growth in demand of DISCOMs has been estimated considering the increase in demand due to implementation of RE schemes like RGGVY, BGJY etc., growth in large industries and addition of new heavy industries. OPTCL has been conducting detailed discussions with the relevant stakeholders while preparing the capital investment plan as well as the demand projection. Both the capital investment plan and the Business Plan have been approved by the BoD of OPTCL. Also deliberations, whenever required, in respect of different projects are being carried out from time to time in CEA Standing Committee Meetings, ERPC Standing Committee Meetings as well as with representatives of Generating companies, DISCOMs and CGS/CTU and GCC meetings of OPTCL. The energy requirements of each DISCOMs have been finalised after due deliberations, the summary of which is given in the table below:

Table –11
DISCOMs' Energy Requirement (MU)

Distribution Company	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19
	(Actual)	(Actual)	(Approved in GRIDCO ARR)	(Projected as per LTDF order)	(Projected as per LTDF order)
CESU	8287	8368	8570	11781	12451
NESCO	5007	5195	5450	6097	6401
WESCO	7067	6898	7050	8221	8406
SOUTHCO	3195	3279	3470	4079	4213
Total	23556	23740	24540	30177	31471

30. OPTCL submitted that for forecasting the demand projections in the Business Plan, they have taken the figures projected in the Long Term Demand Forecast application for FY 2017-18 and FY 2018-19. However, for FY 2014-15 & 2015-16, OPTCL has considered the actual demand data and for FY 2016-17, the demand projections approved by the Commission in the tariff order for FY 2016-17 have been considered.
31. It is observed that in the estimation of energy requirement of the DISCOMs, there is a rise of about 5637 MU of energy from FY 2016-17 to 2017-18. OPTCL replied that the figures for FY 2017-18 have been taken from LTDF order and that of for FY 2016-17 have been taken from ARR & Tariff order of the Commission. Demand escalation did not take place as envisaged due to lower industrial activity arising out of recession. In ARR & Tariff order for

FY 2016-17, actual industrial growth has been considered. Hence, there is a huge gap between ARR figure of FY 2016-17 and LTDF figure for FY 2017-18. Further, the Commission in its Tariff Order for DISCOMs for 2015-16 had approved the energy requirement of the State at 24,800 MU as against actual demand of 23740 MU by the DISCOMs for the said year. So, the demand forecast made for the future years may undergo a change depending on the actual distribution loss and load growth.

32. The projection of demand for the purpose of determination of state consumption includes the existing state generation capacity (net of auxiliary consumption) as well as the State's share from Central Generating Stations which is about 4,407 MW as on 01.04.2016 corresponding to an ex-bus energy availability of 29,205 MU. The details are given in table below.

Table –12
Existing Source of Power for Orissa

Sl. No.	Name of power station	Installed Capacity (no. of Units x MW)	Odisha Share			Availability for Odisha	
			%	(MW)	(MU)	(MW)	(MU)
A.	STATE SECTOR						
	STATE HYDRO						
(i)	Burla Power House	220.5 (2x49.5 + 2x32 + 1x37.5 + 2x10)	98%	216	668	166	662
(ii)	Chiplima Power House	72 (3x24)	100%	72	490	55	485
(iii)	Balimela Power House	510 (6x60 + 2x75)	100%	510	1,183	392	1171
(iv)	Rengali Power House	250 (5x50)	100%	250	525	192	519
(v)	Upper Kolab Power House	320 (4x80)	100%	320	832	246	824
(vi)	Upper Indravati Hydro Electric Project	600 (4x150)	100%	600	1,962	462	1943
(vii)	Machhkund Power House	120 (3x17 + 3x23)	50%	60	262	46	260
	Sub-total (State Hydro)			2,028	5,922	1560	5863
	STATE THERMAL						
(i)	TTPS (NTPC - State dedicated)	460 (2x110 + 4x60)	100%	460	3,304	354	2,957
(ii)	Ib Thermal Power Station (OPGC)	420 (2x210)	100%	420	2,943	323	2,664
(iii)	Vedanta Ltd.	2400 (4x600)	30%	720	5,361	554	5,039
(iv)	GMR Kamalanga Energy Ltd.	1050 (3x350)	45%	473	2,345	363	2,193
(v)	Jindal India Thermal Power Lts.	1200 (2x600)	12%	144	1,072	106	1,008
(vii)	Nava Bharat Ventures Ltd.	60 (1x60)	12%	7	54	5	49
	Sub-total (State Thermal)			2,224	15,080	1706	13910
	NEW & RENEWABLE ENERGY			210	550	103	531
	Sub-total (State Sector)			4,461	21,552	3369	20,305
B.	CENTRAL SECTOR						
	NTPC (ER Stations)						
(i)	Farakka STPS, Stage-I & II		14.18%	227	1,650	168	1,511
(ii)	Farakka STPS, Stage-III		17.14%	86	623	63	575
(iii)	Kahalgaon STPS, Stage-I		15.77%	133	963	98	857
(iv)	Kahalgaon STPS, Stage-II		2.62%	39	286	29	263
(v)	Talcher STPS, Stage-I		32.34%	323	2,352	239	2,157
(vi)	Home State share from Talcher STPS, Stage-II		10.00%	200	1,454	148	1,327
(vii)	Barh STPS, Stage-II		14.79%	195	1,419	144	1,307
	Sub-total (NTPC)			1,203	8,748	888	7,999

Sl. No.	Name of power station	Installed Capacity (no. of Units x MW)	Odisha Share			Availability for Odisha	
			%	(MW)	(MU)	(MW)	(MU)
(i)	Teesta-V (NHPC)		23.40%	119	529.76	88	510
(ii)	Chukha Hydro Electric Project		15.19%	41	260	30	252
(iii)	Tala Hydro Electric Project		4.25%	43	144	32	140
	Sub-total (Central Sector)			1,407	9,681	1,039	8,900
	TOTAL			5,868	31,234	4,407	29,205

33. **Other Long Term Open Access Consumers:** Projected Demand of emergency power & wheeling of power for NALCO and ICCL for Business Plan period has been considered as approved in ARR for FY 2016-17.
34. **New Generation Capacity Addition:** Govt. of Odisha has signed MoUs during the period from June, 2006 to January, 2011 with different IPPs/Private Investors for setting up 30 (thirty) coal based power plants, out of which 3 nos. of MoUs have been cancelled. GRIDCO has signed PPAs with all the IPPs except one, i.e., M/s. Jindal Power Ltd. w.r.t. its proposed thermal plant of 1320 MW at Boinda, Angul.
35. Out of the above mentioned IPPs the following are in operation:
- (i) M/s. Vedanta Ltd. (2400 MW)(formerly M/s. Sterlite Energy Ltd.) at Jharsuguda with Odisha share of 720 MW.
 # 2 connected to STU through 220 kV VAL – Budhipadar D/C.
 # 1, 3 & 4 connected to CTU through LILO of 400 kV Rourkela – Raigarh D/C (PGCIL lines).
 - (ii) M/s. GMR Kamalanga Energy Ltd. (1050 MW) at Kamalanga, Dhenkanal with Odisha share of 472.5 MW.
 # 1 & 2 are connected to CTU through 400 kV Kaniha – Meramundali Ckt-I (PGCIL line).
 # 3 is connected to STU at Meramundali s/s.
 - (iii) M/s. Jindal India Thermal Power Ltd. (1200 MW) at Derang, Talcher, Angul with Odisha share of 144 MW.
 All the units are connected to CTU at Angul (PG) through 400 kV D/C line.
 - (iv) M/s. Nava Bharat Ventures Ltd. (60 MW) at Khadagaprasad, Dhenkanal with Odisha share of 7.2 MW.
36. All the future IPPs are required to be set up in terms of the State Policy on Thermal Power Generation in Odisha notified by the State Govt. on 8th August 2008 and the entitlement of the State from such IPPs shall be as per Clause 3 of the said Policy. GRIDCO has already taken up the matter with CEA & PGCIL with a proposal for development of STU Pooling

Centers connected to a cluster of IPPs. The STU Pooling Centers will be connected in turn with 765/400 KV CTU Pooling Stations at Angul & Jharsuguda. The proposal is yet to be finalized and crystallized. Pending decision on the evacuation system, it is envisaged that the existing OPTCL transmission system including commissioning of the new systems covered under the capital expenditure programme given in the Business Plan will handle the power generated by the following IPPs during the Business Plan period. The capacity addition proposed in respect of above four IPPs, already commissioned, has been done in consultation with GRIDCO. The proposed capacity addition of IPPs may undergo a change in case of any delay in commissioning of these projects.

Table –13
Details of capacity to be handled with existing capex

Sl. No.	NAME OF IPPS	Location	Capacity (MW)	Odisha Share (MW)
1.	M/s. Ind-Barath Energy (Utkal) Ltd.	Sahajbahal, Dist. Jharsuguda	1360	163.2 (12%)
2.	M/s. Monnet Power Company Ltd.	Mallibrahmani & Nisa, Dist.: Angul	1050	126 (12%)
3.	M/s. Maa Durga Thermal Power Company Ltd.	Tangi, Dist.: Cuttack	120	14.4 (12%)
4.	M/s. Lanco Babandh Power Ltd.	Khurunti, Dhenkanal	2640	1188 (45%)
5.	OPGC Expansion Project	Brajarajnagar, Jharsuguda	1320	660 (50%)
6.	North Karanpura STPS, NTPC	Hazaribag & Chhatra, Bihar	1980	396 (20%)
7.	Integrated Thermal Power Station, NTPC	Darlipalli, Sundargarh	1600	800 (50%)
8.	NSPCL	Rourkela	250	25 (10%)

Projected Energy Requirement (in MU)

37. Based on demand projections and loss reduction target mentioned above, the summary of the Energy availability during the subject Business Plan Period is as shown below:

Table –14
Projected Energy Availability (MU)

	FY14-15 (Actual)	FY15-16 (Actual)	FY16-17	FY17-18	FY18-19
Existing Energy	25,877	25466	29205	29205	29205
Addl. Energy – OPGC			-	1158	4632
Addl. Energy –NTPC			-	620	6384
Addl. Energy – IPP			1952	5671	5671
Addl. Energy Renewable Sources			449	918	1607
TOTAL ENERGY AVAILABILITY	25,877	25466	31606	37571	47497
Less – Transmission Losses	1064	1055	1169	1315	1425
Net Availability	24813	24411	30437	36256	46072
Energy Requirement					
CESU	8287	8368	8570	11781	12451
SOUTHCO	5007	5195	5450	6097	6401
WESCO	7067	6898	7050	8221	8406
NESCO	3195	3279	3470	4079	4213
Total DISCOMs	23556	23740	24540	30177	31471
Sale to CPP	44	72	10	10	10
State Surplus for Trading	1213	599	5887	6069	14591

38. The Commission is of view that the demand as well as the proposed capacity addition may undergo a change in case of any delay in commissioning of these projects and load growth. The Commission has already approved the Long Term Demand Forecast (LTDF) which covers the present Business Plan period and has also approved demand in the ARR for FY 2016-17. So, at this stage the commission is not inclined to revisit the demand and it will be properly scrutinised while approving the ARR of OPTCL for the remaining years of the present Business Plan period .

Capital Expenditure:

39. OPTCL has prepared a comprehensive capital expenditure plan for the Business Plan period for construction of sub-stations and lines, improving IT effectives, building infrastructure for telecommunication, civil work and Operation and Maintenance. The abstract of the said Capital expenditure Plan is given in the table below.

Table –15

Investment Heads	FY 2015	FY 2016 (Estimate)	FY 2017 (Estimate)	FY 2018 (Estimate)	FY 2019 (Estimate)
IT investment	1.43	24.94	30.64	8.66	9.86
Civil works	4.40	15.93	17.67	21.14	21.93
Operation & Maintenance	80.41	99.06	119.40	71.14	48.18
Construction	807.45	606.69	689.70	1241.41	1256.16
Telecom	57.29	60.80	101.25	82.31	83.96
Total Investments	950.98	807.42	958.66	1424.66	1420.09

40. OPTCL has stated that the planned CAPEX has to be done commensurate with the load growth of the state as well as enhancing reliability, capability and availability of the transmission system in discharging its functions as a STU/Transmission Licensee. In order to eradicate low voltage problem in different parts of the State, it is necessary to bring out improvement in the system by way of installation of several new transmission lines and Sub-Stations in the State. There is a technically and economically justified requirement for implementation of these additional system reinforcements in the transmission network to meet the system needs during five years Business Plan period.
41. The main thrust and emphasis as well as the fundamental requirements in respect of proposed additional transmission schemes is laid on the following:
- Improvement of system voltage profile at various points of the transmission network.
 - To minimize interruption of power supply to consumers.
 - Enhance security / reliability of power system.
 - Enhance quality and supply standards of system.
 - Strengthening of transmission system.
 - Availability of alternate power supply.
 - Enable OPTCL to receive an economic return.
 - Reduce overloading of important sections.
 - Reduce the overall transmission system losses.
 - Meet the future load demand of the State.
42. The list of the completed transmission projects along with their actual Cost and time over-run during 2013-14, 2014-15 and 2015-16 is given below:

Table – 16
TRANSMISSION PROJECT COMPLETED

Sl. No.	Name of Project	Cost (Rs. in Crore)	Scheduled Completion	Actual Date of Completion	Time Overrun with Reason
PROJECT COMPLETED DURING 2013-14					
1	2x20MVA, 132/33kV S/S Kuchinda with LILO line	Estimated-20.61	06/2012	04.07.2013	1 year
		Actual-19.82			RoW
2	Stringing of 2nd ckt. Stringing of 2nd ckt. from Loc.116 to Loc.202 at Nimapara Grid S/S of the 132kV SC line on DC tower from Chandaka to	Estimated-2.16	01/2011	07.07.2013	2 yrs. 6 months
		Actual-2.02			Delay in getting Railway

Sl. No.	Name of Project	Cost (Rs. in Crore)	Scheduled Completion	Actual Date of Completion	Time Overrun with Reason
	Nimapara (26.087km)				Clearance
3	2x12.5MVA, 132/33kV S/S Purushottampur	Estimated-15.99 Actual-12.48	08/2013	11.08.2013	No delay
4	2x12.5MVA,132/33kV S/S Chandpur	Estimated-16.81 Actual-11.75	08/2013	14.08.2013	No delay
5	132 kV Paradeep - Jagatsinghpur Line	Estimated-16.74 Actual-13.36	06/2013	01.11.2013	4 months RoW
6	2x20MVA,132/33kV S/S Barbil with 132kV LILO arrangement from Joda-Bolani S.C. line to Barbil	Estimated-17.40 Actual-10.40	11/2011	23.01.2014	2 yrs 2 months Slow progress by contractor
7	220kV DC line from Mendhasal to Bidanasi	Estimated-17.39 Actual- 19.55	12/2013	01.02.2014	2 months Court Case-ASBM
8	132kV feeder bay extn. at Nimapara Grid S/S for termination of 2nd ckt of 132 kV Chandaka- Nimapara line	Estimated-10.42 Actual-0.64	02/2012	14.02.2014	2 yrs. Delay in associated line completion
PROJECTS COMPLETED DURING FY 2014-15					
1	3x40MVA, 132/33kV S/S at Arugul with line	Estimated-37.43 Actual-28.46	08/2013	06.05.2014	09 months RoW
2	2x20 MVA, 132/33kV S/S at Barbil with LILO	Estimated-17.4 Actual-10.95	11/2011	02.08.2014	2 yrs 9 months RoW
3	2x12.5MVA, 132/33kV S/S at Kuchinda with LILO	Estimated-20.61 Actual-21.31	06/2012	24.11.2014	2 yrs 5 months RoW
4	2x12.5MVA, 132/33kV S/S at Nuapada with line	Estimated-34.95 Actual-33.10	06/2012	27.12.2014	2 yrs 6 months RoW
5	2x12.5 MVA, 132/33KV S/S at Boudh with line	Estimated-33.53 Actual- 27.03	06/2012	30.01.2015	2 yrs 7 months RoW
6	Conversion of 132/11kV S/S to 2X40MVA,132/33kV S/S Sarasmall (Jharsuguda)	Estimated-13.41 Actual-7.97	03/2014	13.03.2015	Contract Off-loaded & executed departmentally
7	2X20 MVA,132/33kV S/S at Banki with line	Estimated-21.16 Actual- 21.13	08/2013	29.03.2015	1 yr 7 months RoW
8	1X20 MVA + 1X40 MVA,132/33kV S/S at Shamuka Beach Resort, Puri with line	Estimated-20.71 Actual-13.60	08/2013	30.03.2015	1 yr 7 months RoW
PROJECTS COMPLETED DURING FY 2015-16					
1	2X20 MVA,132/33kV S/S at Umerkote with line	Estimated-41.16 Actual-37.97	Nov-15	10.04.2015	Before Time
2	2x12.5MVA, 132/33kV S/S at Dabugaon with line	Estimated-34.95 Actual-29.78	Jun-12	10.04.2015	2 yrs 10 months RoW
3	220kV Atri – Pandiabil line	Estimated-18.81 Actual-6.82	May-15	25.06.15	1 month RoW
4	2X20MVA,132/33kV S/S at Konark with line	Estimated-29.14 Actual-17.27	Jul-14	1st Tfr. Charged on 29.06.15. 2nd Tfr. harged 31.10.15.	11 months RoW
5	2X160MVA+2X40MVA, 220/132/33kV S/S at	Estimated-62.70 Actual-58.25	Nov-15	14.07.15	Before Time (1x160 MVA

Sl. No.	Name of Project	Cost (Rs. in Crore)	Scheduled Completion	Actual Date of Completion	Time Overrun with Reason
	Samangara (Puri) with line				Auto Trans. charged)
6	132kV system at 400/220kV S/S at Mendhasal	Estimated-32.59	Jan-15	17.07.15	6 months, RoW (1x100 MVA Auto Trans. charged)
		Actual-16.86			
7	2x160MVA, 220/132kV S/S & 2x20MVA, 132/33kV S/S at Lapanga with LILO	Estimated-64.83	Mar-13	11.08.15	2 Yrs 5 months, RoW
		Actual-56.33			
8	2X20 MVA, 132/33kV S/S at Kalunga with LILO	Estimated-14.56 Actual-16.33	Oct-13	07.09.15	2 yrs 11 months, RoW
9	400kV Meramundali- Duburi D/C line	Estimated-131.48 Actual-177.17	Oct-08	Ckt.-II charged on 11.09.15. Ckt.-I charged on 19.10.15	06 Yrs 11 months, Acute RoW & Court Case
10	2x40MVA, 132/33kV S/S at Marshaghai with LILO	Estimated-20.57 Actual-17.45	Nov-15	16.10.15	Before Time
11	Conversion of 132kV Switching Station at Somnathpur (Balasore) to 2x20 MVA, 132/33kV S/S	Estimated-11.22 Actual-3.09	Jan-14	11.12.15	09 months, RoW
12	400kV Ib-Meramundali D/C line	Estimated-112.37 Actual-111.41	Nov-12	06.01.16	2 months, RoW
13	2x12.5MVA, 132/33kV S/S at Padampur with SC line	Estimated-27.71	Jun-12	24.02.16	2 months, RoW
		Actual-31.90			
14	132/33kV S/S at Mania (Tangi) for IDCO with LILO	Estimated-12.06	Mar-15	31.03.16	1 Yr
		Actual-9.58			

43. OPTCL has submitted a list of on-going projects and future projects in the business plan amounting to Rs. 4601.41 Crore. OPTCL has made power studies with the help of M/s PRDC, Bangalore. The status of the projects is listed in Table below.

Table- 17
CAPEX Requirement

(Rs. In Crore)

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
(A) APPROVED PROJECTS								
1	2*315MVA, 400/220kV Duburi S/S with line	400kV D/C line from Meramundali to Duburi & LILO of one ckt. of 400kV Baripada-Mendhasal D/C line at Duburi	60.20	59.20	1.00	-	-	-
2	2*100MVA, 220/132kV Cuttack S/S with line	220kV D/C line from Bidanasi to Cuttack	32.67	11.85	7.74	13.08	-	-
3	2*160 & 2*20 MVA, 220/132/33kV Lapanga S/S with line	LILO of both ckts. of 220kV D/C Budhipadar-Katapalli line at Lapanga & 132kV LILO lines	64.83	50.94	13.89	-	-	-

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
4	2*160 & 2*20MVA, 220/132/33kV Atri (Karadagadia) S/S with line	220kV D/C line from Pandiabil to Cuttack with LILO at Pratapsasan	76.39	39.81	15.88	5.00	15.70	-
5	2*100MVA, 220/33kV Baragarh New S/S with line	LILO of both ckts. of 132kV Budhipadar-Burla D/C line at Lapanga	45.56	0.04	10.75	15.00	19.77	-
6	2*100MVA, 220/132kV Mendhasal S/S with line	LILO of both the ckts. of 220kV Narendrapur-Mendhasal D/C line at Atri	19.09	11.52	7.57	-	-	-
7	2*160, 2*20MVA, 220/132/33kV Samangara (Puri) S/S with line	220kV D/C line from Atri to Samangara (Puri) with one ckt. LILO at Pandiabil	80.66	20.58	40.51	19.57	-	-
8	2*40MVA, 220/33kV Bonai S/S with line	LILO of one ckt. of 220kV Rengali-Tarkera D/C line at Bonai	24.20	6.99	2.1	8.00	7.11	-
9	2*40MVA, 220/33kV Infocity-II GIS S/S with line	LILO of 132kV Khurda-Puri S/C line at Atri	48.09	20.38	19.21	8.50	-	-
10	2*40MVA, 132/33kV Konark S/S with line	132kV S/C line on D/C tower from Nimapara to Konark	29.14	17.13	12.01	-	-	-
11	2*40MVA, 132/33kV Khajuriakata S/S with line	LILO of 132kV Chainpal-Choudwar S/C line at Khajuriakata	24.73	11.67	10.70	2.36	-	-
12	2*40MVA, 132/33kV Marshaghai S/S with line	LILO of one ckt. of 132kV Kendrapara-Paradeep D/C line at Marshaghai	20.57	21.72	38.00	2.34	-	-
13	2*20MVA, 132/33kV Olavar S/S with line	132kV Pattamundai-Olavar D/C line, 132kV Dhamara-Olavar D/C line	41.49			-	-	-
14	2*12.5MVA, 132/33kV Padampur S/S with line	132kV S/C line on D/C tower from Patnagarh to Padampur	38.64	28.55	7.09	3.00	-	-
15	2*20MVA, 132/33kV Pottangi S/S with line	132kV Sunabeda-Pottangi S/C line	39.16	25.15	13.91	0.10	-	-
16	2*12.5MVA, 132/33kV Udala S/S with line	LILO of 132kV Balasore-Baripada S/C line at Udala	37.54	2.68	1.00	8.00	15.50	10.36
17	2*20MVA, 132/33kV Bangiriposi S/S with line	LILO of 132kV Kuchei-Rairangpur S/C line at Bangiriposi	15.47	2.20	4.27	9.00	-	-
18	2*40MVA, 132/33kV Mania (Tangi) S/S with line	LILO of existing 132kV ICCL-OCL S/C line at Mania	15.50	4.07	11.43	-	-	-
19	2*20MVA, 132/33kV Kalunga S/S with line	LILO of ckt.I of 132kV Budhipadar-Tarkera D/C line at Kalunga	19.38	15.34	4.04	-	-	-
20	2*20MVA, 132/33kV Chikiti S/S with line	132kV Digapahandi-Chikiti D/C line	41.34	0.07	5.00	22.00	14.27	
21	2*20MVA, 132/33kV Dhenkikote (Ghatagaon) S/S with line	132kV Karanjia-Dhenkikote S/C line	34.11	0.18	6.00	27.93	-	-
22	2*20MVA, 132/33kV Betanoti S/S with line	LILO of 132kV Balasore-Baripada S/C line at Betanoti	23.19	-	4.29	5.00	13.90	-
23	2*160MVA, 2*40MVA, 220/132/33kV Pratapsasan S/S with line	LILO of both the ckts. of 220kV Cuttack-Pandiabil D/C line at Pratapsasan	83.26	9.83	9.30	15.00	45.00	4.13

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
		132kV Phulnakhara-Pratapsasan D/C line						
		LILO of 132kV Kesura-Nimapara S/C line at Pratapsasan						
24	2*160MVA, 220/132kV Kesinga S/S with line	220kV D/C Bolangir-Kesinga line	82.72	10.00	10.79	10.00	47.00	4.93
25	2*100MVA, 2*40MVA, 220/132/33kV Dhamara S/S with line	LILO of one ckt. of 220kV Duburi-Balasore D/C line at Dhamara	29.96	0.96	-		7.00	22.00
		One ckt. of 132kV Dhamra-Chandbali D/C line				-		-
26	220/33kV Narasinghpur S/S with line	LILO of one ckt. of 220kV Bhanjanagar-Meramundali D/C line at Narasinghpur	27.72	2.60	6.13	16.87	2.12	-
27	2*20MVA, 220/33kV Malkangiri S/S with line	220kV Balimela-Malkangiri S/C line	58.18	0.54	15.84	10.00	31.8	-
28	2*20MVA, 132/33kV Podagada S/S with line	LILO of 132 kV Rayagada-Jaynagar S/C line at Podagada	32.47	14.48	16.99	1.00	-	-
29	2*20MVA, 132/33kV Satasankha S/S (Sakhigopal) with line	132kV Samangara (Puri)-Satasankha. D/C line	38.94	3.17	2.00	25.00	8.77	-
30	2*20MVA, 132/33kV Maneswar S/S with line	LILO of 132kV Burla-Rairakhol S/C line at Maneswar	27.44	-	-	1.00	26.44	-
31	2*40MVA, 132/33kV Kantabanji S/S with line	132kV Khariar-Kantabanji S/C line	27.74	2.06	11.16	4.00	10.52	-
32	2*20MVA, 132/33kV CDA Cuttack (Brajabiharipur) S/S with line	LILO of existing 132kV Choudwar-Bidanasi S/C line at CDA Cuttack	37.25	0.03	3.50	20.00	13.72	-
33	2*40MVA, 132/33kV Bhograi S/S with line	LILO of one ckt. of 132kV Baripada-Jaleswar D/C line at Bhograi	33.86	4.72	8.88	14.00	6.26	-
34	2*20MVA, 132/33kV R. Udayagiri S/S with line	LILO of 132kV Mohana-Digapahandi S/C line at R. Udayagiri	46.91	4.54	15.81	23.67	2.89	-
35	2*20MVA, 400/220kV Lapanga GIS S/S with line	LILO of both ckts. of 400kV Sterlite-Meramundli D/C line at Lapanga	126.84		9.48	15.00	102.36	-
36	2*20MVA, 220/33kV Kasipur S/S with line	LILO of one ckt. of 220kV Indravati-Therubali D/C line at Kasipur	28.97	2.39	5.06	10.00	11.52	-
37	2*20MVA, 220/33kV Baliguda S/S with line	220kV Kesinga-Baliguda D/C line	98.96	0.10	13.75	35.00	50.11	-
38	2*100MVA, 2*40 MVA, 220/132/33kV Kuanramunda S/S with line	LILO of one ckt. of 220kV Bhudipadar-Tarkera D/C line at Kuanramunda	67.59	17.19	-	-	25.00	25.40
		132kV Kuanramunda-Chhend D/C line						-
39	2*100MVA, 2*40 MVA, 220/132/33kV Goda S/S with line	LILO of both ckts. of 220kV Meramundali-B-Duburi D/C line at Goda	56.34	0.06	4.00	15.00	37.28	-
		LILO of 132kV Kamakshyanagar-Kalarangi S/C line at Goda		-				-
40	2*100MVA, 2*20 MVA,	220kV Bhanjanagar-	88.39	0.04	16.86	30.00	41.49	-

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
	220/132/33kV Aska S/S with line	Aska D/C line						
		LILO of 132kV Aska-Bhanjanagar line at 220kV Aska S/S		-				-
		LILO of 132kV Aska-Chatrapur line at 220kV Aska S/S		-				-
41	2*100MVA, 220/132kV Jayapatna S/S with line	LILO of one ckt. of 220kV Indravati-Therubali D/C line at Jaypatna	93.81	0.03	11.95	7.00	45.00	29.83
		LILO of 132 kV Jayapatna-Junagarh S/C line at Thumula Rampur		-				-
42	2*20MVA, 220/33kV Dasapalla S/S with line	220kV Nayagarh-Dasapalla S/C line	28.62	0.12	0.50	1.00	17.00	10.00
43	2*100MVA, 3*40 MVA, 220/132/33kV Chhendipada S/S with line	LILO of one ckt. of 220kV Rengali-TTPS D/C line at Chhendipada	40.00	-	-	-	15.00	25.00
		LILO of 132kV Angul-Boinda S/C line at Chhendipada		-				-
44	2*20MVA, 220/33kV Keonjhar GIS S/S with line	220kV D/C line from Keonjhar PGCIL	60.39	-	5.00	15.00	40.39	-
45	2*20MVA, 132/33kV Boriguma S/S with line	LILO of 132kV Jayanagar-Tentulikhunti S/C line	32.11	0.09	5.00	8.00	19.02	-
46	2*20MVA, 132/33kV Muniguda S/S with line	LILO of 132kV Therubali-Kesinga S/C line	28.43	0.97	5.42	10.00	12.04	-
47	3 rd 315MVA, ICT at 400kV Mendhasal S/S		21.32	2.24	8.93	10.15	-	-
	SUB-TOTAL		2130.17	426.23	422.74	445.57	703.98	131.65
	(B) NEW PROJECTS							
1	220/132/33kV Chandaka "B" GIS S/S with line	LILO of 220kV Mendhasal-Chandaka D/C line at Chandaka "B"	88.04	-	40.63	35.00	12.41	-
		Shifting of 132kV Chandaka-Nimapara D/C line from Chandaka to Chandaka "B"		-	-	-	-	-
2	132/33kV Hirakud S/S with line	LILO of 132kV Sambalpur-Burla S/C line at Hirakud	24.41	-	-	-	6.00	18.41
3	220/33kV Deogarh S/S with line	LILO of 2 nd ckt. of 220kV Rengali-Tarkera D/C line	26.95	-	-	1.00	10.00	15.95
4	132/33kV Birmaharajpur S/S with line	132kV Sonapur-Birmaharajpur S/C line	28.54	-	4.01	7.00	17.53	-
5	132/33kV Tushra S/S with line	LILO of 132kV Bolangir-Sainthala S/C line	32.49	-	6.76	10.00	15.73	-
6	132/33kV Lakhanpur (Belpahar) S/S with line	132kV Brajrajnagar-Lakhanpur (Belpahar) D/C line	16.38	-	-	1.00	5.00	10.38
7	132/33kV Lephripada (Sundergarh) S/S with line	LILO of one ckt. of 132kV Budhipadar-Sundergarh D/C line	21.39	-	-	1.00	5.00	15.39
8	132/33kV Rajnagar S/S with line	132kV Pattamundai-Rajnagar S/C line	27.03	-	0.03	5.00	7.00	15.00

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
9	132/33kV Tirtol S/S with line	LILO of 132kV Jagatsinghpur-Paradeep S/C line at Tirtol	40.31	3.10	2.00	15.00	15.00	5.21
10	132/33kV Agarpara S/S with line	LILO of 132kV Bhadrak- Anandapur S/C line	27.85	0.11	8.48	15.00	4.26	-
11	400/220kV Meramundali-B S/S	Shifting of 400kV STPS-Meramundali D/C line from Meramundali to Meramundali-B	195			10.00	-	-
		Shifting of 400kV Jeypore-Meramundali S/C line from Meramundali to Meramundali-B		-	-	-	-	-
		Shifting of 400kV Mendhasal-Meramundali D/C line from Meramundali to Meramundali-B		-	-	-	35.00	150.00
		Shifting of Odisha state dedicated GMR unit connected to existing Meramundali bus to Meramundali-B bus		-	-	-	-	-
		Shifting of 220kV Duburi-Meramundali D/C line from Meramundali to Meramundali-B		-	-	-	-	-
12	220/132kV Kiakata S/S with line	220kV line from Katapalli to Kiakata	77.70	-	0.70	2.00	10.00	65.00
		132kV D/C line from Boudh to Kiakata		-	-	-	-	-
13	220/132kV Karanjia (Turamunga) S/S with line	220kV Keonjhar (PGCIL)-Turamunga D/C line	83.29	-	-	1.00	15.00	67.29
		LILO of 132kV Karanjia-Polaspanga S/C line		-	-	-	-	-
14	220/132/33kV Bamra S/S with line	LILO of 220kV Budhipadar-Tarkera S/C line	31.00	-	-	-	6.00	25.00
		LILO of 132kV Kuchinda-Rajgangpur S/C line		-	-	-	-	-
		132kV Sundergarh-Bamra S/C line		-	-	-	-	-
15	132/33kV Bahugram S/S with line	LILO of 132kV OCL – Salipur S/C line	20.26	-	0.03	5.00	5.00	10.23
16	132/33kV Gondia S/S with line	LILO of one circuit of 132kV TTPS-Duburi (Old) D/C line	34.16	-	0.03	5.00	10.00	19.13
17	132/33kV Thuamula S/S at Rampur with line	LILO of 132kV Jayapatna-Junagarh S/C line	20.50	-	-	0.50	5.00	15.00
18	132/33kV Thuapalli (Khuntulipalli) S/S with line	LILO of 132kV Katapalli-Bargarh S/C line	21.20	-	0.20	1.00	5.00	15.00
19	132/33kV G. Udaygiri S/S with line	LILO of 132kV Bhanjanagar-Phulbani S/C line	25.04	-	0.04	5.00	5.00	15.00

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
20	Conversion of 132kV switching station to 132/33kV S/S at Somnathpur, Balasore.	132kV Balasore-Somanathpur D/C line	10.98	5.84	5.14	-	-	-
21	400/220kV Khuntuni S/S with line	LILO of 400kV Meramundali-Duburi D/C line	80.00	-	-		15.00	65.00
		LILO of 400kV Meramundali-Mendhasal D/C line						
		220kV D/C line to 220/132/33kV Dhenkanal (New) S/S				-		
		220kV D/C line to 220/132/33kV Bidanasi S/S						
22	220/132kV Dhenkanal (New) S/S	i) 220KV DC line from proposed 400KV Khuntuni S/S ii) LILO of one Circuit of 220KV Meramundali-Duburi D/C line	82.03	-	0.03	2.00	5.00	75.00
23	220/132/33kV Gunupur S/S with line.	a) LILO of one circuit of 220kV Narendrapur-Therubali D/C line. b) LILO of 132kV Akhusingh-Parlakhemundi line.	40.52	-	0.52	5.00	10.00	25.00
24	220/33kV Govindpalli S/S with line.	LILO of one circuit of 220kV Balimela-Malkangiri D/C line	40.60	-	0.10	0.50	5.00	35.00
25	220/33kV Kalimela S/S with line.	LILO of one circuit of 220kV Balimela-Malkangiri D/C line	51.67	0.54	5.00	7.00	20.00	19.13
26	220/33kV Telkoi S/S with line.	LILO of one circuit of 220kV TTPS-Joda D/C line	20.00	-	-	-	5.00	15.00
27	132/33kV Ghens S/S with line.	132kV S/C line from 220/132kV Bargarh (New) S/S	32.82	0.08	7.08	15.00	10.00	0.66
28	132/33kV Bhatli S/S with line.	132kV S/C line from 220/132kV Bargarh (New) S/S	31.00	-	-	-	8.00	23.00
29	132/33kV Athagarh GIS S/S with line	LILO of one circuit of 132kV Chainpal-Choudwar D/C line	45.00	-	5.00	15.00	15.00	10.00
30	132/33kV Chandbali S/S with line	132kV D/C line from 132/33kV Olavar S/S	44.28	-	0.10	2.00	15.00	27.18
31	132/33kV Chandipur S/S with line.	LILO of 132kV Balasore-Soro line.	29.47	-	0.03	2.00	10.00	17.44
32	132/33kV Unit-VIII GIS S/S with line	132kV Chandaka B - Unit-VIII GIS S/C line (through Cable)	81.75	-	-	10.00	50.00	21.75
33	132/33kV Rasulgarh GIS S/S with line.	132kV Chandaka B - Rasulgarh GIS S/C line (through Cable)	69.00	-	-	5.00	40.00	24.00
34	220/132/33kV Kuakhia GIS S/S with line	LILO of one circuit of 220kV Duburi-Pradeep D/C line.	82.50	-	0.50	2.00	10.00	70.00
		LILO of one circuit of 132kV Jajpur-Kendrapada D/C line.		-	-	-	-	-
35	400/220kV Narendrapur S/S	400kV Pandiabil-	67.20	-	0.20	2.00	10.00	55.00

Sl. No.	Name of the Project with Sub-Station Capacity	Line Connectivity	Estimated Cost (Rs.)	Expenditure up to 31.03.15	2015-16	2016-17	2017-18	2018-19
	with line	Narendrapur D/C line LILO of both the circuits of 220kV Therubali-Narendrapur D/C line at Narendrapur						
36	400/220kV Ramakrushnapur (Bhadrak) GIS S/S with line		72.75	-	0.75	2.00	15.00	55.00
	SUB-TOTAL		1723.11	9.67	87.36	189.00	436.93	1000.15
	(C) APPROVED LINES							
1	400kV Ib (Sterlite)-Meramundali D/C line		124.96	123.76	1.20	-	-	-
2	220kV Jayanagar (OPTCL)-Jayanagar (PGCIL) D/C line		22.32	4.81	17.51	-	-	-
3	132kV Jayanagar-Sunabeda line		24.97	12.38	12.59	-	-	-
4	132 kV Salipur-Kendrapara D/C line		21.29	16.72	4.57	-	-	-
5	132kV Aska-Digpahandi D/C line		25.32	-	-	-	10.00	15.32
6	400kV Meramundali -Dhuburi		177.17	173.17	4.00	-	-	-
7	220kV Bidanasi-Cuttack D/C line		17.86	12.82	5.04	-	-	-
8	220kV Atri-Pandiabil D/C Line		6.82	-	6.82	-	-	-
9	132kV Junagarh-Kesinga S/C Line		25.50	-	4.47	10.00	11.03	-
	SUB-TOTAL		446.21	343.66	56.2	10.00	21.03	15.32
	(D) NEW LINES							
1	132kV Kuchei (PGCIL)-Jaleswar D/C line		33.28	18.24	9.54	5.50	-	-
2	LILO of 132kV Meramundali - Arati Steel S/C line at Nuapatna		5.31	1.75	3.56	-	-	-
3	132 kV Bhadrak - Anandapur line		12.82	4.84	7.98	-	-	-
4	132kV Nuapara - Padmapur line		25.78	0.10	3.00	5.00	17.68	-
5	132kV Nuapatna - Banki line		18.81	2.86	5.32	10.63	-	-
6	132kV Pottangi - Podagada line		21.31	-	0.05	5.00	10.00	6.26
7	132kV Baripada (PGCIL) - Baripada (OPTCL) S/C line.		16.30	0.10	0.20	3.00	3.00	10.00
8	Conversion of 132kV Jayanagar - Tentulikhunti S/C line to D/C line.		21.79	-	6.00	8.00	7.79	-
9	132kV Phulbani - Boudh line.		29.00	-	-	7.00	7.00	15.00
10	132kV Lapanga - Brajaraj Nagar line.		13.00	-	-	-	3.00	10.00
11	Conversion of 132kV Kesinga - Khariar S/C line to D/C line		15.52	-	-	1.00	3.00	11.52
12	220kV Paradeep - Pratapsasan D/C line.		38.00	-	-	-	8.00	30.00
13	220kV Narendrapur - Aska D/C line		25.00	-	-	-	5.00	20.00
14	220kV Pandiabil-Pratapsasan D/C line		26.00	-	4.74	-	15.00	6.26
	SUB-TOTAL		301.92	27.89	40.39	45.13	79.47	109.04
	GRAND TOTAL		4601.41	807.45	606.69	689.70	1241.41	1256.16

44. The Commission has already accorded in-principle approval of investment proposals of OPTCL as mentioned above at items (A) & (C). For the construction of the new projects mentioned above at items (B) & (D), the Commission has scrutinised the proposal of

OPTCL and has found that though high demand of 5427 MW is considered for the year 2018-19, the loading of some of the s/s are as follows:

Table - 18

Voltage level	Name of the s/s	Loading (%)	Associated Line
400/220 KV	Ramakrishnapur (Bhadrak)	Not covered in the system study	
220/132	Kiakata	33.9	220kV line from Katapalli to Kiakata 132kV D/C line from Boudh to Kiakata
220/132	Bamra	31	LILO of 220kV Budhipadar-Tarkera S/C line LILO of 132kV Kuchinda-Rajgangpur S/C line 132kV Sundergarh-Bamra S/C line
220/132	Govindpalli	31	LILO of one circuit of 220kV Balimela- Malkangiri D/C line
220/132/33	Gunupur	17.4	a) LILO of one circuit of 220kV Narendrapur-Therubali D/C line. b) LILO of 132kV Akhusingh-Parlakhemundi line.
132/33	Ghens	30	132kV S/C line from 220/132kV Bargarh (New) S/S
132/33	Gondia	31	LILO of one circuit of 132kV TTPS-Duburi (Old) D/C line
132/33	G. Udayagiri	15	LILO of 132kV Bhanjanagar-Phulbani S/C line
132/33	Bahugram	19	LILO of 132kV OCL – Salipur S/C line
132/33	Agarapara	28	LILO of 132kV Bhadrak-Anandapur S/C line
220/33	Kalimela	15	LILO of one circuit of 220 kV Balimela – Malkangiri D/C Line

45. While planning new sub-stations the Transmission Utility is expected to be guided by Transmission Planning Criteria prescribed by Central Electricity Authority (CEA). As per existing Transmission Planning Criteria, 2013 of CEA under Clause 15.2 the maximum short circuit level of any new sub-station bus should not exceed 80% of the rated short circuit capacity of the sub-station. In other words when short circuit level goes beyond 80% of the rated short circuit capacity the establishment of another sub-station can be thought of. From the short circuit studies provided by OPTCL it is found that there are enough margin available in the near by sub-station of the proposed sub-station in short circuit bearing capacity. Therefore, there is no requirement of establishment of additional sub-station. However, OPTCL due to clustered load growth elsewhere or for improving quality of supply proposed for establishment of number of sub-station. So, we have no other way but to examine the loading of the sub-station without disturbing economic viability.

46. Since, the loading of the above sub-stations are less than average, justification for construction of the above s/s are not found appropriate for investments at this stage. Over all losses is likely to increase for additional lines without appropriate loading. **Therefore, the Commission at present does not approve the above projects along with its associated lines in the present Business Plan.** In case of appropriate load growth or generation capacity addition, the above projects can be revisited with techno commercial feasibility and financial support, if any, from Government. During the hearing, the Petitioner submitted that there is an immediate requirement for establishment of 220/ 33 kV sub-station at Dasarathpur and 132/33 kV sub-station at Mangalpur in Jajpur District due to number of upcoming 33/11 sub-stations in those areas. However, no detailed study has been carried out and submitted to the Commission till date. In absence of existence of any 220 kV line in vicinity, it is not possible to opine on the proposal. Therefore, the STU may approach the Commission with appropriate justification, in case of need at a later stage.
47. Further, due to absence of sufficient information regarding justification on construction of 400/220 kV sub-stations at Khuntuni & Narendrapur and 220/132 kV sub-station at Dhenkanal, the Commission does not form any opinion on these proposals. In case of adequate information and justification for construction of the said projects, OPTCL may approach the Commission along with DPR with cost benefit analysis for consideration of the Commission later.
48. Since, the Utility is required to facilitate smooth and reliable power flow from generating stations to the end consumer and cater to the demand of consumers of remote areas, the Commission feels that a system to meet the contingency conditions should be in place. Hence, some transmission projects are required by the end of Business Plan period although their loadings are not optimum. In view of the exigencies of the proposed projects, the Commission hereby grants in-principle approval of the feasible projects proposed under the Business Plan in item (B) and (D) above, except those mentioned above at Para 44 and 47, which are found to be not required at present due to their technical infeasibility.
49. Additional cost over the approved shall not ordinarily be considered in the ARR. The Commission will carry out prudence check of the Capex investment on receipt of details of completed works and actual cost before accommodating the same in ARR. Moreover, the Commission may not accept cost of unused/underused lines and sub-stations in the ARR, if need be. Therefore, OPTCL shall exercise thorough examination of requirement before approaching the Commission for investment approval.

Financial Parameters:

50. OPTCL has filed the Business Plan for the third control period for FY 2014-15 to FY 2018-19 based on OERC (Terms and Conditions for Determination of Transmission Tariff) Regulation, 2014. The elements of expenditure and justification for projection by OPTCL are as below:

Employees cost including Terminal liability:

51. OPTCL has submitted components of employees cost in business plan with various assumptions. Such costs are dependent upon the automation of the network and therefore, are controllable. Neither any report to this effect has been placed before us by OPTCL nor any rationale for manpower requirement in an automated environment has been submitted. Therefore, we accept all such costs at existing level. Proposals for escalation, if any, shall be deliberated in the ARR of relevant years and shall be allowed accordingly.

Terminal Liability:

52. OPTCL projects the terminal liability of employees based on the actuarial valuation by the actuary appointed by OPTCL. As per the submission the liabilities upto 31.03.2016 provided in the audited account was under funded by Rs.530.07 cr. than that of the amount approved by the Commission. OPTCL is proposing the above Rs.530.07 cr. to be recovered through tariff during 2017, 2018 & 2019.
53. No actuarial report or data on employees benefited has been placed before the Commission to justify the above expenses. Therefore, the same shall be considered in ARR on year to year basis, if placed before the Commission with justification.

New Pension Scheme:

54. OPTCL has submitted that employee joining on or after 01.01.2005 would be covered under the new Pension Scheme, where employees are required to contribute 10% of monthly salary and dearness allowance. Matching contribution is to be met by OPTCL. OPTCL in its Business Plan has projected the liability to the tune of Rs.3.98 Cr., Rs.4.10 Cr. for the year 2017, 2018 and 2019 respectively.
55. The Commission will address this issue during finalisation of ARR of the respective years.

Repair and Maintenance Expenses

56. The OPTCL in its Business Plan submission for the control period 2014-19 have projected R&M expenses on following major accounts.
- a) Master Maintenance Plan (MMP) of Operations & Maintenance,

- b) Telecom R&M expense plan,
- c) IT R&M expense plan,
- d) R&M Expense on other civil works like buildings etc.,
- e) R&M Expense on Vehicles; and
- f) R&M Expense on furniture and fittings.

57. The OPTCL has projected following amounts to be spent under the master maintenance plan during the control period FY 2014-19.

Table - 19

(Rs in Crores)

Particulars	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
R&M Expense on Vehicles	0.15	0.15	0.15	0.15	0.16
R&M Expense on Furniture & Fixtures	1.89	1.91	1.92	1.94	1.96
Master Maintenance plan of Operations & Maintenance	82.56	108.10	143.62	128.11	137.81
IT R&M expense plan	1.52	3.85	7.80	10.87	12.30
Telecom R&M expense plan	3.87	9.44	10.38	11.42	12.56
R&M Expense on Other Civil works	8.25	13.35	8.85	12.31	11.07
Total R&M Expense	98.24	136.79	172.73	164.81	175.86
Approved in ARR	93.00	108.00	110.59		

58. The Commission in the last tariff order for 2016-17 has allocated Rs.110.59 crore to the OPTCL towards R&M expenses. The Commission would review the amount of expenditures during the current financial year of 2016-17, along with growth in business, network availability, reduction in transmission loss taken as whole and other parameters to arrive at a justifiable decision following which R&M costs for subsequent periods shall be allowed on year to year basis.

59. With the increasing number of grid sub-stations, OPTCL should consider the necessity of smart grids, automation in all other existing grids, reliable grid enabled communication, proper data management and incorporation of other advanced technology for improving reliability, stability and ease of operation so that cost shall be reduced and submit the same to the Commission.

Administrative and General Expenses

60. The OPTCL in its Business Plan has submitted that the AG expenses broadly covers property related expenses, communication, professional charges, conveyance, travelling, OERC licensee fee etc. The annual expenses on A&G for the Business Plan period as submitted by OPTCL are shown in the following table:

Table - 20

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
A&G expenses	32.47	24.37	24.88	25.09	25.30

61. The Commission has approved an amount of Rs.24.66 crore towards A&G expenses for the FY 2016-17. The Commission therefore in accordance with principle as adopted in the ARR would allow the A & G expenses of the OPTCL during the Business Plan period of 2014-19 in accordance with relevant rules and justification in the ARRs of respective years.

Provision for Bad & doubtful debt:

62. Under this head OPTCL has not considered any provision for doubtful debts for Business Plan period. The actual bad debt in any year shall be claimed by OPTCL. The Commission accepts this.

Depreciation:

63. OPTCL in the Business Plan for the period 2014-19 had submitted that depreciation has been calculated on the book value of the assets and additions thereto as per Regulation 8.32 to 8.38 of OERC (Terms and Conditions of Determination of Transmission Tariff) Regulation 2014. While calculating depreciation, OPTCL has not considered the assets added to transmission network out of grants. Further around Rs.1000 crs. of assets have been taken out as the assets have reached the full depreciation level of 90%. OPTCL further submitted that the depreciation should be allowed in line with OERC Tariff Regulations, 2014 and not on pre-92 rate, as the cash inflow will be less to service repayment of debt.
64. The Commission shall address this issue in the ARR of the respective years, keeping in view the provisions of OERC Tariff Regulations 2014 and cash requirement for discharging repayment obligation.

Interest on working capital loans:

65. OPTCL has not projected interest on working capital on the basis of OERC Tariff Regulations, 2014.

Financial Plan:

66. OPTCL in this control period has not projected any repayment of existing loan. Only interest to the tune of Rs.63.08 cr as existing loan has been claimed as a perpetuity in each year of the business plan. Regarding loan for new projects OPTCL claimed an amount of Rs.15.52 Cr., Rs.59.77 Cr., Rs.110.01 Cr. and Rs.152.35 Cr. for the FY 2016, 2017, 2018 and 2019 respectively. The Commission will address this issue in the ARR of the respective years

keeping in view of provisions of OERC Tariff Regulations 2014 and actual receipt of loan by OPTCL.

Return on Equity:

67. OPTCL has projected Return on Equity (RoE) in accordance with OERC Transmission Tariff Regulations, 2014. The return has been calculation @15.5% (Post Tax) on the equity capital to be infused to the system. The equity base does not include share capital of OPTCL amounts Rs.60.07 Cr. inherited from GRIDCO at the time of demerger of GRIDCO w.e.f. 01.04.2005. The Commission shall address this issue in the ARR after due scrutiny of the records on infusion of fresh equity to the system.

Expenses relating to auxiliary energy consumption in the sub-stations

68. OPTCL claimed an amount of Rs.3.82 crore, Rs.4.20 crore & Rs.4.62 crore under this head for FY 2016-17, FY 2017-18 & 2018-19 respectively. The Commission do not consider the same in the Business Plan since as per Regulation 8.5 of OERC (Terms & Conditions for determination of Transmission Tariff) Regulation, 2014 the charges for auxiliary energy consumption in the sub-station for the purpose of air conditioning, lighting and consumption in other equipment shall be borne by the transmission licensee/STU and included in the operation and maintenance expenses.

69. **Other miscellaneous expense**

- (a) **Grid Co-ordination Committee Expenses:** OPTCL claimed an amount of Rs.0.88 crore & Rs.0.93 crore under this head for FY FY 2017-18 & 2018-19 respectively. The Commission allowed an amount of Rs.0.32 crore in line with approved amount in the ARR for 2016-17. The same shall be considered accepted subject to prudence check in ARRs.
- (b) **Corporate Social responsibility:** Under this head OPTCL claimed an amount of Rs.6.73 crore & Rs.7.28 crore for FY FY 2017-18 & 2018-19 respectively. No details have been provided on such expenditures. The Commission viewed that such expenditure is a part of Administrative and General Expenses approved by the Commission in ARR.
70. The commission directs OPTCL to monitor the following measures during the subject Business Plan Period FY 2014-19:
- The time line and mile stones approved in the Capex Plan need to be monitored on regular basis and no time or cost over-run should be permitted.

- The financing of Capex may be done at Debt: Equity ratio of 70:30 in line with OERC Regulations for Intra-State Transmission System for the period 2014-19.
- OPTCL needs to ensure avoidance of under loading of lines and substations to minimize system losses. Since we are approving the Business Plan now OPTCL must ensure through system studies that no under loaded projects are taken up due to its economic un-viability.
- The proper system study should be conducted before proceeding to any network expansion for evacuation of power. The system study should be comprehensive and should clearly specify point of interconnection and additional links required for evacuation.
- OPTCL shall prepare a plan for increasing automation and Smart grids in the system gradually and in functioning. The same shall be submitted to the Commission within one year.

71. The application of OPTCL in Case No. 5/2016 is disposed of accordingly.

Sd/-
(A. K. Das)
Member

Sd/-
(S. P. Swain)
Member

Sd/-
(S. P. Nanda)
Chairperson