



COMMISSION'S ORDER

ON

**TRUE-UP PETITION FOR THE FY 2015-16, ANNUAL (MID-YEAR)
PERFORMANCE REVIEW FOR THE FY 2016-17 AND TRANSMISSION
TARIFF**

& SLDC CHARGES FOR THE FY 2017-18

CASE No: HERC/PRO-15 OF 2017

**HARYANA ELECTRICITY REGULATORY COMMISSION
BAYS 33-36, SECTOR-4, PANCHKULA-134112, HARYANA**

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BEFORE HARYANA ELECTRICITY REGULATORY COMMISSION

BAYS NO. 33-36, SECTOR-4, PANCHKULA-134112

CASE NO: HERC / PRO-15 OF 2017

IN THE MATTER OF

Petition / Application filed by Haryana Vidyut Prasaran Nigam Limited (herein after referred to as HVPNL or the Petitioner or the Licensee) for approval of true-up of the Aggregate Revenue Requirement (ARR) for Transmission business and State Load Dispatch Centre (SLDC) for the FY 2015-16, Annual (mid-year) Performance Review for the FY 2016-17 and determination of Transmission Tariff and SLDC Charges for the FY 2017-18.

Present

Shri Jagjeet Singh

Chairman

Shri M.S. Puri

Member

Shri Debashish Majumdar

Member

ORDER

The Haryana Electricity Regulatory Commission (hereinafter referred to as 'the Commission' or 'HERC'), in exercise of powers vested in it under section 62 of the Electricity Act, 2003 and Section 26 of the Haryana Electricity Reforms Act, 1997 and all other provisions enabling it in this behalf, passes this order determining the true-up for the FY 2015-16, Annual (mid-year) Performance Review for the FY 2016-17 and revised ARR/ transmission tariff and SLDC charges for the FY 2017-18. The Commission, while passing this Order, has considered the Petition filed by HVPNL, subsequent / revised filings made by HVPNL in response to various queries of the Commission and submissions made by HVPNL in its presentation in the public hearing held on 15.03.2017.

CHAPTER 1

1.1 ARR/TARIFF PETITION FILED BY HVPNL

The Haryana Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Generation, Transmission, Wheeling and Distribution & Retail Supply under Multi Year Tariff Framework) Regulations, 2012 ("MYT Regulations 2012") was notified on December 5th, 2012. As per the provisions of the said Regulations the Transmission Licensee i.e. Haryana Vidyut Prasaran Nigam Limited (HVPNL) is required to file, each year, an Annual Performance Review (APR) Petition for true-up of past year and review of estimates for the ensuing year, as per the MYT Order for the Control Period, in accordance with Regulation 11 of the ibid Regulations. The Commission, after following due process, notified 1st Amendment to the ibid MYT Regulations, 2012 wherein the first Control Period was extended to the FY 2017-18. Accordingly, HVPNL vide Memo No. Ch.51/SE/RAU/F-156 dated 30.01.2017 filed the true-up petition for the FY 2015-16, Mid-year performance review for the FY 2016-17 and revised ARR / Tariff for the FY 2017-18 for consideration and approval of the Commission. The Licensee, in the present petition, has proposed revision in various components of the ARR primarily based on two aspects i.e. actual audited figures for the FY 2015-16 and change in opening gross fixed assets for the FY 2016-17 on account of actual capitalization during FY 2015-16. The Petitioner has prayed that the Commission may consider the revised estimates for the FY 2016-17 and the FY 2017-18 based on the audited accounts of the FY 2015-16 on the plea that it would provide more realistic basis for estimates during the MYT Control Period.

The Petitioner has also submitted the status of capital expenditure approved vis-à-vis the envisaged capital expenditure for the FY 2016-17 and the FY 2017-18 as part of MYT Business Plan, including the Capital Expenditure Plan. The changes in the envisaged capital expenditure and the impact thereto on the relevant elements of ARR/ Tariff have been provided in the present petition.

The Petitioner has submitted that while passing the true-up Order for the FY 2014-15, the Commission had considered the audited annual accounts for true-up most of the elements of the ARR and the Petitioner has prayed that based on the same principles the true-up exercise for the FY 2015-16 may also be undertaken.

1.2 HVPNL'S PETITION

1.2.1 TRUE-UP FOR THE FY 2015-16 FOR TRANSMISSION BUSINESS

In accordance with the MYT Regulations, 2012, the Petitioner has filed present true-up Petition for the FY 2015-16 as under:-

1.2.2 OPERATIONS AND MAINTENANCE COST (O&M)

That the O&M expenditure comprises of employees' cost, administration and general expenses (A&G), and repair and maintenance expenses (R&M).

The Regulation 45.3 of the MYT Regulations 2012 provides for determination of O&M cost as per the actual audited employees cost (excluding terminal liabilities) and A&G expenses for the financial year preceding the base year, subject to prudence check, to be escalated at 4% per annum to arrive at the employees' cost (excluding terminal liabilities) and A&G expenses for the base year of the Control Period.

The Petitioner has submitted the details of approved and actual O&M expenses incurred by them as under:-

Particulars (Rs. Millions)	Approved	Actual	Difference
Employee Cost	2,060.81	2,600.59	539.78
Terminal liability	1,189.04	1,976.39	787.35
Repair & Maintenance Cost	366.45	181.21	-185.24
A&G Expenses	161.12	153.85	-7.27
Total O&M Expenses	3772.42	4912.41	1139.99

1.2.3 EMPLOYEES' COST

It has been submitted that the Commission, while allowing the actual employees' cost for FY 2014-15, projected the employee cost for FY 2015-16 considering an inflation factor of 2.47% only. However, the actual increase in the employee cost has been higher than the rate considered by the Commission. The details of the approved vis-à-vis actual employees' cost incurred by the Petitioner are provided below:-

Particulars (Rs. Millions)	Approved	Actual	Difference
Employees' cost	2,060.81	2,600.59	539.78

It has been submitted that the increase in employees' cost was primarily on account of increase in dearness allowance in the FY 2015-16 due to implementation of the instructions of the Haryana Government regarding the same and beyond the control

of the Petitioner. The breakup of employees' cost in the FY 2015-16 and in the FY 2014-15 as provided by HVPNL is reproduced below:-

Particulars (In Rs Millions)	Actual 2015-16	Actual 2014-15
Basic	863.24	915.73
DA	1,002.03	921.07
Other allowances	349.75	317.06
Contract employees	521.61	394.10
Contribution to new pension scheme (NPS)	48.71	43.47
Total Employees' cost	2,784.34	2,591.44
Employees' cost capitalized	-150.75	-172.95
Net Employees' cost Expensed	2,634.60	2,418.49
• For Transmission Business – Excl. SLDC business	2,600.59	2,387.11

Additionally, it has been submitted that in accordance with the directive of the Commission, the Petitioner has not undertaken any new recruitment of employees in the FY 2015-16. The increase in employees' cost as against that approved by the Commission is purely on account of factors beyond their control. The Petitioner has complied with the directions of the Commission to increase the number of contractual employees, thus limiting the financial burden.

HVPNL has prayed that the Commission may consider the actual employees' cost of the FY 2015-16 as per the audited accounts and the same may also be considered as a base for the projection of employees' cost for the MYT Control Period.

1.2.4 TERMINAL LIABILITY

That Regulation 8 of the MYT Regulations, 2012 classifies terminal liability as 'uncontrollable' element of ARR. In this regard, it has been submitted that the Hon'ble APTEL in its judgment dated 30.04.2013 in Appeal No. 100 of 2012, has held that the terminal benefits may be trued-up based on the actual as per the audited accounts. The terminal benefits (liability) for the FY 2015-16 is Rs.1976.39 millions for which the Petitioner has submitted actuarial valuation report for consideration of the Commission while seeking true up of the same.

Particulars (Rs. Millions)	Approved	Actual	Difference
Terminal Liability	1,189.04	1,976.39	787.35

1.2.5 REPAIR AND MAINTENANCE COST (R&M)

The Petitioner has submitted that the actual R&M cost incurred in the FY 2015-16 is lower than the approved R&M cost and also that the entire R&M expenses incurred is related to works which are recurring in nature and the Petitioner has applied significant prudence in undertaking these works, the benefit of which can be passed on to the beneficiaries. This is in line with the principle adopted by the Commission in previous True up order dated 31.03.2016.

Particulars (Rs. Millions)	Approved (FY 2015-16)	Actual (FY 2015-16)	Difference
R&M Cost	366.45	181.21	-185.24

1.2.6 ADMINISTRATIVE AND GENERAL EXPENSES (A&G)

The Petitioner has submitted A&G expenses approved by the Commission and actual A&G expenses incurred as provided below:-

Particulars (Rs. Millions)	HERC Approved	Actual	Difference
A&G Expenses	161.12	153.85	-7.27

It has been submitted that the increase in A&G cost is due to the actual rate of inflation in the economy and certain expenditure items such as rates and taxes, legal and professional fees are unavoidable in nature, which have largely contributed to the increase in A&G expenses. Therefore, it is prayed that the actual A&G expenses may kindly be approved for true up. Hence, the benefit of the same may be passed on the beneficiaries.

1.3 RETURN ON EQUITY (RoE)

The Petitioner has submitted that the RoE for the FY 2015-16 has been estimated after taking into account the equity pending allotment. It has been submitted that they have estimated RoE in line with the approach adopted by the Commission in its previous True up Order dated 31.03.2016 i.e. 50% of the equity portion of assets capitalized has been considered for estimating the amount of equity eligible for RoE. The rate of return on equity has been considered at 10% in line the approach adopted by the Commission in its MYT Order dated 29th May 2014.

The Petitioner has submitted that details of the approved RoE vis-a-vis the entitled RoE as under:-

Particulars(Rs. Millions)	HERC Approved	HVPNL Proposed	Difference
Return on Equity	1,832.23	1726.35	105.88

1.3.1 DEPRECIATION

The Petitioner has submitted that the actual average rate of depreciation is different from the average depreciation rate considered by the Commission. This is mainly due to the change in composition of assets as substantial part of the assets added during the year are depreciable at rates different from 5.28% as provided in the MYT Regulations 2012 and is reflected in the slightly lower actual depreciation during the FY 2015-16.

It has been further submitted that the principle adopted by the Commission in its True up order is being followed. Accordingly, depreciation chargeable to SLDC assets and assets financed through consumer contribution has been deducted for computing the depreciation amount for the Transmission Business.

The Petitioner has sought true-up of the depreciation amount for the FY 2015-16 on actual basis, as under:-

Particulars (Rs. Millions)	HERC Approved	Actual	Difference
Depreciation	3,147.64	3,039.15	108.49

1.3.2 INTEREST AND FINANCE CHARGES

The Petitioner has submitted that the actual interest and finance charges for borrowings incurred by them are higher as compared to that approved by the Commission, as under:-

Particulars (Rs. Millions)	HERC Approved	Actual	Difference
Interest Cost (Capex Loan)	1,706.37	2,376.74	670.37

The Petitioner has submitted that the higher interest and financing cost of Capex loan is on account of the following:-

- i) Consideration of lower opening and closing balance of loan for the FY 2015-16, as the actual figures have changed due to the difference in loan drawn, loan repayments and assets capitalized.
- ii) Excess capitalization of interest by the Commission by taking the CWIP relating to World Bank loan projects. It has been submitted that the interest on World Bank loan is directly capitalized by HVPNL after taking the same as part of CWIP and while calculating the capitalization of interest HVPNL excludes the interest

on World Bank loan as well as CWIP (World Bank) amount pertaining to World Bank loan.

The Petitioner has prayed that the Commission may allow the same based on the actual interest cost as per the audited annual accounts for the FY 2015-16.

It has been submitted that the interest on PF and Pension bonds are borne by the Petitioner which must be allowed to be recovered as per the actual amount incurred by them.

Interest Cost(Bond) (Rs. in millions)	HERC Approved	Actual	Difference
Interest on Pension Bonds	7.0	673.0	666
Interest on PF Bonds	18.40	162.17	143.77

1.3.3 INTEREST ON WORKING CAPITAL

The petitioner has submitted that the working capital requirement assessed by the Commission was on the lower side due to lower approved annual revenue requirement for the FY 2015-16. Also, there is a significant impact of actual receivable days and that considered on normative basis by the Commission. The actual receivable days are significantly higher. Hence, the petitioner had to raise additional amount of working capital to bridge requisite working capital requirements.

Therefore, the Petitioner has prayed that the Commission may approve the actual interest on working capital incurred by the Petitioner, which is based on the audited accounts for the FY 2015-16 as under:-

Working Capital/Bank Loans (Rs. In Millions)	Approved	Actual	Difference
Interest	206.73	398.07	191.34

Petitioner has further submitted that the short term interest rate allowed by the Commission in its Order for the FY 2015-16, was lower than the actual short term interest rates prevailing in the market due to which the higher short term borrowing interest burden has arisen.

1.3.4 INCENTIVES AND PENALTY (TRANSMISSION SYSTEM AVAILABILITY)

The Petitioner has submitted that the transmission system availability has been lower than the normative availability during the FY 2015-16, for which the penalty is to be levied. The penalty of Rs. 53.01 million for the FY 2015-16 based on system

availability has been estimated and the Petitioner has proposed to pass on the impact of such penalty levied on the ARR of HVPNL to the consumers by reduction of its ARR. The remaining 50% share of Rs 53.01 million shall not be passed on to the beneficiaries.

1.3.5 LOSS DUE TO FOREIGN EXCHANGE RATE VARIATION (FERV)

The Petitioner has proposed recovery of FERV, in line with the Commission's order dated 31.03.2016, Clause 3.4.11, whereby the principle of recovery based on cash loss due to FERV has been considered, as reproduced below:-

“...However, in order to spread the incidence of recovering FERV, the cash payment basis can be adopted for the purpose of regulatory practice. Under this methodology, the Licensee will claim the FERV as and when the repayment of loan is made. However, care should be taken that the FERV which has been capitalized should not be recovered again while making payment of the loan. Accordingly, the capitalized value of FERV will be divided into 50 instalments (based on the number of instalments of loan repayment) and while calculating the FERV on the each repayment instalment, the additional FERV will be reduced by 1/50th of the FERV already capitalized.”

Accordingly, in order to estimate the incidence of FERV to be capitalized, the Petitioner has considered recovery of Rs. 3.6 Cr up to the previous year, while for the FERV capitalized during FY 2015-16, is Rs. 17.68 Cr., the amount has been spread over 47 instalments, as only 47 instalments are yet to be paid. The details are provided as below:-

Year	FERV Capitalized (in Rs . Cr.)	FERV Charged to P&L (in Rs Cr.)	Total FERV
2011-12	42.42	15.9	58.32
2012-13	27.77	6.6	34.37
2013-14	79.16	15.8	94.96
2014-15	30.72	13.43	44.15
Total	180.07	51.73	231.8
Capitalization recovery for 50 Instalments (for amount till FY 14-15)	3.60		
2015-16	17.38	43.77	61.16
Capitalization recovery (for 47 instalments)	0.37		
Total FERV Capitalization to recovered in current year	3.97		

The details of calculation of FERV, proposed as part of true up is provided in the table below:-

Calculation of FERV on 1st instalment Paid in 2015-16 in February 2016	Figure (in Crore)	
Amount received (1st Instalment of loan drawl)	USD	2.76
Repayment - 1st instalment for FY 15-16	USD	0.34
Amount Paid - 2nd instalment for FY 15-16	USD	0.37
Exchange Rate at the time of receipt of instalment	INR	45.82
Exchange Rate at the time of Payment of 1st instalment - in FY15-16	INR	63.87
Exchange Rate at the time of Payment of 2nd instalment - in FY15-16	INR	68.19
FERV on 1st instalment	INR	6.15
FERV on 2nd instalment	INR	8.32
Less: Recovery of capitalized FERV	INR	3.97
Net FERV on 1 st and 2 nd Instalment of loan	INR	10.50

The Petitioner has request to the Commission to allow the recovery of FERV as quantified in the table above.

1.3.6 REVISED ARR FOR TRANSMISSION BUSINESS (FY 2015-16)

The ARR approved by the Commission for the FY 2015-16 and the revised ARR submitted by HVPNL for true-up, is summarized below:-

Revised ARR for Transmission business for FY 2015-16 (Rs. millions)

ARR - Transmission (In Rs Million)	HERC Approved (FY 15-16) – Order Dt. 31.03.2015	Proposed for True Up	Surplus/(Gap)
Employees' cost	2,060.81	2,600.59	(539.78)
Terminal benefits	1,189.04	1,976.39	(787.35)
R&M expenses	366.45	181.21	185.24
A & G Expenses	161.12	153.85	7.27
Interest on Capital Expenditure Borrowings	1,706.37	2,376.74	(670.37)
Debenture Interest (PF Bonds)	18.4	162.17	(143.77)
Debenture Interest (Pension Bonds)	7	673	(666)
Interest on bonds – Others			
Interest on Working Capital/Bank Loans	206.73	398.07	(191.34)
Depreciation	3,147.64	3,039.15	108.49
Return On Equity	1,832.23	1726.35	105.88
Non-Tariff Income	(241.87)	(232.07)	(9.8)
Holding Cost for True Up	256.7	256.7	-
Total	10,710.62	13312.16	(2601.54)
Add: True up for FY13-14	1,577.25	1,577.25	-
Add: Loss Due to Foreign Exchange Rate Variation (FERV)		105	(105)
Total ARR	12,287.87	14994.41	(2706.54)
Add: Incentive based on Transmission Availability passed on to beneficiary		(53.46)	53.46
Total ARR - Including incentive	12,287.87	14941.40	(2653.53)

In view of the difference between the HERC approved and actual expenditures as per the audited accounts for the FY 2015-16, truing-up amount of Rs. 2653.53 million

has been computed by HVPNL for the FY 2015-16, including an incentive of Rs. 53.01 million for the FY 2015-16 which has been proposed to be carried forward. HVPNL has prayed that the Commission may approve the same along with carrying cost.

1.4 REVISED ARR OF SLDC (FY 2015-16)

The table that follows provides the details of ARR approved for SLDC business by the Commission in its Tariff Order for the FY 2015-16 and the amount actually incurred as per the audited accounts. In line with the methodology adopted for the revised ARR for Transmission business, HVPNL, has submitted that the true-up for SLDC business may also be considered and approved by the Commission. The details provided by HVPNL are as under:-

ARR of SLDC for FY 2015-16

SLDC ARR (Rs. Million)	HERC Approved	Actual	Surplus/ (gap)
Employees' cost	36.13	34.02	2.11
A & G Expenses	10.06	9.93	0.13
R&M expenses	7.03	5.45	1.58
Depreciation	69.73	22.60	47.13
Interest & Finance Charges on Capital Expenditure	85.66	5.87	79.79
Interest on Working Capital	3.17	2.46	0.71
True Up for Actual Interest Cost for FY 13-14	(2.87)	(2.87)	-
Non-Tariff Income	(0.76)	(0.76)	-
Total Expenditure (including special appropriation)	208.15	76.7	131.46

1.4.1 REVIEW OF ANNUAL REVENUE REQUIREMENT FOR THE FY 2016-17 AND THE FY 2017-18

1.4.2 CAPITAL EXPENDITURE

It has been submitted that in order to meet the power requirement of the consumers, the petitioner intends to revise the Capex plan approved for the FY 2016-17 based upon the latest available data from the field and system operations. The petitioner has requested the Commission to review the Capex for the FY 2016-17 and approve the revised capex plan for the FY 2016-17 as submitted in the Business cum Capital Expenditure Plan for the period. The paragraphs that follow provide the revised capex proposed by the Petitioner.

Capital Expenditure (Rs. millions)

Works	FY 2016-17 (HERC approved vide Order dated 31 st March 2016)	FY 2016-17 (Revised Estimates)	FY 2017-18 (Proposed)
Substation	4,479	4,246	6,034
Lines	2,175	1,243	2,567
Information Technology	30	91	59
Land	72	659	300
Miscellaneous	427	340	340
Total	7,182	6,579	9,300

1.4.3 REVISED CAPITAL INVESTMENT PLAN FOR THE FY 2016-17 AND THE FY 2017-18

It has been submitted that HVPNL, being the State Transmission utility of Haryana, has to manage a large transmission system which is expected to increase rapidly in the coming years. To facilitate easy monitoring of the transmission system, the administration/ management of the transmission system of HVPNL has been divided into two zones i.e. Hisar and Panchkula, with each zone comprising of three circles. The Hisar Zone comprises of Hisar, Gurgaon and Faridabad Circles, while the Panchkula Zone is divided in Panchkula, Karnal and Rohtak circles. The circles are further divided into divisions, as per the details provided in the table below:-

HVPNL						
Zone	Hisar			Panchkula		
Circle	Hisar	Faridabad	Gurgaon	Panchkula	Karnal	Rohtak
Division	- Hisar - Bhiwani - Sirsa - Jind	- Faridabad - Palwal	- Gurgaon - Manesar - Rewari	- Ambala - Madanpur - Yamunanagar	- Karnal - Kaithal - Kurukshetra	- Rohtak - Panipat

HVPNL had prepared the capex plan after taking into consideration all the factors which would affect the operations of the company. The capex plan includes the details of various capital expenditure schemes in the above identified areas and their estimates for the year FY 2016-17 and FY 2017-18.

The capital investments of HVPNL can largely be categorized as under:-

- i) Investments in New Transmission Infrastructure to support the demand requirements or power evacuation from generation projects.
- ii) System augmentation and strengthening including renovation and modernization to maintain the performance of the existing system and to deter fresh investments.

1.4.4 OPERATION & MAINTENANCE EXPENDITURE

The Petitioner has submitted that the Commission, in its Order dated 31st March 2016, had approved various components of O&M expense i.e. employees' cost, R&M expenses and A&G expenses based on the actual expenses incurred in the FY 2014-15 after considering inflationary factor of 4.68%. Since the FY 2015-16 is over and the audited accounts of the FY 2015-16, as well as Consumer Price Index (CPI), and the Wholesale Price Index (WPI) for the year are now available, HVPN has, accordingly, proposed revision of O&M components for the FY 2016-17. Further, the petitioner in line with amended MYT regulations has proposed that the O&M expenses for the extended year of the control period i.e. for FY2017-18 considering FY 2015-16 as the baseline for the purpose of projections.

1.4.5 EMPLOYEES' COST

For employees' cost, the Petitioner has considered actual employees' cost as per audited accounts of the FY 2015-16, after excluding capitalization and SLDC employees' cost. The inflation factor has been considered as 7.96% in line with the MYT Regulations, 2012. It has been submitted that no further addition in manpower has been considered. Additionally, HVPNL has submitted that the terminal benefits estimate for the MYT Control Period is based on the valuation done by the Actuary and a significant increase in the terminal benefit liability for HVPNL is expected as the impact to 7th pay commission has been factored in while carrying out actuarial valuation. The details provided by HVPNL are as under:-

Particulars (Rs. Millions)	2016-17 Revised	2017-18 Revised
Employee cost (excluding Terminal benefits)	2,807.70	3,031.84
Inflation	7.96%	7.98%
Terminal Benefits	3,531.10	5,561.29
Revised Employee Cost	6,338.8	8,593.13
Approved Employee Cost (As per 31 st March 2016 Order)	4,599.6	

In view of the above, the petitioner has submitted that the Commission may revise the employees' cost for the MYT Control Period.

Additionally, the Petitioner has mentioned that while projecting the employees cost the impact of 7th pay Commission has not been considered as at this stage impact of the same cannot be ascertained. Hence, as and when Haryana Government notifies

the implementation of the recommendations of the 7th pay Commission, the Petitioner shall approach the Commission for an appropriate order.

1.4.6 R&M EXPENSE

It has been submitted that the MYT Regulations, 2012 provides that the R&M expenses shall be computed as a percentage of the Gross Fixed Assets (GFA) with constant 'K' factor being 0.5% for the entire Control Period. The R&M expenses have been revised considering the revised opening GFA for the FY 2016-17 as under:-

Particulars (Rs. Millions)	2016-17	2017-18
Revised GFA (Average)*	78,851.86	88,169.14
Revised R&M Expense	425.66	476.04
Approved R&M Cost (As per 31 st March 2016 Order)	414.56	-

**Note : The allocated SLDC assets have been reduced from the HVPN GFA for the FY 2015-16 while determining the R&M Expense for the transmission business.*

1.4.7 A&G EXPENSE

As per the MYT Regulations 2012, the FY 2015-16 A&G cost has to be the baseline for projection of A&G expenses, accordingly the Petitioner has projected the A&G expenses for the Control Period. The Petitioner has submitted that the proposed A&G expenses may be allowed by the Commission, as these reflect the A&G expenses likely to be incurred by them. The details are as under:-

Particulars (Rs. Millions)	2016-17	2017-18
Revised A&G Cost	166.10	179.36
Approved A&G Cost as per 31 st March 2016 Order	151.69	

Further, the Petitioner has prayed that the Commission may approve the revised O&M expenses for the FY 2016-17 and FY 2017-18 as proposed by them.

1.4.8 DEPRECIATION

The Petitioner has separately proposed depreciation for the existing assets and assets likely to be added in the Control Period, considering the revised capital expenditure schedule, as under:-

Existing Assets (Rs. Millions)	2016-17	2017-18
Depreciation during the year	3,239.85	3,239.85
Less: Depreciation on assets through consumer contribution	178.10	178.10
Less: Depreciation on SLDC Assets	22.6	22.6
Total depreciation on existing assets	3,039	3,039

The computation of depreciation on new assets by HVPNL is provided below:-

New Assets (Rs. Millions)	2016-17	2017-18
Opening GFA	-	5,796
Additions	5,796	12,839
Closing GFA	5,796	18,635
Rate of Depreciation	5.25%	5.24%
Depreciation during the year	168	608

The Petitioner has submitted that while estimating depreciation for new assets, they have considered the weighted average rate of depreciation as derived from the proportion of different category of assets being added.

1.4.9 INTEREST AND FINANCE CHARGES

The interest and finance charges, as proposed by HVPNL, on the existing Loans likely to be incurred by them are presented below:-

Loan Schedule (Existing Borrowings, Rs. Millions)	2016-17	2017-18
Opening	31,576	28,952
Addition	-	-
Repayments	2,624	2,624
Closing	28,952	26,328
Interest Capitalized	239	219
Interest	2,500	2,283

It has been submitted that besides the above loans, the Petitioner has plans for significant capital expenditure during the Control Period. Hence, most of the additional loans which are required to be drawn have been already tied-up with funding agencies. Therefore, HVPNL has prayed that the Commission may allow interest cost for the Control Period as proposed by them as per the table below:-

Loan Schedule (New Borrowings, Rs. Millions)	2016-17	2017-18
Opening	-	5,780
Addition	5,780	7,826
Repayments	-	578
Closing	5,780	13,028
Interest Capitalized	27.67	87.82
Interest Cost	289.07	917.40

HVPNL has further submitted that the estimation of interest cost also considers the likely redemption of bonds as per schedule. The pension and PF bonds has been redeemed and swapped with the UDAY bonds on 15.06.2016. In light of this, the petitioner has computed the interest on Pension/PF Bonds only for the duration of 2.5

months during FY 2016-17 i.e. from 01.04.2016 to 15.06.2016. The petitioner has also computed the Interest on UDAY Bonds for the remaining period of the FY 2016-17 i.e. from 15.06.2016 to 31.03.2017 and for the entire period of FY 2017-18.

Interest on Bonds (Rs Million)	2016-17 revised	2017-18 proposed
Interest on PF Bonds	32	0
Interest on Pension Bonds	141	0
Interest on UDAY Bonds	333	280
Total Interest	507	280

It has been submitted that the above interest on PF and Pension bonds and interest on UDAY Bonds are to be incurred by the Petitioner which must be allowed to be recovered, as it is a financial burden on the Petitioner.

1.4.10 INTEREST ON WORKING CAPITAL (IOWC)

The IoWC, based on the principles set out in the MYT Regulations, 2012, revised for the Control Period by HVPNL, is as under:-

Working Capital (Rs. Millions)	2016-17	2017-18
O&M	578	771
Maintenance spares	1,040	1387
Receivables	1289.58	1548.03
Total	2907	3706
Interest Rate	10.50%	10.50%
Interest on Working Capital	305.20	389.13

The petitioner, in its original submission, had proposed IoWC 12.8% p.a. as per the SBI base rate of 9.3% as on 1st April 2016 and after adding a margin of 350 basis points (3.5%). However, in the revised petition, the rate of interest proposed is 10.50%.

1.4.11 RETURN ON EQUITY (ROE)

The revised RoE has been estimated by HVPNL based on the expected infusion of equity capital to fund the new capex works. The rate of return considered for computing return on equity is 10% in line with the approach adopted by the Commission in its Order dated 29th May 2014. The details are as under:-

Particulars (Rs. Millions)	2016-17 Revised	2017-18 Revised
Paid up equity in beginning	21487.75	21487.75
Add: share application money pending allotment	2,000.00	2000.00
Less: SLDC equity	56.00	56.00
Less: Generation equity	1595.40	1595.40
Less: Distribution equity	1259.33	1259.33
Equity to be considered for Transmission business	20577.02	20577.02
Less: Equity related to transmission works not yet	1,759.80	2,075.00

commissioned (opening CWIP)		
Add: 50% of Equity portion of GFA	869.4	1,925.8
Closing equity for RoE	19686.6	20427.9
Rate of Return	10.0%	10.0%
RoE - Proposed	1968.66	2042.79

HVPNL has submitted that the equity base considered for revised RoE has been adjusted for the CWIP, as Commission has laid down its approach for approval of ARR that such returns shall not be considered on the equity locked up in the capital works in progress. Therefore, it has been prayed that the above RoE may be allowed in the revised ARR for MYT Control Period.

1.4.12 NON-TARIFF INCOME

The non-tariff income for the FY 2016-17 and FY 2017-18 has been proposed by HVPNL in line with the actual non-tariff income during the FY 2015-16 i.e. Rs. 232 million.

1.4.13 AGGREGATE REVENUE REQUIREMENT (ARR)

As per the submissions in the preceding paragraphs, HVPNL has revised the ARR for the FY 2016-17 and projected for the FY 2017-18 as per table below:-

Financial Year	2016-17 (Rs Million)		2017-18 (Rs. Million)
Particulars	HERC approved vide Order dated 31.03.2016	HVPNL (Revised Proposal)	HVPNL Proposed
O&M Cost	5,165.85	6,931	9,249
Interest on Loan	2,655.75	2,789	3,200
Interest on Pension Bonds	6.72	141	0
Interest on PF Bonds	0	32	0
Interest on UDAY Bonds	0	333	280
Depreciation	3,285.91	3,207	3,647
Interest on Working Capital	253.80	305	389
Return on Equity	1,704.60	1969	2043
Share of SLDC Charges	0	13.36	14.50
Non-Tariff Income	(314.38)	(232)	(232)
Less SLDC Expenses forming part of O&M expenses	(69.0)		
True-up for FY 2014-15 for Transmission	827.19	827.19	
Carrying cost on true-up for FY 2014-15	89.75	89.75	
Total ARR	13,606.19	16405	18591

The Petitioner has prayed that the Commission may approve the revised ARR for the FY 2016-17 and projected ARR for the FY 2017-18 as proposed above and allow recovery of the same by making appropriate adjustments in the Transmission tariff.

1.5 REVENUE GAP AND CARRYING COST

In view of the true-up of the FY 2015-16 and revised ARR for the FY 2016-17, the revenue gaps computed by the Petitioner for the respective years are provided in table below:-

HVPNL Proposed Revenue Gap (Rs. Millions)

Financial Year	2015-16	2016-17
Approved ARR	12288	13606
Proposed Revised ARR	14941	16405
Revenue Surplus /(Gap)	(2654)	(2799)

The Petitioner has prayed that the Commission may allow recovery of the revenue gap of FY 2015-16 as well as the revenue gap on account of revision in the ARR of the FY 2016-17 in the Transmission tariff charge to be approved by the Commission for the FY 2017-18 and also allow carrying cost on the under-recovered amount in line with the MYT Regulations, 2012. The carrying cost computed by the Petitioner pertaining to the revenue gap for the FY 2015-16 and the FY 2016-17, after considering the applicable SBI base rate and appropriate margin, is as under:-

Particulars (Rs Million)	FY 2015-16	FY 2016-17	Total
Opening Revenue Gap (including carrying cost)	-	2654	
Addition	2654	2799	5453
Closing Revenue Gap	2654	5453	
Interest Rate	12.80%	12.80%	
Carrying Cost	170	519	689

HVPNL has prayed that the Commission may include the carrying cost of Rs 689 million in the ARR of the FY 2017-18 for recovery through Transmission tariff and charges. It has been further submitted that while calculating carrying cost HVPNL has assumed that full cost will be recovered in the beginning of the FY 2017-18.

1.6 UNITARY CHARGES (JHAJJAR KT TRANSCO PRIVATE LTD)

The Petitioner has submitted that the Commission has granted Transmission license to M/s Jhajjar KT Transco Private Ltd (JKTPL) on 26th October, 2010. The Licensee is under commercial operation w.e.f 12th March 2012.

As per Transmission Service Agreement (TSA) approved by the Commission (clause 26.8.2); the applicable monthly Unitary Charges is being paid by HVPNL to JKTPL. The base Unitary Charge for the accounting year, in which COD was declared i.e. 2011-12, was Rs. 4,50,00,000/-, and the same, as per the TSA, is subject to adjustment annually by decreasing the Base Unitary Charges for the immediately preceding Accounting Year by 3% and also on account of 40% of the variation in the Whole Sale Price Index.

The expected Unitary Charges for the FY 2017-18 is about Rs 44.5 Million per month (approx.) keeping in view the expected increase in WPI and yearly reduction of Base Unitary Charge by 3%.

The Petitioner has prayed that the Commission may consider the above proposed unitary charges as part of annual Transmission charges to be approved for the FY 2017-18.

1.7 YEARLY TRANSMISSION CHARGES (YTC) FOR TRANSMISSION LINES OPERATING AS INTER-STATE TRANSMISSION SYSTEM (ISTS)

HVPNL has submitted that in compliance of the Central Electricity Regulatory Commission's Order dated 23.09.2015, the petitioner has also calculated and included YTC for the FY 2017-18 based on tentative line lengths (ckm.) to be added in the corresponding year. Further, in line with the approach adopted by the HERC in its Order dated 31.03.2016, the petitioner has proposed to adjust the YTC charges against the ARR for the FY 2017-18.

Name of Lines	Length (ckt kms.)	YTC 2017-18 (Rs Million)
220 kV S/C Bhiwadi-Rewari line Rajasthan-Haryana)	23.76	29.74
220 kV D/C Madanpur Panchkula)-Kunihar (HP) line with LILO one Ckt. At 220 kV S/S Baddi (HP) [Haryana Portion 40.5 Km=81 Ckt. km]	81.00	78.33
Total		108.07

Accordingly, the Petitioner has prayed that the Commission may allow the YTC for intra-State lines operating as ISTS and its adjustments thereto as proposed.

1.8 SLDC ARR

The Petitioner has proposed to revise the capital expenditure envisaged during the remaining MYT Control Period. The table below provides the details of proposed capital expenditure for the SLDC for the FY 2016-17 and the FY 2017-18:-

Year	FY16-17 (Revised)	FY17-18 (Proposed)
Capital Expenditure (Rs Million)	370	44

Based on the above revised capital expenditure plan for the remaining years of the MYT period and actual expenses for the FY 2015-16, the revised annual revenue requirement for the SLDC has been estimated by HVPNL as under:-

Particulars (Rs Million)	FY 2016-17 (Proposed)	FY 2017-18 (Proposed)
O&M Cost	69	76
Interest on Loan	47	62
Depreciation	50	35
Interest on Working Capital	3	3
Non-Tariff Income	1	1
Annual Revenue Requirement	167	175

The Petitioner has prayed that the Commission may approve the ARR of the SLDC for the remaining years of the MYT period as proposed above.

1.8.1 RECOVERY OF REVENUE LOSS ON ACCOUNT OF SLDC CHARGES TO CRCPCL FOR FY 2015-16

The Petitioner has submitted that the Commission in its Order dated 29.11.2016, has provided for recovery of market operation charges in the true up, as under:-

“The levy of Market Operation Function charges on the Petitioner, being RE Power producer for captive consumption, is imposing undue financial hardship. Therefore, in view of the anomaly in the HERC MYT Regulations, 2012, as already discussed, HVPNL is directed to withdraw the claim raised on the Petitioner on account of Market Operation function charges since the FY 2014-15 till date. HVPNL may claim the loss of revenue on account of Market Operation function charges, so withdrawn, in its true up petition for the FY 2016-17.”

The Petitioner has provided details of bills raised against Chanderpur Renewable Power Co. Pvt. Ltd. (CRPCPL) for FY 2015-16 as under:-

Description	Transmission	System Operation	Market Operation	Total (in Rs.)
Bill	-	3,156.00	5,947,140.00	5,950,296.00
Surcharge	-	207.00	390,281.00	390,488.00
Surcharge	-	488.00	-	488.00
Bill 03/16	41,905.00	-	-	41,905.00
Total	41,905.00	3,851.00	6,337,421.00	6,383,177.00

The Petitioner has prayed that the Commission may allow recovery of market operation charges raised on CRPCPL amounting to Rs 6.33 Million along with the SLDC Charges of FY 2017-18.

1.9 ANNUAL TRANSMISSION CHARGES FOR THE FY 2017-18

HVPN has submitted that the annual transmission charges are to be determined as per the provision of Regulation 50 of the MYT Regulations, 2012 as under:-

“Transmission Licensee shall recover the transmission charges at the normative annual transmission system availability factor specified for it by the Commission”.

The details of the annual transmission charges proposed by the HVPNL are summarized in the table below:-

HVPNL's Proposed Transmission Tariff for the FY 2017-18

Particulars	Amount (Rs. Million)
Aggregate Revenue Requirement for FY 2017-18	18591
Gap on account of True-up for FY 2015-16	2654
Gap on account of Review of FY 2016-17	2799
Carrying Cost on Gap for FY 2015-16 & FY 2016-17	689
Adjusted ARR	24732
Unitary Charges for JKTP	534
Less YTC for Lines Operating As ISTS Lines FY 17-18	108.07
Total Transmission Charges	25158
Monthly Transmission Tariff	2096.53
Ratio Of Average Transformation Capacity	
UHBVNL	45.65626%
DHBVNL	53.67112%
TPTCL	0.64287%
NTPC Ltd	0.02592%
CRPCPL	0.00384%
Monthly Transmission Tariff - UHBVN (based on ratio of Transmission capacity)	957.1955
Monthly Transmission Tariff - DHBVN (based on ratio of Transmission capacity)	1125.2292
Monthly Transmission Tariff - TPTCL (based on ratio of Transmission capacity)	13.4779
Monthly Transmission Tariff - NTPC (based on ratio of Transmission capacity)	0.5434
Monthly Transmission Tariff - CRPCPL (based on ratio of Transmission capacity)	0.0804

It has been submitted that in case any beneficiary is added at a later stage during the Financial Year, the transmission charges shall be recovered from him in proportion to the allotted transformation capacity contracted by such entity.

1.10 SLDC CHARGES

As per the amended Regulation 52 of the HERC MYT Regulations 2012 “*The annual charges of SLDC determined as per regulations 6 and 16, shall be recovered as a single composite charge from the beneficiaries as under:-*

<i>Intra – State Transmission Licensee</i>	<i>8% of the Annual SLDC Charges</i>
<i>Generating Stations and Sellers</i>	<i>46% of the Annual SLDC Charges</i>
<i>Distribution Licensees and Buyers</i>	<i>46% of the Annual SLDC Charges</i>

It has been submitted that commission in its Order dated 31st March 2016, sought further deliberation on SLDC Charges for FY 2016-17 worked out by petitioner. In line with the above and HERC MYT Regulation 2012 (1st Amendment), Regulation 2016, petitioner has examined the entire matter of apportionment of SLDC Charges for FY 16-17 and apportioned the SLDC Charges among the different beneficiaries as per the table below:-

Beneficiaries	Installed Capacity / Capacity (in MW)	Amount (in Rs Million)	Total (Rs. Millions) FY 16-17
HVPN @ 8%	-	Amount	9.2816
Generating Companies & Sellers @ 46%		Amount	53.3692
HPGCL	2,782.4	Sub-Amount	32.3814
Faridabad Gas Power Plant	432.0	Sub-Amount	5.0276
Mahatma Gandhi Super Thermal Power Station	1,320.0	Sub-Amount	15.3621
Gemco Biomass	8.0	Sub-Amount	0.0931
Star Wire India Ltd	9.9	Sub-Amount	0.1152
Sri Jyoti	9.5	Sub-Amount	0.1106
Shahbad Co-operative Sugar Mills	24.0	Sub-Amount	0.2793
Distribution Licensees and Buyers @ 46%	Transformation Ratio (in %)	Amount	53.3692
UHBVN	45.65626%	Sub-Amount	24.3664
DHBVN	53.67112%	Sub-Amount	28.6438
TPTCL	0.64287%	Sub-Amount	0.3431
NTPC	0.02592%	Sub-Amount	0.0138
CRPCPL	0.00384%	Sub-Amount	0.0020
Total (HVPN + Gencos + Discoms)			116.02

The SLDC Charges for the FY 2017-18, to be recovered from the beneficiaries, will be the summation of the Proposed ARR for FY 2017-18 and revenue loss on account of Market Operation charges of Rs. 6.33 Million to CRPCPL. The same will be as per below depicted table:-

Particulars (Rs Million)	FY17-18
Annual Revenue Requirement	175
Recovery of Revenue Loss on Account of SLDC Charges raised to CRPCPL	6.33
Total SLDC Charges to be recovered	181.33

Thus the SLDC charges apportioned among different beneficiaries by HVPNL is as under:-

Beneficiaries	Installed Capacity / Capacity (in MW)	Amount (in Rs Million)	Total (Rs. Millions) FY 17-18
HVPN @ 8%	-	Amount	14.5064
Generating Companies & Sellers @ 46%		Amount	83.4118
HPGCL	2,782.4	Sub-Amount	50.6494
Faridabad Gas Power Plant	432.0	Sub-Amount	7.8577
Mahatma Gandhi Super Thermal Power Station	1,320.0	Sub-Amount	24.0097
Gemco Biomass	8.0	Sub-Amount	0.1455
Star Wire India Ltd	9.9	Sub-Amount	0.1801
Sri Jyoti	9.5	Sub-Amount	0.1728
Shahbad Co-operative Sugar Mills	24.0	Sub-Amount	0.4365
Distribution Licensees and Buyers @ 46%	Transformation Ratio (in %)	Amount	83.4118
UHBVN	45.65626%	Sub-Amount	38.0827
DHBVN	53.67112%	Sub-Amount	44.7680
TPTCL	0.64287%	Sub-Amount	0.5362
NTPC	0.02592%	Sub-Amount	0.0216
CRPCPL	0.00384%	Sub-Amount	0.0032
Total (HVPN + Gencos + Discoms)			181.33

The petitioner has prayed that the Commission may approve the apportionment of SLDC Charges for FY 2016-17 and FY 2017-18 amongst the different beneficiaries as stated above.

1.11 SHORT TERM OPEN ACCESS CHARGES (STOAC)

It has been submitted that the MYT Regulation, 2012 provides that the transmission charges shall be payable by the Short Term Open Access Consumers for the scheduled energy drawl at per kWh rate as worked out by dividing the annual transmission charges by the total volume of energy sales by the Distribution Licensee(s) during the previous year. Accordingly, HVPNL has prayed that the Commission may decide the Transmission Charges to be recovered from prospective Short Term Open Access Consumers. The calculation of STOAC submitted by the Petitioner is as per table 1.8.

Table 1.8 HVPNL - Proposed STOAC (FY 2017-18)

Particulars	FY 2017-18
Transmission Cost for FY 2017-18 including Unitary Charges (Rs. Million)	19125
Projected Sales for the FY2016-17 for the distribution Licensee (MU) (based on the submissions made by the UHBVNL & DHBVNL in their APR Petition for FY 16-17)	35,713
Proposed Transmission Charge (Rs./kWh) from STOA Consumer	0.536

It has been submitted that the projected sales for the FY 2016-17 is based on the submissions made by the Distribution companies of Haryana (UHBVNL & DHBVNL) in their Annual Performance Review (APR) Petition for the FY 2016-17.

1.12 RECOVERY OF SLDC CHARGES FROM SHORT TERM OPEN ACCESS CONSUMERS

It has been submitted that the Short Term Open Access Consumers are required to pay composite SLDC charges as provided in the HERC (Terms and Conditions for grant of connectivity and Open Access for intra-State Transmission and Distribution System), Regulations, 2012 as amended from time to time. As such, HVPNL has prayed that the Commission may decide the SLDC Charges to be recovered from prospective Short Term Open Access Consumers.

1.13 REACTIVE ENERGY CHARGES

Regulation 48 of MYT Regulations, 2012 provides that the reactive energy charges are payable by the Distribution Licensee to the Transmission Licensee as per Regulation 5.5.1 of the Haryana Grid Code (HGC) as amended from time to time. The reactive energy charges paid by the Distribution Licensee, however, shall not be recovered through ARR.

That a generating station shall inject/absorb the reactive energy into the grid as per the directions of State Load Dispatch Centre. Such injection/absorption may be undertaken on the basis of machine capability and in accordance with the directions issued by SLDC as per the provisions of Haryana Grid Code as amended from time to time.

That the reactive energy charges from embedded Open Access Consumers shall be recovered by the Distribution Licensee. Reactive energy account shall be maintained and operated as per the intra-State ABT Regulations to be notified by the Commission

and as amended from time to time. Until the intra-State ABT Regulations are notified by the Commission, CERC ABT Regulations shall be applicable;

That the DISCOMs, Generators /Long Term Open Access Customers are expected to provide adequate reactive compensation in order to ensure that they do not draw / inject VARs during low in line with the criteria laid under Clause 6.6 of Indian Electricity Grid Code.

That the beneficiaries are expected to provide local VAR compensation such that they do not draw VAR from EHV grid, particularly under low voltage conditions. Accordingly the Grid Code provides VAR exchanges as under:-

- ❖ The beneficiary pays for VAR drawl when voltage at metering point is below 97%.
- ❖ The beneficiary gets paid for VAR return when voltage is below 97%.
- ❖ The beneficiary gets paid for VAR drawn when voltage is above 103%.
- ❖ The beneficiary pays for VAR return when voltage is above 103%.

As per Clause-6.6 (2) of Indian Electricity Grid Code the VARh shall be @ 10 paise per KVARh w.e.f. 1.4.2010 to be escalated at the rate of 0.5 paise per KVARh per annum thereafter.

HVPN has submitted that they are raising reactive energy bills on the Discoms at rates determined by the CERC and for the FY 2017-18; HVPNL has proposed to charge UHBVN & DHBVN at a rate of 13.5 paise /KVARh w.e.f 1.4.2017 on the basis of the SEMs installed at the interface.

1.14 CAPITAL EXPENDITURE FOR THE FY 2015-16 AND FY 2016-17

As per the MYT Regulations in vogue, the Licensee has also submitted the status of capital expenditure approved vis-à-vis the envisaged capital expenditure for the FY 2016-17 and the envisaged capital expenditure for the FY 2017-18 as part of MYT Business Plan, including the capital expenditure plan and resultant impact on the ARR / Tariff.

CAPITAL EXPENDITURE FOR FY 2016-17 TO FY 2017-18

The Petitioner has submitted that Capital expenditure is essential for meeting demand growth and prompt upkeep of the network on sustainable basis and further

submitted that HVPN has invested capital each year with a focus to improve its transmission system through addition of transmission capacity, augmentation, maintenance and strengthening to improve the existing system.

The Petitioner had submitted the capital investment plan (CIP) relating to the transmission & SLDC business for the period (FY 2014-17) in March 2014. Further, Capital Expenditure requirement for the period FY 2017-18 has also been submitted for the consideration of the Commission.

REVISED CAPITAL INVESTMENT PLAN (CIP) FOR FY 2016-17 & FY 2017-18

The Petitioner has submitted that for proper monitoring, administration and management the State transmission system has been divided into two zones, namely Hisar and Panchkula, which are further divided into of three circles each i.e Hisar, Gurgaon, Faridabad under Hisar Zone and Panchkula, Karnal and Rohtak circles under Panchkula zone. There are 17 Divisions working under these circle. HVPN had prepared the capex plan taking into consideration all the factors which would affect the operations of the company. It has been submitted that the planning department of HVPN receives inputs from field officers and the Distribution Companies on investment requirement for catering to the load growth on annual basis which formulate core of the capital expenditure plan, accordingly the capacity addition requirement are incorporated in the Capital Expenditure Plan. The transmission licensee consistently monitors loading of transformers and transmission lines so as to promptly address any constraints. The load flow analysis is also being carried out to derive scientific evidences to strengthen capital investment plan proposals.

It has been further submitted that in order to address the requirement of consumers, the petitioner intends to revise the Capex plan approved for the FY 16-17 based upon the latest available data from the field and system operations. The petitioner has requested the Hon'ble commission to review the Capex for the FY16-17 and approve the revised capex plan for FY 16-17. The petitioner also requested the Hon'ble Commission to approve the Capital expenditure plan for the FY17-18 as submitted in the Business cum Capital Expenditure Plan for the period.

The Petitioner has further submitted that the capital investment plan for the transmission business comprises of the following capital works:-

- i. Transmission lines
- ii. Sub station
- iii. Information technology initiatives
- iv. Land & Right of Way expenses
- v. Miscellaneous works including civil works, procurement of thermo-vision cameras, testing equipment, contingency capital works.

The work wise revised expenditure for the period (2016-17) and envisaged for FY 2017-18 has been proposed as under: -

Works	FY 16-17		FY 2017-18
	(Approved)	(Envisaged)	(Envisaged)
Hisar Zone			
Sub Station	2742	2615.6	3821.4
Transmission lines	1379	679.2	1596.2
Land	67	447.5	102.9
Panchkula Zone			
Sub Station	1737	1630.2	2212.1
Transmission lines	796	563.5	970.4
Land	5	212	197.2
Information Technology	30	91	59
Misc. work	427	340	340
Total	7182	6579	9299.2

The petitioner has submitted that the HVPN has focussed on catering to the increasing demand in the State and is committed to supply quality and reliable power to the consumers by strengthening of the existing transmission system. New substations along with the requisite lines have been planned, while older, inefficient equipment at the existing sub-stations has been considered for replacement with modern and efficient equipment. New transmission lines are planned for power evacuation, meeting the load demand, and the current lines will be strengthened and renovated as required.

It has submitted that adequate infrastructure is required to ensure that unforeseen breakdowns in few parts of the system do not have any adverse impact on the availability of overall transmission system. Therefore, the capacity addition and the necessary expenditure are planned in manner to create sufficient redundancies in the system considering the state of existing infrastructure and growth in power demand.

That a number of new transmission lines have been proposed together with repair and maintenance activities for the existing lines.

The main purposes for the expenditures on transmission line is to deport bulk amount of power near to load centres with focus on creating redundancy by means of improvement/strengthening, supporting the load growth and facilitating the evacuation of power from the newly Commissioned generating plants.

The Petitioner has further submitted that meticulous planning has been made to ensure effective modernization of the system through IT implementation and negotiate problems and delay faced on accounts of Land and right of way issues.

The Capital Expenditure Plan also includes the envisaged expenditure for land acquisition and ROW settlements and the miscellaneous works including civil works and the procurement of testing and T&P equipment and Thermo-vision Cameras for hot spot detection.

A number of schemes had been/to be commissioned in the previous/upcoming years, but minor expenditures are likely to be undertaken during FY 2016-17 & FY 2017-18 and the schedule of capitalization is as detailed below in the table and provides the expenditure break up for the control period, for all the schemes that have been represented in the first column as under:-

Year of Commissioning /Proposed year	Capital Expenditure in the Financial Year (in Rs. Million) of commissioning of Scheme	
	FY 16-17	FY 17-18
2009-10	4.5	-
2010-11	17.0	19.5
2011-12	41.1	13.9

2012-13	108.4	17.1
2013-14	176.3	10.0
2014-15	310.6	27.0
2015-16	1,127.5	141.8
2016-17	3,200.9	1,516.7
2017-18	818.6	5,759.8
2018-19	53.8	1,104.6
2019-20	-	34.0
Total	5,858.7	8,644.4

SOURCES OF FUNDING

HVPN has submitted that it has sought to utilize debt that is available at a low cost to ensure that the burden on the beneficiaries can be minimized. HVPNL has negotiated with the financing institutions and ensured that the cost of capital is low and the terms of debt are favorable to the Company.

Financial Institution	FY 16-17	FY 17-18	Debt Ratio (%)	Interest Rate (%)
Scheme with tied up financing				
NABARD	134.3	53.7	80	11
PFC	136.4	48.2	80	11.25
REC	1572.4	3323.5	90	11.25
World Bank	1783.3	1215.9	80	10
JICA	474.3	56.3	100	12
Total	4100.7	4697.6		
Loans pending Approval				
REC(Proposed)	650.2	865.8	90	11.25
NCRPB (Proposed)		937.8	70	7
Total	650.2	1803.6		
Capex Scheme awaiting Loan (Proposal)				
Expenditure	737.6	2099.0	70	11.25
Grand Total	5488.5	8600.1		
Debt Ratio for the year	84.43	81.47		
Wt. Avg. Interest Rate (%)	10.96%	10.69%		

It has been submitted that the main sources of loan for the Capex are World Bank and the Rural Electrification Corporation . The other works are being funded by domestic financial sources like Power Finance Corporation, National Bank for Agricultural and Rural Development etc.

It has been further added that some schemes have been proposed to the financing institutions for funding and approval for the requisite loans is awaited while few schemes have been approved by HVPNL and are in the process of being posed for loans. A number of schemes have also been undertaken from the grants and deposits provided by HSIIDC; therefore no investment is being made by HVPNL for such projects.

The Petitioner vide its True up petition dated 26.11.2015 for FY 2014-15, APR of FY 2015-16 and revised ARR for FY 2016-17 had submitted that against the approved capital expenditure of Rs.9805 million for FY 2015-16 vide Commission's order dated 31.03.2015 the licensee had incurred Rs.841 million on Capex during first quarter and was likely to incur Rs.7991 million on Capex during FY 2015-16 and further submitted that during FY 2016-17 the HVPNL envisaged capital expenditure of Rs.9965 million against the Commission's approval of 7182 million and prayed for approval of the same.

The Commission has taken on record the above submissions of the Petitioner and shall deal with the same in the Chapter – 3 of the present Order.

CHAPTER 2

2.1 PROCEDURAL ASPECTS OF THE ARR FILING

The Petitioner, Haryana Vidyut Prasaran Nigam Ltd. (HVPNL), is a State Government owned company and is registered under the Indian Companies Act, 1956. The Government of Haryana vide its notification No. 1/10/2003-1/ Power dated 9.12.2003 notified HVPNL as the State Transmission Utility (STU) for the purpose of section 39(1) of Electricity Act, 2003. Through another notification No. 1/11/2003-1 Power dated 9.12.2003, the State Government notified that SLDC at Sewah in Distt. Panipat, established for the purpose under Section 31 (1) of the Act, shall be operated by HVPNL w.e.f. 10.12.2003. HVPNL also holds ownership interest in the shared generation project i.e. BBMB. HVPNL's share of Power Generation from BBMB Hydro Projects i.e. Bhakra, Dehar and Pongs has been assigned to the UHBVNL & DHBVNL in the ratio of 1:1 vide Government of Haryana notification dated 11.4.2008 and further extended by notification dated 07.02.2014. It has been submitted that BBMB being inter-state generation projects, the power to fix generation tariff for these projects do not fall under the jurisdiction of the State Commission.

2.2 MODIFICATION IN THE TRANSMISSION LICENCE

HVPNL was initially granted Transmission and Bulk Supply Licence [Licence No. 1 of 1999] by the Commission under Section 15 of the Haryana Electricity Reforms Act, 1997. However, the Government of Haryana vide its notification no. 116/2005/1/ Power dated 9th June, 2005, transferred the rights relating to procurement and bulk supply of electricity or trading of electricity from HVPNL to HVPNL and subsequently to the Distribution Licensees. Accordingly, in compliance to the provisions of Regulation 22.2 of Form-1 in HERC (Conditions for Transmission Licence) Regulations, 2008 notified by the Commission on 31st October, 2008, HVPNL had submitted application for the modifications in its existing licence. The Commission vide Order dated 11.01.2013, in line with the Regulation No. 09/2004 namely "Haryana Electricity Regulatory Commission (Transmission and Distribution Licensing) Regulations, 2004 and Section 18 of

the Electricity Act, 2003 granted the amended Transmission Licence to HVPNL for carrying on the business of transmission of electrical energy in the area of supply within the State of Haryana as per the terms and conditions mentioned in the amended Licence i.e. Licence No. 1 of 1999, 1st Amendment dated 11.01.2013.

It has been submitted that as per Section 86 (a) of Electricity Act, 2003 the power to determine tariff for generation, transmission, supply & wheeling of Electricity, wholesale, bulk or retail, as the case may be, are vested with the Commission. Hence, HVPNL has filed the present Petition for true-up of FY 2015-16, Annual (Mid-year) performance review for the FY 2016-17 and determination of ARR for Transmission business & SLDC and for fixation of transmission tariff & SLDC charges for the FY 2017-18 under Section 62 read with Section 64 (3) (a) and Section 64 (6) of the Electricity Act, 2003.

2.3 PUBLIC PROCEEDINGS

In accordance with the provisions of Section 64 (2) of the Electricity Act, 2003, HVPNL published highlights of its petition in abridged form for inviting comments / objections from the stakeholders / general public. The Public Notice was issued by the HVPNL in The Tribune (English) dated 04.02.2017 and Punjab Kesari dated 03.02.2017 inviting objections/ suggestions/ comments from the stakeholders and general public. Additionally, the Commission also issued Public Notice in The Tribune (English) and Dainik Jagran (Hindi) on 16.02.2017 inviting comments / objections from the stakeholders/general public.

Sh. R.K. Jain, Counsel, intervened on behalf of M/s Chanderpur Renewal Power Limited. The objections filed by the Intervener, reply filed by the petitioner and the Commission's view thereto are as under:-

- i) That the State Commission approved ARR for FY 2016-17 for an aggregate amount of Rs.13606.19 Million and corresponding Monthly Transmission Charges of Rs.1141.37 Million/month and Wheeling Charges of 33 Ps/unit for Short-Term Open Access consumers. The Commission revised the ARR for FY 2016-17 from Rs.13606.19 Million to Rs.13690.19 Million vide order dated 08.11.16 and corresponding revised monthly Transmission Charges of

Rs.1148.37 Million but the Transmission Wheeling Charges for Short-term Open Access consumers was kept the same as already approved.

HVPNL's Reply

The petitioner hereby submits that the ARR for FY 2016-17 has been framed keeping in adherence to HERC-MYT order for control period FY 2014-15 to FY 2016-17 taking the audited annual account for the period FY 2015-16 as the base year for computation.

Commission's View

The Commission has considered the above objections and HVPNL's reply thereto. The ARR approved for the FY 2016-17 shall be taken up for true-up in the FY 2018-19 as per the provisions of the MYT Regulations. Hence, any amount (+/-) shall be dealt with in the ARR/Tariff for the FY 2018-19 including holding cost, within the MYT framework.

- ii) That as per revised ARR for FY 2016-17, HVPNL has requested the Commission to allow revised ARR of Rs.16467 Million thereby proposing an increase of Rs.2861 Million or 21% over the approved figures. Major increase has been proposed in O&M Expenses (34%), Interest & Financing Charges (26%) and Return of Equity (15%).

HVPNL's Reply

The Petitioner in line with amended MYT regulations has proposed the O&M Expenses, Interest & Financing Charges and RoE components for the year FY 2016-17 and extended year FY 2017-18.

Commission's View:

The Commission has considered the above submissions and observes that the ARR of the FY 2016-17 is not being revised at this stage. While the ARR for the FY 2017-18 shall be worked out as per the provision of the MYT Regulations in vogue including O&M, RoE and Interest on term loan. Thus, the percentage increase as proposed by the licensee or as pointed out by the intervener is of little relevance unless they are in line with the HERC MYT Regulations.

- iii) That the Utility has proposed ARR of Rs.18582 Million for the FY 2017-18 i.e. an increase of over 36% over the approved ARR for FY 2016-17. The corresponding Monthly Transmission Charges have been claimed as 2113.72 Million i.e. an increase of 85% in the Monthly Transmission Charges. Such abnormal increase in expenses is bound to have serious impact on the

beneficiaries, especially the smaller ones who cannot pass on this expenditure to any other entity and have to bear it by itself.

HVPNL's Reply

The petitioner hereby submits that the ARR for FY 2016-17 has been framed keeping in adherence to HERC-MYT order for control period FY 2014-15 to FY 2016-17 taking the audited annual account for the period FY 2015-16 as the base year for computation .Subsequently the Monthly Transmission Charges has been computed.

Commission's View

The Commission has considered the above contentions of the parties and is of the view that the ARR for the FY 2017-18 shall be worked out on the basis of the MYT Regulations in vogue. The approved ARR and tariff thereto may be different from that proposed by the Licensee. Hence, the percentage increase pointed out by the Intervener is of little relevance at this stage. It needs to be noted that the Commission, while determining ARR / tariff keeps in mind interest of the stakeholders of all hues.

iv) That analysis of some of the major factors impacting the transmission charges are as follows:-

a) Operation & Maintenance Cost:

ARR FY 2016-17		ARR FY 2017-18	(%) Increase over approved ARR for FY 2016-17
Approved by HERC 31.03.16	Revised proposal of HVPN	Proposed by HVPN	
5165.85	6931.00	9249.00	79.04

Major increase has been proposed on account of Employees' cost. This parameter comes under the controllable factors and there seems to be no effort by the Licensee to reduce the manpower cost.

HVPNL's Reply

The petitioner hereby submits the revised O&M components for FY 2016-17 considering the audited actual accounts of FY 2015-16 as well as the CPI & WPI indices for the year, further with adherence to the amended MYT regulations of HERC for the extended year of control period FY 2017-18. All the projections for the period FY 2016-17 and FY 2017-18 are made considering FY 2015-16 as the baseline.

Commission's View

The Commission has considered the above and is of the view that O&M expenses comprising of Employees expenses, A&G expenses and R&M expenses shall be worked out by the Commission as per the MYT Regulations. Further, as far as the employees expenses are concerned certain components i.e. retirement benefits, increase in pay scale including impact of the 7th pay revision etc. as per the MYT Regulations, are pass through components in the ARR / Tariff. **Given these constraints, the Commission shall appreciate in case the intervener submits, to the Commission, an implementable solution / strategy to rein in employees cost including efficiency of the work force deployed in the transmission / SLDC business. The proposal may also include manpower budgeting / planning commensurate with the size of the transmission / SLDC business of the Licensee or any other suggestions regarding this that can be implemented and the benefit streams quantified.**

b) Interest & Financing Cost

ARR FY 2016-17		ARR FY 2017-18	(%) Increase over approved ARR for FY 2016-17
Approved by HERC dated 31.03.16	Revised proposal of HVPN	Proposed by HVPN	
2916.27	3668.00	3954.00	35.60

HVPNL's Reply

The petitioner proposes that the interest cost has been estimated based on the loans proposed to be drawn during FY16-17 and FY17-18, based on the funding requirements, while the interest capitalized has been based on the average of last 3 years interest capitalized. Apart from this, the pension and PF bonds has been redeemed and swapped with the UDAY bonds on 15.06.2016, in light of this the petitioner hereby has computed the interest on Pension/PF Bonds only for the duration of 2.5 months during FY 16-17 i.e. from 01.04.2016 to 15.06.2016. The petitioner has also computed the Interest on UDAY Bonds for the remaining duration of FY 2016-17 i.e. from 15.06.2016 to 31.03.2017 and for the entire period of FY 17-18.

Commission's View

The Commission has considered the concern raised by the Intervener and reply of HVPNL thereto. It needs to be noted that the capital structure of funding any assets required for augmentation, up gradation etc. targeted at improving the efficiency and reliability of the transmission system is the debt: equity ratio as per the MYT Regulations. The term loan component, based on

the capital works approved by the Commission, has to be serviced by way of allowing interest in the ARR / Tariff as per the Regulations in vogue, while the amount capitalized is recovered by way of depreciation used for repayment of the principle amount. As far as interest on Pension/PF Bonds including UDAY bonds, as claimed by HVPNL, are concerned, the Commission shall examine the same on merit in the light of its previous dispensation / Order passed in the matter.

c) Depreciation:

ARR FY 2016-17		ARR FY 2017-18	(%) Increase over approved ARR for FY 2016-17
Approved by HERC dated 31.03.16	Revised proposal of HVPN	Proposed by HVPN	
3285.91	3207.00	3647.00	11.00

HVPNL's Reply

The petitioner has stated that while estimation of depreciations for new assets the weighted average rate of depreciation based on the proportion of different category of assets has been considered.

Commission's View

The Commission has perused the objection and reply thereto on this issue and observes that the depreciation is a function of the opening balance of the Gross Fixed Assets and the additions to GFA during the year in accordance with the capital works approved by the Commission and added to the fixed assets. The depreciation rate of each component of the Fixed Assets over its useful life are specified and the average rate for the Asset Mix can be computed from the audited accounts. Accordingly, the depreciation amount for the year is worked out and allowed in the ARR / Tariff.

d) Return on Equity:

ARR FY 2016-17		ARR FY 2017-18	(%) Increase over approved ARR for FY 2016-17
Approved by HERC dated 31.03.16	Revised proposal of HVPN	Proposed by HVPN	
1704.60	1963.00	1948.00	14.28

HVPNL's Reply

The petitioner in lieu of the above query would like to state that the revised return on equity has been estimated based on the expected equity contribution on the new capex proposed, the rate of return considered for the

return on equity is 10% in line with the office memo no. Ch 65/SE/RAU/F122/Volume-II dated 04/12/2014 which considers the approach adopted by the Hon'ble Commission in its MYT Order dated 29 May 2014.

Moreover, the equity base considered for revised proposal of return on equity is adjusted for the CWIP, as Hon'ble Commission has established in its approach for approval of ARR that such returns shall not be provided on the equity invested in the capital works in progress.

Commission's view

The above positions have been considered. The Commission observes that for quite sometimes now the rate of return claimed and allowed has remained at 10%. However, based on the equity component infused for funding capital works approved by the Commission, the RoE, in absolute terms, may increase as pointed out by the Intervener. Further, it needs to be noted that return is allowed only on the equity amount deployed in the Transmission and SLDC business of the Licensee.

- e) That for True up for FY 2014-15, 2015-16 and Gap due to review of FY 2016-17 the Licensee has demanded heavy provisions for the True up of FY 2014-15, 2015-16 and Gap for 2016-17. The relevant amounts are as follows,

Gap on account of True up of FY 2014-15 – Rs 827.19 Million

Gap on account of True up of FY 2015-16 – Rs 2779.00 Million

Gap on account of Review of FY 2016-17 – Rs 2861.00 Million

Carrying cost on gap for FY 2014-15 – Rs 89.75 Million

Carrying cost on gap for FY 2015-16 and 2016-17 – Rs 717.00 Million

The large variations asked for may kindly be examined and superfluous demands may kindly be rejected.

HVPNL's Reply

Petitioner in lieu of the above query that the Revenue gap of FY 2014-15, 2015-16 and the proposed revision in FY 2016-17 are computed in line with the HERC MYT Regulations, 2012 along with the applicable SBI base rate and appropriate rate as mentioned as well. It may be noted that while calculating the carrying cost it was assumed that the full cost would be recovered at the beginning of the FY 17-18.

However post this; a significant query was raised by the Commission that while calculating the Return on Equity, equity capital for investment in distribution companies have not been reduced (previous year – Rs 1259.33 million) from total equity capital. Hence the revised calculation after the

deduction of equity capital for investment in distribution companies is as follows:

AGGREGATE REVENUE REQUIREMENT

Financial Year	2016-17 (Rs Million)		2017-18 (Rs Million)
Particulars	Approved as per Order dated 31st March 2016	Revised Proposed	Proposed
O&M Cost	5,165.85	6,931	9,249
Interest on Loan	2,655.75	2,789	3,200
Interest on Pension Bonds	6.72	141	0
Interest on PF Bonds	0	32	0
Interest on UDAY Bonds	0	333	280
Depreciation	3,285.91	3,207	3,647
Interest on Working Capital	253.80	373	475
Return on Equity	1,704.60	1,969	2,043
Share of SLDC Charges	0	13.36	14.50
Non-Tariff Income	(314.38)	(232)	(232)
Less SLDC Expenses forming part of O&M expenses	(69.0)		
True-up for FY 2014-15 for Transmission	827.19	827.19	
Carrying cost on true-up for FY 2014-15	89.75	89.75	
Total ARR	13,606.19	16,473	18,677

REVENUE GAP AND CARRYING COST

Financial Year	FY 2015-16 (In Rs Million)	2016-17 (In Rs Million)
Approved ARR	12,288	13,606
Proposed Revised ARR	14,941	16,473
Revenue Surplus /(Gap)	(2,654)	(2,867)

Particulars (In Rs Million)	FY 2015-16	FY 2016-17	Total
Opening Revenue Gap (including carrying cost)	-	2,654	
Addition	2,654	2,867	5,520
Closing Revenue Gap	2,654	5,520	
Interest Rate	12.80%	12.80%	
Carrying Cost	170	523	693

Commission's View

The Commission has taken note of the concern raised by the Intervener and the detailed reply filed by the licensee. It needs to be noted that the true-up exercise is carried out as per the provisions of the MYT Regulations in vogue including the incentive and penalty mechanism specified therein. Any true-up amount claimed, which does not fit into the four corners of the ibid Regulations is disallowed. Further, any penalty amount / surplus available on true-up is either reduced from the ARR / Tariff or refunded to the beneficiaries. Thus, the Commission never loses sight of balancing equity on both the sides.

- f) That when we look at the impact on the Small RE Project of Chanderpur Renewal Power, which is pumping hardly 620 kW, the monthly transmission charges alone would increase from the present level of Rs.48,000/Month to Rs.81,100/Month i.e. almost 70% increase rendering the power generation from this tiny project totally unviable. While we wheel on an average 75,000 units every month and the net impact of wheeling charges alone comes to almost 64 Ps/unit and if the transmission charges are increased as proposed by the Licensee, this impact would increase to 108 Ps/unit or an increase of 43 Ps/unit. The cost of this RE power would exceed the grid tariff also.

HVPNL's Reply

The petitioner humbly submits that keeping adherence to the prescribed guidelines of the Commission the proposed Transmission Charges has been computed which is resulting in a significant jump in the Wheeling charges.

Commission's View

The Commission, keeping in view the difficulties had amended the MYT Regulations thereby mitigating the financial burden on the smaller entities. As far as transmission charges are concerned, the same, for entities like of Chanderpur Renewal Power, as per the ibid Regulations, is in proportion to its ratio of transformation capacity in the overall transformation capacity of HVPNL. Hence, smaller entities are automatically passed on lesser burden of the transmission cost / ARR approved by the Commission. The percentage increase as pointed out by the Intervener is not relevant at this stage as the same would depend on the ARR / Tariff approved by the Commission for the FY 2017-18.

2.4 PUBLIC HEARING

The Commission, in order to afford an opportunity to the stakeholder/ interested person to present their case in person, held public hearing on the

petition filed by HVPNL after intimating the date of public hearing in the newspapers. The date of public hearing was also posted on the website of the Commission under the heading 'Schedule of Hearing'.

The public hearing was held on 15.03.2017 in the Conference Hall of the Commission. The Petitioner made a presentation in the hearing and also responded to various queries / clarifications sought by the Commission.

2.5 STATE ADVISORY COMMITTEE (SAC)

The Commission, in order to have the benefit of the views of the SAC Members, convened a meeting of the State Advisory Committee, constituted under Section 87 of the Electricity Act, 2003, on 20.03.2016. No comments/suggestions specific to the Transmission ARR/Tariff and charges were offered by the SAC Members and they mostly confined their comments/suggestions to the Distribution ARR/Tariff.

CHAPTER 3

COMMISSION'S ANALYSIS OF THE PETITION & ORDER ON TRANSMISSION CHARGES

3.1 TRUE UP OF THE FY 2015-16, ANNUAL PERFORMANCE (MID-YEAR) REVIEW FOR THE FY 2016-17 AND THE DETERMINATION OF TRANSMISSION TARIFF AND SLDC CHARGES FOR THE FY 2017-18

The Petitioner has submitted the performance of HVPNL for first six months of the FY 2016-17 along with its half-yearly financial statements in addition to the proposal for true up for the FY 2015-16, and proposed transmission tariff and SLDC charges for the FY 2017-18 for consideration and approval of the Commission.

3.2 Capital Investment Plan (CIP)

A comparative statement of capital expenditure projected by HVPNL, approved by HERC & actual incurred by HVPNL is presented in the table below:-

FY	HVPNL Capex Projected (Rs. millions)	HERC Capex approved (Rs. millions)	HVPNL Actual Capex (Rs. millions)	% of actual w.r.t. HVPNL projected Capex (Rs. millions)	% of actual w.r.t. HERC approved Capex (Rs. millions)
2008-09	9613.90	6601.41	6704.40	69.73	101.56
2009-10	24009.75	19000	10818.80	45.06	56.94
2010-11	23605.60	17000	10927.00	46.29	63.64
2011-12	14057.51/ 9172 rev.	10158	7061.90	50.23	69.52
2012-13	9261.68/ 9100.89 rev	6878	6202.1	68.14	90.17
2013-14	11274.48 11810.88 rev.	7368	8722 6379 (Rev.)	54%	86.57%
2014-15	12963 (9694 as per APR) 30.12.2014 7480 (rev.) 12.02.2015	8337	6297.83	48.37%	75.53%
2015-16	11110 (15017 as per APR) 30.12.2014 11058 rev. 12.02.2015 7991 envisaged 26.11.2015	7744 9805 rev. 31.03.2015	4687.80	42%	48%

2016-17	9558 (10362 as per APR) 9814 (rev.) 12.02.2015 9665 envisaged 26.11.2015 6579 (Envisaged 30.01.2017)	7182 rev. approved 31.03.2015	3919 (up to January, 2017)		
2017-18	9299				

The Commission has considered the submissions of the Petitioner on CIP as appearing in Chapter-1 of this Order, the same are not being reproduced here. The Commission observes that the Petitioner has incurred Rs.6298 Million on Capital works as against Rs.8337 Million approved by the Commission in the FY 2014-15.

For FY 2015-16, the Capex was revised from Rs.7744 Million to Rs.9805 Million by the Commission as prayed for by the petitioner (Order dated 31.03.2015). The petitioner had again requested to revise the same to Rs.7991 Million in their petition dated 26.11.2015. However, the Commission did not consider it appropriate to revise the Capex for FY 2015-16 at that point of time as the same is to be reviewed at the end of the control period (FY 2014-17) as per the MYT Regulations in vogue. Against this the licensee has actually incurred Rs. 4556 million on capital works in FY 2015-16.

HVPN has now projected Capital Expenditure of Rs. 6579 million for the FY 2016-17 and Rs. 9299 million for FY 2017-18. However, from the detail of works included in the CIP, it is observed that there are 346 works involving expenditure of Rs.598 Crore which have been targeted to be completed in the FY 2016-17 and the FY 2017-18 but the funding for the same was still to be posed. Out of these works about 80 works have been claimed to be completed in the FY 2016-17 with an estimated cost of Rs. 72.96 Crore. The Commission notes with some degree of concern as to how these works are being executed in the FY 2016-17 without even tie up of the funding with the Financial Institutions. Similarly, for the works targeted to be completed in FY 2017-18, there are 266 works with an estimated cost of about Rs. 525 crore which are yet to be

ties up for funding as per details provided by the licensee. **The Commission observes that the licensee is not able to adhere to its Capex Plan due to one reason or the other. HVPN needs to identify the impediments and take corrective actions to formulate a more realistic CIP.**

The Commission observes that the HVPN had initially projected Capex of Rs.11110 million for the FY 2015-16 in its CIP submitted on 23.12.2013 for MYT control period FY 2014-17 against which the commission had approved Rs.7744 million in its MYT order. The petitioners again requested, vide its petition on 12.02.2015, for revision of Capex to Rs.11058 million. The Commission in consideration of the same revised the Capex for the FY 2015-16 to Rs.9805 million vide Order dated 31.03.2015. However, as against the same, HVPNL has now reported capital expenditure of Rs.4688 million in the FY 2015-16 which is 47.81% only of the amount approved. The licensee was asked to provide work wise list where Capital Expenditure has not been made as per approval of the Commission and the expenditure incurred on the works other than approved by the Commission in the FY 2015-16 and FY 2016-17. The list of works where the expenditure has not been made during FY 2016-17 has been provided. Additionally, it has been submitted that in the FY 2015-16 and the FY 2016-17 that Capex has been as per the approved list of works and no expenditure, out of actual Capex of Rs. 4688 million in the FY 2015-16 has been made on any work other than that approved by the Commission.

The licensee, in response to Commission's query regarding financial progress of capital expenditure in the FY 2016-17 in the Public hearing on 15th March, 2017, had conveyed that HVPN may incur Capital Expenditure to the tune of about Rs.5000 million. In view of the tardy progress HVPN was asked to revise its CIP for the FY 2016-17 and FY 2017-18 and also submit a few additional information for consideration of the Commission. The licensee submitted its revised capital expenditure for FY 2016-17 and FY 2017-18 as Rs.5308 million and 9775 million respectively and provided the list of works on which no expenditure incurred in FY 2016-17. The licensee further submitted that the Capex till January, 2017 has been Rs.3919 million and provided details of Capex as per the relevant schedule of works.

In view of the licensee's submissions and restatement of Capex for the FY 2016-17 & FY 2017-18, the Commission is of the view that the licensee as per its past performance may not be able to execute the proposed capital expenditure of Rs.9775 millions in the FY 2017-18 for transmission business. Out of the proposed Capex of Rs. 9775 million the funding arrangements have been firmed up to the extent of Rs. 6501.2 million. The Commission, after taking into account the capital works for which funding has been firmed up and the fact that during the FY 2017-18 some more funding is expected to materialize, approves Capex of Rs.7332 million for the FY 2017-18.

As far as Capex for FY 2016-17 is concerned the Commission notes that the licensee has proposed the Capex of Rs.5308 million, the same will be considered at the time of true up for FY 2016-17.

The licensee was also directed to ensure that the transmission works required for implementation of smart grid scheme in Gurugram are also included in the present CIP. Regarding the same HVPNL has been submitted that no transmission works is required for Smart Grid Programme being implemented in Gurugram for Capex in the FY 2016-17 and FY 2017-18. The DPR of the said scheme given in principal approval by the Commission also envisages no Capex to be undertaken by HVPNL. Accordingly, no Capex for transmission work has been proposed or approved by the Commission for Gurugram smart grid project as such.

In view of continued under achievement in execution of capital works, the licensee is directed to analyze the reasons and submit a report within three month of this order and bring out work wise reasons for such under achievement and delay in execution of capital works in FY 2015-16 and FY 2016-17. The report should highlight the generic short comings in the area of procurement, tendering, ensuring adequate bid participation, quality and timely the completion of the works and action proposed for overcoming the same. Further, the physical and financial progress of the major capital works being executed having estimated cost exceeding Rs. 20 Crores each be also placed on the licensees website for

information of the stakeholders and a quarterly report regarding the same be submitted to the Commission

INTRA-STATE TRANSMISSION LOSSES

The petitioner has submitted that the regulation 45.4 of the MYT Regulation, 2012 provides as under:-

- (a) The Commission may specify the trajectory for intra-state transmission losses based on the approved capital investment plan in the MYT order;
- (b) The losses shall be borne by the beneficiaries in kind. The SLDC shall reduce the demand scheduled by the beneficiaries during each time block by the 12 months rolling transmission losses (the said period will be the 12 months period preceding the relevant month by 3 months). The SLDC shall post the rolling 12 months losses regularly on its website. The SLDC, however, shall develop necessary software for working out rolling 52 week losses and reduce the scheduled demand accordingly thereafter.
- (c) If the actual annual transmission losses (%) exceed the benchmark value (%) approved by the Commission, the licensee(s) shall be penalized.

In accordance with the *ibid* Regulations, the Commission had fixed the intra-state transmission loss trajectory as under:-

Year	Transmission Loss as proposed by HVPNL (%)	HERC Allowed Loss (%)
2014-15	2.72	2.50
2015-16	2.70	2.48
2016-17	2.70	2.46

It has been further submitted that reductions in transmission losses are an important objective under section 26(2)(b) and (c) of the Act and tariff determinations will need to take account of such reductions. The plans for reducing losses, together with relevant load flow studies and details of the investment required to achieve the planned reductions should be presented & shall substantiate by relevant analysis as to achievability and the cost.

It has been added that during the 11th Five Year Plan (2007-12) capital expenditure of Rs.4111.7 Cr. has been incurred by the HVPNL for system strengthening, hence the average transmission losses are on decline as indicated in the table below:-

Transmission losses (%) as per HVPNL

Period	Target fixed by HERC in %	Intra-state Transmission Losses (%)	Energy Handled in LU
2007-08	2.6	2.44	
2008-09	2.1	2.57	284310
2009-10	2.1	2.68	312740
2010-11	2.1	2.63	344020
2011-12	2.1	2.76	363631
2012-13	2.5	2.494	380431
2013-14	2.5	2.737	428485
2014-15	2.5	2.615	464758
2015-16	2.48	2.698	478718
2016-17	2.46	2.311	480820.8

The month wise intrastate transmission losses of HVPNL transmission system, as reported by them, are as under:-

	2015-16			2016-17		
Month	Total Drawl by Discom	Intra State Transmission Losses in LU	Intra State Transmission losses in %(21)	Total Drawl by Discom)	Intra State Transmission losses	Intra State Transmission losses in %
April	29656.95258	710.799	2.348	35408.07375	665.97125	1.846
May	40326.6108	1049.452	2.536	41636.88021	967.81470	2.271
June	43062.46341	1196.072	2.703	47367.04256	1152.73417	2.378
July	48356.84260	1790.480	3.571	51754.00443	1116.43424	2.112
Aug	49466.92158	1232.877	2.431	48687.35751	1115.10542	2.239
Sept	47929.54880	1195.219	2.433	49617.26333	1148.72582	2.267
Oct	40395.96091	1023.471	2.471	40969.16105	905.84511	2.162
Nov	30867.70729	818.575	2.584	31380.49756	695.82450	2.169
Dec	35477.78077	983.957	2.699	34633.04752	1088.06943	3.046
Jan	35267.45716	1252.588	3.430	33051.09004	1008.32580	2.960
Feb	33506.60913	583.737	2.570	31702.78866	665.5733	2.056
March	31599.0353	777.362	2.401	34693.61571	838.7231	2.360
Total losses upto March 2017				480820.82233	11374.74962	2.311

The table, on intrastate transmission losses has been perused by the Commission. It is observed that the month wise quantum of energy handle / drawl by the Discoms and the corresponding intra State transmission losses do not depict a smooth correlation i.e. in the FY 2016-17 the total drawl of the Discoms was 41636.88 LU (May) and the corresponding intra State loss was 2.271%. While the quantum of Discoms drawl in the month of July, 2016 increased to 51754.01 LU and the intra State loss reported declined to 2.112%. Further, the transmission losses in January, 2016 and January, 2017 is unusually high despite the fact that during these months the drawl of the Discoms as compared to the peak demand months of May to September. **HVPNL needs to analyze this fact including any system constraints or aberrations in the readings of the meters at the interface of HVPNL and the Discoms.**

HVPNL has submitted that they have been able to limit Transmission Losses vis-a-vis the target to some extent in the FY 2016-17 and they are trying to further reduce the same. It has been further submitted that the commission, in the past, had been restricting the transmission losses and is not allowing the actual losses despite the fact that the loss level achieved by the HVPNL is comparatively lower vis-à-vis other best performing utilities. A comparison has been provided by HVPNL as under:-

State	Year	Transmission Losses	State	Year	Transmission Losses
Andhra Pradesh	2014-15	3.37%	Chhattisgarh	2013-14	4.30%
Rajasthan	2014-15	4.11%	Madhya Pradesh	2014-15	2.82%
Karnataka	2013-14	3.66%	Gujarat	2014-15	3.76%
UP	2013-14	3.67%			

The Petitioner has submitted that the losses of Delhi Transco Ltd. and Power Transmission Corporation of Uttaranchal which are in the range of 0.96% and less than 2% respectively, are not strictly comparable with that of HVPN due to significant difference in infrastructure w.r.t. installed capacity, energy handled etc. It has been further submitted that the losses in HVPN system is less than 3%. HVPN system comprises of 440 kV, 220 kV and 132 kV transmission lines as well as the sub-stations. The percentage losses increases with increase in line length and the no. of transformers, also the percentage losses are higher at lower voltage levels. HVPN has submitted that best efforts are being made to achieve low Transmission Loss level.

Additionally, it has been further submitted that the State transmission losses are purely technical losses and are due to energy dissipated in the conductors and equipment used for transmission, transformation, sub-transmission. These technical

losses are inherent in a system and cannot be reduced beyond a certain level. The losses can be further sub grouped depending on the stage of power transformation & transmission system as Transmission losses (400kV/220kV/132kV/66kV).

The Intra-State transmission losses over a given transmission system keep varying over time depending on power flows, voltage profile, reactive energy flows, pattern of energy usage, load demand, load density and capability & configuration of transmission system etc. The transmission system owner has little control over these except that outage of a transmission element increases the power flow on parallel path affecting the losses. The Central Electricity Regulatory Commission is also of similar view and has categorically indicated in the proposed approach for sharing of charges and losses in interstate transmission system that transmission losses is the phenomenon of physics and are unavoidable.

That a study carried out by Electric Power Research Institute (EPRI) of the USA some time back, (referred in 17th Power Survey report of CEA) the losses in various elements of the Transmission system usually are of the order as indicated below:-

System element	Power Losses (%)	
	Minimum	Maximum
Step up transformers & EHV transmission system	0.5	1.0
Transformation to intermediate voltage level, transmission system & step down to sub- transmission voltage level	1.5	3.0
Sub transmission system & step down to distribution voltage level	2.0	4.5

The Petitioner has submitted that during the year 2015-16, the system has handled 478718 LU energy as compared to 464758 LU in the year 2014-15. The transmission loss has been 2.698% for FY 2015-16, and the losses from April to November, 2016 are 2.192%. The Commission has fixed the target for transmission loss as 2.46% for FY 2016-17 wherein under achievement is subjected to penalty. It has been submitted that the Transmission Loss targets fixed by the Commission, for the control period, are too ambitious, and are much more stringent than the targets fixed in other similar States. Thus, the Petitioner has prayed that the Commission may allow the Transmission losses as per actual.

The Commission observes that in terms of Ckt. KMs (EHV) the line length increased from 13794.652 as on 31.03.2016 (FY 2015-16) to 14371.364 as on

31.03.2017 (FY 2016-17) i.e. an increase of 576.712 Ckt. KMs. The number of sub stations during the same period increased from 405 to 412 and the transformation capacity increased from 54084 MVA to 55970 MVA i.e. an addition of 1886 MVA.

HVPNL has provided circle wise number of overloaded/fully loaded transmission lines in its system as under:-

Sr. No.	Name of Circles	Fully Loaded/overloaded lines
1	TS Circle Panchkula	4
2	TS Circle Karnal	6
3	TS Circle Rohtak	7
4	TS Circle Gurgaon	8
5	TS Circle Faridabad	11
6	TS Circle Hisar	2

The Commission, from the above table, observes that there are large numbers of transmission lines running on full load / overloaded condition. Resultantly, the number of tripping increase leading to higher line losses. The licensee was asked to pay special attention to such lines and take immediate steps for appropriate loading of these lines. **HVPNL, going forward, is directed to take corrective measures to ensure that all lines are optimally loaded so as to minimize tripping and losses thereto and also provide a list of works including Capex incurred in the FY 2015-16 and the FY 2016-17 undertaken to address the above issue as well as submit details of the instances when Open Access to Short Term Open Access Consumer was denied due to system constraints.**

HVPNL had submitted report of load balancing in eight sub stations under Palwal Division in TS Circle, Faridabad. However, such action is also required to be taken in all the Circles. HVPNL is directed to submit a report to this effect including outcome of the efforts made at Palwal Division within 30 days of the order.

Additionally, HVPNL has intimated that out of Sixty Two 220 KV transformers, 49 transformers are running in parallel and remaining 13 transformers are not feasible for operating in parallel. The Commission observes that the licensee was asked to supply the list of substations where the action for parallel operation of the power transformers

was taken and the name of works identified and executed/being executed to rein in the intrastate transmission losses. In response thereof, HVPN has submitted that 66 KV substations at Mandkola and Hakim are being fed through 220 KV substations Ranglarajpur by using 220 KV line on 66 KV voltage **as stop gap arrangement** since June, 2015. Also 66 KV substation Punhana which was being fed from 220 KV substation Palwal along with 66 KV substation Hodel through single ckt. 0.15 sq. inch. ACRs conductor has been shifted on Aurangabad-Hsanapur at Mirpur Kurali as a stop gap arrangement since 20.05.2016.

The Commission has considered the above submission and is of the considered view that instead of taking adhoc measures to provide temporary relief, HVPNL, should make concerted efforts to complete the works well within time to achieve the objective i.e. reduction of transmission losses. **The Commission directs that the licensee should pay special attention on such areas where the new substations have been Commissioned and the transmission capacity so created is not being optimally utilized and ensure that the Discom loads/feeders are connected on these substations expeditiously so that the benefits of investment made on such works flows ultimately to the electricity consumers.**

The Commission observes that the licensee has raised the issue of actual intra State Transmission losses not being allowed to them. The Commission has considered the same and is of the view that the target fixed for transmission losses in the MYT Regulations 2012, as amended from time to time, have been fixed after due deliberations including achievability of the same. Thus, the Commission has not considered transmission losses for the FY 2015-16 & FY 2016-17 as per actual as requested and in deviations to the Regulations in vogue.

The Commission is in the process of revising its MYT Regulation and may consider the submission made by the licensee at that point of time.

TRANSMISSION SYSTEM AVAILABILITY

As per MYT Regulation, 2012 the Normative Annual Transmission System Availability Factor is as under:-

Norms	MYT Period			
	2013-2014	2014-2015	2015-2016	2016-2017
AC System (%)	98.5	98.8	99	99.2

The aforementioned target availability is subject to an incentive and penalty mechanism in accordance with regulation 12 of the MYT Regulations, 2012.

It has been submitted that HVPN has adopted the methodology for calculating the Transmission System Availability (Certified Deemed Availability) on the basis of CERC regulations dated 19.01.2009 with effect from October 2009.

The transmission system availability as reported by HVPN is as under:-

Year	Availability in %
Cumulative for the year 2010-11	99.59
Cumulative for the year 2011-12	99.56
Cumulative for the year 2012-13	99.67
Cumulative for the year 2013-14	99.69
Cumulative for the year 2014-15	99.13
Cumulative for the year 2015-16	98.30
Cumulative for the year 2016-17	99.0425

A perusal of the transmission system availability, as calculated by HVPNL, reveals that the same is depicting a declining trend despite continuous infusion of capital for augmentation and strengthening of transmission system.

The licensee was directed to analyze the reasons behind the decline in the Transmission System availability for FY 2015-16 and submit a report to the Commission within 45 day. The licensee was further directed to provide the month-wise number of tripping and break downs at various voltage levels in the System for the FY 2013-14, FY 2014-15, and FY 2015-16 with detailed analysis report giving the reasons for such break downs in the transmission system leading to decline in the transmission system

availability. The detailed analysis report giving the reasons for breakdowns in the transmission system was submitted by HVPN as under:-

The transmission system availability for the year 2015-16 has been 98.2985% and for FY 2016-17 it is 99.0425% which is below the target fixed by the Commission i.e. 99% for FY 2015-16 and 99.2% for FY 2016-17. It has been observed that the outages of following transmission elements mainly accounts for the fall in the transmission system availability during the year of 2015-16.

Sr. No	Name of Sub station	Name of the elements	Length in Ckt KM/MVA of T/F	Forced outage of element		Restoration of element		Outage hrs during the year 2015-16
				Date	Time	Date	Time	
1	400 KV Nawada	315 MVA 400/220KV ICT-II	315.00	22.04.2015	0:19	06.05.2016	19:07	8279.68
2	400 KV Daultabad	315 MVA, 400/220 KV ICT-1	315.00	05.09.2015	11:33	24.10.2015	12:45	1177.20
3	220 KV Madanpur	100 MVA, 220/66 KV T-2	100.00	01.04.2015	0:00	04.12.2015	24:00	5952.00
4	220KV Badshahpur	100 MVA, 220/66 KV T-4	100.00	01.04.2016	0:00	04.19.2015	18:40	6782.00
				16.11.2015	2:50	20.03.2016	22:10	
5	220 KV Kaul	100 MVA, 220/132 KV T-1	100.00	24.11.2015	19:07	05.02.2016	09:50	1742.72
6	220 KV Fatehabad	220 KV Fatehabad-Hisar (PGCIL) ckt-I	67.50	01.04.2015	0:00	Contd.	24:00	8784.00
7	220 KV Fatehabad	220 KV Fatehabad-Hisar (PGCIL) Ckt-II	67.50	01.04.2015	0:00	Contd.	24:00	8784.00

The Commission observes that 400 kV, 315 mVA transformer at 400 kV substation Nawada (Faridabad) damaged and replaced with 250 mVA transformer arranged from Power Grid on loan basis but it took about an year which is a matter of concern.

The Commission further observes that replacement of damaged 100MVA Power transformers at 220 KV Substations Madanpur, Bahshahpur and Kaul have been inordinately delayed i.e. it has taken 8 months, 4 months and more than two months respectively. The transmission system availability reported for FY 2016-17 (99.0425%) which is lower than the normative target availability of 99.2%. The licensee has tried to justify the delay in terms of requisite additional civil works to be carried out for replacement of the power transformers. The Commission has considered the submissions of the licensee and observes that while prioritizing its works HVPNL should, at all times, be conscious of the fact the tradeoff between the cost of

expeditiously fixing / replacing the damaged transformers and the benefit that would accrue in doing so. In cases where the benefit far outweighs the costs involved such works ought to be carried out in the least possible time.

The licensee is advised to explore an arrangement with power grid/ other transmission licensee to have pooled spare 400 kV transformer which may be utilized in case of emergent need arising due to failure of such power transformer in their transmission system.

Failure of Power Transformers

The Commission, in its Order ARR / Tariff dated 29th May, 2014 , had advised HVPNL to strictly enforce the preventive maintenance schedules, ensure healthiness of the protection system, prevent over loading of the transformers and implement the findings of the enquiry reports of the Maintenance and Protection wing of the HVPNL to aim for zero damage rate for Power Transformers.

The following table provides the status of damage of power transformers during the FY 2015-16 and the FY 2016-17 (up to October, 2016) as per information made available by the Licensee.

Sr. No.	Period	Total no. of Power Transformers	No. of Transformers damaged	
			Nos.	% age
1.	2015-16	1030	30	2.91
2	2016-17 (Oct. 2016)	1054	08	0.75

The Commission, from the table above, observes that in the FY 2015-16 the damage rate of power transformer continues to be on the higher side i.e. 2.91% of the total number of Power Transformers against the benchmark of 1% as per the best performing transmission utilities in the country.

The Licensee was directed to submit a report with regard to investigation into the causes of damage of power transformers and action taken thereof to avoid recurrence of such damage in future.

The licensee has also provided voltage-wise break-up of damage rate of power transformers vis-à-vis the corresponding total number of power transformers population for FY 2016-17 (up to October, 2016) as under:-

Sr. No.	Voltage rating	Total no. of transformer	Damaged transformer	% of damage
1	400 kV		0	0
2	220 kV	159	2	1.25
3	132 kV	546	5	0.91
4	66 kV	336	1	0.29

The HVPN has provided data in respect of circle-wise, voltage-wise power transformer damage as under:-

Circle-wise Transformer damage

Name of circle	Voltage	FY 2014-15			2015-16			2016-17		
		No. of T/F	T/F Damage	%	No. of T/F	T/F Damage	%	No. of T/F	T/F Damage	%
Panchkula	220/66KV	17	1	5.88	16	0	0	17	0	0
	220/33KV				1	0	0	1	0	0
	132/66 KV	4	0	0	4	0	0	5	0	0
	66 KV	131	3	2.33	137	4	2.92	142	1	0.71
	33 KV	2	0	0	0	0	0	0	0	0
Karnal	220 KV	35	1	2.85	25	0	0	27	0	0
	132 KV	224	7	3.12	160	5	3.12	161	3	1.86
Rohtak	220 KV	18	0	0	21	0	0	22	0	0
	132 KV	91	2	2.19	117	3	2.56	192	0	0
Faridabad	400 KV	2	0	0	2	1	50	2	0	0
	220 KV	14	1	7	16	0	0	16	0	0
	66 KV	92	3	3.30	98	3	3.13	99	0	0
Gurgaon	400 KV	6	0	0	6	0	0	6	0	0
	220 KV	31	1	3.23	34	1	2.90	34	2	5.80
	132 KV	51	0	0	51	1	1.96	51	0	0
	66 KV	81	2	2.5	89	1	1.18	91	0	0
Hisar	400 KV	5	0	0	5	0	0	5	0	0
	220 KV	40	0	0	40	0	0	43	0	0

	132 KV	194	4	2.05	199	12	6.03	206	4	1.94
	33 KV	12	0	0	16	0	0	16	0	0

It is observed that there has been improvement in the reduction of damage rate of the power transformers in the FY 2016-17 vis-a- vis FY 2015-16. However, it is evident from the circle wise details that in some of the circles it is still on the higher side vis-à-vis the benchmark of 1% i.e. it is 1.86% (Karnal 132 kV), 5.80% (Gurgaon 220 kV) and 1.94% (Hisar 132 kV).

The Commission, vide its order dated 31.03.2016 on ARR for FY 2016-17, had directed the licensee to get the detailed analysis done for the damage of its power transformers in the FY 2015-16 and take all remedial steps to save the power transformers from further damage. And had further directed HVPN to provide list of sick transformers in the system along with rating, age & location and action plan for replacement/rehabilitation.

HVPN has submitted that the sick transformers have been identified and most of the sick transformers have out lived their useful life. It has been further submitted that the power transformers got damaged primarily due to tripping of 33 KV and 11 KV feeders on close faults. However, efforts are being made to reduce the damage rate of power transformer by constant pursuance with distribution companies for proper and timely maintenance of their 33 KV and 11 KV feeders. Resultantly, the transformer damage rate has decreased to 0.75% during the current financial year i.e. 2016-17 up to October, 2016 and is expected to further decline on a completed year basis against 2.91% in the FY 2015-16.

The Commission observes that as per the details supplied by the licensee there are 38 sick power transformers deployed in the system. In case any of these sick transformer has not outlived its useful life the licensee should formulate a plan for overhauling/replacement of such sick transformers and should also plan for phasing out the sick transformers which have already outlive their life in a time bound manner under intimation to the Commission.

Further, the Commission had directed the licensee to implement the protection audit norms for its substation and lines to ensure the healthiness of the protection

system and submit the action taken report in this regard be submitted. In response to the above observation, the licensee has submitted that the Protection Audit of the substation is being done once in three year and has provided the circle wise details as under:-

	Nos. of S/Stn.	No of Observations	Observation attended	Observation pending
Faridabad	47	220	159	61
Gurugram	61	370	242	128
Hisar	190	1559	811	749
Panchkula	70	536	0	536
Karnal	61	448	274	174
Rohtak	54	442	0	442
	487	3575	1486	2089

The Commission observes that as per the protection audit carried out by the licensee during April to November, 2016 for its substations across the State, 3575 observations were recorded by the protection audit team. Out of which only 1486 observation have been attended as per the details provided by the licensee. More than 58% observations are pending which is a matter of serious concern. **The licensee ought to take immediate steps for attending to the pending observations within three months from the date of this Order and report compliance to the Commission regarding the same.**

Provision of polymer insulators

In order to avoid the problem of tripping of power transmission lines due to dense fog in winter season, HVPN was advised to provide anti fog/polymer insulators in the transmission network. HVPN had submitted that the work of replacement of insulators was delayed due to some dispute in procurement; however, the work of replacement of insulators was completed in December, 2016.

Safety Standards

The Commission, in its order dated 29.05.2014 on the petition for APR of Transmission business of HVPN FY 2014-15, had directed the licensee to ensure development of Safety Manual as per the provisions of CEA Regulations by 30th June 2014 and circulate the same within one month thereafter positively. It was further directed that the staff may be provided adequate training and sensitized for use of

safety equipment and to take necessary safety precautions while working on electric lines and equipments to safeguard the precious human life and the costly equipments.

The table below provides the data in respect of fatal / non-fatal accidents occurred in HVPNL during the last 6 years.

Fatal/Non-Fatal Accidents				
Sr. No.	Period	Human Beings		
		Fatal	Non fatal	Total
1	2010-11	1	3	4
2	2011-12	2	5	7
3	2012-13	2	11	13
4	2013-14	3	4	7
5	2014-15	-	4	4
6	2015-16	1	10	11
7	2016-17 (end Oct. 2016)	3	2	5

It has been observed that though, the licensee has claimed that all possible safety measures are being taken to avoid of accidents, 11 accidents involving human beings have occurred which include a fatal accidents during FY 2015-16 and 5 nos. accidents including 3 fatal accidents have occurred in FY 2016-17 till October, 2016.

The licensee was directed to provide the details of safety workshops organized in the field to increase awareness about Safety Regulations and safety measures to be taken while working on electrical equipments and lines. The copy of literature on Safety Regulations and safety measures prepared and circulated by the licensee among its officers and staff was also asked to be provided to the Commission.

HVPN has submitted that the Nigam has a set of well-framed safety rules, which are intended to avoid accidents in the system. All possible safety measures are presently being taken to avoid occurrence of accidents. The supervisory staffs, subordinate staff and the workers are regularly advised to take safety measures while performing their duties. It has been submitted that the workshops on safety are being organized in the field to increase awareness about safety regulation & safety measures to be adhered to while working on electrical equipment & electric lines and proper tools

and plant (T&P) have been provided to the field technical staff. All electrical equipment and structures are properly earthed and fencing/guarding is being provided wherever necessary. It has been further submitted that safety instructions of Grid Code are being implemented and literature on safety regulations, safety measures has been prepared and circulated amongst the officers/ staff posted in the field to increase the level of awareness.

The Commission observes that the license was directed to investigate the causes of these accidents and circulate these cases in the field advising the appropriate preventive actions to avoid recurrence of such incidents in future. However the action taken report on the directions is still awaited. The circulation of investigation report in the field along with the preventive action to be taken by the field staff be ensured under intimation to the Commission.

Installation of Capacitor Banks

The licensee is required to comply with the provisions of the Regulations 4.10 and 5.5 (a) of the Haryana Grid Code in order to improve the reactive power management. The Petitioner has submitted that it has already installed 3946.721 MVAR Capacitors (as on 30.09.2016) on 220kV, 132 kV, and 66 kV network to improve the power factor in the HVPN System. An addition of 785.87 MVAR Capacitors was planned to be made during 2015-16. During FY 2016-17, HT Capacitors banks of 25.2 MVAR Capacity have been added in the transmission system up to September, 2016. The Commission observed that there were 364.02 MVAR defective Capacitor Units as on 30.09.2015 which were to be revived/replaced.

The number of Capacitors installed in the transmission and distribution system is as under:-

Installed Capacitor Banks in HVPN System

Sr. No.	Name of Circle	Total Capacitors installed as on 31.03.2016(MVAR)	Total Capacitors installed as on 30.09.2016(MVAR)
1.	TS Zone, Panchkula	2158.227	2183.447
2.	TS Zone, Hisar	1763.294	1763.294
Total of HVPNL		3921.521	3946.721

It is observed that only 25 MVA capacitor bank have been installed in the first two quarters of FY 21016-17.HVPN was asked to provide the progress in the work of rehabilitation of defective capacitor banks in its transmission system. The capacity of defective units replaced and brought back in to the service and the details of random checks carried out by officers of utility regarding proper operation of the capacitor banks was also sought.

The licensee was directed to expedite the rehabilitation of the defective capacitors banks in its sub stations by replacing some of these and cannibalizing the others from spared healthy capacitor units and other allied equipments as a result of providing replacement and submit a report.

The licensee has supplied the information. The Commission observed that large number of capacitor banks installed in the substations are either non functional or functional with reduced capacity resulting in to the inadequate VAR compensation which deteriorate the quality of supply as well as increases losses. Also in some of the substations the power transformers have not been provided with the capacitor bank. In majority of the cases the capacitor units are lying defective since long and in some of the substation the capacitors banks are out of service due to non-availability of the requisite equipment like VCB, RVT, NCT etc. The Commission observe that the despite the fact that Commission allows adequate R &M expenditure, the licensee has failed to carry out maintenance works to maintain its plant and equipments properly and in perfect working condition. **HVPN is directed to chalk out a plan to rehabilitate all the capacitors banks which are defective within six months and submit details to the Commission.**

Special Energy Meter (SEM)

HVPN has submitted that under the terms and conditions of the Transmission License, HVPNL is required to install and maintain the interface meters for recording the flow of power from HVPNL to DISCOMs (UHBVNL & DHBVNL). There are 1018 interface metering points between HVPNL & DISCOM. Special Energy Meters (SEMs) of 0.2 class accuracy have been provided at 1011 locations and at 7 location

conventional electronic meters have been installed, which are under process of replacement.

The status of Special Energy Meters (SEMs) and which are under process to replacement Conventional meters installed at various interface locations with DISCOMs, as on 31.10.2016 is as under:-

Sr. No.	Description	UHBVNL	DHBVNL	TOTAL
1	Total No of interface between HVPNL and Discoms	505	513	1018
2	Total no. of Metering Points where SEMs are commissioned	500	511	1011
3	No. of Metering Points where SEM have not been installed and ECMs are installed	5	2	7

The interface point w.r.t. State Generator and HVPNL is as under:-

Name of Generating Plant	PTPS	WYC	DCRTPS	RGTPS	FGPS	MGSTPS
Total No. of Interface Points	14	3	8	4	4	4

Name of Renewable Energy Generating plant	Shahbad Mill	Sugar	Starwire	Gemco	Sri Jyoti
Total No. of Interface Points	2		1	1	1

At the new interface points, where conventional energy meters were installed initially, the same are being replaced with special energy meters (SEMs). As far as the inter-state metering is concerned these meters are installed and maintained by the Central Transmission Utility (Power Grid Corporation of India LTD.) Adequate back-up systems also exist to avoid metering inadequacies in the system.

HVPNL was directed in the ARR order dated 31.03.2016 to provide meters at all interface points. As per the latest status, there are only 7 interface points with ECMs which are to be replaced with SEMs.

The Commission in its order dated 31.03.2015 had observed that as per the licensee's development plan, the addition of new sub-stations or the augmentation of

the capacity of the existing sub-station by providing additional power transformers or the augmentation of the existing transformers is a continuous process and each year the population of the power transformer increases. The licensee must ensure the availability of the SEMs along with the requisite CTs/PTs so that the SEMs are provided on all those interface points which are commissioned and added in the transmission system of the licensee.

The license is directed to ensure that no interface point (inter utility) with any utility is energized without installation and commissioning of SEM as per CEA Regulations.

3.2 UNITARY CHARGES

The Commission has granted project specific transmission license to M/s Jhajjar KT Transco Private Limited on 26th October, 2010. The transmission works under public private partnership mode stands completed and has achieved Commercial Operation Date on 12th March 2012.

As per Transmission Agreement (clause 26.8.2); the applicable monthly Unitary Charges is being paid by HVPNL to M/s Jhajjar KT Transco Private Limited. The base Unitary Charge for the accounting year, in which COD occurred i.e. 2011-12, was Rs. 4,50,00,000/-, and the same is being revised annually by decreasing the base unitary charge for the immediately preceding accounting year by 3% thereof and to reflect 40% of the variation in WPI in accordance with the provisions of Transmission Service Agreement (TSA).

Accordingly, the calculation of monthly Unitary Charges for current financial year 2016-17 submitted by HVPNL is as under:-

Sl. No.	Description	Amount in Rs.
1	Monthly Base Unitary Charge as per Clause 26.2.1 of TA for 2011-12	45,000,000
4	Yearly reduction (%)	3%
5	Monthly Base Unitary Charge for FY 2016-17	38643029
6	WPI for Jan 2010 (Base Accounting Year)	135.2 (published by the Ministry of Industry, GOI)

7	WPI for Jan 2016 preceding the Accounting Year	175.4 (published by the Ministry of Industry, GOI)
8	Increase in WPI (%)	29.73%
9	WPI Index (40 % of WPI increase) (%)	11.89%
10	Increase in Base Unitary Charge linked with WPI	4596009
11	Indexed Unitary Charge (Rs) (Sl.No.5+10)	43239038
12	System Availability (%)	100% (Assuming)
13	Normative Availability (%)	98
14	Incentive due to System Availability	864781
15	Incentive due to less Transmission Losses	168395
16	Unitary Charge + Incentives (Sl.No.11+14+15)	44272214
17	Total Unitary charges for the month	Rs. 44272214 (i.e. 4.42 crore)
18	Monthly Unitary Charges (In Millions)	44.2

The licensee has submitted that the expected Unitary Charges for the next Financial Year (2017-18) is likely to remain around Rs 44.5 Million per month (approx.) keeping in view the expected increase in WPI and yearly reduction of Base Unitary Charge by 3%.

The Commission has examined the proposal of the licensee and observes that the actual Unitary charges including incentive as per the audited accounts of the licensee were Rs. 4.24 crores per month during the FY 2015-16 as against an estimate of Rs. 4.75 crores per month. In view of the latest available figures of WPI index for January, 2017, the estimated Unitary charges for the FY 2017-18 are expected to be around 4.3 crores per month. The Commission, therefore, approves monthly Unitary Charges of Rs. 4.3 Crores for the FY 2017-18 as per details given below after excluding the incentive for system availability and transmission losses. The incentive on account of availability of transmission system and transmission losses shall be separately billed by HVPNL to the beneficiaries only after ensuring the conditions and provisions in the Transmission Service Agreement.

Sr. No	Description	Amount in Rs.
1	Monthly Base Unitary Charge as per Clause 26.2.1 of TA for 2011-12	45000000
2	Yearly reduction (%)	3
3	Monthly Base Unitary Charge for 2017-18	37483740
4	WPI for Jan 2010 (Base Accounting Year) (published by the Ministry of Industry, GOI)	135.2

5	WPI for Jan.,2017 preceding the Accounting Year(published by the Ministry of Industry, GOI)	184.6
6	Increase in WPI (%)	36.54%
7	WPI Index (40 % of WPI increase) (%)	14.62%
8	Increase in Base Unitary Charge linked with WPI	5478393
9	Indexed Unitary Charge (Rs) (Sl.No.5+10)	42962133
10	Total Unitary charges for the month	4.3 crores

Further, the Commission, in its earlier Order, had directed HVPNL that incentive on account of availability of the transmission system and the transmission losses shall be subject to ensuring fulfillment of the terms and the conditions and other provisions in the transmission service agreement regarding the same. The calculations details/ methodology adopted by the Independent Engineer were also required to be scrutinized before the incentive on both these account are paid. **The Licensee is once again directed that incentive on account of availability and transmission losses shall be allowed to JKTPPL only after ensuring the conditions and provisions in the Transmission Service Agreement are met and after thoroughly examining the calculations and methodology adopted for computing the incentive amount. The licensee, in its calculations of Unitary Charges for the FY 2016-17 has included incentive of Rs. 864781 and Rs. 168395 on account of System Availability and lower Transmission Losses, the status of its admissibility vis-à-vis directions of the Commission on this issue for the FY 2016-17 and the FY 2015-16 may be intimated to the Commission within one month from this Order.**

3.3 TRUE-UP OF ARR FOR THE FY 2015-16

The Commission has examined the true-up petition of HVPNL's expenditures in line with the MYT Regulations, 2012 and amendments thereto, with reference to the Order of the Commission for the FY 2015-16 and the actual expenditure incurred by the Licensee as per the audited accounts submitted by the Licensee. The True-up amount admitted by the Commission for individual components of the ARR is discussed in the following paragraphs:-

3.3.1 EMPLOYEES' COST

The Commission has examined each component of the employee cost with reference to the previous year in order to arrive at the reason behind the 8.94% increase in the said cost especially when the inflation indexation factor has been

calculated at 2.63% only for the FY 2015-16 over the FY 2014-15. A comparison of item wise annual increase in each component of employees' cost is presented below:-

Particulars (In Rs Millions)	Actual 2015-16	Actual 2014-15	% increase over previous year
Basic	863.24	915.73	-5.73%
DA	1002.03	921.07	8.79%
Other allowances	349.75	317.06	10.31%
Contract employees	521.62	394.10	32.36%
Contribution to new pension scheme (NPS)	48.71	43.47	12.05%
Total Employee Cost	2,785.35	2,591.44	7.48%
Employee cost capitalized	-150.75	-172.95	-12.48%
Net Employee Cost	2,634.60	2,418.48	8.94%
For Transmission Business- Excl. SLDC Business	2600.59	2387.11	8.94%

The MYT Regulations, 2012 provides that the employees' cost, as part of O&M expenses, is to be considered as controllable cost. The Commission observes that the basic salary cost has decreased in FY 2015-16 over FY 2014-15 which reflects the attrition of employees. The increase in other allowances and in cost of contractual employees is a cause of concern. The Licensee, during the hearing confirmed that it has not recruited any new employees and that its total no of employees including contractual is within the sanctioned strength. In view of this statement, the Commission approves the actual cost incurred during FY 2015-16 as part of true up.

However, it needs to be noted that the objective behind outsourcing of work wherever possible was to rein in the employee cost but the same has increased defeating the very objective of outsourcing. **The licensee is directed to examine the details of the cost incurred on contractual employees' during the FY 2015-16 and submit a report including the ways and means to reduce the said cost within one month of this Order.**

The details of employees' cost, excluding terminal benefits, after true-up as approved by the Commission is given in table 3.8. The Commission has considered the submission of HVPNL that due to lower escalation (inflation) impact considered by the Commission, the base cost was underestimated leading to the difference in that approved by the Commission and the amount actually incurred by them. Hence, the Commission allows true-up in line with the MYT Regulations, 2012 as under:-

Table 3.8 Employees' cost for FY 2015-16

	HERC Approval	HVPNL Audited	Difference
Employees' cost (excluding terminal benefits)	2060.81	2600.59	539.78

The Commission, in line with the MYT Regulations, now allows the difference amounting to Rs. 539.78 million to be trued – up.

3.3.2 TERMINAL BENEFITS

On the basis of the audited accounts for the FY 2015-16, the petitioner has sought true-up of Rs.787.35 million as under:-

Particulars (Rs. Millions)	HERC Approved FY 2015-16	HVPNL Actual FY 2015-16	Difference
Terminal Liability	1189.04	1976.39	787.35

The Commission had allowed Rs. 1189.04 million towards terminal benefits for the FY 2015-16 as proposed by the Licensee. As per the MYT Regulation 8.3 (b) the terminal benefits are classified as 'uncontrollable' on account of changes in pay scales or dearness allowance due to inflation. As per the present filing, the Licensee has sought true-up of Rs. 787.35 million without citing any reasons why the liability has gone up as against its own estimates. The Commission has examined the data regarding valuation of pension liabilities annexed with the balance sheet and observes that the pension liability has gone up from Rs.2481 Crore at the end of FY 2014-15 to Rs.2626 Crore at the end of FY 2015-16 inspite of the fact that no new additional employees are eligible for pension. The Commission also observes that as against the liability of Rs.93 Crore on account of gratuity, the licensee has allocated Rs.180 Crore as plan assets on this account. Similarly as against the liability of Rs.59 crore on account of leave encashment, it has allocated Rs.156 Crore as plan assets. **The Licensee is directed to examine the above anomalies and submit a report within one month of this order.** However, this being an uncontrollable item, the Commission approves the true-up amount as proposed by the Licensee. Resultantly, the trued-up terminal benefit shall be Rs. 1976.39 millions (Rs.1189.04 million+ Rs.787.35 million).

3.3.3 REPAIR AND MAINTENANCE EXPENSES (R&M)

The Licensee has submitted that the actual R&M cost incurred in the FY 2015-16 is lower than the HERC approved R&M cost as every element of R&M expenditure

incurred is related to works that are recurring in nature and the petitioner has applied significant prudence in undertaking these works. Accordingly, it has been submitted that the benefit of lower cost may be passed on to the beneficiaries. The details are as under:-

Particulars (Rs. Millions)	HERC Approved	HVPNL Proposed	Difference
R&M Cost – Transmission	366.45	181.21	-185.24

As per the MYT Regulations, the R&M expenses are to be allowed as a factor of GFA. The Commission observes that R & M expenses incurred by the licensee during the past years have been substantially lower than those approved in accordance with the MYT Regulations. During the hearing on the present petition, the licensee has verified that the standard operating procedure with regard to the prescribed maintenance schedule is being adhered to. However, in view of the lower availability of the transmission system in the FY 2015-16, **the Commission directs the licensee to prepare and undertake ‘predictive maintenance’ besides ‘preventive maintenance’ so as to ensure better operating efficiency and reliability of the Transmission System.** Accordingly, the Commission approves the true-up R&M cost as for the FY 2015-16 as proposed by the licensee.

3.3.4 A & G EXPENSES

The Petitioner has submitted Administrative and General Expenses (A&G) approved by the Commission and the actual A&G expense incurred as under:-

True-up of A&G Expenses for FY 2015-16

Particulars (Rs. Millions)	Approved	Actual	Difference
A&G Expenses	161.12	153.85	- 7.27

The Commission observes that despite the fact A&G expenses are lower than that approved by the Commission, there is significant increase in rates and taxes (almost 3 times i.e. from Rs.23.50 lakh in FY 2014-15 to Rs.68.08 lakh in FY 2015-16), legal & professional fees (1.5 times i.e. from Rs.104.68 lakh to Rs.161.21 lakh) and professional charges (almost 5 times i.e. from Rs. 10.79 lakh to Rs. 49.09 lakh). **The licensee is directed to ensure that these costs are minimized to the extent possible. The License is directed to ensure that due diligence is done to ensure**

that such costs are not disproportionate to the amount involved in the litigation. Further, legal remedies may only be preferred after exhausting all non-legal recourses available.

In view of above discussions the Commission approves Rs. 153.85 million as per audited accounts as part of true-up for the FY 2015-16 as proposed by the licensee.

3.3.5 DEPRECIATION

The Petitioner has submitted that this Commission, in its true-up Order for the FY 2014-15, had provided for depreciation based on the GFA of the FY 2014-15 with certain estimates. In line with the approach adopted by the Commission, the Petitioner has submitted the details of depreciation for true-up for the FY 2015-16. The Commission has examined the details provided by HVPNL and observes that depreciation for true-up has been worked out by HVPNL based on the actual opening GFA in the FY 2015-16 adjusted for the additions/deletions during the year to arrive at the closing GFA of Rs.76,380.62 million. Further, from the depreciation amount of Rs.3239.84 Million, depreciation on SLDC assets amounting to Rs.21.85 million and depreciation on assets funded through consumer contribution amounting to Rs. 178.09 million has been reduced to arrive at the depreciation amount of Rs. 3039.90 million for the Transmission business for the FY 2015-16. As the calculation is reasonable and based on the methodology adopted by the Commission, the same is approved.

3.3.6 RETURN ON EQUITY (ROE)

The Licensee has proposed RoE of Rs. 1726.35 million for the FY 2015-16. The Commission observes that the Licensee during FY 2015-16 has received equity capital of Rs.2000 million out of which Rs. 1838.2 million was contributed in arrear towards funding capital expenditure of Rs. 4566.85 million. For the delayed period the petitioner reportedly arranged short term loan for bridging the gap and has not claimed any interest for this period. The Commission observes from the audited accounts of the FY 2015-16 that the addition to GFA during this period was Rs. 6149.3 million, considering 30% of the said amount i.e. Rs. 1844.79 million being the equity obligation. Hence, 50% of this amount i.e. 922.40 million has been considered eligible for RoE in line with the normative capital structure (debt: equity ratio i.e. 70:30) specified in the MYT

Regulations. Accordingly, the calculation of true up of RoE for the FY 2015-16 is as under:-

Table 3.9 True-up of Return on Equity for FY 2015-16

	HERC Order	HVPNL Proposed	HERC order
	2015-16	2015-16	2015-16
	Rs Millions	Rs Millions	Rs Millions
Paid up Equity Share Capital at the beginning of the year		19,367.10	19,367.16
Share application money pending allotment		2,120.60	2,120.60
Out of the above, Equity Capital for SLDC		56.00	56.00
Out of the above, Equity Capital for Generation as on 31.3.2014		1,595.40	1595.40
Out of the above equity capital for investment in distribution companies		1,259.30	1,259.33
Balance Equity for Transmission		18,576.30	18576.30
less equity related to transmission works not yet commissioned		2235.20	2242.06
Opening balance of equity for transmission business		16341.10	16334.81
Add 50% of equity portion of GFA added during FY 2015-16		922.40	922.40
Equity to be considered for ROE	14,250.00	17263.50	17257.21
Rate of return	10%	10%	10%
Return on Equity for Transmission Business (FY 2015-16)	1,425.00	1726.35	1725.72

In view of the above details the Commission approves the revised RoE of Rs. 1725.72 millions for the FY 2015-16 as against Rs. 1726.35 million claimed by the licensee.

3.3.7 INTEREST AND FINANCE CHARGES

The Licensee has submitted the break-up of finance cost (interest expenses) of transmission business as per audited annual accounts as under:-

Particulars (In Rs Million)	Interest Cost Incurred
Interest on Capex Loan	2376.74
Interest on Bank loans & Working capital loan	398.07
Interest Pension Bond	673.00
Interest on PF Bond	162.18
Interest on bonds issued by HVPN on behalf of Discoms	1427.27
Other Finance Charges	51.61
Total interest incurred by HVPN	5088.87

True-up of Term loan proposed by the Licensee is as under:-

Interest Cost (Capex Loan)	Approved	Actual	Difference
Interest (In Rs Million)	1706.37	2376.74	670.37

HVPNL has submitted that the higher interest cost of capital expenditure loan amounting to Rs. 670.37 million vis-à-vis that approved by the Commission is on account of following reasons;

- Lower opening and closing balance of loan considered for the FY 2015-16, as the actual figures have changed due to the difference in loan drawn, loan repayments and assets capitalized.
- Excess capitalization of interest by the Commission by including the CWIP relating to World Bank loan projects. It has been submitted that the interest on World Bank loan is directly capitalized by HVPNL after taking the same as part of CWIP and while calculating the capitalization of interest HVPNL excludes the interest on World Bank loan as well as CWIP (World Bank) amount pertaining to World Bank loan.

The Licensee has submitted that the Commission may allow interest cost on Capex loan based on the audited annual accounts for the FY 2015-16.

The Commission has considered the above submissions and is of the view that the closing balance of approved borrowings for capital works, as on 31.03.2015, was considered as the opening balance as on 01.04.2015. The additional borrowings during the year were derived from the calculations of funding of capital expenditure made during the year and repayments were derived from the information provided by HVPNL vide memo no. Ch-121/SE/RAU/F-157 dated 15.03.2017. The additional CWIP during the FY 2015-16, as per the audited accounts, amounting to Rs. 4566.85 million, is approved as being funded as follows:-

Funding of CAPEX	Rs. Million
Equity (Rs. 2000 Mln-1830Mln)	161.80
Consumers contribution	478.45
Loan Funds (Actual)	3926.60
Total funds	4,566.85

Consequently, the closing balance of borrowings for capital works as on 31.3.2015, as approved by the Commission, has been used to calculate the interest to be allowed for the FY 2015-16. Going forward, the additions to loan are worked out as per paragraph above, repayments are as submitted by the licensee to work out the closing balance of loan as on 31.03.2016 to arrive at interest on borrowings for capital works. At the average rate of interest on capex borrowings for the FY 2015-16 as per

audited accounts, the interest cost approved by the Commission net of IDC (IDC is allocated in the ratio of approved borrowing and unapproved borrowings) is as under:-

Interest on borrowings for capital expenditure (Rs. Millions)						
	Balance at the beginning of the year	Receipt during the year	Repayment during the year	Closing Balance	Interest cost	Rate
FY 2014-15						
Capex loan	29084.18	4969.56	2764.21	31289.53	2217.61	
FY 2015-16						
Capex loan	31289.53	3926.60	3,026.11	32190.01	2259.78	7.12%
Allocation to SLDC					92.24	
Allocation to transmission					2167.54	
Interest cost actual					2284.50	
Interest cost disallowed					116.96	

3.3.8 INTEREST ON WORKING CAPITAL LOANS

The Petitioner has submitted that the working capital requirement approved by the Commission was on lower side owing to lesser approved annual revenue requirement for the FY 2015-16. Also, there is a significant impact on the working capital requirement of actual receivable days and normative receivable days. The actual receivable days being significantly higher than the norms the petitioner had to raise additional working capital to bridge requisite working capital gap. Therefore, the Petitioner has prayed that the Commission may approve the actual interest on working capital incurred by them as per the actual audited accounts of the FY 2015-16 as under:-

Working Capital/Bank Loans (Rs. Millions)	HERC Approved	Actual	Difference
Interest	206.73	398.07	191.34

The Petitioner has further submitted that the short term interest rate allowed by the Commission in its MYT Tariff Order for the FY 2015-16, was lower than the actual short term interest rates prevailing in the market, due to which the higher short term borrowing interest burden has arisen. The Commission, however, observes that interest on working capital loans for the FY 2015-16 in its order dated 31.03.2015 was allowed at the rate of 10.85% being the actual rate of interest during the FY 2013-14. In

view of the fact that rate of interest has witnessed sustained decline since the FY 2013; hence, the Commission is not inclined to increase the rate of interest for calculation of true up interest cost. However, the working capital has been revised after taking into consideration the revised ARR for the FY 2015-16 based on the true-up amounts approved by the Commission. The revised interest on normative working capital borrowing for the FY 2015-16 is as per the details provided in the table 3.11.

Table 3.11 Interest on Working Capital	
Particulars	True-up 2015-16
O&M Expenses for a month	409.37
Spares (15% of annual O&M Expenses)	736.86
Receivables - 1 Months	919.32
Total working Capital (1+2+3)	2065.55
Working Capital Loan	2065.55
Normative Interest Rate (%)	10.85%
Normative Interest on Working Capital	224.11

3.3.9 OTHER INTEREST COSTS

In addition to the borrowings for Capital expenditure and Working Capital, HVPNL has to bear certain other interest costs i.e. interest on bonds issued to discharge its liabilities towards Pension and Provident Fund of the employees. The Commission has made concerted efforts to ensure that these liabilities are discharged at the earliest. The Commission had approved Rs.7.00 million as interest cost on the average balance of pension bonds for the FY 2015-16. Now, that the audited accounts for the FY 2015-16 are available for true up, the outstanding balance of pension fund is also required to be trued- up. The approved interest on pension bonds for the FY 2015-16 is given below:-

Interest on pension bonds Rs. million

Balance as on 31.3.2015 as per true-up order for FY 2014-15	284.37
Adjustment of 25% revenue from Short term open access customers	207.95
Closing balance as on 31.3.2016	76.42
Interest @10% on average balance for the year	18.04

The Commission approves interest on pension bonds on true up for the FY 2015-16 as above.

Interest on PF bonds is retained at the same level as approved by the Commission in its order dated 29.05.2014 at Rs.18.40 million in view of the fact that the

redemption of PF bonds is approved in ten equal installments out of the earnings of the licensee.

3.3.10 REACTIVE ENERGY CHARGES

The Commission in its Order dated 18.8.2015, on the issue of reactive energy charges, has ordered as below:-

“.....Hence, HVPNL is directed to pay the said amount i.e. Rs. 44.187 Million to the Discoms out of Rs. 75.4 Million received from PGCIL-NRLDC and the balance is to be kept in the State Reactive Energy Pool Account, to be maintained by the SLDC on behalf of the Haryana Power Utilities. SLDC shall invest any surplus available in the pool account in fixed deposits with any nationalised bank and the same shall be shown under a separate head in its books of accounts. The Commission shall issue separate instructions/ directions for maintenance and use of funds in the pool account shortly after holding consultation with stakeholders”

Further, the Commission in its order dated 31.03.2016 had advised the Licensee that the reactive energy charges are to be met through the State reactive energy Pool account as ordered by the Commission in its earlier order. **HVPNL was further directed to submit the details of the Reactive Energy Pool Account including the amount received by HVPNL from NRLDC within 45 days of the Order. HVPNL was further required to inform the Commission about the details of fixed deposits held by it out of balance funds of the Pool Account. The Commission observes that the directive of the Commission on formation of pool account has neither been complied with by the Licensee nor any reason for non-compliance has been submitted. The Commission has viewed this non-compliance very seriously and as a last opportunity allows one month time to the licensee to report compliance regarding the same.**

3.3.11 FOREIGN EXCHANGE RATE VARIATION (FERV)

The Petitioner has proposed recovery of FERV, in line with the Commission's order dated 31.03.2016, Clause 3.4.11, whereby the principle of recovery based on cash loss due to FERV has been considered, as reproduced below:-

“...However, in order to spread the incidence of recovering FERV, the cash payment basis can be adopted for the purpose of regulatory practice. Under this methodology, the Licensee will claim the FERV as and when the repayment of loan is made. However, care should be taken that the FERV which has been capitalized should not be recovered again while making payment of the loan. Accordingly, the capitalized value of FERV will be divided into 50 instalments (based on the number of instalments of loan repayment) and while calculating the FERV on the each repayment instalment, the additional FERV will be reduced by 1/50th of the FERV already capitalized.”

The Petitioner has submitted that in order to estimate the incidence of FERV to be capitalized, the petitioner has considered recovery of Rs.3.6 Cr up to the previous year. While for the FERV, capitalized during FY 2015-16, the said amount is Rs. 17.68 Cr; the amount has been spread over the 47 instalments are yet to be paid. The details are provided below:-

Year	FERV Capitalized (in Rs . Cr.)	FERV Charged to P&L (in Rs Cr.)	Total FERV
2011-12	42.42	15.9	58.32
2012-13	27.77	6.6	34.37
2013-14	79.16	15.8	94.96
2014-15	30.72	13.43	44.15
Total	180.07	51.73	231.8
Capitalization recovery for 50 Instalments (for amount till FY 14-15)	3.60		
2015-16	17.38	43.77	61.16
Capitalization recovery (for 47 instalments)	0.37		
Total FERV Capitalization to recovered in current year	3.97		

The details of calculation of FERV, considered to form part of true up is provided in the table below:-

Calculation of FERV on 1st instalment Paid in 2015-16 in February 2016		Figure (in Crore)
Amount received (1 st Instalment of loan drawl)	USD	2.76
Repayment - 1 st instalment for FY 2015-16	USD	0.34
Amount Paid - 2 nd instalment for FY 2015-16	USD	0.37
Exchange Rate at the time of receipt of instalment	INR	45.82
Exchange Rate at the time of Payment of 1 st instalment - in FY 2015-16	INR	63.87
Exchange Rate at the time of Payment of 2 nd instalment - in FY 2015-16	INR	68.19
FERV on 1 st instalment	INR	6.15
FERV on 2 nd instalment	INR	8.32
Less: Recovery of capitalized FERV	INR	3.97
Net FERV on 1 st and 2 nd Instalment of loan	INR	10.50

The Petitioner has prayed that the Commission may allow the recovery of FERV as per above table.

The Commission has examined the calculation of FERV submitted by the petitioner and observes that there are certain calculations errors e.g. the exchange rate as on date of receipt of first instalment as per calculation submitted are different when compared with the rate submitted during the previous year. The recovery of capitalized amount is to be made in number of balance instalment out of which 2 instalments have been paid in the FY 2015-16. Therefore, amount equal to two instalments is to be recovered from the FERV of the current year.

Statement of Foreign exchange rate variation during FY 2015-16

Year	FERV Capitalized	FERV Charged to P&L (Rs. Crores)	Total FERV
2011-12	42.42	15.9	58.32
2012-13	27.77	6.6	34.37
2013-14	79.16	15.8	94.96
2014-15	30.72	13.43	44.15
Total	180.07	51.73	231.8
Capitalisation of recovery for 50 installments for amount till FY 14-15	3.60		
2015-16	17.38	45.86	63.24
Capitalisation recovery (for 49 installments)	0.35		
Total FERV capitalisation to be recovered in current year	7.91		

Calculation of FERV on installments Paid in 2015-16

	Figure in Crore	
Amount received (1st Installment of loan drawal)	USD	2.76
Repayment – 1 st installment in FY 15-16	USD	0.34
Repayment – 2 nd installment in FY 15-16	USD	0.37
Exchange Rate at the time of receipt of installment	INR	45.82
Exchange Rate at the time of Repayment of 1 st installment	INR	63.87
Exchange Rate at the time of Repayment of 2 nd installment	INR	68.19
FERV on 1 st installment = (63.87 – 45.82) * 0.34 =		6.14
FERV on 2 nd installment = (68.19 – 45.82) * 0.37 =		8.28
Less recovery of capitalized FERV		7.91
Net FERV on 1st & 2nd installment of repayment of loan		6.50
Total FERV capitalized as on 31.03.2016	Rs. Crore	197.45
Less: Recovered	Rs. Crore	
2014-15	Rs. Crore	3.60
2015-16	Rs. Crore	7.91
Unrecovered balance of capitalized FERV as on 31.03.2016	Rs. Crore	185.94
Total FERV charged to Revenue upto 31.03.2016	Rs. Crore	97.59
Less: Recovered from ARR		

FY 2013-14	Rs. Crore	15.83
FY 2014-15	Rs. Crore	1.99
FY 2015-16	Rs. Crore	6.50
Unrecovered FERV charged to Revenue as on 31.03.2016	Rs. Crore	73.27

The Commission observes that the risk arises due to the fact that the revenue generated in the present case is in INR while financing of forex loan is in USD. Thus INR depreciation vis-à-vis USD, in the present case, would therefore result in revenue that is insufficient to cover the cost of funding. Further, given the country credit rating it is unlikely that forward foreign exchange transactions could be arranged at an affordable cost. Hence, till such times the credit rating of India reaches 'investment grade' on a sustained basis, **HVPNL may keep such transactions indexed with the foreign exchange rate and at the same time keep exploring the possibilities of strategic hedging / passive hedging.** Thus, in line with the previous Order of the Commission on FERV the licensee is allowed to recoup losses on account of FERV through ARR/Tariff.

3.4 NON TARIFF INCOME

The Commission had considered non-tariff income of Rs. 241.87 million for the FY 2015-16 while determining the ARR for the FY 2015-16. As against this, the Licensee has proposed a true-up of Rs. 232.07 million as non tariff income for the FY 2015-16. The Commission has examined the audited accounts of the licensee and observes that certain non tariff incomes, though arising out of the transmission business, have not been considered by the licensee. Non tariff income, in accordance with Regulation 46 of the MYT Regulations is as follows:-

NON-TARIFF INCOME

- (a) All incomes being incidental to electricity business and derived by the licensee from sources, including but not limited to profit derived from disposal of assets, rents, miscellaneous receipts from the beneficiaries, etc. shall constitute non-tariff Income of the licensee;*
- (b) The amount received by the licensee on account of non-tariff income shall be deducted from the aggregate revenue requirement for calculating the net revenue requirement of such licensee:*

The Commission observes that income from SLDC & STS charges for open access (Rs. 623.84 Million) and fee for grant of connectivity (Rs. 4.70 million) are, therefore to be included in the non tariff income and used for reducing the Transmission charges. Also, the prior period income are on account of provisions and expenses already borne by the beneficiaries in the prior years and thus the write back is also to be for their benefits only. The Commission therefore approves the non- tariff Income for the FY 2015-16 on true up as given below. **HVPNL shall give the benefit of 75% of the income from SLDC & STOA charges amounting to Rs.623.84 million directly to the Discoms and other long term beneficiaries of the transmission system.**

Table 3.12 Non-Tariff Income

Non Tariff Income for FY 2015-16	Rs. Millions
Non tariff income as per audited accounts	232.06
Add: Fee for grant of connectivity	4.70
Add: Net Prior Period Income	37.23
Total approved Non Tariff Income	273.99
Less: allowed as per ARR order	241.87
Non Tariff Income to be trued up for FY 2015-16	32.12

3.5 APPROVED AND PROPOSED ARR FOR TRUE-UP OF FY 2015-16

Based on the above analysis of various components of the of the ARR, the true-up proposed by the Licensee and revised calculations based on the MYT Regulations and previous Orders of the Commission, the true-up amount is presented below:-

Table 3.13 HERC Approved True-up for the FY 2015-16 (Rs. Millions)

CALCULATION OF TRUE UP FOR HVPNL FOR FY 2015-16				Rs. millions
Description	HVPNL Proposal	HERC Approval	True up Proposed by HVPNL	HERC Revised ARR after True up
Employees' cost	2387.47	2060.81	2600.59	2,600.59
Terminal benefits	1189.04	1189.04	1976.39	1,976.76
R&M expenses	444.89	366.45	181.21	181.21
A & G Expenses	216.78	161.12	153.85	153.85
Interest on Capital Expenditure Borrowings	3358.51	1706.37	2376.74	2167.54
Debenture Interest (PF Bonds)	152.30	18.40	162.17	18.40
Debenture Interest (Pension Bonds)	639.35	7.00	673.00	18.04
Interest on bonds – Others	983.00	0.00	0.00	0.00
Interest on Working Capital/Bank Loans	260.64	206.73	398.07	231.41
Depreciation	3176.53	3147.64	3039.15	3,039.90
Return On Equity	2065.66	1832.23	1726.35	1725.72
Non-Tariff Income	-241.81	-241.87	-232.07	-273.99
Share of SLDC Charges	16.88	0.00	0.00	0.00

Total	14649.24	10453.92	13055.45	11839.43
Add: True up for FY13-14		1577.25	1577.25	1577.25
Add: Holding cost for true up for the FY 2013-14		256.70	256.70	256.70
Add: Loss Due to Foreign Exchange -			105.00	65.02
Total ARR		12287.87	14994.41	13738.40
less: penalty based on Transmission Availability passed on to beneficiary			-53.01	-86.11
Total ARR - Including incentive		12287.87	14941.40	13652.29
Add: Unitary Charges		570.00		509.12
Total ARR (To be billed)				14161.41
Transmission Charges Billed during FY 2015-16				13321.50
True up for FY 2015-16				839.91

The true-up amount as approved by the Commission for the FY 2015-16 shall be added to the ARR/Tariff in the FY 2017-18 along with holding cost.

3.6 REVISED ARR FOR THE FY 2017-18 BASED ON MIDTERM PERFORMANCE REVIEW FOR THE FY 2016-17

The ARR for the FY 2017-18 is required to be determined within the MYT framework, 2012, in view of the fact that the first control period has been extended by the Commission vide order dated 07.09.2016 to include FY 2017-18. The determination of ARR for the FY 2017-18 shall be in accordance with the MYT Regulations, 2012 and shall only be an extension of the methodology used for determining the ARR for FY 2016-17. However, the base year considered for determining the ARR shall be the audited accounts for the FY 2015-16; being the latest year for which the audited accounts are available. The Commission is not revising the ARR for the FY 2016-17 in view of the fact that the year is now over.

The Commission's analysis of the proposed ARR for the FY 2017-18 filed by the petitioner and Order on each of the items of expenditure is as under:-

3.6.1 O & M EXPENSES

The O&M expenses proposed by HVPNL for the FY 2017-18 at Rs. 9248.53 million is substantially higher (79%) than Rs. 5165.85 million approved by the Commission for the FY 2016-17 as per the Order dated 31.03.2016. A major part of this increase is on account of increase in employee expenses and terminal benefits. The Commission, after taking into account the audited employees' cost for the FY 2015-16 approved by the Commission for true-up and the inflation factor of 3.97% for the FY

2016-17 and FY 2017-18, has further enhanced the estimated employee cost by 15% in order to account for the impact of 7th pay Commission, to arrive at approved employee cost of Rs.3232.85 million. The Commission, in its analysis of terminal benefits for the FY 2015-16 has pointed out certain anomalies in the actuarial valuation report. **The Licensee is directed to examine its projections of terminal benefits for the FY 2016-17 and FY 2017-18 in light of these observations.** Meanwhile, Commission observes that the terminal benefits for the FY 2017-18 have been projected by HVPNL based on actuaries report amounting to Rs. 556.12 Crore considering a discounting factor of 7%. Since the said amount is highly sensitive to the rate of discounting considered, which as of now is indeterminate. Resultantly, the Commission, for the purpose of present ARR has considered Rs. 3531.1126 Millions as worked out by the Actuary and allowed an escalation of 15% to the same to account for the cascading effect of the pay revision on pensioners etc.

Resultantly, the terminal benefit for the FY 2017-18 has been considered at Rs. 4060.80 millions subject to being trued – up based on the audited accounts for the FY 2017-18.

Table No. 3.14 Employee Cost for the FY 2017-18

	Rs. millions
Approved employee cost for FY 2015-16	2600.59
Inflation factor for FY 2016-17 and FY 2017-18	3.97%
Effect of 7th pay Commission	15%
Revised Employee cost for FY 2017-18	3232.85
Terminal Benefits	4060.80

Repair and maintenance expenses are calculated @ 0.5% of the average GFA for the FY 2017-18 and escalated by the inflation factor. The resultant figure is as under:-

Table No. 3.15: R & M expenses for the FY 2017-18	
	Rs. millions
Opening Balance of gross fixed assets	81,322.49
Add: Additions to GFA	5,841.08
less: Retirement	0
Closing balance	87,163.57
Average GFA	84,243.03
Less: GFA of SLDC assets	426.54
Net average GFA for R & M	83,816.49
R&M 0.5% of Average GFA of Rs.83,816.49 million)	419.08

Escalation (Inflation factor)	3.97%
R & M Cost (419.08*1.0397)	435.72

A & G expenses have been calculated simply by applying the escalation factor on the approved A & G expense for the FY 2015-16 as part of true-up.

Table No.3.16 A & G expenses for the FY 2017-18

	Rs. millions
A&G cost for FY 2015-16	153.85
Escalation (Inflation factor for FY 2016-17 and FY 2017-18)	3.97%
Revised A&G cost for FY 2017-18	166.31

Summing up, the O&M expenses as proposed by HVPNL and that approved by the Commission is given in table 3.14.

**Table 3.14 Commission Approved O&M expenses for FY 2017-18
(Rs. Millions)**

	HVPNL Proposed	HERC Approved
R&M Expenses	476.04	435.72
Employee Expenses	3031.84	3232.85
Terminal Benefits	5561.29	4060.80
A&G Expenses	179.36	166.31
Total O&M Expenses	9248.53	7895.68

3.6.2 DEPRECIATION

The average rate of depreciation considered by the Licensee is 5.24% for the FY 2017-18 on the additions to GFA and 4.61% on balance as on 01.04.2015. The Commission, in accordance with the methodology adopted in the earlier three years of the control period approves depreciation for the FY 2017-18 @ 4.61% being the average rate of depreciation as per the audited accounts for the FY 2015-16.

Though, the opening balance of GFA as on 1.4.2016 considered by the Commission is the same as taken by the Licensee for its calculations, the additions during the FY 2016-17 and FY 2017-18 are as approved by the Commission. The depreciation rate used by the licensee for calculating depreciation on additions during the FY 2017-18 is 5.24% claiming to be the weighted average rate of depreciation derived based on proportion of different category of assets being added. However, no such calculations have been provided. Even otherwise, the Commission observes that average rate of depreciation as per audited accounts would also take into account any effect of depreciation on assets capitalized / added during the year and accordingly, using the average rate of depreciation as per the audited accounts for the FY 2015-16,

the depreciation for the FY 2017-18 is approved as under:-

Table 3.15 Commission approved calculation of CWIP and its Funding
(Rs. Million)

	FY 2015-16	FY 2016-17	FY 2017-18
	Audited	Estimated	estimated
Opening CWIP excluding Generation Proj.	7473.53	5891.00	6257.14
Additions during the year / interest	4566.85	5308.00	7332.00
Total	12040.38	11199.00	13589.14
Transfer to GFA	6149.38	4941.86	5841.08
Closing Balance excluding generation works	5891.00	6257.14	7748.05
Funding of CAPEX:			
Equity	1055.68	1322.03	1929.23
Excess equity deemed to be loans	905.88		
consumer contribution	478.45	901.23	901.23
Deposit works not yet commissioned	569.45		
Loan Funds (balancing figure)	1557.38	3084.74	4501.54
Total funds	4566.85	5308.00	7332.00

Table 3.16 Commission approved calculation of GFA and depreciation
(Rs. Million)

	HVPNL	HERC	HERC
Transmission and SLDC GFA	Audited	Estimated	Estimated
	2015-16	2016-17	2017-18
Opening Balance of gross fixed assets	70353.037	76380.63	81322.49
Add: Additions to GFA	6149.38	4941.86	5841.08
less: Retirement	121.79	0	0
Closing balance	76380.63	81322.49	87163.57
Consumer Contribution	3556.24	4034.69	4935.92
SLDC	426.54	426.54	426.54
Depreciation			
Gross Fixed Assets at the beginning of the year	70353.04	76380.63	81322.49
Depreciation rate	4.61%	4.61%	4.61%
Total Depreciation Expense Rs. Million	3239.84	3517.42	3745.00
Less Depreciation against Capital reserve	178.09	202.05	247.18
Less Depreciation against SLDC	21.84	21.84	21.84
Net Depreciation for the year	3039.91	3293.53	3475.97

3.6.3 INTEREST ON TERM LOAN FOR CAPITAL EXPENDITURE

Interest on term loan for capital expenditure is derived from the approved funding for capital expenditure for the previous years. Additionally, any difference in the closing balance of term loans as approved by the Commission for the FY 2015-16 and that as per audited accounts will also reflect in the interest cost to be allowed for the FY 2017-18. The Commission, in its order dated 18.08.2015, had examined the allocation of borrowings amongst various businesses of the licensee and had approved loan balances as on 31.03.2014 based on the information provided by the licensee. In

addition, the Commission had also decided that the additional long term loan shall be the balancing figure for financing capital expenditure after accounting for equity and consumer contribution. Accordingly, the balance as on 31.03.2015 was arrived at as part of true up for the FY 2014-15 vide order dated 31.03.2016. Going forward, the balance as on 31.03.2015 is adjusted for approved additions for long term borrowings based on approved funding of capital expenditure for the FY 2015-16 and FY 2016-17 to arrive at the opening balance as on 01.04.2017.

The approved capital expenditure of Rs.7332 million during the FY 2017-18 is proposed to be met by equity (Rs.1929.23 million), consumer contribution (Rs.901.23 million) and balance as loan (Rs.4501.54 million). Repayment is assumed to be equal to depreciation and interest on loan is provided at the average balance for the FY 2017-18 at average rate of interest on long term loans for the FY 2015-16 (7.12%). Interest is capitalized in the same ratio as proposed by the licensee to arrive at the IDC of Rs.187.64 million.

Interest on Capex loan (Rs. Millions)					
	Balance at the beginning of the year	Receipt during the year	Repayment during the year	Closing Balance	Interest cost
FY 2015-16					
Capex loan	31289.53	3926.60	3026.11	32190.01	2259.78
Less SLDC					92.24
Net interest expensed					2167.54
Actual (only transmission)					2284.50
Interest disallowed					116.96
FY 2016-17	32190.01	3084.74	3,292.77	31981.98	-
FY 2017-18	31981.98	4501.54	3475.97	33007.55	2313.63
IDC					202.40
Net interest expensed					2111.23

3.6.4 INTEREST ON UDAY BONDS

The Licensee, in its petition, has submitted that the PF and Pension bonds have been redeemed and swapped with the UDAY bonds on 15.06.2016, and has proposed to recover interest on UDAY Bonds for 9.5 months of the FY 2016-17 i.e. from 15.06.2016 to 31.03.2017 and for entire period of the FY 2017-18. The Commission observes that interest on PF and Pension bonds along with repayment is being allowed to the Discoms in compliance of the orders of the Hon'ble Appellate Tribunal for

Electricity. Accordingly, the PF and Pension bonds are deemed to have been fully redeemed in the FY 2015-16 and the FY 2016-17 respectively and therefore, no interest is to be provided during the FY 2017-18 even on UDAY bonds which are to replace the already redeemed PF and Pension Bonds.

3.6.5 INTEREST ON WORKING CAPITAL

The licensee's proposal of interest on working capital amounting to Rs. 389.13 million has been considered. The interest on working capital has been calculated by the Commission as per the MYT Regulations, 2012 at the rate of interest proposed by the licensee during the hearing held on 15.03.2017 i.e. @9.80% per annum. The working capital borrowings, based on the approved ARR for the FY 2017-18, interest cost thereto are as per the table 3.18.

Table 3.18 Interest on Working Capital 2017-18

S. No.	Interest on working capital	Rs. millions
1	O&M Expenses for a month	657.97
2	Spares (15% of annual O&M Expenses)	1184.35
3	Receivables - 1 Months	1303.74
4	Total working Capital (1+2+3)	3146.06
5	Normative Interest Rate (%)	9.80%
6	Normative Interest on Working Capital	308.31

3.6.6 TRUE-UP OF THE FY 2015-16

Based on the audited accounts of HVPNL for the FY 2015-16, the true-up amount has, as discussed earlier, has been estimated at Rs. 839.90 million, holding cost@ 9.80% p.a. for one and half years has also been considered. The true-up amount approved by the Commission is as under:-

CALCULATION OF TRUE UP FOR HVPNL FOR FY 2015-16			Rs. millions
Description	HERC Approval	True up Proposed by HVPNL	HERC Revised ARR after True up
Total ARR - Including incentive	12287.87	14941.40	13652.29
Add: Unitary Charges	570.00		509.12
Total Recovery through tariff	12857.87		14161.41
Billed during FY 2015-16			13321.50
True up for FY 2015-16			839.90
Holding Cost @ 9.80% pa			123.46
Total True up for FY 2015-16 including holding cost			963.37

3.6.7 RETURN ON EQUITY (RoE)

The Licensee has proposed RoE of Rs.2042.78 million @ 10% on equity of Rs.20427.82 million. The Commission, in its calculation, has considered the share capital at the beginning of the year as proposed by the licensee. Further, Rs.38.43 million has been assumed to be the increase in share of equity of generation business as already explained. The balance equity is then adjusted for equity locked in CWIP at the beginning and at the end of the year to arrive at the equity eligible for return @ 10%. Additionally, as part of true up for the FY 2015-16 as approved by the Commission at para 3.3.6, additional equity amounting to Rs. 905.88 million is to be treated as deemed loan. Based on the assumed capitalization ratio of 30:60:10, 90% of equity, deemed to be loan for the FY 2015-16, is also eligible for return at the average rate of borrowings for long term loan (7.12% p.a) assuming that 90% of capital works funded by such deemed loan have been capitalized up to the end of FY 2016-17. Accordingly, the Commission approves RoE as per table 3.19.

Table 3.19 Computation of Return on Equity for FY 2017-18 (Rs. Millions)

	HVPNL Proposal 2017-18	HVPNL audited 2015-16	HERC approval 2017-18
	Rs Millions	Rs Millions	Rs Millions
Paid up Equity Share Capital at the beginning of the year	21,487.75	19,367.00	21,487.75
Share application money pending allotment	2,000.00	2,120.60	1,055.68
Less			
Equity Capital for SLDC	56.00	56.00	56.00
Equity Capital for Generation	1,595.40	1,595.40	1,595.40
Additional equity used for Generation CWIP during FY 2015-16			38.43
Equity capital for investment in distribution companies	1,259.33	1,259.33	1,259.33
Balance Equity for Transmission	20,577.02	18,576.87	19,594.27
Add 50% of equity portion of GFA added during FY 2017-18	1,925.80		876.16
Less equity related to transmission works not yet commissioned	2,075.00		1,877.14
Equity for Transmission Business (A)			18,593.29
Return on Equity for Transmission Business (A) @ 10%	2,042.78		1,859.33

3.6.8 NON-TARIFF INCOME

The Commission approves non-tariff income as proposed by the Licensee i.e. Rs. 232 million.

3.6.9 SHARE OF SLDC CHARGES

The Licensee has proposed Rs.14.50 million as share of SLDC charges to be borne by the transmission business for the FY 2017-18. The Commission has approved

Rs. 107.28 as the ARR for the SLDC business for the FY 2017-18. Accordingly, the share of SLDC charges to be borne by the Transmission Licensee is estimated to be Rs. 8.58 million. However, the SLDC charges have been taken out of calculation of the ARR of the transmission Licensee in order to avoid double counting of the working capital borrowings and interest thereto. The calculation of individual components of SLDC ARR is based on the same assumptions as have been used for calculation of transmission ARR for the FY 2017-18.

Table 3.20 HERC Approved SLDC Charges for FY 2017-18 (Rs. Millions)

SLDC ARR (Rs. Millions)	FY 17-18 proposed	FY 17-18 approved
O&M Cost	76	56.04
Interest on Loan	62	24.73
Depreciation	35	43.48
Interest on Working Capital	3	3
Non-Tariff Income	-1	-1
Annual Revenue Requirement	175	126.26
Less: Interest cost of true up for FY 2015-16		-18.98
Total ARR for FY 2017-18		107.28

3.7 ARR FOR TRANSMISSION BUSINESS FOR FY 2017-18

Based on the above calculations, the ARR for the transmission business for the FY 2017-18 is as per the table 3.21.

Table 3.21 ARR for Transmission business for FY 2017-18 (Rs. millions)

S.NO.	Particulars	FY 2017-18	
		2017-18	2017-18
		HVPNL estimate	HERC Approval
	Expenditure		
1	O&M expenses	9248.53	7895.68
a	R&M Expenses	476.04	435.72
b	Employee Expenses	3031.84	3232.85
c	Terminal Benefits	5561.29	4060.80
d	A&G Expenses	179.36	166.31
2	Depreciation	3647.00	3475.97
5	Interest on term Loans	3200.40	2111.23
6	Interest on UDAY Bonds	280.00	0.00
	Interest on Pension bonds		0.00
7	Interest on PF Bonds	0.00	0.00
8	Interest on working Capital	389.00	308.31
9	Share of SLDC Charges	14.50	
A	Total Expenditure	16779.43	13791.19
B	Return on Equity	2042.79	1859.33
C	Less Non Tariff Income	(232.00)	(232.00)
F	Aggregate Revenue Requirement	18590.22	15418.52

3.8 TRANSMISSION TARIFF FOR THE FY 2017-18

Unitary charges of M/s KT Transco and share of SLDC charges borne by the Transmission Licensee are to be added to the transmission ARR approved by the Commission to arrive at the total transmission charges to be recovered from long term beneficiaries of Intra-State Transmission system, in accordance with Regulation 50 of MYT Regulations, 2012. However, the transmission charges to be recovered from both long term beneficiaries and Short Term Open Access Consumers requires certain other adjustments.

The MYT regulations 51.1.2 provide for the methodology of recovery of transmission charges as under:-

“The Total Transmission Cost (TTC) as determined by the Commission as per regulation 51.1.1 above, shall be shared by all long-term and medium-term open access consumers on monthly basis (including existing Distribution Licensees) in the same manner as provided for in regulation 50 for sharing of annual transmission charges.”

3.9 YEARLY TRANSMISSION CHARGES FOR LINES OPERATING AS ISTS LINES

The Licensee has proposed to reduce the yearly transmission charges (YTS) for transmission lines designated as inter-state transmission lines from the charges to be paid by long term beneficiaries which is in accordance with the methodology approved by the Commission. Consequently, the transmission charges to be recovered from long term beneficiaries shall be reduced by Rs. 108.01 million as proposed by the licensee.

3.10 DETERMINATION OF TRANSMISSION TARIFF

In accordance with the ARR determined by the Commission for the FY 2017-18 and the above mentioned adjustments, the Transmission Tariff for the FY 2017-18 shall be as per the details provided in the table that follows and shall be shared by the long term beneficiaries of the intra-state transmission system based on their respective estimated transformation capacity.

Table 3.22 Transmission Tariff for the FY 2017-18 (Rs. Millions)

Particulars	HVPNL Proposal	HERC Approval
	Amount (Rs. Millions)	Amount (Rs. Millions)
Aggregate Revenue Requirement for FY 2017-18	18,591.00	15418.52
Gap on account of True-up for FY 2015-16	2,654.00	839.90
Gap on account of Review of FY 2016-17	2,799.00	0.00
Carrying Cost on Gap for FY 2015-16 & FY 2016-17	689.00	123.46
Share of SLDC Charges		8.58
Adjusted ARR	24,732.00	16390.46
Unitary Charges for JKTPL	534.00	516.0
Less YTC for Lines Operating As ISTS Lines FY 17-18	108.07	108.01
Total Transmission Charges	25,158.00	16798.45
Monthly Transmission Tariff	2,096.53	1399.87
Ratio Of Average Transformation Capacity		
UHBVNL	45.66%	45.66%
DHBVNL	53.67%	53.666%
TPTCL	0.64%	0.64%
NTPC Ltd	0.03%	0.03%
CRPCPL	0.004%	0.004%
Monthly Transmission Tariff - UHBVN (based on ratio of Transmission capacity)	957.1955	639.18
Monthly Transmission Tariff - DHBVN (based on ratio of Transmission capacity)	1,125.23	751.25
Monthly Transmission Tariff - TPTCL (based on ratio of Transmission capacity)	13.4779	8.96
Monthly Transmission Tariff - NTPC (based on ratio of Transmission capacity)	0.5434	0.42
Monthly Transmission Tariff - CRPCPL (based on ratio of Transmission capacity)	0.0804	0.06

3.11 TRANSMISSION CHARGES FOR SHORT TERM OPEN ACCESS CONSUMERS

HVPNL has sought revision of Short Term Open Access (STOA) charges for the FY 2017-18 on account of determination of ARR for the FY 2017-18 as below:-

Table 3.23 Transmission charges proposed to be recovered from STOA Consumers

Particulars	FY 2017-18
Transmission Cost for FY 2017-18(Rs. Millions)	18591
Unitary Charges for JKTPL (Rs. Millions)	534
Total volume of energy sales by the distribution Licensee(s) during the previous year (MU) 2016-17 (based on the submissions made by UHBVNL and DHBVNL in their APR petition for FY 2015-16)	35713
Proposed Transmission Charge (Rs./kWh) from STOA Consumer	0.536

The Commission, based on the approved ARR for FY 2017-18 for the transmission business, determines the transmission charges to be paid by short term open access consumers based on the methodology approved by the Commission vide its order dated 31.03.2016 based on the energy drawn through the transmission system for the FY 2015-16. Accordingly, the transmission cost for the calculation of short term open access charges is under:-

Table 3.24 Transmission Cost for Short Term Open Access consumers for FY 2017-18 (Rs. Millions)

Transmission Charges from STOA consumers		(in Millions)
	HVPNL Proposal	HERC Approval
Aggregate Revenue Requirement for FY 2017-18 including FY 2015-16 true-up	18591	16273.87
Transmission Share of SLDC charges (8% of 107.28 million)		8.58
Unitary Charges for JKTP	534	516.0
Total Transmission Charges	19125	16798.45
Transmission Tariff for short term open access customers based on energy drawn by the Discoms in the FY 2015-16 of 46591 MUs (Rs / kWh)	0.536	0.36

CHAPTER 4

ANALYSIS OF THE PETITION AND COMMISSION'S ORDER ON SLDC CHARGES

4.1 TRUE-UP OF ARR OF SLDC BUSINESS FOR THE FY 2015-16

The Petitioner has submitted that the true-up for SLDC business may be considered by the Commission as per details provided by them. The details of the ARR approved for SLDC business by the Commission in its Tariff Order for the FY 2015-16, the actual expenditure incurred as per the audited accounts is provided in the table that follows.

The Commission has examined the petition for true-up of the SLDC expenses and approves the same as proposed by HVPNL. Accordingly (Rs. 126.23) million is approved for true-up of the SLDC expenses for the FY 2015-16 as under:-

SLDC ARR FOR THE FY 2015-16

SLDC ARR (Rs. Millions)	FY 15-16 approved	FY 15-16 proposed	FY 15-16 as per audited accounts	Surplus / (Deficit)
O&M Cost	53.22	49.40	48.30	4.92
Employee Cost			32.92	
R & M expenses			5.45	
A & G expenses			9.93	
Interest on Loan	85.66	5.87	3.41	82.25
Depreciation	69.73	22.6	21.84	47.89
Interest on Working Capital	3.17	2.46	2.46	0.71
Non-Tariff Income	-0.76	-0.76	-1.20	0.44
True up for FY 2013-14	-2.87	-2.87	-2.87	0.00
Annual Revenue Requirement	208.15	76.70	71.94	136.21
Recovered through billing as per audited accounts			206.99	
Less: SLDC market operation charges not to be recovered from CRCPCL			5.95	
True up for FY 2015-16			129.10	

The Commission observes that the actual expenses are less than 50% of the approved expenses for the FY 2015-16 and it shall not be possible to adjust the surplus amount of Rs.129.10 million from the ARR of the FY 2017-18. **The Commission, therefore, orders that the surplus amount shall be returned back to the long term beneficiaries of SLDC in the same ratio as billed during the FY 2015-16. The holding cost on account of this surplus shall be adjusted in the ARR for the FY**

2017-18. The licensee is directed to report compliance within one month of the Order.

4.2 SLDC ARR FOR THE FY 2017-18

The Petitioner has proposed to revise the capital expenditure envisaged for SLDC for the FY 2016-17 and has sought approval of additional expenditure for FY 2017-18 as below:-

Year	FY 2016-17 (Revised)	FY 2017-18 (Proposed)
Expenses (in Rs. Millions)	370	44

Based on the revised capital expenditure plan and actual expenses for the FY 2015-16 the revised ARR for the SLDC for the FY 2016-17 and FY 2017-18 has been estimated by HVPNL as under:-

Particulars (Rs. Millions)	FY 16-17 (Proposed)	FY 17-18 (Proposed)
O&M cost	69	76
Interest on Loan	47	62
Depreciation	50	35
Interest on Working Capital	3	3
Non-tariff Income	-1	-1
Annual Revenue Requirement	167	175

The Petitioner has prayed that the Commission may approve the same for the remaining years of the MYT Control Period.

At this stage, the Commission has not considered revision of the ARR for FY 2016-17 and the same shall be taken-up in the FY 2017-18 in line with the MYT Regulations, 2012. The Commission approves ARR of the SLDC for the FY 2017-18 as under:-

O & M Expenses: The Licensee has proposed O & M expense of Rs. 76 million for the FY 2017-18. The Commission considers it appropriate to re determine the individual components of O & M expenses namely Employee Cost, R & M expenses and A & G expenses for the FY 2017-18 based on the same methodology as adopted by the Commission for determination of similar cost for the transmission business.

The individual components are discussed as below:

Employee Cost: The employee cost as per audited accounts for the FY 2015-16 is Rs.32.92 million. The same has been enhanced by 15% to account for 7th Pay

Commission report and also by the inflationary factor for the FY 2016-17 and FY 2017-18. Accordingly, the Commission approves employees cost of Rs.40.92 million (Rs. $32.92 * 1.15 * 1.0397 * 1.0397$).

R & M Expenses: These expenses have been estimated at 0.5% of the average GFA for the SLDC business taking into account the projected additions during the FY 2016-17 and FY 2017-18. After accounting for inflation factor of 3.97% p.a. the Commission approves Rs.4.38 millions towards R&M expenses.

A & G Expenses: These expenses have been estimated at Rs. 10.73 by applying the inflation factor of 3.97% p.a. on the audited cost of SLDC business for the FY 2015-16

Summing up, the Commission approves Rs.56.04 million towards O & M expense for the FY 2017-18.

Interest on term loan: The Licensee had proposed interest on term loan as Rs. 62 million for the FY 2017-18. The Commission has determined the interest cost based on the closing balance of long term borrowing as on 31.03.2016. Going forward, the additions to the long term borrowings are same as additions to capital expenditure proposed by the licensee. Repayment is assumed to be equal to depreciation and interest on loan is provided at the average balance for the FY 2017-18 at average rate of interest on long term loans for the transmission business. Accordingly, the Commission approves Rs.24.73 million as interest on long term loans for the FY 2017-18.

Depreciation: Opening GFA for the purpose of calculating depreciation on SLDC assets is derived from the closing balance of GFA as on 31.03.2016 by adding the proposed capital works for the FY 2015-16 and FY 2016-17. The rate of depreciation used is the average rate of depreciation as per the audited accounts for the FY 2015-16 for the SLDC business.

All other expenses and non tariff income are approved as proposed by the Licensee.

In view of the above, the Commission approves the ARR for the FY 2017-18 as per the details provided in the table that follows;-

Table 4.1 ARR for SLDC Business for FY 2017-18(Rs. Millions)

Particulars (Rs Million)	HVPNL Proposal	HERC Approved
O&M Cost	76	56.04
Employee Cost		40.92
R & M expenses		4.38
A & G expenses		10.73
Interest on Loan	62	24.73
Depreciation	35	43.48
Interest on Working Capital	3	3.00
Non-Tariff Income	-1	-1.00
Annual Revenue Requirement	175	126.26
Less Interest cost on true-up for FY 2015-16		18.98
SLDC charges for FY 2017-18		107.28

4.3 SLDC CHARGES

The Licensee has proposed that in accordance with the amended Regulation 52 of the HERC MYT Regulations 2012. The annual charges of SLDC determined as per regulations 6 and 16, shall be recovered as a single composite charge from the beneficiaries as under:-

<i>Intra – State Transmission Licensee</i>	<i>8% of the Annual SLDC Charges</i>
<i>Generating Stations and Sellers</i>	<i>46% of the Annual SLDC Charges</i>
<i>Distribution Licensees and Buyers</i>	<i>46% of the Annual SLDC Charges</i>

- (i) *The SLDC charges shall be levied by the Transmission licensees / STU, also designated as the SLDC, on the basis of weighted average of the lines (Ckt. km) owned by the Intra State Transmission Licensee(s) as on the last day of the month prior to billing of the month.*

<i>Ckt. km</i>	<i>400 kV</i>	<i>MF 4</i>	<i>product</i>
<i>Ckt. km</i>	<i>220 kV</i>	<i>MF 2.2</i>	<i>product</i>
<i>Ckt. km</i>	<i>132 kV</i>	<i>MF 1.32</i>	<i>product</i>
<i>Ckt. km</i>	<i>66 kV</i>	<i>MF 0.66</i>	<i>product</i>

Total ___XXX___

Therefore, the SLDC charges for transmission Licensee =

8% x (annual SLDC charges X weighted Ckt Km of concerned transmission licensee) / total weighted Ckt. Km of all transmission licensees

- (ii) *The SLDC charges from the generating companies and sellers (which exclude short term open access consumers) shall be collected in proportion to their installed capacity /contracted capacity as on the last day of the month prior to billing of the month.*
- (iii) *The SLDC charges from distribution licensees and buyers (which exclude short term open access consumers) shall be collected in proportion to the sum of their allocated transmission capacity in MVA as on the last day of the month prior to billing of the month.*

The Licensee has further submitted that the Commission in its Order dated 31st March 2016, has sought further deliberation on SLDC Charges for FY 2016-17 worked out by petitioner. In line with the above and HERC MYT Regulation 2012 (1st Amendment), Regulation 2016, petitioner has examined the entire matter of apportionment of SLDC Charges for FY 16-17 and apportioned the SLDC Charges among the different beneficiaries as per the table below:-

Beneficiaries	Installed Capacity / Capacity (in MW)	Amount (in Rs Million)	Total (Rs. Millions) FY 16-17
HVPN @ 8%	-	Amount	9.2816
Generating Companies & Sellers @ 46%		Amount	53.3692
HPGCL	2,782.4	Sub-Amount	32.3814
Faridabad Gas Power Plant	432.0	Sub-Amount	5.0276
Mahatma Gandhi Super Thermal Power Station	1,320.0	Sub-Amount	15.3621
Gemco Biomass	8.0	Sub-Amount	0.0931
Star Wire India Ltd	9.9	Sub-Amount	0.1152
Sri Jyoti	9.5	Sub-Amount	0.1106
Shahbad Co-operative Sugar Mills	24.0	Sub-Amount	0.2793
Distribution Licensees and Buyers @ 46%	Transformation Ratio (in %)	Amount	53.3692
UHBVN	45.65626%	Sub-Amount	24.3664
DHBVN	53.67112%	Sub-Amount	28.6438
TPTCL	0.64287%	Sub-Amount	0.3431
NTPC	0.02592%	Sub-Amount	0.0138
CRPCPL	0.00384%	Sub-Amount	0.0020
Total (HVPN + Gencos + Discoms)			116.02

The Licensee has submitted that the SLDC Charges for FY 2017-18 to be recovered from the beneficiaries will be the summation of the Proposed ARR for FY 17-18 and revenue loss on account of Market Operation charges of Rs. 6.33 Million to CRPCPL, these are to be recovered along with the SLDC Charges of FY 2017-18. The same will be as under:-

Particulars (Rs Million)	FY17-18
Annual Revenue Requirement	175
Recovery of Revenue Loss on Account of SLDC Charges raised to CRPCPL	6.33
Total SLDC Charges to be recovered	181.33

The SLDC Charges apportioned among the different beneficiaries as per the licensee proposal is as per the table below:-

Beneficiaries	Installed Capacity / Capacity (in MW)	Amount (in Rs Million)	Total (Rs. Millions) FY 17-18
HVPN @ 8%	-	Amount	14.5064
Generating Companies & Sellers @ 46%		Amount	83.4118
HPGCL	2,782.4	Sub-Amount	50.6494
Faridabad Gas Power Plant	432.0	Sub-Amount	7.8577
Mahatma Gandhi Super Thermal Power Station	1,320.0	Sub-Amount	24.0097
Gemco Biomass	8.0	Sub-Amount	0.1455
Star Wire India Ltd	9.9	Sub-Amount	0.1801
Sri Jyoti	9.5	Sub-Amount	0.1728
Shahbad Co-operative Sugar Mills	24.0	Sub-Amount	0.4365
Distribution Licensees and Buyers @ 46%	Transformation Ratio (in %)	Amount	83.4118
UHBVN	45.65626%	Sub-Amount	38.0827
DHBVN	53.67112%	Sub-Amount	44.7680
TPTCL	0.64287%	Sub-Amount	0.5362
NTPC	0.02592%	Sub-Amount	0.0216
CRPCPL	0.00384%	Sub-Amount	0.0032
Total (HVPN + Gencos + Discoms)			181.33

The petitioner has prayed that the Commission may approve the apportionment of SLDC Charges for FY 2016-17 and FY 2017-18 among the different beneficiaries as stated above.

The Commission has examined the proposal of the Licensee and observes that the Commission, vide order dated 17.11.2016, has modified the methodology of recovery of SLDC charges and expects that the Licensee has amended its bills for the FY 2016-17 accordingly. **The recovery of SLDC charges from various constituents in the FY 2017-18 shall be as per the 1st Amendment to the HERC MYT Regulations, 2012. The Commission directs the Licensee that in case the allocation factors of generating companies, sellers, distribution licensee and buyers change, the Licensee shall adjust its bills for subsequent months as per the provisions of the MYT Regulations without the need for seeking regulatory approvals.**

4.4 INCENTIVE AND PENALTY (SYSTEM AVAILABILITY) FOR THE FY 2015-16

HVPNL has submitted that the transmission system availability has been calculated circle wise and month wise and then the average has been taken to arrive at the system availability in the FY 2015-16. The month wise availability of each circle is calculated in accordance with the formula prescribed in MYT Regulations, 2012 as

under:-

HVPNL's calculation of Transmission System Availability (FY 2015-16)

S. No	Month	Total of Lines & transformers capacity during month (C*D)	Numerator (H*C*D)	Availability during Month {100-100*(S/R*U)}	Hours in the Month	Denominator (R*U)
P	Q	R	S	T	U	V
1	Apr - 15	103039.7115	1023973.031	98.6198	720	74188592.29
2	May - 15	103368.0217	1408166.271	98.169	744	76905808.17
3	Jun - 15	103462.6312	1410998.265	98.1059	720	74493094.45
4	Jul - 15	103533.3362	1276825.374	98.3424	744	77028802.13
5	Aug - 15	103897.4216	1232090.413	98.4061	744	77299681.66
6	Sep - 15	104930.7963	1524770.356	97.9818	720	75550173.32
7	Oct - 15	105014.1132	1559281.248	98.0043	744	78130500.25
8	Nov - 15	105185.7154	1203783.257	98.4105	720	75733715.08
9	Dec - 15	105051.4913	1385705.891	98.2271	744	78158309.55
10	Jan - 16	106018.4625	1337850.823	98.3039	744	78877736.13
11	Feb - 16	106395.6164	1102735.293	98.5109	696	74051348.99
12	Mar - 16	106233.4719	1178600.526	98.5088	744	79037703.06
	Total		15644780.7449	1179.5903	8784	919455465.1
	Annual TSA for the year 2015-16			98.2985		

Legend

C = length of line in ckt. KM/MVA Rating of T/F

D = No of Sub-conductors per phase /constant factor = 2.5 for T/F

H = Total Outage hours (Planned Outage + Forced Outage)

Annual TSA for the year 2015-16 as per HERC Formula is

=100 – 100*{Total Numerator H*C*D/Total Denominator R*U}

=100 – 100*{15644780.7449/919455465.0795}

=**98.2985**

Particulars	(Rs Million)
Annual Transmission Charges (ATC)	14994.41
Annual Availability Achieved (Actual) (AA)	98.30
Normative Target Availability (TA)	99.00
(AA-TA)/TA	(0.007071)
Incentive (I) (Rs. Million)	(106.02)

Proposed Incentive Sharing	
Licensee	Beneficiary
50%	50%
(53.01)	(53.01)

Accordingly, the Petitioner has admitted that the system availability has been

lower than the normative availability during FY 2015-16, for which the penalty is to be levied. The penalty of Rs. 53.46 million for the FY 2015-16 based upon system availability has been estimated above and the Petitioner proposes to pass on the impact of such penalty levied on the ARR of HVPNL to the consumers by reduction of its ARR. The remaining 50% share of Rs 53.46 million shall be passed on to the beneficiaries. The Commission in its Order dated 29.03.2013 on the ARR / Tariff and charges for the Transmission and SLDC business of HVPNL for the FY 2013-14 had observed that the incentive if any shall be governed by the MYT Regulation, 2012. The relevant regulations are reproduced below:-

12.1 *Various elements of the ARR of the generating company and the Licensee will be subject to incentive and penalty framework as per the terms specified in this regulation. The overall aim is to incentivize better performance and penalize poor performance, with the base level as per the norms / benchmarks specified by the Commission."*

12.2 *"The elements of ARR of generating company and Licensees to which incentive and penalty framework shall apply are as follows:*

(c) Only for Transmission Licensee

(i) Availability- Applicable when actual availability falls below or exceeds the level specified by the Commission. The incentive for actual availability above target availability shall be worked out as per the following formula:

$I = ATC \times (AA - TA) / TA$ Where

I = Incentive

ATC = Annual transmission charges

AA = Annual availability achieved (actual)

TA = Normative target availability.

Note 1: The incentive mechanism for availability shall be applicable only when the transmission Licensee submits detailed computation of the availability figures to the Commission and the Commission approves the same. The detailed computation will include all details of the input data, methods of recording the data (manual or through electronic modes), formula used for computation and all other details required to establish the current level of availability. While reporting the level of availability to the Commission, the transmission Licensee shall enclose a certificate from the SLDC validating the indicated level of availability.

Note 2: For all purposes the 'normative target availability factor' shall be considered for recovery of fixed charges. Any fall in the actual availability from the normative target availability shall result in pro-rata reduction of fixed charges."

As per the norms of operation given in the MYT Regulations, 2012 for Transmission Licensee the normative annual transmission system availability factor is as under:-

Normative Annual Transmission System Availability Factor (NATAF)

MYT Control Period				
Norm	FY 2013-2014 (%)	FY 2014-2015 (%)	FY 2015-2016 (%)	FY 2016-17 (%)
AC System	98.5	98.8	99	99.2

It has been provided that the target system availability shall be subject to incentive and penalty mechanism subject to the conditions specified in Regulation 12 of the MYT Regulations, 2012. The normative target availability for the FY 2015-16 is 99%, thus the incentive / penalty worked out for the FY 2015-16 is as under:-

Transmission System Availability Incentive / Penalty (FY 2015-16)

Particulars	(Rs Million)
Annual Transmission Charges (ATC)	11987.68
Annual Availability Achieved (Actual) (AA)	98.3
Normative Target Availability (TA)	99.00
(AA-TA)/TA	-0.00707
Incentive / Penalty (I) (Rs. millions)	-84.7614

The recovery of incentive and penalty is covered under Regulation 12 of the MYT Regulations which, in case of loss incurred by the transmission licensee, proposes at Regulation 12.5.2 as below:-

“The item wise losses on account of controllable factors in case of a generation company / transmission licensee, unless otherwise specifically provided by the Commission, shall be borne by the generation company / transmission licensee.”

Accordingly, the Commission orders that the transmission licensee shall bear the penalty of Rs.84.76 million on account of lower availability of transmission system and accordingly the ARR of the transmission business including the amount allowed as true-up for the FY 2015-16 has been reduced by the said amount.

CHAPTER 5

GENERAL INSTRUCTIONS/DIRECTIVES

5. COMPLIANCE OF DIRECTIVES

In addition to the directives contained in the preceding chapters , the Commission further directs as under:-

1. In view of continued under achievement in execution of capital works, the licensee is directed to analyze the reasons and submit a report within three month of this order and bring out work wise reasons for such under achievement and delay in execution of capital works in FY 2015-16 and FY 2016-17. The report should highlight the generic short comings in the area of procurement, tendering, ensuring adequate bid participation, quality and timely the completion of the works and action proposed for overcoming the same. Further, the physical and financial progress of the major capital works being executed having estimated cost exceeding Rs. 20 Crores each be also placed on the licensees website for information of the stakeholders and a quarterly report regarding the same be submitted to the Commission.
2. **ABT & Deviation Settlement Mechanism / SAMAST:** The relevant reference to the SAMAST report has been forwarded to HVPNL. HVPNL is directed to examine the same and submit its comments to the Commission within one month including its readiness for implementation of intrastate ABT wherein SLDC has significant role.
3. **MYT Amendment / re-enactment for next control period:** The Commission, vide 1st Amendment to the HERC MYT Regulations, 2012 has extended the first MYT control period to the FY 2017-18. However, a comprehensive review / re-enactment of the said Regulations is to be undertaken. HVPNL is directed to review the existing MYT Regulations and file its comments / suggestions for amending the same in general and with specific reference to the provisions regarding transmission and SLDC business.
4. **Employees Rationalization:** The Commission observes that sub-station automation system has been embarked upon in all the new / upcoming sub-

stations of HVPNL. Resultantly, the manpower required for manning such sub-stations would reduce to a certain extent. Hence, keeping in view modernization and automation, HVPNL is directed to undertake manpower planning & rationalizations to rein in employees cost and submit a report to the Commission within three months.

5. HVPNL is directed to make available information related to any vacant / partly utilized building / premises owned by it to the other power utilities to enable them to utilize the same at mutually agreed terms, if required.
6. Any other issue not specifically dealt with in this order shall be governed by the provisions of the Haryana Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff for Generation, Transmission, Wheeling and Distribution & Retail Supply under Multi Year Tariff Framework) Regulations, 2012 and other relevant Regulations as may be applicable to HVPNL.
7. HVPNL is directed to review all the earlier directions / Orders passed by the Commission and submit a report to the Commission within a month including reasons for non-compliance, if any.

The Licensee shall implement the tariff and charges contained in this Order with effect from 1.04.2017.

This order is signed, dated and issued by the Haryana Electricity Regulatory Commission on 30.05.2017.

Date: 30.05.2017
Place: Panchkula

(Debashish Majumdar)
Member

(M.S. Puri)
Member

(Jagjeet Singh)
Chairman