

BEFORE  
THE  
RAJASTHAN ELECTRICITY REGULATORY COMMISSION,  
JAIPUR

**PETITION**

FOR  
APPROVAL OF

**AGGREGATE REVENUE REQUIREMENT**

AND

**TARIFF PETITION**

FOR

**FY 2016-17 AND FY 2017-18**

(THIRD & FOURTH YEAR OF MYT CONTROL PERIOD FROM  
FY 2014-15 TO FY 2018-19)

Filed By

JAIPUR VIDYUT VITRAN NIGAM LIMITED, JAIPUR  
(A Government of Rajasthan Undertaking)

**JANUARY 2017**

## **ARR FOR FY 2016-17 AND FY 2017-18**

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### **Notes:**

**In this Application:**

**(n-1) Year is defined as Financial Year 2015-16 (referred to as FY 16)**

**(n ) Year is defined as Financial Year 2016-17 (referred to as FY 17)**

**(n+1) Year is defined as Financial Year 2017-18 (referred to as FY 18)**

**All currency figures used in this Application, unless specifically stated otherwise, are in Rs. Cr.**

**All energy unit figures used in this Application, unless specifically stated otherwise, are in Million Units.**

**List of Abbreviations**

Application	The application for approval of ARR for FY 2016-17 & FY 2017-18
Jaipur Discom, JVVNL	Jaipur Vidyut Vitran Nigam Ltd.
ARR	Aggregate Revenue Requirement
MYT	Multi Year Tariff
BST	Bulk Supply Tariff
CC&SL	Cosumers' Contribution for Service Connections and Lines
CPP	Captive Power Producers
DS	Domestic Service
EHT	Extra High Tension
EA 2003	Electricity Act, 2003
FRP	Financial Restructuring Plan
FY	Financial Year
FY 15	Financial Year 2015-2016
FY 16	Financial Year 2016-2017
FY 17	Financial Year 2017-2018
GFA	Gross Fixed Assets
GoI	Government of India
GoR	Government of Rajasthan
GSS	Grid Sub Station
HT	High Tension
kVA	Kilo Volt Ampere
kW	Kilo Watt
kWh	Kilo Watt Hour or Unit
LT	Low Tension
MDI	Maximum Demand Indicator
MIP	Medium Industrial Power
MU	Million Units
NDS	Non-Domestic Service
NFA	Net Fixed Assets
NPCIL	Nuclear Power Corporation India Limited
NHPC	NHPC Limited
NRLDC	Northern Region Load Despatch Centre
NTPC	National Thermal Power Corporation
PGCIL	Power Grid Corporation India Limited
PWW	Public Water Works
RERC, Commission	Rajasthan Electricity Regulatory Commission
RVPN	Rajasthan Rajya Vidyut Prasaran Nigam Limited
RVUN	Rajasthan Vidyut Utpadan Nigam Limited
REC	Rural Electrification Corporation
Rs.	Indian Rupees
RSEB/Board	Rajasthan State Electricity Board
SIP	Small Industrial Power
SMD	Simultaneous Maximum Demand

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SLDC	State Load Despatch Centre
STU	State Transmission Utility
UI	Unscheduled Interchange
The Petitioner/utility	Jaipur Vidyut Vitran Nigam Ltd.

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**A1: PROJECTIONS FOR FY 2016-17 & FY 2017-18**

- 1.1 Section 61 of the Electricity Act, 2003 empowers the State Regulatory Commissions (RERC in this case) to specify the terms and conditions for the determination of tariff and specifies that in doing so, the Commission shall inter alia be guided by multi-year tariff principles (Section 61 (f)). As per the provisions of the Act, while prescribing regulations for the Petitioners in the state, the State Commission would also be guided by the regulations prescribed by Central Electricity Regulatory Commission (CERC).
- 1.2 The Rajasthan Electricity Regulatory Commission (RERC) notified the Rajasthan Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulation, 2014 for the third control period from FY 2014-15 to FY 2018-19 on March 27, 2014. The third Multi Year Control Period from FY 2014-15 to FY 2018-19 began from 1<sup>st</sup> April 2014 after end of the second control period.
- 1.3 The RERC notified the Tariff Order for the second year FY 2015-16 of the control period FY 2015-16 to FY 2018-19 on 22<sup>nd</sup> of September 2016.
- 1.4 Regulation 11(1) of the RERC Tariff Regulations 2014 specify that the Petitioner shall submit the forecast of Aggregate Revenue Requirement, expected revenue from existing tariff and proposed tariff for the ensuing year of the Control Period, accompanied by fees applicable.
- 1.5 The Petitioner has strived to conform to the norms and provisions of the RERC Tariff Regulations 2014 as far as possible and projected the elements of the ARR for FY 2016-17 & FY2017-18. The Petitioner has utilised audited annual accounts for FY 2015-16 (n-1 year) and prepared ARR for third and fourth year of the control period FY 2014-15 to FY 2018-19 i.e. FY 2016-17 and FY 2017-18. The projections for the two years has been summarised in the subsequent sections of this application.

**A2: ENERGY SALES AND REQUIREMENT FOR FY 2016-17 AND FY 2017-18**

- 2.1 As prescribed in the Clause 75 of the RERC Tariff Regulations 2014, the Petitioner has utilised past growth in consumers, connected load and energy sales to forecast the category-wise energy sales during FY 2016-17 and FY 17-18.
- 2.2 For projection of sales for the third and fourth year, i.e. FY 2016-17 & FY 2017-18 of the MYT control period from FY 2014-15 to FY 2018-19, the Petitioner has considered the actual data for the previous years in accordance with the Clause 75 of the RERC Tariff Regulations 2014 and the methodology approved by the Hon'ble Commission in the past tariff orders. Other factors affecting the energy sales for various customer class has also been considered while projecting the sales.
- 2.3 The Petitioner has computed category wise CAGR for 3 years, 5 years, 7 years and so on based on the historical data. The category wise CAGR has then been applied on the audited sales of FY 2015-16 to estimate the sales for FY 2016-17 and FY 2017-18.
- 2.4 The Petitioner would further like to submit that this growth trend of increase in sales has been considered as it signifies the best possible projections as per the experience of the Petitioner and latest available data. Also, wherever the trend has seemed unreasonable or unsustainable, the growth factors have been appropriately modified to arrive at more realistic projections.
- 2.5 However, the following events being beyond the control of the Petitioner, sales forecast may need to be reviewed in the future. In such cases, the revenue requirement may also be adjusted accordingly as any such variation is reasonably beyond the control of the Petitioner.
- (a) The impact of any variance (positive or negative) in the industrial sales forecasted due to shifting of consumers into open access or decline in consumption due to economic recession;
  - (b) Change in hours of supply to rural areas and agricultural consumers from the levels taken in the forecast by the Petitioner for any year in the Control Period, resulting in increased actual input to rural areas;
  - (c) Increase in agriculture connections as per the commitment of the State Government as per Budget announcements; &
  - (d) Migration of eligible Open Access consumers from the Petitioner.
- 2.6 The variance in energy sales would change power procurement cost and aggregate revenue requirement and affect the profitability of the Discoms. Hence, Petitioner requests to present its case for the revised energy sales at the time of annual review of performance / true up with suitable measures to adjust such aggregate variance.



**Previous years energy sales**

2.7 The following table summarises the actual energy sold during previous years to different consumer categories:

**Table 1: Past trend in energy sales (MU)**

Category of Consumers	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Domestic	2,180	2,658	3,032	3,142	3,491	3,761	4,068	4,418
Non-Domestic	835	898	996	1,188	1,550	1,573	1,805	1,966
Public Street Light	75	79	92	110	129	143	168	175
Agriculture (Metered)	2,062	2,777	3,288	4,148	5,135	4,258	4,715	5,238
Agriculture (Flat)	1,137	1,153	1,011	783	724	581	530	517
Small Industry	239	248	279	267	277	274	335	301
Medium Industry	521	548	619	637	664	722	770	735
Large Industry	2,747	3,095	3,520	3,835	3,721	3,482	4,294	3,415
Public Water Works (S)	199	207	222	218	199	195	218	229
Public Water Works (M)	29	26	26	26	27	32	37	41
Public Water Works (L)	100	114	107	143	189	200	218	259
Mixed Load / Bulk Supply	250	333	430	366	171	161	191	172
Electric Traction	302	350	330	370	404	404	146	385
<b>Total</b>	<b>10,676</b>	<b>12,486</b>	<b>13,951</b>	<b>15,234</b>	<b>16,682</b>	<b>15,784</b>	<b>17,494</b>	<b>17,852</b>

2.8 All the consumer categories have shown growth in energy sales during this period except flat rate agriculture categories. The decreasing trend in flat rate agriculture category is primarily due to the consumers shifting to agriculture metered category

2.9 In the metered consumer categories there has been an average increase of around 11% in the energy sold since FY 2011-12. The growth in energy sales can be attributed to the following:

- (a) The policy decision by the Petitioner to release all pending application for connections in domestic category and to improve the availability of energy in the rural areas;
- (b) The agriculture (metered) sales have increased due to additional release of connections and substantial increase in consumption of existing consumers due to lowering of the water table;

2.10 The industries have also shown an increase in consumption of energy during this period due to general industrial growth experienced by the country as a whole during the period.

- 2.11 From the above, it is observed that sales to consumer categories have been dependent on various extraneous variables like increase in consumers, increase in supply hours and industrial revival due to policy initiatives. Therefore, the projection for sales of FY 2016-17 & FY 2017-18 have been estimated by taking into account the recent trend in energy sales and also the variables which are going to affect the energy sales in future.

## **Energy Sales Projections for categories other than agriculture consumers**

### **Projections of sales for FY 2016-17**

- 2.12 The energy sales for FY 2016-17 and FY 2017-18 are projected on the basis of historical sales data using the category wise CAGR as per the methodology approved by the Hon'ble Commission in the previous year tariff orders. For all consumer categories except the agriculture category, past trends have been used while estimating sales. Wherever the trend has seemed unreasonable, the forecast has been appropriately adjusted after taking into consideration the latest available data.
- 2.13 The last five years have shown an increasing trend in the energy sales for Domestic category of consumers. The increase in sales is largely attributable to increase in consumers in rural areas consequent to intensification efforts under RGGVY scheme and increase in specific consumption of the existing consumers due to increase in living standards. The Petitioner expects the same trend in growth of sales to continue in the future.
- 2.14 Besides the above, the Government of India and Government of Rajasthan have taken a joint initiative to provide 24 x 7 power in the State to all its consumers (except agriculture consumers). This initiative aims at ensuring uninterrupted supply of quality power to existing consumers by the end of 12<sup>th</sup> Plan and providing access to electricity to all unconnected consumers in the next five years. As per this initiative, six lakh domestic consumers in the state of Rajasthan are envisaged to be added each year during FY 2016-17 & FY 2017-18.
- 2.15 It is important to mention that the electrification of un-electrified households in the state will lead to change in consumer mix and further increase the percentage of subsidised consumers. Consumer mix is an important determinant of the financial health of a utility and with the increase in subsidised category consumers, it becomes important that the tariff for these categories should move towards being closer to the average cost of supply and reduce the cross subsidy gap.
- 2.16 For Non-Domestic category, the last five years have shown an increasing trend in the energy sales. There has been rapid growth in sales in this category in last few years which is attributable to rapid urbanisation and increase in commercial activities in the recent past. The Petitioner expects the same trend in growth to continue in the future.
- 2.17 For Industrial consumers, the Petitioner submits that there has been a growth in sales in small, medium and large industrial categories in the past.

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- 2.18 However, owing to the increase in purchase of power by industrial consumers via Open Access, reduction in growth of industrial sales was witnessed during the previous years. The Petitioner has estimated sales for such consumers accordingly.
- 2.19 The energy sales figures for the Public Water Works (PWW) categories have been estimated on the basis of past trends. In the past, public water works category has shown substantial growth, however as all connections have now been metered and there are no new connections pending. However shifting of connections of Public Water Works (M) to Public Water Works (L) has also been observed. Therefore, while projecting sales for this category, the trend has been appropriately adjusted.
- 2.20 In case of Mixed Load/ Bulk Supply category a decreasing trend has been observed in the previous years which can be attributed to the shift in certain consumer groups such as mobile tower consumers and private institutions to non-domestic consumer category and others. However, after FY 2013-14, sales have marginally increased in comparison to the previous years. The Petitioner expects this trend to continue.
- 2.21 The projected energy sales for FY 2016-17 & FY 2017-18 (Other than agriculture) have been summarised in the table below:

**Table 2: Projected sales for FY 2016-17 & FY 2017-18 (Other than agriculture)**

Category of Consumers	FY 2016-17	FY 2017-18
Domestic	5,357.98	6,919.32
Non-Domestic	2,221.69	2,510.75
Public Street Light	193.80	214.35
Small Industry	322.18	344.73
Medium Industry	760.78	760.78
Large Industry	3,523.28	3,634.62
Public Water Works (S)	239.31	250.59
Public Water Works (M)	43.45	45.74
Public Water Works (L)	285.25	313.77
Mixed Load / Bulk Supply	180.85	189.90
Electric Traction	392.31	-
<b>Total</b>	<b>13,520.88</b>	<b>15,184.55</b>

## Energy Sales Projections for agriculture consumers

### *Agriculture metered category*

- 2.22 The energy sales for agriculture metered category have been estimated on the basis of the following factors:
- Existing Consumers at the start of the Financial Year
  - Addition in the consumers during the Financial Year

- (c) Consumers converted from 'Agriculture Flat' to 'Agriculture Metered' category
- (d) Connected load per consumer
- (e) Estimated specific energy consumption

$$\text{Agriculture Consumption} = \text{No. of consumers} \times \text{Connected load per consumer} \times \text{Specific Consumption}$$

2.23 The connected load per consumer has been forecasted on the basis of the trend observed in previous years and the growth anticipated in connected load per consumer due to the ever decreasing water table. Moreover, the Petitioner has initiated voluntary load disclosure scheme, due to which the connected load per consumer is expected to further increase. Therefore, for estimating the connected load per consumer, the Petitioner has considered a nominal increase over the previous year. The connected load per consumer estimated for FY 2016-17 and FY 2017-18 has been provided in the following table.

**Table 3: Projected Connected Load (kW) per consumer for agriculture metered**

Year	Connected Load / Consumer
FY 2016-17	5.82
FY 2017-18	6.12

2.24 For estimating specific consumption of agriculture metered consumers, average of specific consumption of last two years specific consumption has been considered.

**Table 4: Projected specific consumption (kWh/kW/year) for agriculture metered**

Year	Specific Consumption
FY 2016-17	2029.57
FY 2017-18	2029.57

2.25 The following table summarises the number of consumers considered for the projections of energy sales for agriculture metered category for the FY 2016-17 & FY 2017-18:

**Table 5: Projected no. of consumers in Agriculture Metered Category**

Year	Opening Consumers	Addition during the year	Flat to metered category conversion	Closing consumers
FY 2016-17	426,930	15,000	25,000	466,930
FY 2017-18	466,930	15,000	10,000	491,930

- 2.26 It is important to note that conversion of consumers from flat to metered category is an ongoing process and is considered to take place over the entire year. Thus to consider this impact, sales for 6 months have been considered for such converted consumers while computing sales of consumers under 'Agriculture Metered' category.
- 2.27 In view of above, under 'Agriculture Metered' category, the projected energy sales for FY 2016-17 is summarised in the following table:

**Table 6: Projections of Sales (MU) for Agriculture Metered Consumption**

Particulars	FY 17	FY 18
Energy Sales (MU)	5,609.71	6,135.86

***Agriculture flat (un-metered) category:***

- 2.28 The energy sales for agriculture flat rate category have been estimate on the basis of the following factors:
- (a) Existing Consumers at the start of the Financial Year
  - (b) Consumers converted from 'Agriculture Flat' to 'Agriculture Metered' category
  - (c) Connected load per consumer
  - (d) Approved specific energy consumption

$$\text{Agriculture Consumption} = \text{No. of consumers} \times \text{Connected load per consumer} \times \text{Specific Consumption}$$

- 2.29 The connected load per consumer has been forecasted on the basis of the trend observed in previous years and the growth anticipated in connected load per consumer due to the decrease in the water table. For agriculture flat rate (un-metered) category, the Petitioner has considered a nominal escalation for estimating the connected load per consumer for FY 2016-17 and FY 2017-18 and the same has been provided in the following table.

**Table 7: Projected Connected Load per consumer for agriculture flat-rate (kW)**

Year	Connected Load / Consumer
FY 2016-17	7.60
FY 2017-18	7.60

- 2.30 The Petitioner submits that the Hon'ble Commission in its previous Tariff Orders has approved the specific energy consumption of 1945 kWh/kW/year for flat rate agriculture consumers. Thus, for FY 2016-17 and FY 2017-18, the Petitioner has also adopted the same specific consumption of 1945 kWh/kW/year as approved by the Hon'ble Commission.

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- 2.31 The following table summarises the addition of consumers and specific consumption considered for the projections of energy sales for agriculture un-metered category for FY 2016-17 and FY 2017-18:

**Table 8: Projected no. of consumers in Agriculture Flat Rate Category**

Year	Opening Consumers	Flat to metered category conversion	Closing consumers
FY 2016-17	36,694	25,000	11,694
FY 2017-18	11,694	10,000	1,694

- 2.32 It is important to note that conversion of consumers from flat to metered category is considered to take place over the entire year and thus to consider this impact, sales for 6 months have been considered for such consumers while computing sales of consumers under 'Agriculture Flat Rate' category.
- 2.33 In view of above, under 'Agriculture Flat Rate' category, the projected energy sales for FY 2016-17 and FY 2017-18 is summarised in the following table:

**Table 9: Projections of Agriculture Flat Rate Consumption**

Particulars	FY 17	FY 18
Energy Sales (MU)	172.96	25.06

## Summary of energy sales estimates for FY 2016-17 and FY 2017-18

- 2.34 Based on the methodology provided in the aforementioned sections, the projected energy sales for FY 2016-17 & FY 2017-18 for various consumer categories is summarised in the table below:

**Table 10: Total sales for FY 2016-17 & 2017-18 (MU)**

Category of Consumers	FY 2016-17	FY 2017-18
Domestic	5,357.98	6,919.32
Non-Domestic	2,221.69	2,510.75
Public Street Light	193.80	214.35
Agriculture (Metered)	5,609.71	6,135.86
Agriculture (Flat)	172.96	25.06
Small Industry	322.18	344.73
Medium Industry	760.78	760.78
Large Industry	3,523.28	3,634.62
Public Water Works (S)	239.31	250.59
Public Water Works (M)	43.45	45.74
Public Water Works (L)	285.25	313.77
Mixed Load / Bulk Supply	180.85	189.90
Electric Traction	392.31	0.00
<b>Total</b>	<b>19,303.55</b>	<b>21,345.47</b>

**Distribution Loss for FY 2016-17 and FY 2017-18**

- 2.35 The actual distribution loss levels of the Petitioner at the end of FY 2015-16 stood at 31.90%.
- 2.36 The Petitioner recognises the importance of bringing down the distribution losses in order to ensure that the state power sector remains viable. The Petitioner has already undertaken several steps and numerous measures are envisaged to be undertaken to bring down the existing loss levels.
- 2.37 The Petitioner intends to pursue the loss reduction programs initiated in previous years and also increasingly use technology to target erring consumers and reduce the losses during the projection period. The investments being made under schemes like R-APDRP, FIP, SIP etc. are also expected to aid in the reduction of distribution loss especially in urban pockets.
- 2.38 In order to achieve operational efficiency and bring around improvements, other steps like loss based load management, performance monitoring and management system, 100% feeder and DT metering, AMR metering for high value consumers, energy audit & accounting at feeder level, feeder segregation, etc. have already been initiated.
- 2.39 Loss reduction targets have been prepared at the division/circle/zonal level and concerned officials have been made responsible for achieving the loss reduction targets. At the same time, efforts are also being made to reduce theft and other illegal activities by undertaking name and shame campaign and aggressive vigilance drives. Further, the capital investment plans are also on-going to achieve the distribution loss trajectory set forth by the Commission.
- 2.40 The Discom is committed towards reduction of losses and therefore time bound targets have been set for each of the above listed activities. These initiatives have also been recognized at the highest levels and form part of the landmark tripartite MoU signed under the UDAY scheme between the Discoms, the Central Ministry and the Rajasthan government.
- 2.41 Considering the large distribution area of petitioner, sparse distribution of load centers and significant number of agricultural connections, certain time would be required before reaping the benefits of the steps being undertaken. Disallowing expenses based on the loss trajectory set by the Commission will act as a setback in the Petitioner's efforts towards achieving operational and financial turnaround by FY 2018-19 thereby leading to negative impact on the consumers at large.
- 2.42 Considering the focus and all round efforts being made to reduce the AT&C losses, the commitments made under the UDAY scheme and the present available details, the petitioner has proposed a stringent distribution loss reduction trajectory for FY 2016-17 and FY 2017-18 as shown in following table:

**Table 11: Distribution loss reduction plan (%)**

<b>Particulars</b>	<b>FY17</b>	<b>FY18</b>
Distribution loss (%)	25.00	20.00

- 2.43 It is humbly requested that the Hon'ble Commission may kindly consider the efforts being undertaken by the Petitioner and consider the distribution loss trajectory as proposed above.



**Energy requirement for FY 2016-17 and FY 2017-18**

2.44 The Petitioner has estimated the energy requirement at Distribution periphery for FY 2016-17 and FY 2017-18 on the basis of actual figures for FY 2015-16 and projected energy sales and distribution losses for FY 2016-17 & FY 2017-18.

**Table 12: Distribution Losses and Energy Requirement at Discom Periphery**

<b>Description</b>	<b>FY 17</b>	<b>FY18</b>
Total Energy Sales to Consumers (MU)	19,303.55	21,345.47
<i>Distribution Loss %</i>	25.00%	20.00%
<b>Total Energy Required to Discom (MU) at Discom Periphery</b>	<b>25,738.06</b>	<b>26,681.83</b>

**A3: POWER PURCHASE QUANTUM AND COST FOR FY 2016-17 AND FY 2017-18**

**Energy Availability & Energy Balance**

**Energy Availability**

- 3.1 For computing the energy availability for FY 2016-17 and FY 2017-18, the existing availability based on power purchase for FY 2015-16 has been considered.
- 3.2 The energy availability for FY 2016-17 is projected on the basis of estimated generation from existing stations and projected generation from new stations. For existing stations, the Petitioner submits that the power purchase quantum has been considered as per the actual energy received in previous years. The Petitioner has analysed the existing power scenario and the power purchase has been accordingly projected considering the energy requirement and the merit order principles. The power purchase from stations which were commissioned in FY 2015-16 and were only available for part of the year has been computed based on capacity, PLF and Auxiliary consumption.
- 3.3 The power purchase from new stations has been considered as per the percentage share allocated to / contracted by the Rajasthan State. The assumption for PLF and Auxiliary Consumption for new stations has been considered as per historical trends and operating norms approved by the appropriate Commission. The power purchase from such new stations for the year has been computed after duly considering the anticipated commercial operation date of these stations.
- 3.4 The Petitioner has been making sincere efforts to fulfil its Renewable Purchase Obligation and have continuously increased the purchase from renewable sources. It is now close to achieving the targets set by the Hon'ble Commission.
- 3.5 It is worthwhile to mention that Rajasthan is one of the states with the highest installed capacity of solar and wind generation in India. Wind energy forms almost 20% of the firm capacity available to the state. The installed capacity of wind power plants in Rajasthan is 4120 MW as on 30.09.2016. Despite of such enormous installed capacity, the distribution companies of Rajasthan have faced difficulties in meeting the required RPO over the past years.
- 3.6 Considering the challenges faced in fulfilling the Renewable Purchase Obligation due to infirm nature of such power, lack of sufficient hydel sources which can be operated in integration with renewable sources to absorb the variations in generation from such renewable sources, inverse relation between generation from renewable sources and demand in the state of Rajasthan, financial burden on the Discoms, etc. the Petitioner has already written to the Hon'ble Commission and also to the MNRE to revise and adopt the below mentioned RPO targets.

**Table 13: RPO targets for FY 17, FY 18 and FY 19**

S. No.	Year	Obligation expressed as percentage of energy consumption (%) excluding consumption met from Hydro source of power			
		Wind	Biomass	Solar	Total
1	2016-17	8.10	0.35	1.25	9.70
2	2017-18	8.65	0.35	3.89	12.89
3	2018-19	8.65	0.35	5.11	14.11

- 3.7 It is further submitted that for FY 2016-17 & FY 2017-18, the purchase from renewable energy sources has been projected as per the above proposed RPO trajectory.
- 3.8 In line with the above, the Petitioner has computed the source wise quantum of power purchase for FY 2016-17 and FY 2017-18 and humbly requests the Hon'ble Commission to approve the same.
- 3.9 For FY 2016-17, the Petitioner has considered the intra-state transmission losses of 4.11% as approved by the Hon'ble Commission in its Tariff Order for RVPN. The inter-state transmission losses have been considered as 3.15% based on the average of weekly losses for the northern grid. The Petitioner has considered the same level of inter and intra state transmission losses for FY 2017-18.
- 3.10 The total energy availability from all sources for FY 2016-17 and FY 2017-18 has been summarised in the following table:

**Table 14: Energy availability for FY 2016-17 and FY 2017-18 (MU)**

Particulars	FY 2016-17	FY 2017-18
Gross energy available from outside state sources (A)	9,505.21	9,673.18
Inter-state transmission losses (%)	3.15%	3.15%
Inter-state transmission losses (MU)	299.41	304.71
Net energy available from outside state	9,205.79	9,368.48
Add: energy generated within the state (B)	19,787.25	22,504.39
<b>Net energy available for use in State</b>	<b>28,993.04</b>	<b>31,872.87</b>
Intra-state transmission losses (%)	4.11%	4.11%
Intra-state transmission losses (MU)	1,191.61	1,309.97
<b>Energy available for sale to distribution licensee</b>	<b>27,801.43</b>	<b>30,562.89</b>
<b>Total Energy Purchased (A+B)</b>	<b>29,292.45</b>	<b>32,177.57</b>

**Table 15: Source wise energy FY 2016-17 and FY 2017-18 (MU)**

Particulars	FY 2016-17	FY 2017-18
<b>Source-wise Energy Purchased</b>		
NTPC	2,259.51	2,377.15
NHPC	729.74	777.17

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Particulars	FY 2016-17	FY 2017-18
State Generation/RVUN	12,831.82	12,433.32
NPCIL	1,227.27	1,227.27
Shared projects	1,554.57	1,371.57
Others and SJVN	444.92	474.59
IPP/UMPP (including NVVN Bundled)	6,975.83	7,244.26
Non-Conventional including CPP's	2,411.88	3,326.09
New Stations	856.92	2,946.16
<b>Total</b>	<b>29,292.45</b>	<b>32,177.57</b>

### Energy Balance for FY 2016-17 and FY 2017-18

- 3.11 Based on the projected energy sales, distribution loss reduction plan, power purchase based on the drawl ratio and the consequent inter-state sales, the energy balance of JVVNL for FY 2016-17 and for FY 2017-18 has been summarised in following table.

**Table 16: Energy Balance for FY 2016-17 and FY 2017-18**

Particulars	Units	FY 17	FY 18
Estimated sales	MU	19,303.55	21,345.47
Distribution Losses	%	25.00%	20.00%
<b>Energy Requirement</b>	<b>MU</b>	<b>25,738.06</b>	<b>26,681.83</b>
Energy availability at DISCOM periphery	MU	27,801.43	30,562.89
<b>Energy surplus/ (deficit)</b>	<b>MU</b>	<b>2,063.36</b>	<b>3,881.06</b>

## **Power purchase cost for FY 2016-17 and FY 2017-18**

### **Fixed and Variable Charges**

- 3.12 The Petitioner has projected the power purchase cost for FY 2016-17 & FY 2017-18 from the various sources based on the following assumptions:
- (a) For Coal, Gas and Hydro based Power Plants, an escalation rate in the range of 2% to 15% is considered over the per unit actual cost of FY 2015-16 for computing the per unit fixed cost for different power plants for FY 2016-17 and FY 2017-18 depending on the power procurement envisaged, plant load factor, availability, etc.
  - (b) For Nuclear Power Plants, a nominal escalation rate of 2% has been considered. This is in accordance with the increase seen in average per unit tariff from nuclear sources in the past years as given in DAE reply to Lok Sabha query dated 09.03.2016.
  - (c) The fixed charges and variable charges for the plants which are going to be commissioned in FY 2016-17 and FY 2017-18 have been assumed on the basis of similar types of plant.
  - (d) Other charges (including cess, electricity duty, etc.) for FY 2016-17 and FY 2017-18 have not been considered while determining the power purchase cost. It is requested that the actual power purchase cost for FY 2016-17 and FY 2017-18 may be considered at the time of true-up.

### **Transmission & SLDC Charges**

- 3.13 For FY 2016-17 & FY 2017-18, the transmission charges have been computed by applying 5%- 15% escalation as deemed appropriate over actual transmission charges of FY 2015-16.
- 3.14 It is requested that the actual power purchase cost for FY 2016-17 and FY 2017-18 may be considered at the time of true-up.
- 3.15 Transmission and SLDC charges considered by the Petitioner for FY 2016-17 and FY 2017-18 is provided in the table below:

**Table 17 : Transmission & SLDC Charges (Rs Cr)**

<b>Transmission Charges</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>
PGCIL	548.06	602.87
RVPN	916.45	1,052.61
SLDC	7.17	8.25
NRLDC	1.42	1.56
<b>Total Transmission &amp; SLDC</b>	<b>1,473.10</b>	<b>1,665.29</b>

**Total Power Purchase Cost**

3.16 The projected power purchase cost for FY 2016-17 & FY 2017-18 from various sources has been summarised in following table:

**Table 18 : Power Purchase Cost from FY 2016-17 & FY 2017-18 (Rs. Cr.)**

<b>Station</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>
NTPC	717.02	726.54
NHPC	244.29	254.01
State Generation/RVUN	5,300.22	4,978.35
NPCIL	357.73	357.73
Shared projects	120.67	47.65
Others and SJVN	164.23	171.74
IPP/UMPP (including NVVN Bundled)	2,226.67	2,286.74
Non-Conventional including CPP's	1,177.05	1,599.01
New Stations	343.30	1,406.57
<b>Total</b>	<b>10,651.18</b>	<b>11,828.34</b>
Transmission Cost	1,473.10	1,665.29
<b>Total Power Purchase Cost including Transmission Cost</b>	<b>12,124.28</b>	<b>13,493.62</b>

3.17 The Petitioner submits that sale and purchase of power is a dynamic process. The market clearing prices in exchange are dependent on the bids submitted by buyers and other sellers and the power available in the entire market. It is important to note that the Petitioner has no control over the mentioned factors. In FY 2015-16, the Petitioner was able to sell such surplus power only @ Rs. 2.50/kWh. In light of the above surplus energy is expected to be available during FY 2016-17 owing to upcoming stations, reduction in losses and consumers procuring power via open access. The available surplus energy may be sold through short term market to generate revenue from trading.

3.18 The following table summarises the impact of short term purchase/ sale of power and the same has been considered as revenue from trading activity in subsequent sections.

**Table 19: Surplus/ Deficit account for FY 2016-17 & FY 2017-18 (Rs Cr)**

<b>Particulars</b>	<b>Units</b>	<b>FY 17</b>	<b>FY 18</b>
Energy surplus/ (deficit)	MU	2,063.36	3,881.06
Short term rate *	Rs kWh	2.50	2.50
<b>Power Purchase Cost/ Revenue from Trading</b>	<b>Rs. Cr</b>	<b>515.84</b>	<b>970.27</b>

\* As per actual per unit rate of sale of power through short-term during FY 2015-16

3.19 The break-up of the power purchase cost from different sources has been shown in Form 3.1.

**A4: CAPITAL INVESTMENTS, CWIP AND CAPITALISATION**

- 4.1 The Petitioner proposes capital investments for FY 2016-17 & FY 2017-18 based on investments made in FY 2015-16 as per audited accounts for FY 2015-16 in accordance with the Petition for Investment Plan for FY 2016-17 & FY 2017-18 as submitted to the Commission.
- 4.2 The following table provides the summary of projected capital expenditure plan, the CWIP and capitalisation during the year for FY 2016-17 and FY 2017-18:

**Table 20: Capital Investments, CWIP & Capitalisation for FY 17 and FY 18 (Rs Cr)**

Description	FY 17	FY 18
Opening CWIP	1,135.87	588.67
Add: Capital investment during the year	1,807.46	1,792.79
<b>Sub-total</b>	<b>2,943.33</b>	<b>2,381.46</b>
Less: Assets capitalised during the year (Assets transferred to GFA)	2,354.66	1,905.16
<b>Closing CWIP</b>	<b>588.67</b>	<b>476.29</b>

**A5: AGGREGATE REVENUE REQUIREMENT FOR FY 2016-17 AND FY 2017-18**

**Operation and Maintenance Expenses**

- 5.1 The Operation and Maintenance (O&M) expenses comprise of Employee expenses, Repair and Maintenance (R&M) expenses and Administration and General (A&G) expenses.
- 5.2 The norms for each component of O&M expenses for the distribution business are based on per unit of energy sold and are specified under Regulation 83 of the RERC Tariff Regulations 2014.
- 5.3 The Normative O&M expenses allowed at the commencement of the Control Period (i.e. FY 2014-15) under the aforesaid Tariff Regulations are to be escalated at the rate of 5.85% per annum for each year of the Control Period.
- 5.4 The O&M expenses are determined by multiplying the norms specified in Regulation 83 of the RERC Tariff Regulations 2014 and the projected energy sales for the year. The per unit norms for each component for third and fourth year of the control period FY 2016-17 & FY 2017-18 are as follows:

**Table 21: Per unit norms for O&M Expenses (Rs/kWh)**

Description	FY 17	FY 18
Employee expenses	0.43	0.45
A&G expenses	0.04	0.05
R&M Expenses	0.09	0.09

- 5.5 The O&M expenses based on normative projections for FY 2016-17 & FY 2017-18 as per the methodology described above have been summarised in the following table:

**Table 22: Operation and Maintenance Expenses**

Particulars	FY17	FY18
<b>Employee Expenses</b>		
Per unit norm (escalated @ 5.85% p.a. for FY 17, FY 18)	0.43	0.45
Projected energy sales (MU)	19303.55	21345.47
<b>Gross employee expenses (Rs Cr)</b>	<b>821.87</b>	<b>961.97</b>
<i>Less: Capitalization (Rs Cr)</i>	255.68	299.26
<b>Net employee expenses (Rs Cr)</b>	<b>566.19</b>	<b>662.71</b>
<b>A&amp;G Expenses</b>		
Per unit norm (escalated @ 5.85% p.a. for FY 16)	0.04	0.05
Projected energy sales (MU)	19303.55	21345.47
<b>Gross A&amp;G expenses (Rs Cr)</b>	<b>86.51</b>	<b>101.26</b>
<i>Less: Capitalization (Rs Cr)</i>	28.95	33.88
<b>Net A&amp;G expenses (Rs Cr)</b>	<b>57.57</b>	<b>67.38</b>



<b>Particulars</b>	<b>FY17</b>	<b>FY18</b>
<b>R&amp;M Expenses</b>		
Per unit norm (escalated @ 5.85% p.a for FY 16.)	0.09	0.09
Projected energy sales (MU)	19303.55	21345.47
<b>R&amp;M expenses (Rs Cr)</b>	<b>173.03</b>	<b>202.52</b>
<b>Gross O&amp;M Expenses (Rs Cr)</b>	<b>1081.41</b>	<b>1265.75</b>
<i>Less: Expenses Capitalized (Rs Cr)</i>	284.62	333.14
<b>Net O&amp;M Expenses (Rs Cr)</b>	<b>796.78</b>	<b>932.61</b>

## **Insurance Expenses**

- 5.6 Insurance expenses for FY 2016-17 & FY 2017-18 have been estimated on the basis of net fixed assets subject to the ceiling specified in Regulation 25 of the RERC Tariff Regulations 2014.

**Table 23: Insurance expenses (Rs Cr)**

<b>Particulars</b>	<b>FY 17</b>	<b>FY18</b>
Average Net Fixed assets (Rs Cr)	11,715.41	13,012.47
<b>Insurance Expenses @ 0.2% of NFA (Rs Cr)</b>	<b>23.43</b>	<b>26.02</b>

## **Terminal benefits**

- 5.7 For determination of terminal benefits liability, the Petitioner has adopted the guidelines specified under AS-15 (Employee benefit). The guidance of implementing AS-15 states that the benefit involving employer established provident funds, which require interest shortfall to be provided, are to be considered as defined benefit plans. In accordance with the provisions of the AS-15 the company has provided for the shortfall in the terminal benefits in respect to pension and gratuity each year.
- 5.8 The Petitioner has considered the terminal benefits as per the liability assessed in the actuarial valuation for the year FY 2015-16. It is prayed to the Commission to allow the expenses as shown in the following table:

**Table 24: Terminal Benefits (Rs Cr)**

<b>Particulars</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>
Terminal Benefits	700.00	700.00

**Interest on long term loans, security deposits & other finance charges**

- 5.9 The interest on long term loan has been considered normatively. The opening normative loan for FY 2016-17 has been considered equivalent to closing balance of long term loans for FY 2015-16 as per audited accounts for the year.
- 5.10 The total capitalisation during the year has first been reduced by the amount of consumer contribution projected to be received during the year. 30% of the remaining capitalisation has been considered to be funded through equity and the balance amount has been considered as addition to long term loans during the year. The loan repayment has been considered in accordance with Regulation 21 of the RERC Tariff Regulations 2014 which caps deemed repayments to the depreciation charged for the year. The closing normative loan is considered after deducting normative repayment for FY 2016-17.
- 5.11 Similar approach has been adopted for which has then been considered as the opening loan balance for computing interest on normative loan for FY 2017-18.
- 5.12 The interest on long term loans is estimated on the basis of actual weighted average interest rate for long term loans of the Petitioner and applied on the average of normative loans (average of opening and closing normative loan). During FY 2015-16, as per the audited accounts, the weighted average interest rate on long term loans is estimated at 12.40% and this rate is applied on average balance of normative loans during the FY 2016-17 & FY 2017-18 to estimate interest charges on long term loans for FY 2015-16.
- 5.13 The security deposit for FY 2016-17 and FY 2017-18 has been considered on the basis of average of actual security deposit per consumer in the previous two years as per the audited accounts of FY 2015-16 and audited accounts of FY 2014-15 and the projected growth in number of consumers. The interest rate has been considered equivalent to RBI Bank Rate as on 1<sup>st</sup> April 2016 i.e. 7.75% which is in accordance with the RERC Supply Code.
- 5.14 The finance charges or other borrowing cost for FY 2016-17 & FY 2017-18 have been estimated to increase by 5% per annum from audited accounts for FY 2015-16.
- 5.15 The estimated interest charges on long term loans, security and finance charges, for FY 17 and FY 18 are summarised in the table below:

**Table 25: Interest on long term loans, security deposits and finance charges (Rs Cr)**

<b>Particulars</b>	<b>FY17</b>	<b>FY18</b>
Opening Balance of Normative Loan	4,557.74	5,264.74
Deemed Addition during the year	1,479.69	1,145.95
Deemed Repayments	772.69	877.96
Closing Balance of Deemed Loan	5,264.74	5,532.73
<b>Average balance during the Year</b>	<b>4,911.24</b>	<b>5,398.74</b>
<i>Interest Rate (%)</i>	<i>12.40%</i>	<i>12.40%</i>

<b>Particulars</b>	<b>FY17</b>	<b>FY18</b>
<b>Interest Payment on Normative Loans</b>	<b>609.08</b>	<b>669.54</b>
Interest on Security Deposit	82.76	87.52
Finance charges & other borrowing costs	97.76	102.65
<b>Gross Interest and finance charges</b>	<b>789.60</b>	<b>859.71</b>

***Interest on unfunded revenue gap for past years***

- 5.16 In the True-Up Order for FY 2013-14, the Commission had approved an unfunded gap of Rs 13,643.64 Cr up to FY 2013-14 for JVVNL and allowed carrying cost on the same @ 12.36% per annum.
- 5.17 The Commission had also provisionally approved an unfunded gap of Rs. 1,156 Cr. and Rs. 592 Cr. for FY 2014-15 and FY 2015-16 respectively increasing the provisionally approved unfunded gap to Rs. 15,391.64 Cr.
- 5.18 The Petitioner had an accumulated loss of Rs. 32,294.00 Cr as on 31<sup>st</sup> March 2016. However, the actual accumulated losses as on 31<sup>st</sup> March 2016 were Rs. 35,161.44 Cr. The Govt. of Rajasthan had owned losses to the extent of Rs. 2,867.44 Cr. out of the total accumulated losses of Rs. 4,410.43 Cr. as on March, 2009. Therefore there is difference between actual accumulated losses and accumulated losses as per balance sheet to this extent (Rs. 2,867.44 Cr.).
- 5.19 Further, the GoR had signed a MoU with the Petitioner to allow coverage of losses till FY 2008-09 through cash support from the government in a phased manner till FY 2021-22. Till FY 2015-16, the Petitioner has received Rs. 978.19 Cr. as cash support against the losses of Rs. 2,867.44 Cr. owned by the GoR.
- 5.20 Owing to the widening gap between the approved unfunded gap and the actual losses, the Petitioner had been reeling under severe financial stress. To bridge this ever increasing gap, the Govt. of India and Govt. of Rajasthan has taken over 75% of the outstanding loans of the Petitioner as on 30.09.2015 under the tripartite MoU signed with the Govt. of India and Govt. of Rajasthan in order to improve the operational and financial efficiency and enable the Petitioner to achieve financial turnaround.
- 5.21 However, on signing the tripartite MoU, the cash support committed earlier by GoR against the losses owned by GoR upto 2009 has been discontinued. Therefore to arrive at the actual accumulated losses, the accumulated losses as per balance sheet has been increased to the extent of difference between losses owned by GoR and subsidy received against losses owned i.e. by Rs. 1,889.25 Cr. (Rs. 2,867.44 Cr. – Rs. 978.19 Cr.).

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- 5.22 While calculating the interest on unfunded revenue gap for previous years, the Petitioner has reduced the unfunded gap to the extent of balance between actual accumulated losses and actual loan takeover. The details of the same has been summarised in the table below.

**Table 26: Unfunded Gap for FY 17 and FY 18**

S. No.	Description	Rs Cr
A	Accumulated Losses as on 31.03.2016 as per balance sheet	32,294.00
B	Losses owned by GoR	2,867.44
C	Subsidy received against losses owned by GoR	978.19
D	Actual Accumulated Losses as on 31.03.2016 (A + B - C)	34,183.25
E	Loans taken over under UDAY	20,998.41
F	Difference (D - E)	13,184.75
G	Unfunded gap approved by the Hon'ble Commission	15,391.64
	<b>Unfunded gap considered for computation of interest liability (Min of F,G)</b>	<b>13,184.75</b>

- 5.23 In order to calculate the interest on unfunded revenue gap, the Petitioner has considered the weighted average rate of interest as per the audited accounts for FY 2015-16 available with the Petitioner.

- 5.24 The interest liability is determined on the unfunded gap as detailed in the following table:

**Table 27: Interest liability on unfunded revenue gap of past years (Rs Cr)**

Description	FY17	FY18
Unfunded Gap	<b>13,184.84</b>	<b>13,184.84</b>
Average ROI	12.40%	12.40%
<b>Interest liability</b>	<b>1,635.15</b>	<b>1,635.15</b>

- 5.25 The total interest liability on the Petitioner for FY 2016-17 and FY 2017-18 is summarized in the following table:

**Table 28: Total interest and finance expenses (Rs Cr)**

Description	FY17 Projected	FY18 Projected
Interest payment on normative debt	609.08	669.54
Interest on Security Deposit	82.76	87.52
Finance Charges & Lease Rental	97.76	102.65
Interest liability on unfunded gap	1,635.15	1,635.15
<b>Gross Interest Charges</b>	<b>2,424.76</b>	<b>2,494.86</b>
Less: Interest Expenses Capitalized	144.79	148.98
<b>Net Interest &amp; Finance charges</b>	<b>2,279.96</b>	<b>2,345.88</b>

**Interest on Working Capital**

5.26 The Petitioner has estimated its working capital requirement for FY 2016-17 as per the Regulation 27 (3) of the RERC Tariff Regulations 2014. The working capital requirement has been computed considering the following parameters:

- a) Operation and Maintenance expenses for one month;
- b) Maintenance spares @15% of O&M expenses as per Regulation 83 of the RERC Tariff Regulations 2014;
- c) Receivables equivalent to one and a half-months billing of consumers;
- d) The security deposits of distribution system users (Open Access consumers) and retail supply consumers except the security deposits held as bank guarantees have been deducted from the above to arrive at the total working capital requirement for the year

5.27 The rate of interest on working capital has been considered on the basis of latest applicable base rate of State Bank of India of FY 2016-17 plus 250 basis points which works out to 11.80%. The following table summarises the interest on working capital for the FY 2016-17 and FY 2017-18 as per the normative figures for FY 2016-17 & FY 2017-18:

**Table 29: Interest on Working Capital (Rs Cr)**

S. No	Description	FY17	FY18
1	O&M expenses	66.40	77.72
2	Maintenance	119.52	139.89
3	Receivables	2,046.98	2,247.13
	<i>Less:</i>		
4	Security deposit of Consumers & distribution system users	1,067.93	1,129.28
<b>5</b>	<b>Total Working Capital</b>	<b>1,164.97</b>	<b>1,335.46</b>
6	<i>Interest Rate (%)</i>	11.80%	11.80%
<b>7</b>	<b>Interest on Working Capital</b>	<b>137.47</b>	<b>157.58</b>

**Depreciation**

5.28 The depreciation for FY 2016-17 and FY 2017-18 has been calculated as per Straight Line Method (SLM) at rates specified in Annexure-1 of the RERC Tariff Regulations 2014 in accordance with Regulation 22 of the said Regulations.

5.29 The depreciation has been determined by applying applicable depreciation rates on the average balance of opening and closing Gross Fixed Assets.

**Table 30: Depreciation for FY 2016-17 and FY 2017-18 (Rs Cr)**

Description	FY17	FY18
Depreciation	772.69	877.96

### **Return on Equity**

- 5.30 The RERC Tariff Regulations 2014 allows for return on equity @ 16%. However, as the Petitioner has huge accumulated revenue deficit, thus the Petitioner has not proposed any return on equity for FY 2016-17 and FY 2017-18.

### **Non-Tariff Income and Other Income**

- 5.31 The non-tariff income for FY 2016-17 and FY 2017-18 has been projected applying an escalation of 5% per annum on the numbers of FY 2015-16.
- 5.32 The income from wheeling charges and reactive energy charge for FY 2016-17 and FY 2017-18 has been projected based on actual income from wheeling charges and reactive energy charges in FY 2015-16. No increase has been considered for projecting income from wheeling charges for FY 2016-17 and FY 2017-18.
- 5.33 The income from cross subsidy surcharge and additional surcharge has also been projected for FY 2016-17 and FY 2017-18 based on the rates approved by the Hon'ble Commission and the projections made for energy drawl through open access.

### ***Interest on funding of principal amount of DPS***

- 5.34 It is submitted that the Delayed Payment Surcharge (DPS) is levied on the outstanding receivables of the consumers and considered in the books of accounts on accrual basis. The Commission in the past has considered DPS as part of NTI as provided in the books of accounts. However, it doesn't reflect the actual DPS being realized by the Petitioner, thus the amount of DPS being booked in the annual accounts keeps on inflating. This consideration of DPS from books of accounts adversely affects the revenue gap of the Petitioner.
- 5.35 It is further submitted that if the accrued DPS is considered to form part of NTI, it is important that the financing cost for corresponding receivables must also be considered. It is pertinent to mention here that the Petitioner has already incurred power purchase and other costs on such receivables. However, the Petitioner is allowed only 2 months receivable in allowance of working capital and for period beyond that period DPS is applicable. Thus the financing cost of such receivables must be allowed, especially in the event of considering that DPS as to be the additional income of the Petitioner.

## ARR FOR FY 2016-17 AND FY 2017-18

- 5.36 It is pertinent to mention that consideration of financing cost of DPS is in line with the judgement of the Hon'ble Appellate Tribunal for Electricity (APTEL) dated 12.07.2011 in case no. 142 & 142 of 2009. The Hon'ble APTEL has held in case of NDPL vs DERC, dated 20.07.2010, as reproduced below:

*“The normative working capital compensates the distribution company in delay for the 2 months credit period which is given to the consumers. The late payment surcharge is only if the delay is more than the normative credit period. For the period of delay beyond normative period, the distribution company has to be compensated with the cost of such additional financing. It is not the case of the Appellant that the late payment surcharge should not be treated as a non-tariff income. The Appellant is only praying that the financing cost is involved due to late payment and as such the Appellant is entitled to the compensation to incur such additional financing cost. Therefore, the financing cost of outstanding dues, i.e. the entire principal amount, should be allowed and it should not be limited to late payment surcharge amount alone.”*

- 5.37 In line with the above judgement, other state commissions like the State Electricity Regulatory Commission of Bihar has also considered carrying cost of receivables against which DPS is booked in the NTI and has considered the financing cost of DPS as per the interest rate allowed for interest on working capital.
- 5.38 The Petitioner submits that the financing cost of DPS as per the interest rate considered for computation of interest on working capital for FY 2016-17 and FY 2017-18 is as summarised in the table below:

**Table 31: Interest on funding of principal amount of DPS for FY 17 and FY 18 (Rs. Cr.)**

Interest on funding of Principal DPS	FY 17	FY 18
DPS	237.10	248.95
Principal Amount on which DPS is charged (@2% per month)	987.90	1,037.29
Interest rate for funding principal of DPS	11.80%	11.80%
<b>Interest on funding of Principal DPS</b>	<b>116.57</b>	<b>122.40</b>

- 5.39 The following table summarises the estimated non-tariff income and income from wheeling, cross subsidy and additional surcharge charges for FY 2016-17 and FY 2017-18.

**Table 32: Non-Tariff Income & income from wheeling charges for FY 17 and FY 18 (Rs Cr)**

S.No.	Particulars	FY 17	FY18
1	Non- Tariff Income and other income	433.67	455.35
2	Less: Interest on Funding of principle amount of DPS	116.57	122.40
3	Net Non-Tariff Income	317.10	332.95
4	Income from wheeling charges and reactive charges	23.23	23.23
5	Income from Cross Subsidy Surcharge	49.59	125.33
6	Income from Additional Surcharge	68.85	75.11
	<b>Total</b>	<b>458.77</b>	<b>556.62</b>

**Aggregate Revenue Requirement for FY 2016-17 and FY 2017-18**

5.40 The projected ARR for FY 2016-17 and FY 2017-18 based on the expense elements considered in the preceding section is summarised in the following table.

**Table 33: Aggregate Revenue Requirement for FY 2016-17 and FY 2017-18 (Rs Cr)**

S. No.	Particulars	FY17 Projected	FY18 Projected
1	Power Purchase Expenses	10,651.18	11,828.34
2	Operation & Maintenance Expenses	1,520.21	1,658.63
2.1	<i>Employee Expenses (net)</i>	566.19	662.71
2.2	<i>Administration &amp; General Expenses (net)</i>	57.57	67.38
2.3	<i>Repair &amp; Maintenance Expenses</i>	173.03	202.52
2.4	<i>Terminal Benefits</i>	700.00	700.00
2.5	<i>Insurance expenses @ 0.2% of NFA</i>	23.43	26.02
3	Depreciation, including advance against depreciation	772.69	877.96
4	Interest on Loan Capital (Includes security deposit & interest on unfunded revenue gap till FY13)	2,279.96	2,345.88
5	Interest on Working Capital (normative)	137.47	157.58
6	Prior period expenses & other expenses	-	-
7	Transmission Charges paid PGCIL	548.06	602.87
8	NRLDC Fee	1.42	1.56
9	Transmission Charges paid to RVPN	916.45	1,052.61
10	SLDC Fee	7.17	8.25
<b>11</b>	<b>Total Revenue Expenditure</b>	<b>16,834.61</b>	<b>18,533.68</b>
12	Return on Equity Capital	-	-
<b>13</b>	<b>Aggregate Revenue Requirement</b>	<b>16,834.61</b>	<b>18,533.68</b>
14	Less: Non-Tariff Income	317.10	332.95
15	Less: Income from wheeling charges, Cross Subsidy and Additional Surcharge	141.67	223.67
<b>16</b>	<b>Aggregate Revenue Requirement from Retail Tariff</b>	<b>16,375.84</b>	<b>17,977.06</b>



**A6: REVENUE FROM EXISTING TARIFF**

- 6.1 For FY 2016-17 and FY 2017-18, revenue has been estimated based on energy sales forecasts for the period and the applicable retail tariff as per the RERC's Tariff Order for FY 2015-16 dated 22<sup>nd</sup> September 2016.
- 6.2 The following table summarises the category-wise expected revenue for FY 2016-17 and FY 2017-18:

**Table 34: Revenue from sale of power at existing Tariff (Rs Cr)**

Category of Consumers	FY 2016-17	FY 2017-18
	Revenue (Rs. Cr.)	Revenue (Rs. Cr.)
Domestic Service	3,507.91	4,736.09
Non-Domestic Service	1,992.97	2,410.38
Public Street Light	128.52	148.75
Agriculture Metered Supply	2,747.35	3,071.41
Agriculture Flat Rate Supply	92.83	13.76
Small Industrial Service	221.98	244.55
Medium Industrial Service	575.86	596.22
Large Industrial Service	2,730.98	2,939.36
P.W.W. & S. Pumping –Small	151.66	166.07
P.W.W. & S. Pumping –Medium	31.14	34.11
P.W.W. & S. Pumping –Large	207.07	237.69
Mixed Load / Bulk Supply	133.00	145.26
Electric Traction	290.90	-
<b>Total</b>	<b>12,812.17</b>	<b>14,743.64</b>

**Subsidy from State Government**

- 6.3 The State Government used to provide transitional period support to the Petitioner including reimbursement of past losses, subventions against electricity duty and cash support to meet operational losses. However, as per the UDAY scheme, no further cash support will be provided by the State Government except subvention against ED. Subvention against ED has been estimated based on the sales projected for the year and the category wise per unit ED subvention receivable. The following table summarises the subsidy expected to be received in FY 2016-17 and FY 2017-18.

**Table 35: Subsidy support from State Government (Rs Cr)**

Description	FY17 (Proposed)	FY18 (Proposed)
Differential Interest Subvention on World Bank Loan	4.00	3.00
Subvention from State Govt. against ED	563.97	664.28
Subsidy against compounding charges	15.00	17.00
<b>Total Subsidy Amount</b>	<b>582.97</b>	<b>684.28</b>

**Revenue Deficit at existing tariff**

6.4 The revenue deficit for third and fourth year of control period FY 2016-17 and FY 2017-18 at the existing tariff has been summarised in the following table.

**Table 36: Revenue deficit at existing tariff (Rs Cr)**

<b>Particulars</b>	<b>FY 17</b>	<b>FY 18</b>
Aggregate revenue requirements [A]	16,375.84	17,977.06
Revenue at existing tariffs [B]	12,812.17	14,743.64
Revenue from trading activity [C]	515.84	970.27
<b>Revenue deficit before subsidy [ D = A- B-C ]</b>	<b>3,047.83</b>	<b>2,263.15</b>
Subsidy support from State Government [E]	582.97	684.28
<b>Revenue deficit after subsidy [F =D- E ]</b>	<b>2,464.86</b>	<b>1,578.87</b>
Add: Revenue deficit for previous year [G]	-	2,617.70
Carrying cost on revenue deficit as per SBI Base rate during first half of FY [H]	152.84	422.55
<b>Revenue deficit after adjusting for previous year gap [I = F + G + H]</b>	<b>2,617.70</b>	<b>4,619.12</b>

6.5 For computation of carrying cost on revenue gap for FY 2016-17 and FY 2017-18, interest rate equivalent to average interest rate on long term loans has been considered.

6.6 As can be seen from table above, the Petitioner would be in revenue deficit in FY 2016-17 and FY 2017-18 at the existing tariffs.

**A7: TREATMENT OF REVENUE DEFICIT**

- 7.1 As detailed in above section, the revenue deficit of the Petitioner at existing tariffs for the year FY 2016-17 and FY 2017-18 is estimated at Rs 2,464.86 Cr and Rs 1,578.87 Cr, respectively. Thus, the cumulative revenue gap for FY 2016-17 and FY 2017-18 comes out to be Rs 2,617.70 Cr and Rs 4,619.12 Cr (including carrying cost on revenue gap for FY 2016-17 and FY 2017-18 respectively).
- 7.2 The Petitioner would like to mention that necessary steps are being undertaken to reduce the cumulative revenue gap and to improve overall efficiency. Some of these steps have been listed below:

(a) **Loss Reduction**

In order to achieve envisaged operational efficiency and bring around improvements, various measures are being taken. The steps include restricting power supply in areas with high AT&C losses, performance monitoring and management system, 100% feeder and DT metering, AMR metering for high value consumers, energy audit & accounting at feeder level, etc. All feeders are planned to be equipped with three phase electronic meters at sub-stations from where the feeders originate. This will enable comparison of energy sent into the feeder and the energy billed thereby helping in better estimation of AT&C losses in each feeder. 100% metering of feeders will also assist in identification of 'high-loss' feeders which will subsequently help in implementation of Discom's plan to do loss based load shedding so as to disincentivize theft.

Loss reduction targets have been prepared at the division/circle/zonal level and concerned officials have been made responsible for achieving the loss reduction targets. At the same time, efforts are also being made to reduce theft and other illegal activities by undertaking name and shame campaign and aggressive vigilance drives. Further, the capital investment plans are also on-going to achieve the distribution loss trajectory set forth by the Commission.

The Discom is committed towards reduction of losses and therefore time bound targets have been set for each of the above listed activities. These initiatives have also been recognized at the highest levels and form part of the landmark tripartite MoU signed under the UDAY scheme between the Discoms, the Central Ministry and the Rajasthan government.

(b) **Feeder Segregation**

In order to limit supply of power to agricultural consumers to block hours, it is essential to have agricultural and non-agricultural consumers in rural areas on separate feeders. At present, the distribution network in rural areas is only virtually segregated which limits the Discom to resort to providing three phase supply for the block hours and single phase supply during rest of the day. If the rural feeders are physically segregated across rural domestic and

agriculture consumers, three phase supply can be provided to domestic consumers throughout the day while limiting agricultural consumers to the block hours. Therefore, the Discom aims to physically segregate the feeders which shall also enable the Discom to reduce the losses.

(c) **Billing efficiency**

To improve billing efficiency of the Discom, measures have been undertaken to ensure 100% consumer metering. The Petitioner has completed consumer metering except for agriculture connections which are flat rate consumers. Conversion of these flat rate agriculture consumers to metered consumers is also planned to ensure proper energy and reliable accounting. Also, efforts are being made to ensure that meter readings are taken regularly and defective meters are replaced within a span of 2 months from the date of detection.

AMR metering which reduces human intervention is another step towards proper billing and revenue realization. In the first phase, AMR metering of high value consumers has been planned and initiated. As mandated in the UDAY scheme, Discom plans to install AMR meters for all consumers with consumption above 500 units / month by June 2018 and for other consumers with consumption above 200 units / month by June 2020.

(d) **Network Strengthening**

To reduce technical losses and to eliminate the occurrence of shutdowns and number of tripping (improve reliability), feeder and substation improvement programs are being implemented in the State. The Discom has also taken up strengthening and augmentation of existing distribution infrastructure by constructing more 33kV substations and load balancing on 33kV network.

Under Feeder Improvement Program, sag correction, reduction in long spans and re-conditioning of transformers is being undertaken while Substation Improvement Program entails replacing defective feeder meters, circuit breakers and roster switches. Discom is making all out efforts to ensure a shift from breakdown maintenance to preventive maintenance. Feeder Managers have been appointed to monitor the condition of feeders. Proper log books are maintained to ensure maintenance schedule is adhered to.

In order to keep the distribution network robust, the Discom has also taken several other steps to ensure distribution network remains robust. These steps include:

- Review and updating of technical specifications, qualifying requirements of suppliers and warranty conditions;
- Notifying norms for technical staff for grid sub-stations;
- Enforce warranty obligations to replace defective equipment;

- Repair of equipment not under warranty within a specified time frame

The progress of FIP and SIP is being constantly monitored at the corporate level through parameters like number of tripping per month per feeder.

(e) **Cost Optimisation**

Improved power purchase management, better forecasting, load curve straightening, improved inventory management etc. have been planned with the use of better systems and IT implementation. The Discom is actively working on improving its efficiency of power procurement especially to take advantage of cheaper power available at exchanges or through bilateral deals. The discom is also evaluating other options such as surrendering costly PPAs, under-drawing power through PPAs when the variable cost is higher than what is available bilaterally or through exchanges.

Discom is also undertaking measures for accurate load forecasting so that impact of over drawl and under drawl on power purchase cost can be minimized. These measures will help to optimise the cost and reduce the existing revenue gap.

(f) **Vigilance Drives**

As part of the Discom's efforts to reduce commercial losses, aggressive vigilance and anti-theft drives are being undertaken. A significant increase in revenue realized from vigilance has been seen as compared to the previous years. While electricity theft is a criminal offence, most of such cases in the past have been compounded and prosecution is hardly pursued. This is one of the primary challenges being faced by the Discom as far as vigilance is concerned. The Discom is trying to address this challenge and has seen a substantial increase in the number of FIRs being lodged.

(g) **Private Sector Participation**

Encouraging private sector participation in the distribution segment was one of the mandatory conditions of the Central FRP scheme, 2012. Further, the aggressive targets for efficiency improvement measures mandated by the UDAY scheme also necessitate adoption of this route for achieving the desired results in a time bound manner. The GoR has planned for private sector participation in distribution through input based distribution franchise model in 7-8 towns/areas in the state in phases.

(h) **Demand Side Management**

Demand side management is one the most cost effective ways to reduce demand cost of power purchased. Incandescent bulbs are being replaced with

LEDs. Also the existing street lights are being replaced with energy efficient street lights with the help from local development bodies.

(i) **Focus on customer service**

A MoU has been signed with GoI to provide 24X7 reliable and quality supply of Power to all its consumers (except agriculture) and Discom is committed to provide the same. In order to improve reliability of supply, the Discom has planned to provide separate direct three phase feeders from 33kV substation in villages having population above 3000.

Numerous other initiatives are being undertaken to improve quality of service. Use of IT is being promoted to reduce human intervention and make it convenient for consumers to interact with the Discom. Connection related services like application for new connections and payment of bills is now available online. Discom has opened centralized customer care and call center for timely resolution of complaints related to current and other technical complaints, misbehaviour by official, reporting of theft and safety related complaint etc. These call centres have defined service levels and escalation mechanism and facility of SMS alerts to consumers. Discom is also utilizing social media for better outreach to consumers besides introducing more avenues to consumers for bill payment, which could be in terms of e-payment through net banking, credit/ debit card etc.

(j) **Safety related measures**

The safety of the general public and its employees has been identified as an issue of utmost importance by the Discom. Various steps in this regard are being taken by the Discom, some of which are mentioned below:

- i. Feeder Improvement Programme (FIP) – Main features of this programme are as under**
- Tightening of loose wires
  - Straightening of tilted poles
  - Insertion of Pole in long span for providing adequate ground clearance
  - Reconditioning of distribution transformer single phase
  - Reconditioning of distribution transformer three phase
  - Replacement of obsolete AB cables
  - Capacity argumentation of single phase DT's
  - Earthling of single phase DT's
  - Providing three phase systems in villages near to 33/11 KV S/s
  - Tightening of loose AB cable
  - Providing M-seal / repairing of unsealed cable points.

- Providing Insulated connectors
  - Replacement of defective meters
  - Transformer reading platform etc
- ii. Sub Station Improvement Programme (SSIP) - Main features of this programme are as under**
- Replacement of non-operative roster switches
  - Installation of new roster switches
  - Repair/replacement of non-operative circuit breakers
  - Installation of new circuit breakers
  - Replacement of non-functioning feeder meters.
  - Installation of new feeder meters
  - Improvement of earthing at 33 KV substation/power transformers, etc.
- iii. Training Programmes and Social Awareness –** The Discom in its endeavour to provide safe and sound services to the public is carrying out intensive training sessions to its employees. Also in order to reach out to a wider public, it has been spreading consumer awareness through social media and other platforms.

7.3 Additionally, the Petitioner submits that even after all the efforts being made by the Petitioner, it would not be possible to bridge the entire revenue deficit and recover total cost of supply in the future without revision in existing tariff but no tariff hike is being proposed for FY 2016-17 and FY 2017-18.

7.4 However, the Petitioner proposes to include certain tariff rationalization measures in order to facilitate better utilisation of resources and better revenue management.

### **Tariff Rationalization**

7.5 The Petitioner proposes to include the following tariff rationalization measures for FY 2016-17 in order to facilitate better utilisation of resources, economic pricing and better revenue management:

### **Load Factor Rebate:**

7.6 Load factor for any consumer indicates its consumption pattern and utilization of consumers contract demand. Forecasting and planning is done for both power procurement as well as strengthening and augmentation of network infrastructure on the basis of connected load and consumption pattern of consumers. If there are huge and random variations in the consumption pattern, it disturbs the entire system of the Petitioner. Moreover due to such variations, forecasting of requirement becomes less accurate resulting in increase in power purchase cost or penalties in the form of deviation settlement charges as well as inefficiencies in network infrastructure. Therefore considering the system stability as well as proper planning and projections, it becomes necessary that the load factor variation is minimised.

7.7 Therefore to incentivise consumers to minimise such variations in load factor, load factor rebate is proposed to be introduced for 'Large Industrial Consumer Category'. The Petitioner proposes a rebate of Rs 0.15 per unit on energy charges for such consumers maintaining Load Factor of 50% and above during the billing period. The rebate would only be applicable on the energy consumption over a load factor above 50%.

### **Power Factor Rebate**

7.8 It is needless to mention that low power factor is detrimental to the network of the licensee. Power Factor of system is governed by nature of load. Generally low power factor is caused by the highly inductive load on the system. Due to low power factor actual working component of the power gets reduced leading the system to overloading, Higher Line Losses, Voltage Dips.

7.9 Economical operation of the system is difficult in low power factor scenario as appropriate infrastructure needs to be added to compensate its ill effects. So, it becomes very important that a reasonable value of power factor to be maintained for reliable & economical operation of the system

7.10 Few ill effects of low power factor are as given below:

- System load with a low power factor draws more current than a system with a higher power factor
- A low power factor draws higher internal current which generates excessive heat that further reduces the equipment life or damages the equipment
- Increased reactive loads can reduce output voltage and damage equipment sensitive to reduced voltage

7.11 Considering the above ill-effects of a low power factor and benefits of maintaining a higher power factor, the power factor penalty/rebate structure is already present and applicable. However, it is proposed to modify the structure to ensure that the rebates are commensurate with the benefits accrued to the network. As the benefits do not increase equally for every percentage point improvement in power factor, it is proposed to introduce graded power factor rebate in the following manner:

7.12 In case average power factor is above 0.95 (95%), an incentive of 0.5% of energy charges shall be provided for each 0.01 (1%) improvement above 0.95 (95%) till 0.97 (97%). If the average power factor is above 0.97 (97%), an incentive of 1% of energy charges shall be provided for each 0.01 (1%) improvement above 0.97 (97%).



- 7.13 Where the installation of the meters at the consumer's premise comply with the requirements of the CEA (Installation & Operation of Meters) Regulations, 2006, in case average power factor is above 0.950 (95.0%), an incentive of 0.05% of energy charges shall be provided for each 0.001 (0.1%) improvement above 0.950 (95.0%) till 0.970 (97.0%). If the average power factor is above 0.970 (97.0%), an incentive of 0.1% of energy charges shall be provided for each 0.001 (0.1%) improvement above 0.970 (97.0%).
- 7.14 In case the average power factor falls below 0.90 (90%), a surcharge of 1% of energy charges for every 0.01 (1%) fall in average power factor below 0.90 (90%), shall be charged. Where the installation of the meters at the consumer's premise comply with the requirements of the CEA (Installation & Operation of Meters) Regulations, 2006, in case average power factor falls below 0.900 (90.0%), a surcharge of 0.1% of energy charges for every 0.001 (0.1%) fall in average power factor below 0.900 (90.0%), shall be charged.
- 7.15 If the power factor falls below 0.70 (70%), the installation shall be disconnected and will not be reconnected till the time average power factor is improved to the satisfaction of the Petitioner.

**Voltage Rebate:**

- 7.16 Voltage rebate is provided to HT consumers based on the voltage at which they are connected. It is being given to incentivize HT consumers to avail connections on a higher voltage level. Although the energy charges are the same for all HT consumers of a category, consumers who have taken a connection at a higher voltage level are given a rebate in accordance with their voltage level.
- 7.17 This is because the T&D losses at higher voltage level are less and hence the benefits of the same can be shared with the consumers. However, the benefits of higher voltages are only in terms of savings in energy alone and there is no impact on fixed charges. Moreover, the maintenance cost for HT lines are higher compared to lower voltage lines.
- 7.18 Further, at present the fixed charges in the tariff do not ensure recovery of fixed cost elements of the Petitioner as envisaged while introducing two part tariff. Therefore in view of the Petitioner, offering voltage rebate on fixed as well as energy charges is not appropriate.
- 7.19 Similarly, in case of an LT consumer who is provided High Tension Supply, a rebate of 7.5% on the billed amount (Fixed charges plus Energy charges) is applicable. In this case also, the rebate should only be applicable on the energy charges.
- 7.20 Hence in light of the above facts the Petitioner prays to the Hon'ble Commission to redefine the applicability of the voltage rebate which should be applicable only on the energy charges and not on both energy charges and fixed charges. This shall facilitate economic pricing of electricity reflecting the true costs/ benefits of availing supply at higher voltage level.

**Domestic Service (Schedule DS/LT-1)**

- 7.21 In case of a new consumer, for the first six months, Fixed charges are levied at the lowest slab and thereafter on the basis of six months average consumption. To provide further clarity it is proposed to modify the note as follows:

*“Fixed charges shall be levied on the basis of average monthly consumption of previous financial year. In case of a new consumer, for the first six months, Fixed charges shall be levied at the lowest slab of General Domestic and thereafter on the basis of six months average monthly consumption.”*

- 7.22 The above mentioned change will clarify that for first six months, fixed charges are to be paid equivalent to fixed charges applicable for the lowest slab of General Domestic-1 and not Small Domestic. It is pertinent to mention that a new consumer is given connection under General Domestic only and to provide the benefit of rebate provided to Small Domestic, it has to be first ensured that the consumption does not exceed 50 units in any month.

**Prompt Payment Rebate**

- 7.23 An incentive of 0.15% is being allowed on energy and fixed charges in the next bill if payment is received before seven (7) working days from the due date of the bill. The Petitioner proposes to add another provision to incentivise consumers for prompt payment which will also improve the cash flows of the Discom.
- 7.24 Accordingly the Petitioner proposes to allow an incentive of 0.35% on energy and fixed charges in the next bill if payment is received before ten (10) days from the due date of the bill.

**Tariff for Temporary Supply**

- 7.25 At present, in case of temporary tariff, the applicable tariff for corresponding permanent supply plus 50% is being charged. The same is being proposed to be revised to the corresponding permanent supply tariff plus 10% for a period of two months. The proposed change would be applicable for a group of consumers, trusts and societies holding events and will not be applicable for individual consumers and for construction purposes. The proposed change would only be applicable for fairs, exhibitions and decorative purposes. Post the period of two months the existing clause (permanent tariff plus 50%) will be applicable.

**Exceeding Contract Demand clause for HT Consumers**

- 7.26 Presently a consumer is not allowed to cause a demand more than his contract demand. In case a demand of more than 105% of the contract demand in a particular month is caused, apart from disconnected, he shall be required to an extra charge equal to the same percentage of the Fixed and Energy charge by which the percentage the excess demand has actually been caused.

- 7.27 It is proposed that the ceiling limit for such cases be increased to 120% during night hours (22:00- 06:00 hours) for deemed energy drawl from Discom only. The energy drawl from open access will not be considered in this case. In case of daytime (06:00- 22:00 hours) the existing clause be retained.
- 7.28 The Petitioner thus, requests the Hon'ble Commission to approve the aforementioned tariff rationalization measures.

## A8: Compliance to Directives issued by Hon'ble Commission in Tariff Order dated 22<sup>nd</sup> September 2016

8.1: The following table summarises the issue-wise compliance to directives issued by the Commission in the previous ARR and Tariff Order:

**Table 37: Compliance to Directives**

S. No.	Particulars	Compliance report
1.	<p><b>Proper Filing of Petition</b> Discoms shall, while filing petitions for future years, provide all requisite information in complete form so as not to give room for any complaint in this regard and to enable the Commission to take expeditious decision on the petition.</p>	The petitioner has made genuine efforts to provide the information as per the prescribed formats. However in some places, despite the best efforts of the petitioner, information could not be provided. Such columns have been left blank & appropriate reason has been mentioned.
2.	<p><b>Conversion of Flat to Metered Consumers</b> Provide the report on conversion of flat rate agriculture consumers to metered consumers before filing the next petition otherwise entire energy consumed by these consumers may be disallowed in the ARR as penalty</p>	The petitioner submits that meters have been provided on all the flat rate agriculture consumers in urban areas as on date.
3.	<p><b>Loss Reduction</b> The Discoms in UDAY Scheme have targeted to achieve the loss level of 15%. The Discoms may look into the data of losses of Towns/Sub-Divisions furnished to the Commission and analyse the reasons wherever losses are more than 15% and take effective measures to reduce the losses to at least 15%. The Discoms should furnish a detailed report in this regard to the Commission on action taken</p>	Petitioner submits that in order to adhere to the targets specified for loss reduction, various measures of technical intervention in existing infrastructure, domestic and other connections have been initiated. Petitioner submits that road map with quarterly target for reduction of AT&C losses in FY 2017 has been prepared. Through Chairman Discom orders the field officers have been directed to effectively implement these measures so as to bring the loss level down to specified targets gradually as per UDAY Scheme. Petitioner submits that road map for AT& C loss reduction for FY 2017 has been prepared with quarterly targets. Copy of above orders are enclosed at <b>Annexure – 1.</b>
4.	<p><b>Energy Accounting and Auditing</b> As per Rajasthan State Electricity Distribution Management Responsibility Act, 2016, the road map in relation to energy accounting and auditing and time bound metering of all consumers shall be prepared within six months and approval for the same shall be sought from the State Commission. The consumer indexing shall be completed within one year from the date of coming into force of the said act.</p>	11 KV feeder wise energy accounting has been started under Network Indexing Module (NIM). Further a work order has been awarded to M/s. PWC for independent review of energy audit of all 189 sub-divisions of Discom vide No. 1540 dated 4.11.16 which is under progress. All consumers have been metered except agriculture flat rate consumers of rural areas. Further for effective revenue

S. No.	Particulars	Compliance report
		management in field, in order to ensure achieving of targets under RSEDMR Act, 2016 standing order for compliance has been issued by Chairman Discoms vide No. 16/08 dated 27.08.2016, copy of which is enclosed at <b>Annexure – 2</b> . Consumer indexing of all the 11KV feeders have been completed and DT wise consumer indexing is under process.
5.	<p><b>Voltage wise Cost of Supply</b>                      With the feeder metering, DT metering and segregation of feeders and energy audit as per the MOU entered under UDAY scheme, the Discoms shall be able to compute the voltage wise cost of supply with more accuracy in future. In case they need assistance of any experts, they may engage such experts and determine voltage wise cost of supply by the next tariff filing.</p>	The petitioner submit that work of 11 KV feeder meter is completed. However feeder segregation is under progress. The DT metering also has not yet been completed. Upon completion of the above works in progress, the basic parameters required for ascertaining voltage wise losses will be available subsequently which the voltage wise cost of supply will be computed accurately.
6.	<p><b>Preparation of Fixed Asset Register</b>                      In the Commission’s view it may be difficult for Discoms to find out the old data but not impossible. Therefore Discom may prepare the asset registers taking into account the available data. For the future, petitioners shall maintain the asset register so that the difficulty now faced by them for prior period is not faced by them again. All properties of Discoms should also be accounted for and secured as these are public properties and need to be protected and will be of use for future requirements of the Discoms.                      As per section 7(2) of the recently enacted “Rajasthan State Electricity Distribution Management Responsibility Act, 2016” the State Government shall ensure that the Distribution Licensees complete physical verification and prepare fixed assets register as per accounting standards prescribed under the Companies Act, 2013 within two years.</p>	The work for preparation of Fixed Assets Register has been outsourced to M/s Ankit Maheshwari & Associates Jaipur who has compiled and submitted the Draft Fixed Assets Register of Kota circle which is under verification Further Discom is also considering to introduce IT enabled system for better inventory and fixed assets management.
7.	<p><b>Consumer Education</b>                      Discoms shall make arrangements to inform the consumer about the availability of energy saving pumps, fans and air conditioners, so that consumer may adopt them considering the benefit they may derive from them in the form of savings in electricity charges. Discoms should also consider to extend similar schemes to consumers of other categories.</p>	Petitioner submits that continuous efforts are being made to educate consumers about using energy efficient equipments & to use electrical energy judiciously. In chaupals organised in sub divisions, the consumers are being informed about ways & means of saving electricity by using energy efficient equipments. The consumers are also being awared through television, SMS, publicity in newspapers etc. Moreover in some circles, campaigns have been organised in school where the children & associated staff were requested to take oath to save electricity &

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		<p>motivate their family members also to do so. Similar campaigns has been carried out in government offices also. During the meeting of district administration where members of Zila Parishads, Municipal wards etc. are present, the Discom officials brief them about various schemes in existence for saving electricity including advantages of using star labelled equipments.</p>
8.	<p>The DSM measures proposed under the UDAY Scheme should also be pursued by educating agriculture consumers about the benefit of using energy efficient pumps, pipes and adopting sprinkler/ drip irrigation. This makes more sense in the context of State of Rajasthan where water is a scare resource. The savings through introduction of DSM in agriculture sector is vast and will lead to savings for farmers by way of reduction in bills, for Discom by way of reduction in losses and cost and for the Government by way of reduction in subsidy.</p>	<p>Petitioner submits that the DSM programme in agriculture sector has been proposed to be implemented by replacing existing pump sets with energy efficient pump sets with starting of a pilot project in Chomu (Jaipur). M/s EESL in consultation with J-PAL and Principal Secretary Energy has submitted a DPR for replacing 2 lac pumps in 6 districts of Rajasthan. The baseline data of 93 Agriculture pumps and replacement of 50 inefficient pumps with Energy Efficient pumps of Tejaji feeder of Chomu sub division. In all 28 pumps were replaced. This was done to finalise the methodology and estimate the savings through the replacement of pumps with energy efficient pumps. Upon analysis of the project with respect to financial viability corresponding to annual energy savings potential through the project, it will be replicated in other areas in phased manner. Besides this, Incandescent bulbs are being replaced with LED bulbs and streetlights are being replaced with energy efficient lights.</p>
9.	<p><b>Provision of Basic Facilities at Sub-Divisions</b> Stakeholders also pointed that when they visit a subdivision there is no one to guide and facilitate them. Discoms may consider to designate one officer/ employee as “consumer friend” to guide/ facilitate the consumers. Further, Discoms shall not hesitate to provide seating arrangements, etc. as these are the minimum courtesies to be provided to the consumers.</p>	<p>Petitioner submits that the basic amenities for the consumers are in existence &amp; have been provided in all sub division of Discoms. Also one employee in sub division has been designated as consumer clerk/ consumer friend to guide/ facilitate the consumers.</p>
10.	<p><b>Cost Benefit Analysis</b> The Commission requires Discoms to submit a detailed report with regards to cost benefit analysis of expenditure incurred under Investment Plan within a period of three months for consideration of the Commission. Similar reports be submitted on RGGVY works and RAPDRP programmes.</p>	<p>Petitioner submits that the work in sub-transmission &amp; distribution investment plan scheme are identified on a need basis with objective to increase reliability of network, strengthening of network &amp; improvement of system to meet the growth in demand. The</p>

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		proposals for investments to be undertaken in the field are forwarded by circle SEs after due diligence & cost benefit analysis. The detailed report on RGGVY & DDUGJY along with updated status of these schemes and that of RAPDRP is enclosed at <b>Annexure – 3.</b>
11.	<p><b>Replacement of Defective Meters</b> The Commission observes that Discoms shall install the new meters/replace the defective meters on war footing as this is not only a statutory obligation but will also help them in energy accounting which is a must for the energy audit. The Discoms shall adhere to the schedule for installation of the AMR meters under the “UDAY Scheme”.</p>	Petitioner submits that to ensure that the defective meters are changed within stipulated time, directions in field have been issued through JPR5 – 820 dt. 11.11.2016 & JPR5-813 dt. 19.10.2016 ( <b>Annexure – 4</b> ) detailing procedure for installation/ replacement of meters with duties of ARO, JEN, AEN & ACOS specified clearly in the task. Till Nov-2016 out of total metered consumers existing, around 10 % defective meters/ metering arrangement are existing which will be replaced. The policy framing of installation of AMR meters is under process. Once the policy framed, the tenders will be floated.
12.	<p><b>Compliance of Safety Regulations</b> If Petitioners need to spend any money for compliance of the Safety Regulations, the same can be claimed through Investment Plan/ARR and the Commission is willing to consider any additional amount spent on training of employees and for compliance of Safety Regulations during truing up exercises for FY 2015-16 and in ARR for subsequent years.</p>	The petitioner submits that regular directions are imparted to field officers for ensuring compliance of CEA Safety Regulations, 2010. Further in the training programmes being conducted for Discom employees, the safety measures for electrical lines as per the Safety Regulation are explained in detail. Also Surakshit Bijli Abhiyan Campaign has been implemented through Chairman Discom order dated 06.05.2016 ( <b>Annexure - 5</b> ). For educating the consumers in regard to safety from electricity, advertisements were also published in May 2016 & July 2016
13	<p><b>UDAY Scheme</b> Adherence to targets set under UDAY</p>	Petitioner submits that for adherence to targets set under UDAY, various officers have been designated as initiative owners for each activity for ensuring that the required activities are being completed in stipulated time and monthly monitoring of each of the activity is also done. The list of such designated officers, activity wise, is enclosed at <b>Annexure - 6.</b>
14.	<p><b>Energy Audit</b> Discoms have contemplated that work of installation of meters on feeders will be got completed in a time</p>	Petitioner submits that work of installation of meters on 11 KV feeders in urban & rural areas

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	<p>bound manner. Considering this, the Commission observes that Discoms shall, based on the meter readings, conduct energy audit. As a parallel to installation of individual meters on unmetered consumers in particular agriculture consumer category, the Discoms may examine providing meters on feeders and at distribution transformer level and take the said data to arrive at actual consumption and also to take suitable action in case theft is noticed</p>	<p>have been completed. To conduct 11 KV feeder wise energy audit a work order has been awarded by SE (IT), Jaipur vide No. 727 dated 30.9.2009 to M/s. HCL. The work under this order is in progress. Further a work order has been awarded by Sr. AO (Revenue) to M/s. PWC vide No. 1540 dated 4.11.2016 for independent review of energy audit in all 189 sub divisions of Discom &amp; to submit a detailed report wherein verification of correctness of energy sold to the unmetered &amp; non consumers is also included in the scope. This work is also under progress.</p>
15.	<p><b>ERP Implementation</b> Commission observes implementation of ERP is a concrete and good step and should be implemented expeditiously. Further, MDs of Discoms should monitor the material management and inventory management so that adequate material is available for its works and at the same time excess purchase of material is avoided</p>	<p>"The Rajasthan Discoms have planned to implement ERP under Govt. of India's IPDS scheme over a period of 5 years. Part of the cost will be covered under IPDS, for which a central Govt. grant of up to 60% of approved project cost will be available. Deloitte Touche Tohmatsu India LLP has been appointed as Project Management Agency (PMA) under IPDS, to assist Discoms' in preparations of DPR and RFP for ERP implementation. The DPR prepared by the Discoms with the assistance of PMA has been submitted to PFC for approval. Once approved, a detailed RFP will be floated to select an ERP product and implementation partner. The implementation is expected to require two years."</p>



**A8: PRAYER**

8.1 Jaipur Vidyut Vitran Nigam Limited respectfully prays to the Hon'ble Commission:

- To admit the ARR Petition for FY 2016-17 and FY 2017-18;
- To approve the principles and methodology proposed for projection of ARR for FY 2016-17 and FY 2017-18 given in the detailed formats along with this application;
- To approve the changes in the tariff schedule proposed by the Petitioner;
- To condone any error/omission and to give opportunity to rectify the same;
- To permit the Petitioner to make further submissions, additions and alterations to this Petition as maybe necessary from time to time;
- To pass any other order as the Hon'ble Commission may deem appropriate.