

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 247/TT/2020**

**Coram:**

**Shri I. S. Jha, Member  
Shri Arun Goyal, Member  
Shri P. K. Singh, Member**

**Date of Order: 07.11.2022**

**In the matter of:**

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and determination of transmission tariff of 2014-19 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 in respect of (1) 400 kV K.V. Kota – Suryapet – I & II feeders for the period 2016-17 to 2018-19, (2) Part of PGCIL 400 kV VJA-NLR line (Nunna – Manubolu) to the extent of 18.405 km (Part of Nunna – Manubolu Ckt-3 from Loc. No: 532/15 to Loc. Nunna Sub-station + Part of VTPS – Manubolu Circuit from Loc. 532/16 to Loc. VTPS) for the period 2015-16 to 2018-19 pertaining to Transmission Corporation of Andhra Pradesh Limited (APTRANSCO) in Southern Region.

**And in the matter of:**

Transmission Corporation of Andhra Pradesh Limited,  
Vidyut Soudha, Gunadala,  
Vijayawada, Andhra Pradesh – 520004.

**...Petitioner**

**Versus**

1. Transmission Corporation of Telangana Limited,  
6<sup>th</sup> Floor, A Block, Vidyut Soudha,  
Khairathabad, Hyderabad – 500082.
2. Power Grid Corporation of India Limited,  
SAUDAMINI, Plot No.2,  
Sector 29, Gurgaon-122 001 (Haryana)
3. Tamil Nadu Generation and Distribution Corporation Limited,  
NPKRR Maaligai, 800, Anna Salai,  
Chennai – 600002.
4. Karnataka Power Transmission Corporation Limited,  
Kaveri Bhavan, Kempegowda Road,



Bangalore – 560 009.

5. Electricity Department,  
Government of Pondicherry,  
Pondicherry – 605001.
6. Kerala State Electricity Board,  
Thiruvananthapuram, Vaidyuthi Bhavanam,  
Pottom, Thiruvananthapuram – 695004.

.....Respondent(s)

**For Petitioner** : Shri Vallinayagam, Advocate, APTRANSCO  
Shri P. Mohan Rao, APTRANSCO  
Ms. P. Jyotsna Rani, APTRANSCO

**For Respondents** : None

### **ORDER**

The Petitioner, Transmission Corporation of Andhra Pradesh Limited (APTRANSCO), is a Company registered under the Companies Act, 1956 and it has been declared as the State Transmission Utility (STU) by the Government of Andhra Pradesh (AP). APTRANSCO is a deemed licensee under Section 14 of the Electricity Act, 2003 for transmission of electricity in the State of Andhra Pradesh. The present petition has been filed by the Petitioner for determination of tariff of 2014-19 tariff period in respect of 3 number of APTRANSCO owned transmission lines connecting the other State and intervening transmission lines incidental to inter-State transmission of electricity, in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. The Petitioner has made the following prayers in this petition:

- “1) To determine the tariff for the 3 Nos. Assets for FY 2015-16 to 2018-19;
- 2) To approve the annual fixed charges for the assets covered under this petition;



- 3) To Reimburse the filing fee and other expenses in accordance with the Regulation 70 of the Central Electricity Regulatory Commission (Terms and conditions of tariff) Regulations, 2014; and
- 4) To pass any other order or relief as this Commission may deem fit and proper in the facts and circumstances of the case.”

### **Background**

3. The brief facts of the case are as follows:

- a) The Petitioner, APTRANSCO, being the State Transmission Utility (STU) and a deemed transmission licensee, is required to build, maintain and operate intra-State transmission system in the State of Andhra Pradesh as per Sections 39 and 40 of the Electricity Act, 2003.
- b) The erstwhile State of Andhra Pradesh was bifurcated into new State of Andhra Pradesh and new State of Telangana on 2.6.2014 as per the Andhra Pradesh Reorganisation Act, 2014 (hereinafter referred to as “the 2014 Act”). The bifurcation resulted in number of inter-State transmission lines between new States of Andhra Pradesh and Telangana and some of these lines are partly/ wholly owned by APTRANSCO.
- c) The Commission *vide* order dated 14.3.2012 in Petition No.15/SM/2012 directed that tariff petition for determination of tariff for inclusion in PoC transmission charges be filed by the developers/ owners of the transmission lines or by State Transmission Utilities (STUs) where the transmission lines are owned by them in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009.
- d) The Commission *vide* order dated 12.5.2017 in Petition No.7/SM/2017 directed the State utilities to file tariff petitions for ISTS lines connecting two



States along with certificate from the concerned RPC for 2014-19 tariff period as per the 2014 Tariff Regulations.

e) Accordingly, APTRANSCO filed Petition No.237/TT/2016 for determination of tariff for 2016-17 only in respect of 42 inter-State transmission lines connecting States of Telangana and Andhra Pradesh for APTRANSCO owned transmission lines. The Commission vide order dated 21.6.2018 in Petition No. 237/TT/2016 granted tariff for the financial year 2016-17 in respect of all 42 natural inter-State transmission lines except for two lines (Asset-VIII and Asset-IX i.e. Uravakonda-Veltur-I and II Feeders) which were put under commercial operation with effect from 17.11.2016. The Petitioner was directed to file a fresh petition for these two assets alongwith the required information specified in the tariff Forms as per the 2014 Tariff Regulations.

f) Accordingly, the Petitioner filed Petition No.10/TT/2019 for determination of tariff for 40 number of lines for the control period viz. 2014-15, 2015-16, 2017-18 and 2018-19. In addition, the Petitioner also prayed for the determination of tariff for the 2 lines (Asset-VIII and Asset-IX i.e. 400 kV Uravakonda- Veltur D/C Quad moose line) for 2016-17, 2017-18 and 2018-19.

g) However, the Commission vide order dated 5.2.2020 in Petition No. 10/TT/2019 allowed tariff for 40 number of lines for 2017-18 and 2018-19 only and it did not consider Asset-VIII and Asset-IX for grant of tariff and directed the Petitioner to file a fresh petition for these two number of assets alongwith required information.



h) The Petitioner has filed the present petition in respect of 400 kV K.V. Kota-Suryapet-I and II feeders for 2016-17 to 2018-19 as Asset-I and Asset-II, while part of PGCIL 400 kV VJA-NLR line (Nunna-Manubolu) to the extent of 18.405 km (Part of Nunna – Manubolu Ckt-3 from Loc.No: 532/15 to Loc. Nunna Sub-station + Part of VTPS – Manubolu Ckt from Loc. 532/16 to Loc. VTPS as Asset-III for 2015-16 to 2018-19 as per the Commission’s 2014 Tariff Regulations. Asset-I, Asset-II and Asset-III are jointly referred to in this order as ‘transmission assets’ and their details are as follows:

Assets	Asset’s Name	COD	Length in km	Connecting States
Asset-I & II	400 kV K.V. Kota - Suryapeta - I	25.1.2017(*)	89.36	AP-Telangana
	400 kV Kota - Suryapeta I and II feeders			
Asset-III	VTPS-Nunna –I (Part of Nunna – Manubolu Ckt-3 from Loc.No: 532/15 to Loc. Nunna Sub-station + Part of VTPS – Manubolu Ckt from Loc. 532/16 to Loc. VTPS)	8.8.2015(**)	18.41	AP-PGCIL

(\*) As per Petitioner’s affidavit dated 10.7.2020, Asset-I and Asset- II were test charged on 20.10.2016 and subsequently put into commercial operation from 25.1.2017 after completion of 400 kV Kamavarapu-Kota Sub-station.

(\*\*) As per para 2 of letter dated 28.5.2019 (attached with the petition), written by APTRANSCO to SRPC regarding certification of above Asset-III that COD of the same is 8.8.2015 matching with asset (Asset-II, of PGCIL approved vide order dated 30.12.2015 in Petition No. 405/TT/2014).

i) The Petitioner has submitted that Asset-I and Asset-II were not included in the aforesaid two petitions i.e. in Petition No. 237/TT/2016 and Petition No. 10/TT/2019 for claiming tariff for 2014-19 tariff period as these assets were certified as inter-state lines by the SRPC vide its certificate dated 2.5.2019. The Petitioner vide affidavit dated 10.7.2020 has further submitted SRPC certificate dated 11.9.2019 issued to TSTRANSCO shows that SRPC has certified these two lines as natural ISTS lines from the year 2016-17. Accordingly, the Petitioner



has filed the instant petition with a prayer for determination of tariff for Asset-I and Asset-II for the 2014-19 tariff period.

j) As regards the claim of tariff for 2014-19 tariff period for Asset-III viz. VTPS-Nunna –I (Part of Nunna–Manubolu Ckt-3 from Loc. No: 532/15 to Loc. Nunna Sub-station + Part of VTPS – Manubolu Ckt from Loc. 532/16 to Loc. VTPS), the Petitioner has submitted that VTS-Nunna D/C line was executed in 2009 and no tariff was claimed for this line as ISTS till 4.8.2015 i.e. till the line was LILOed to terminate the PGCIL's VTS-Nellore line. PGCIL did not pay any charges for utilizing 18.4 km of APTRANSCO line and asked APTRANSCO to approach the Commission for its tariff. Accordingly, APTRANSCO has approached the Commission for claiming tariff for 18.4 km of line owned by APTRANSCO. The line has also attracted audit objections as there are no returns for the last 6 years.

4. The details of the transmission charges as claimed by the Petitioner in respect of the transmission assets for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	Asset-I & Asset-II		
	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	213.38	1207.52	1207.52
Interest on Loan	292.23	1573.52	1450.15
Return on Equity	238.91	1346.78	1355.55
O&M Expenses	18.03	104.64	108.12
Interest on Working Capital	37.56	85.38	83.19
<b>Total</b>	<b>800.11</b>	<b>4317.83</b>	<b>4204.53</b>

(₹ in lakh)

Particulars	Asset-III			
	2015-16 (pro-rata)	2016-17	2017-18	2018-19
Depreciation	21.52	32.72	32.72	32.72
Interest on Loan	18.08	22.07	18.80	15.54



Return on Equity	28.98	44.07	44.07	44.30
O&M Expenses	86.35	135.69	140.20	144.84
Interest on Working Capital	4.14	9.77	9.94	10.13
<b>Total</b>	<b>159.07</b>	<b>244.32</b>	<b>245.74</b>	<b>247.53</b>

5. The Respondents are distribution licensees, power departments and transmission licensees, who are procuring transmission services from the Petitioner, mainly beneficiaries of Southern Region.

6. The Petitioner has served the petition on Respondents and notice regarding filing of this petition has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notices published in the newspapers. None of the Respondent(s) have filed any reply in the matter.

7. Hearing in this matter was held through video conference on 23.6.2022 and order was reserved.

8. Having heard the learned counsel for the Petitioner and on careful perusal of the materials on record, we proceed to dispose of the petition.

9. This order is issued considering the submissions made by the Petitioner in the petition vide affidavits dated 5.9.2019, 10.7.2020, 27.7.2020, 10.10.2020, 7.7.2021, 19.7.2021, 7.12.2021, 30.6.2022 and 5.7.2022 and PGCIL's submissions made vide affidavit dated 14.7.2021.

### **Analysis and Decision**

10. Asset-I and Asset-II is taken up first for consideration and tariff for Asset-III has been considered in the later part of this order.



### **Determination of tariff of Asset-I and Asset-II**

11. The Petitioner has submitted that Asset-I and Asset-II were test charged on 20.10.2016 and subsequently put into commercial operation from 25.1.2017 after completion of 400 kV Kamavarapukota Sub-station. For the purpose of determination of tariff from COD to 31.3.2019 in respect of Asset-I and Asset-II, the Petitioner has furnished Auditor's Certificates and applicable tariff Forms as required under the 2014 Tariff Regulations.

12. We have considered the submissions of the Petitioner. The Commission vide order dated 12.5.2017 in Petition No. 7/SM/2017 directed the State utilities to file tariff petitions for the natural Inter-State transmission lines connecting two States along with the certificate from the concerned RPCs, for 2014-19 tariff period as per the 2014 Tariff Regulations. Accordingly, the Petitioner has filed the instant petition for determination of tariff in respect of the transmission tariff from COD to 31.3.2019.

13. It is further observed that Suryapet-KV Kota 400 kV D/C line as a part of Power evacuation system from 1040 MW Power plant of M/s Hinduja at at Visakhapatnam was discussed and agreed for implementation by united Andhra Pradesh. The Scheme was discussed in 36<sup>th</sup> meeting of the Standing Committee on Power System Planning of Southern Region held on 4<sup>th</sup> September, 2013. The relevant minutes of the 36<sup>th</sup> SCM of SR is extracted as under:

*“9.2 Power evacuation system from 1040 MW power plant of M/s Hinduja at Vishakapatnam*

*9.2.1 For evacuation of power from 1040 MW power plant of M/s Hinduja following is proposed by APTRANSCO:*

*(i) 400 kV twin moose D/c line from Kalpaka S/s to Hinduja (HNPCL) Switchyard.*

*(ii) A new 400/220 kV KVKota S/s with 2x315MVA capacity and 400kV twin moose D/c line from HNPCL switchyard to the proposed KVKota S/s.*

*(iii) 400/220kV Suryapet S/s with 2x315MVA capacity and 400kV quad moose D/c line from proposed KVKota S/s to proposed Suryapet S/s.*





(iv) 400kV quad moose D/c line from proposed Suryapet S/s to 400/220kV Yeddumailaram(Shankarapally). (this line is to be made through Manikonda which can be made LILO upon realization of 400kV Manikonda S/s).

(v) 400kV twin moose D/c line from proposed KVKota S/s to Vemagiri S/s.

9.2.2 COO(CTU), PGCIL said that the Hinduja generation project is getting ready for commissioning and APTRANSCO is very late in formulating its proposal for a sufficient transmission system which would enable evacuation of power from the project.

9.2.3 ED(SRLDC), POSOCO said that in view of the constraints in the system beyond Vemagiri, full evacuation of power from Hinduja project may not be possible as APTRANSCO is yet to start construction of above transmission system.

9.2.4 Member agreed for the above proposed transmission system. It was also agreed that in the absence of above transmission system the generation at Hinduja may have to be backed-down to avoid over-loadings in the grid. It was indicated that about 600 MW of power may be injected into ISTS either at Vemagiri or at Hinduja. The actual quantum of gas based injections at Vemagiri and that at Hinduja power project that may be allowed under different scenarios would be worked through operational studies on case to case basis.”

14. The erstwhile State of Andhra Pradesh was bifurcated to the States of Andhra Pradesh and Telangana w.e.f. 01.04.2014., from the date of bifurcation of the erstwhile State of Andhra Pradesh. We observe that KV Kota is located in Andhra Pradesh and Suryapet is located in Telangana. Hence these transmission lines would carry electricity from geographical area of State of Andhra Pradesh into the geographical area of State of Telangana.

15. It is further observed that SRPC vide letter dated 2<sup>nd</sup> May,2019 has certified the 400 kV K.V. Kota – Suryapeta D/C line as ISTS line.

16. In view of the above discussions, we approve 400 kV K.V. Kota – Suryapeta D/C line as ISTS line.

17. In the instant petition, the Petitioner has furnished the Auditor’s Certificates and tariff Forms in respect of Asset-I and Asset-II. Therefore, taking into consideration the submissions of the Petitioner for allowing tariff from COD to 31.3.2019 for 2014-19 tariff period in respect of Asset-I and Asset-II, we are of the view that tariff determination in respect of Asset-I and Asset-II is required to be dealt in accordance with the provisions

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of the 2014 Tariff Regulations. Accordingly, we proceed with the determination of tariff in respect of Asset-I and Asset-II in the following paragraphs.

**Commercial Operation Date (COD):**

18. Regulation 4 of the 2014 Tariff Regulations provides as follows:

*“4. **Date of Commercial Operation:** The date of commercial operation of a generating station or unit or block thereof or a transmission system or element thereof shall be determined as under:*

*.....*

*(3) Date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:*

*Provided that:*

- (i) where the transmission line or substation is dedicated for evacuation of power from a particular generating station, the generating company and transmission licensee shall endeavour to commission the generating station and the transmission system simultaneously as far as practicable and shall ensure the same through appropriate Implementation Agreement in accordance with Regulation 12(2) of these Regulations:*
- (ii) in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof.*

*(4) Date of commercial operation in relation to a communication system or element thereof shall mean the date declared by the transmission licensee from 0000 hour of which a communication system or element is put into service after completion of site acceptance test including transfer of voice and data to respective control centre as certified by the respective Regional Load Dispatch Centre.”*

19. The Petitioner has submitted that Asset-I and Asset-II viz. 400 kV K.V. Kota - Suryapet -I & II feeders, were test charged on 20.10.2016 and subsequently put into commercial operation from 25.1.2017 after completion of 400 kV Kamavarapukota Sub-station. The Petitioner has submitted SRPC certificate dated 2.5.2019, minutes of the meeting of 31<sup>st</sup> SRPC meeting indicating the commercial operation of the said line, SRPC certificate dated 11.9.2019 issued in connection with natural inter-State lines



between A.P., Telangana and SRPC letter dated 11.6.2020 regarding certification of natural ISTS lines in support of the same. Keeping in mind the above, COD of Asset-I and Asset-II is considered as 25.1.2017 for the purpose of tariff determination.

### **Capital Cost**

20. Regulations 9 of the 2014 Tariff Regulations provides as follows:

**“9. Capital Cost:** (1) *The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects.*

(2) *The Capital Cost of a new project shall include the following:*

(a) *the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*

(b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*

(bi) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period shall form part of the capital cost.*

(c) *Increase in cost in contract packages as approved by the Commission;*

(d) *Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;*

(e) *capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;*

(f) *expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations; 39*

(g) *adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and*

(h) *adjustment of any revenue earned by the transmission licensee by using the assets before COD.”*

.....

**“(6) The following shall be excluded or removed from the capital cost of the existing and new project:**

(a) *The assets forming part of the project, but not in use;*

(b) *Decapitalisation of Asset;*

(c) *In case of hydro generating station any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State government by following a two stage transparent process of bidding; and*



(d) the proportionate cost of land which is being used for generating power from generating station based on renewable energy:

Provided that any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment shall be excluded from the Capital Cost for the purpose of computation of interest on loan, return on equity and depreciation;”

21. The Petitioner has claimed the following estimated capital cost as on COD in respect of Asset-I and Asset-II and has submitted Auditor’s Certificate in support of the same:

(₹ in lakh)					
Assets	Asset Name	Length in km	Capital Cost as on COD	ACE for 2017-18	Completion Cost
Asset-I	400 kV K.V. Kota - Suryapeta - I	89.36	22693.61	176.07	22869.68
Asset-II	400 kV K.V. Kota - Suryapeta -II				

22. The Petitioner vide affidavit dated 30.6.2022 has submitted copy of Investment Approval (IA) duly approved by APERC vide Lr No. APERC / Secy. / Dir.(Eng.) / DD (Trans) / F:E700:27 / 2013 / Dt.12.3.2014 for 400 kV Suryapet Sub-station and associated lines. The Petitioner has submitted that 400 kV Suryapet Sub-station was originally proposed with LILO from 400 kV Kamavarapukota to Shankarapalli QMDC line and administrative approval for the said line was issued vide T.O.O. (CE-Construction/ 400 kV-II) Ms. No.01, dated 17.1.2014 in the erstwhile Andhra Pradesh in two parts viz Kamavarapukota to Suryapet and Suryapet to Shakarapalli. After State bifurcation, the Kamavarapukota – Suryapet line was executed in two phases i.e 400 kV Kamavarapukota – Chinakorukondi (AP portion) and Chinakorukondi – Suryapeta (TS portion).

23. We have considered the submissions of the Petitioner. The Petitioner has placed on record copy of IA dated 17.1.2014 in respect of Asset-I and Asset-II and the same



was further approved by APERC on 12.3.2014. Thus, these two assets were envisaged as a part of intra-State transmission system under the undivided State of Andhra Pradesh. It is observed that post bifurcation of the State of Andhra Pradesh, Asset-I and Asset-II stand natural ISTS line connecting the State of Andhra Pradesh and Telangana and APTRANSCO is now claiming tariff in respect of AP portion of this natural ISTS line.

24. On perusal of IA, it is further observed that IA was granted for erection of 400 kV Quad Moose DC line from 400/220 kV KamavarapuKota Sub-station- Suryapeta 400/220/132 kV Sub-station having length of 212 km at an estimated cost of ₹56702.33 lakh. On the other hand, the Petitioner has claimed the line and length in respect of Asset-I and Asset-II as 89.36 km for AP portion. Although, the Petitioner has submitted IA which depicts the FR cost of entire transmission line of 212 km from Kamavarapukota Sub-station to Suryapeta 400/220/132 kV Sub-station. However, apportioned FR cost in respect of A.P. portion of ISTS line (400 kV K.V. Kota - Suryapeta-I and II transmission line having length of 89.36 km) executed by APTRANSCO post bifurcation of the State of Andhra Pradesh is not made available nor execution schedule for the same is not made available and the Petitioner in Form-12 has not furnished the details of time over-run. The Petitioner has also not provided Form-5.

25. The Petitioner has prayed for determination of tariff in respect of Asset-I and Asset-II as ISTS lines. The Sharing of transmission charges for ISTS is governed by the provisions of the respective Sharing of Inter-State Transmission Charges and Losses Regulations (Sharing Regulations) wherein respective beneficiaries connected to ISTS share the transmission charges. Thus, this mechanism enables benefit for



beneficiaries as a whole and thereby beneficial to number of State / Region. However, in the instant petition, Asset-I and Asset-II are natural ISTS lines connecting the States of Andhra Pradesh and Telangana only. As such, the recovery of transmission charges under the provisions of the Sharing Regulations will require all the respondents to share the transmission charges of Asset-I and Asset-II whereas the same is connecting the States of Andhra Pradesh and Telangana only.

26. As SRPC has already certified 400 kV K.V. Kota - Suryapeta-I and II transmission lines as natural ISTS lines carrying inter-State power and the Petitioner has also made available audited capital cost alongwith F.R. cost of the entire transmission line of 212 km, we are of the view that Asset-I and Asset-II should be allowed tariff. Accordingly, capital cost in respect of Asset-I and Asset-II is allowed on provisional basis without capitalising IDC of ₹2063.06 lakh as claimed in the Auditor's Certificate and the same will be reviewed at the time of truing up of Asset-I and Asset-II. The Petitioner is directed to provide duly approved apportioned capital cost as per F.R. in respect of Asset-I and Asset-II along with details of scheduled date of commercial operation at the time of truing up. The Petitioner is further directed to provide awarded cost for Asset-I and Asset-II.

27. Accordingly, capital cost considered in respect of Asset-I and Asset-II as on COD under Regulation 9(2) of the 2014 Tariff Regulations is as follows:

<b>Assets</b>	<b>COD</b>	<b>Capital cost claimed as on COD as per Auditor's Certificate</b>	<b>Less: IDC not capitalised</b>	<b>Capital Cost considered for the purpose of tariff as on COD</b>
Asset-I & II	25.1.2017	22693.61	2063.06	20630.55



## **Additional Capital Expenditure (“ACE”)**

28. Regulations 14 of the 2014 Tariff Regulations provides as follows:

### **“14. Additional Capitalisation and De-capitalisation:**

*(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) Undischarged liabilities recognized to be payable at a future date;*
- (ii) Works deferred for execution;*
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*
- (v) Change in law or compliance of any existing law:*

*Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.*

*(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work after the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
- (ii) Change in law or compliance of any existing law;*
- (iii) Deferred works relating to ash pond or ash handling system in the original scope of work; and*
- (iv) Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.*

*(3) xxxxxx*

*(4) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of decapitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalised.”*

29. The Petitioner has claimed projected ACE of ₹176.07 lakh during 2017-18 period and submitted Audited certificate and Form-7 in support of the same. COD of Asset-I and Asset-II is 25.1.2017. Accordingly, as per Regulation 3(13) of the 2014 Tariff



Regulations, cut-off date of Asset-I and Asset-II is 31.3.2020. ACE claimed by the Petitioner in respect of Asset-I and Asset-II is as follows:

Assets	Projected ACE for period		Total
	2016-17	2017-18	
Asset-I and Asset-II	0.00	176.07	176.07

30. We have considered the submissions of the Petitioner. The Petitioner has claimed projected ACE of ₹176.07 lakh towards balance and retention payment of transmission line work under Regulation 14(1)(i) of the 2014 Tariff Regulations for 2017-18 period. Therefore, ACE of ₹176.07 lakh for 2017-18 period is allowed with respect to Asset-I and Asset-II under Regulation 14(1)(i) of the 2014 Tariff Regulations, subject to truing-up.

#### **Capital Cost for 2014-19 tariff period**

31. In view of above, the capital cost considered in respect of Asset-I and Asset-II for 2014-19 tariff period is as follows:

Assets	Capital Cost allowed as on COD	ACE allowed in 2017-18	Total Estimated Completion Cost allowed up to
			31.3.2019
Asset-I & Asset-II	20630.55	176.07	20806.63

#### **Debt-Equity Ratio**

32. Regulation 19 of the 2014 Tariff Regulations provides as follows:

**“19. Debt-Equity Ratio:** (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:





- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt : equity ratio.

**Explanation.**-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

33. The Petitioner in Form-6 has claimed debt-equity ratio of 70:30. Relying on the submissions of the Petitioner, debt-equity ratio of 70:30 has been considered in respect of Asset-I and Asset-II for the purpose of computation of tariff for 2014-19 tariff period. The Petitioner is directed to furnish the resolution of the Board of the company regarding infusion of equity to the extent of 30% as claimed by the Petitioner in respect of Asset-I and Asset-II at the time of truing up.

Asset-I and Asset-II	As on COD		As on 31.03.2019	
	Amount (₹ lakh)	(in %)	Amount (₹ lakh)	(in %)
Debt	14441.39	70.00%	14564.63	70.00%
Equity	6189.17	30.00%	6241.99	30.00%
<b>Total</b>	<b>20630.55</b>	<b>100.00%</b>	<b>20806.62</b>	<b>100.00%</b>



## Depreciation

34. Regulation 27 of the 2014 Tariff Regulations provides as follows:

**“27. Depreciation:** (1) *Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

(2) *The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

(3) *The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

*Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable.*

(4) *Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

(5) *Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:*

*Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

(6) *In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission*



upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) alongwith justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services.”

35. Depreciation has been dealt as per Regulation 27 of 2014 Tariff Regulations. Asset-I and Asset-II were put under commercial operation during 2016-17. Accordingly, they will complete 12 years of useful life beyond 2014-19 tariff period. Thus, depreciation has been calculated annually based on straight line method. Asset-I and Asset-II comprise of only single element viz. transmission line, therefore, Gross Block as on COD and ACE has been depreciated at the rate of 5.28% as specified in the 2014 Tariff Regulations. Accordingly, depreciation allowed during 2014-19 tariff period is as follows:

		(₹ in lakh)		
	Particulars	Asset-I and Asset-II		
		2016-17 (Pro-rata for 66 days)	2017-18	2018-19
A	Opening Gross Block	20630.55	20630.55	20806.62
B	Addition during the year 2014-19 due to projected ACE	0.00	176.07	0.00
C	Closing Gross Block (A+B)	20630.55	20806.62	20806.62
D	Average Gross Block (A+C)/2	20630.55	20718.59	20806.62
E	Depreciable value (D*90%)	18567.50	18646.73	18725.96
F	Weighted average rate of Depreciation (WAROD) (in %)	5.28	5.28	5.28
G	Lapsed useful life at the beginning of the year (Year)	0.00	0.00	1.00
H	Balance useful life at the beginning of the year (Year)	25.00	24.00	23.00
I	<b>Depreciation during the year(D*F)</b>	<b>196.97</b>	<b>1093.94</b>	<b>1098.59</b>
J	Aggregate Cumulative Depreciation at the end of the year	196.97	1290.91	2389.50



	Particulars	Asset-I and Asset-II		
		2016-17 (Pro-rata for 66 days)	2017-18	2018-19
K	Remaining Aggregate Depreciable Value at the end of the year(E-J)	18370.53	17355.82	16336.46

### **Interest on Loan (“IoL”)**

36. Regulation 26 of the 2014 Tariff Regulations provides as follows:

**“26. Interest on loan capital:** (1) *The loans arrived at in the manner indicated in Regulation 19 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

(2) *The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.*

(3) *The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.*

(4) *Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.*

(5) *The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered;*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

(6) *The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.*

(7) *The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.*



(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

*Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”*

37. IoL has been worked out as per Regulation 26 of the 2014 Tariff Regulations as follows:

1. Gross amount of loan, repayment of instalments and rate of interest on actual loans have been considered as per petition including additional information.
2. The yearly repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that year.
3. Weighted average rate of interest on actual average loan worked out as per (i) above is applied on the notional average loan during the year to arrive at the interest on loan.

38. The Petitioner, vide affidavit dated 27.7.2020, has submitted that loan was availed from REC for entire scheme/schemes in a bundled manner in which the line is an element. The Petitioner has submitted Form 9C with respect to Asset-I and Asset-II based on which we have worked out Weighted Average Rate of Interest (WAROI). IoL has been allowed in accordance with Regulation 26 of the 2014 Tariff Regulations. IoL allowed in respect of Asset-I and Asset-II for 2014-19 tariff period is as follows:

		(₹ in lakh)		
Particulars		Asset-I and Asset-II		
		2016-17 (Pro-rata for 66 days)	2017-18	2018-19
A	Gross Normative Loan	14441.39	14441.39	14564.63



B	Cumulative Repayments up to Previous Year	0.00	196.97	1290.91
C	Net Loan-Opening (A-B)	14441.39	14244.42	13273.72
D	Addition due to ACE	0.00	123.25	0.00
E	Repayment during the year	196.97	1093.94	1098.59
F	Net Loan-Closing(C+D-E)	14244.42	13273.72	12175.14
G	Average Loan (A+F)/2	14342.90	13759.07	12724.43
H	Weighted Average Rate of Interest on Loan (in %)	10.00	10.00	9.35
I	<b>Interest on Loan (GxH)</b>	<b>259.35</b>	<b>1375.91</b>	<b>1189.73</b>

### **Return on Equity (“RoE”)**

39. Regulation 24 and Regulation 25 of the 2014 Tariff Regulations provide as follows:

**“24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of-river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of-river generating station with pondage:

Provided that:

- i. in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:
- ii. the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:
- iii. additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:
- iv. the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
- v. as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
- vi. additional RoE shall not be admissible for transmission line having length of less than 50 kilo meters.”



## **“25. Tax on Return on Equity.**

(1) *The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax on income from other business streams including deferred tax liability (i.e. income on business other than business of generation or transmission, as the case may be) shall not be considered for the calculation of “effective tax rate”.*

(2) *Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:*

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

*Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.*

### **Illustration.-**

(i) *In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 20.96% including surcharge and cess:*

$$\text{Rate of return on equity} = 15.50 / (1 - 0.2096) = 19.610\%$$

(ii) *In case of generating company or the transmission licensee paying normal corporate tax including surcharge and cess:*

(a) *Estimated Gross Income from generation or transmission business for FY 2014-15 is Rs 1000 crore.*

(b) *Estimated Advance Tax for the year on above is Rs 240 crore.*

(c) *Effective Tax Rate for the year 2014-15 = Rs 240 Crore / Rs 1000 Crore = 24%*

$$(d) \text{Rate of return on equity} = 15.50 / (1 - 0.24) = 20.395\%$$

(3) *The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after trueing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.”*

40. RoE has been computed as per Regulation 24 of the 2014 Tariff Regulations.



The Petitioner has submitted copy of Income Tax Return filed for the financial years for 2014-19 tariff period in which it has been indicated that MAT rates were paid during the respective financial years. The Petitioner *vide* affidavits dated 30.6.2022 and 5.7.2022 has claimed RoE alongwith MAT rate and has claimed revised RoE in tariff Form-8.

41. In view of above, RoE allowed in respect of Asset-I and Asset-II for 2014-19 tariff period is as follows:

(₹ in lakh)				
	Particulars	Asset-I and Asset-II		
		2016-17 (Pro-rata for 66 days)	2017-18	2018-19
A	Opening Equity	6189.17	6189.17	6241.99
B	Addition due to ACE	0.00	52.82	0.00
C	Closing Equity (A+B)	6189.17	6241.99	6241.99
D	Average Equity(A+B)/2	6189.17	6215.58	6241.99
E	Return on Equity (Base Rate) (in %)	15.50%	15.50%	15.50%
F	Tax Rate applicable (in %)	<b>21.342%</b>	<b>21.342%</b>	<b>21.549%</b>
G	Rate of Return on Equity (Pre-tax)	19.705%	19.705%	19.758%
H	<b>Return on Equity (Pre-tax)</b>	<b>220.53</b>	<b>1224.78</b>	<b>1233.29</b>

### **Operation & Maintenance Expenses (“O&M Expenses”)**

42. Regulation 29(4) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. Norms specified in respect of the elements of Asset-I and Asset-II are as follows:

Element	Norms for 2014-15	Norms for 2015-16	Norms for 2016-17	Norms for 2017-18	Norms for 2018-19
<b>Transmission Line:</b> Double Circuit (Bundled conductor with four or more sub-conductors) (in ₹ lakh per km)	1.062	1.097	1.133	1.171	1.210
<b>Transmission Line:</b> Single Circuit (Twin & Triple Conductor) (in ₹ lakh per km)	0.404	0.418	0.432	0.446	0.461





43. The Petitioner has submitted the technical parameters of the transmission lines, considered for the purpose of working out of O&M Expenses in respect of Asset-I and Asset-II and the same are as follows:

Assets	Asset Name	Voltage	Line Type (S/C or D/C)	No. of sub-conductors	COD	Line Length (km)
Asset-I & Asset-II	400 kV K.V. Kota-Suryapeta-I feeder	400 kV	D/C (ACSR Quad Moose)	4	25.1.2017	89.36
	400 kV K.V. Kota-Suryapeta-II feeder					

44. We have considered the submissions of the Petitioner. Accordingly, the details of O&M Expenses worked out in respect of elements of Asset-I and Asset-II as per provisions of Regulation 29(4) of the 2014 Tariff Regulations are as follows:

(₹ in lakh)					
S. N.	Assets	Asset Name	2016-17 (pro-rata for 66 days)	2017-18	2018-19
1	Asset-I & Asset II	400 kV K.V. Kota-Suryapeta-I feeder	18.31	104.64	108.13
		400 kV K.V. Kota-Suryapeta-II feeder			

### **Interest on Working Capital (“IWC”)**

45. Regulations 28 of the 2014 Tariff Regulations provide as follows:

**“28. Interest on Working Capital:** (1) *The working capital shall cover:*

.....

**(c) Hydro generating station including pumped storage hydro generating station and transmission system including communication system:**

(i) *Receivables equivalent to two months of fixed cost;*

(ii) *Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and*

(iii) *Operation and maintenance expenses for one month.”*

.....



“(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1<sup>st</sup> April of the year during the tariff period 2014-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency.

46. IWC has been calculated considering SBI Base Rate plus 350 basis points as on 1.4.2016 (12.80%) for 2016-17. The components of the working capital and interest allowed thereon in respect of Asset-I and Asset-II for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	Asset-I and Asset-II		
	2016-17 (Pro-rata for 66 days)	2017-18	2018-19
Working Capital for O&M Expenses (O&M Expenses for one month)	15.19	15.70	16.22
Working Capital for Maintenance Spares (15% of O&M Expenses)	8.44	8.72	9.01
Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges)	655.22	647.55	618.69
<b>Total Working Capital</b>	<b>678.85</b>	<b>671.96</b>	<b>643.92</b>
Rate of Interest of Working Capital (in %)	12.80%	12.80%	12.80%
<b>Interest of Working Capital</b>	<b>15.71</b>	<b>86.01</b>	<b>82.42</b>

**Annual Fixed Charges for 2014-19 Tariff Period in respect of Asset-I and Asset-II**

47. The transmission charges allowed in respect of Asset-I and Asset-II for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	Asset-I and Asset-II		
	2016-17 (pro-rata for 66 days)	2017-18	2018-19
Depreciation	196.97	1093.94	1098.59
Interest on Loan	259.35	1375.91	1189.73
Return on Equity	220.53	1224.78	1233.29
O&M Expenses	18.31	104.64	108.13



Interest on Working Capital	15.71	86.01	82.42
<b>Total</b>	<b>710.87</b>	<b>3885.28</b>	<b>3712.17</b>

### **Determination of tariff in respect of Asset-III**

48. The Petitioner has claimed COD of Asset-III as 27.7.2016. The Petitioner has submitted that individual audited capital cost in respect of Asset-III is not available, therefore, benchmark cost of Asset-III is taken as per the methodology laid down vide order dated 21.6.2018 in Petition No. 237/TT/2016 for calculation of tariff of year 2016-17 by the Commission. The Petitioner has claimed tariff in respect of Asset-III and has submitted the following in support of its claims:

- a) Originally PGCIL planned for a 400 kV line from 400 kV Nunna Sub-station to 400 kV Manubolu Sub-station (Vijayawada–Nellore).
- b) There were right of way (RoW) problems in execution of 400 kV Manubolu-Nunna 3 & 4 feeders pertaining to PGCIL at Nunna (PGCIL) Sub-station. On the request of PGCIL those lines were terminated by LILO of 400 kV VTPS - Nunna Line-1 of APTRANSCO at 400 kV Manubolu Sub-station.
- c) PGCIL communicated APTRANSCO and the Chief Engineer/APGENCO/ Dr. NTPPS, Vijayawada, the following information with regard to completion of Vijayawada-Nellore 400 kV D/C line by loop-in and loop-out (LILO) on existing VTPS-Nunna circuit-I:
  - i. 400 kV D/C line from Vijayawada-Nellore 3 & 4 circuits under SRSS XVIII project, due to RoW constraint at Vijayawada end, this termination was modified and LILO of one circuit was done with existing VTPS-Nunna (PGCIL) 400 kV line of APTRANSCO after getting all approvals including approval from CEA dated 27.1.2015, clearance from APTRANSCO & APGENCO) (letter No. CE (IPC & PS) /SE/ PS/ DE (SS&LTSS)/ F.VTS-



NNA/ D.No.27/15, Dt:16.2.2015), standing committee of SRPC (Ref. 51/4(38th)/ SP&PA 2015/731-744 Dt.23.5.2015) and proceedings in SRPC meeting dated 7.3.2015.

ii. Accordingly, termination has been modified and both the lines have been executed and declared under commercial operation from 8.8.2015.

iii. The configuration after modification of Vijayawada-Nellore 3 & 4 circuits is as follows:

**Lines:**

- 1) Vijayawada (Nunna) -Manubolu 400 kV Sub-station (Circuit-3)  
Total Circuit km - 348.254 km
  - a) Asset belongs to PGCIL - 330.393 km
  - b) Asset belongs to APTRANSCO – 17.861 km  
From Loc. 532/15 to Loc Nunna Sub-station.
  
- 2) VTPS – Manubolu 400 kV Sub-station (APTRANSCO)  
Total Circuit km - 330.870 km
  - a) Asset belongs to PGCIL - 330.428 km
  - b) Asset belongs to APTRANSCO – 0.442 km  
From Loc 532/16 to Loc VTPS Switchyard.

**Bays:**

- i. Vijayawada (Nunna) – Manubolu 400 kV line bay at Manubolu Sub-station (APTRANSCO) belongs to PGCIL and bay at Vijayawada (Nunna) belongs to APTRANSCO. However, the asset reactors with associated equipment belongs to PGCIL.
  
- ii. VTPS – Manubolu 400 kV line bay at Manubolu Sub-station completely belongs to PGCIL and bay at VTPS (APGENCO) belongs to APGENCO except for line reactor and its associated equipment which belong to PGCIL.



- iii. PGCIL vide letter dated 27.9.2018 intimated the Petitioner that it was not claiming any tariff on APTRANSCO portion of the line. The length of the line and value of capital cost have been arrived at after excluding the APTRANSCO portion of the line while filing the tariff petition.

49. During the hearing on 13.7.2020, learned counsel for the Petitioner submitted that there was difficulty in completion of 400 kV transmission line from Nunna Sub-station to Manubolu Sub-station under the scope of PGCIL. Therefore, on the request of PGCIL, the said line was terminated by LILO of 400 kV VTPS- Nunna Line-1 of APTRANSCO at Manubolu Sub-station. PGCIL has been allowed tariff for its portion of the transmission line and the tariff has been included in the PoC computation. However, for the portion owned by APTRANSCO that is also carrying ISTS power, SRPC has not certified it as an ISTS line since inter-State power flowing in the subject line is less than 50%. Learned counsel for the Petitioner submitted that portion of the line owned by APTRANSCO is in use and it is carrying inter-State power, but it is not getting any tariff. Learned counsel for the Petitioner further submitted that as SRPC has declined to grant it ISTS status, APTRANSCO is left with no option but to approach the Commission with a prayer to exercise its inherent power under the regulations to determine tariff of the instant transmission line. He also submitted that none of the Respondents have filed their reply to the petition.

50. The Commission vide RoP for the hearing held on 13.7.2020 directed PGCIL/CTU to submit its comments on the Petitioner's claim that Asset-III is carrying inter-State power and on its plea for grant of its tariff and inclusion in the PoC computation.



The Petitioner was directed to submit details of power flow before LILO and incremental power flow with LILO.

51. In response, the Petitioner *vide* affidavit dated 27.7.2020 has submitted the following:

(a) Due to RoW issues, 400 kVNunna-Manubolu line of PGCIL was terminated by making LILO of 400 kV VTPS- Nunna Circuit-I owned by APTRANSCO with approval of Standing Committee of SR of Power System Planning (SCSRPSP).

(b) As per the Single Line Diagram, earlier VTPS-Nunna I & II have become VTPS-Nunna II, Nunna-Manubolu and VTPS-Manubolu lines after LILO. The Petitioner has submitted details of power flows before LILO i.e VTPS-Nunna I & II and incremental power flow with LILO i.e VTPS-Nunna 2, Nunna-Manubolu and VTPS-Manubolu lines.

52. The Petitioner *vide* affidavit dated 10.10.2020 has submitted that based on APTRANSCO's request for necessary approval for considering the portion of 400 kV VTPS- Nunna Circuit-I owned by APTRANSCO as ISTS line, the matter was thoroughly discussed in the 44<sup>th</sup> & 45<sup>th</sup> SRPC Commercial sub-Committee meetings. SRPC has sought the details of the petition filed before the Commission for the above line and same was submitted *vide* letter dated 11.9.2020. SRPC convened a special meeting in this regard on 25.9.2020. APTRANSCO and CTU reiterated the circumstances in which the above Asset-III was created after due discussions and it was approved in various SRPC Committees and sub-committees. The SRPC constituents were appraised about the developments before the Commission in Petition No.



247/TT/2020. CTU stated that 400 kV Vijayawada-Nellore lines were required for transferring power from Andhra Pradesh, Telangana and Karnataka (jointly referred to as 'S1' area) to Tamil Nadu and Kerala (jointly referred to as 'S2' area). All the constituents of SR benefitted by LILO arrangement of VTPS-Nunna Ckt-I of APTRANSCO for execution of Vijayawada-Nellore (AP) of PGCIL. For considering APTRANSCO portion as ISTS, the quantum of power flow should not be a criteria. However, the certification as ISTS line is under the purview of SRPC. Further, SRLDC informed that if usage of State-owned line is more than 50% by States other than the home State, then those lines would be certified as non-ISTS lines carrying inter-State power. SRPC stated that certification for non-ISTS line is worked out as per SRPC approved procedure and any deviation in the same is discussed in TCC/ SRPC meetings. Finally, it was agreed that APTRANSCO has approached the Commission and the matter is under consideration of the Commission, therefore, it may be prudent to wait till Commission's direction in Petition No. 247/TT/2020.

53. The Commission during the course of hearing on 15.6.2021, observed that the transmission charges approved in respect of the transmission assets have to be shared by all the entities/ beneficiaries in the region. Therefore, they should be made Respondents in the matter failing which the Petitioner may face difficulty in recovery of the approved transmission charges. The Commission directed the Petitioner to implead all the necessary parties and file revised "Memo of Parties". The Commission further directed the Petitioner to submit status of tariff claimed through ARR for 2014-19 period in respect of the transmission assets, if any.

54. As directed, the Petitioner has filed revised "Memo of Parties" making TANGEDCO, KPTCL, Electricity Department, Puducherry and KSEB as Respondents



on 23.7.2021 and they were mapped in the e-filing portal on 20.6.2021. However, none of them have filed any reply. Further, in response to the directions in RoP of 15.6.2021, the Petitioner *vide* affidavit dated 7.7.2021 has submitted the following clarification regarding ARR:

- (a) As per Regulation 5 of the Andhra Pradesh Electricity Regulatory Commission (Terms and conditions for determination of Transmission Tariff) Regulation, 2005, ARR filing shall contain the following:
  - (i) O&M cost which includes employee related cost, repairs and maintenance costs and administrative and general cost,
  - (ii) Regulated rate base,
  - (iii) Interest rate and RoE for computing weighted average cost of capital,
  - (iv) Details of depreciation etc.
- (b) All the above details are for APTRANSCO network as a whole. Hence, there is no individual line wise capital cost approval or no individual line wise transmission tariff approved by APERC.
- (c) Regarding claim of VTS-Nunna D/C line as ISTS, the Petitioner has submitted that the line was executed in 2009. However, no tariff was claimed till 4.8.2015 as ISTS till the line was LILOed to terminate the PGCIL's VTS-Nellore line on 4.8.2015. Further, PGCIL is not paying any charges for utilising 18.4 km of APTRANSCO line and APTRANSCO is facing audit objection for no returns from PGCIL for the past 6 years. Accordingly, APTRANSCO has approached the Commission.
- (d) Recovery of the cost of line from AP DISCOMS (through ARR), is contrary to the very objective and purpose of the Sharing Regulations especially when





the line is being utilised for flow of inter-State power (being part of PGCIL line).

55. In compliance of the Commission's direction dated 15.6.2021, PGCIL/ CTU *vide* affidavit dated 14.7.2021 submitted the following clarification with regard to LILO and ISTS (400 kV transmission line from Nunna Sub-station to Manubolu Sub-station):

**(A) Issue of congestion and planning of 400 kV D/C Vijayawada PG (Nunna)-Nellore-Thiruvelam-Sholingallur corridor:**

Southern Region was facing severe congestion between bid areas of Andhra Pradesh, Telangana and Karnataka (jointly referred to as 'S1' area) and Tamil Nadu and Kerala (jointly referred to as 'S2' area) due to delay/ deferment of certain planned generation projects in S2 (Tamil Nadu and Kerala) area. Accordingly, to enhance the power transfer capability from S1 to S2, 400 kV D/C Vijayawada PG (Nunna)-Nellore-Thiruvelam-Sholingallur corridor was planned and agreed for development as a Regional System Strengthening Scheme in the 32<sup>nd</sup> SCM of SR dated 8.6.2010 and 17<sup>th</sup> SRPC dated 12.8.2011.

**(B) Reorientation of one circuit of Vijayawada-IV TPS-Vijayawada PG (Nunna):**

Owing to severe right of way (RoW) constraints in Vijayawada area, the termination of 400 kV D/C Vijayawada PG (Nunna)-Nellore line at Vijayawada (Nunna) was re-configured by reorientation of one circuit of Vijayawada-IV TPS-Vijayawada PG (Nunna) so as to form 400 kV D/C Vijayawada-IV TPS-Nellore line with one circuit via Vijayawada PG (Nunna). The reorientation was agreed in the 38<sup>th</sup> SCM of SR dated 7.3.2015 and 27<sup>th</sup> SRPC meeting dated 12.5.2015.



**(C) Present Status:**

As 400 kV D/C ISTS line from Nellore has been LILO-ed on the existing 400 kV D/C Vijayawada-IV TPS-Vijayawada PG (Nunna) line of APTRANSCO, the transmission line is also being used to facilitate ISTS power transfer. However, the quantum of ISTS power flow on the referred transmission lines would largely depend *inter alia* upon load-generation scenario in SR, network configuration etc. Further, as per SRPC's study of data and letter dated 13.6.2019 for the 1<sup>st</sup> quarter of 2018-19, the percentage utilization of these lines is around 45-48%. The issue has also been deliberated in the Special Meeting of Commercial sub-committee held on 25.9.2020.

56. The Petitioner, *vide* affidavit dated 20.7.2021, has further clarified that Asset-III is meant for strengthening of SR grid and not meant for APTRANSCO alone. The line is incidental to flow of inter-State power. Hence, the quantum of power flow is immaterial. Since the line is integral to PGCIL's line, tariff structure should be same as that of PGCIL. AP DISCOMS are unwilling to share the entire burden of this line as the same is being used as an ISTS line. PGCIL should have obtained the Commission's tariff order of their portion together with the APTRANSCO's portion. APTRANSCO has undertaken to pass on the YTC of the subject line to the AP DISCOMS.

57. The Commission *vide* RoP dated 25.11.2021 directed the Petitioner to clarify whether the tariff for Asset-III has been included in the ARR of APTRANSCO. In response, the Petitioner *vide* affidavit dated 7.12.2021, has reiterated its submission made *vide* affidavit dated 7.7.2021.



## **Analysis and decision**

58. Based on the submissions of the parties and documents on record, we proceed to decide the present matter.

59. The issue for consideration before the Commission is whether the APTRANSCO portion of 18.41 km of Ckt-I of VTPS-Nunna D/C transmission line after the LILO arrangement of Ckt-I of VTPS-Nunna D/C transmission line (for execution of Vijayawada-Nellore (AP) of PGCIL's transmission line) can be declared as an ISTS line in view of the fact that the Petitioner considers the transmission line as ISTS line as it is being used to carry ISTS power to PGCIL's Sub-station.

60. The Petitioner has prayed for considering Asset-III as ISTS line and for allowing tariff for the 2014-19 tariff period thereof. The Petitioner has submitted that 400 kV VTS-Nunna D/C transmission line was executed in 2009 and no tariff was claimed as ISTS till 4.8.2015 i.e. till the line is LILOed to terminate the PGCIL's VTS-Nellore line.

61. The Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 (hereinafter referred to as "2010 Sharing Regulations) which was in force till 31.10.2020, provided for consideration of an intra-State transmission system as inter-State transmission system on the basis of power flow. The relevant portion of paragraph 2.1.3 of Annexure-I to the 2010 Sharing Regulations provides as follows:

*" ..... Certification of non-ISTS lines carrying inter-State power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. RPC Secretariat, in consultation with RLDC, using Web Net Software would examine the proposal. The results of the load flow studies*



*and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter State transmission. The software in the considered scenario will give percentage of usage of these lines by home State and other than home State. For testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home State and other than home State. Based on percentage usage of ISTS in base case, RPC will approve whether the particular State line is being used as ISTS or not. Concerned STU will submit asset wise tariff. If asset wise tariff is not available, STU will file petition before the Commission for approval of tariff of such lines. The tariff in respect of these lines shall be computed based on Approved ARR and it shall be allocated to lines of different voltage levels and configurations on the basis of methodology which is being done for ISTS lines.”*

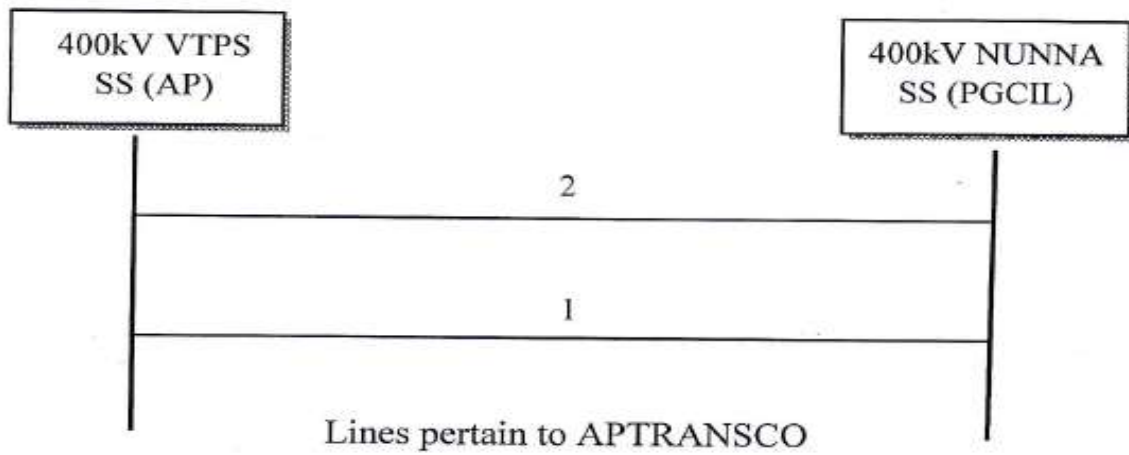
Thus, in accordance with paragraph 2.1.3 of Annexure-I, the certification of a non-ISTS lines used for carrying inter-State power shall be done on the basis of load flow studies of a line if STU puts up a proposal to RPC and RPC based on the percentage of usage of these lines approves the said lines as being used as ISTS. Petitioner has submitted vide Affidavit dated 10.7.2020 that APTransco vide letter dated 28.05.2019 to SRPC requested for certification of the AP Transco owned portion of the said line as inter-state. SRPC vide letter dated 13.06.2019 indicated that, the percentage utilization of these lines for interstate power is in the range of 45 to 49 %. Hence, they are not qualified for POC (as per the SRPC approved procedure for intrastate lines carrying interstate power) as the percentage utilization is less than 50% for inter-state power. The issue of considering the portion of 400 kV VTPS-Nunna Circuit-I owned by APTRANSCO as ISTS line was also discussed in the 44th and 45th SRPC Commercial sub-committee meetings on 29.5.2020 and 28.8.2020 respectively. However the matter could not be concluded in the said meetings and a special meeting was held on 25.9.2020 where it was recorded that “Since the issue is under the consideration of CERC, it was decided to wait until the CERC directions in this regard.”

62. Following are the single line diagram furnished by the Petitioner showing previous

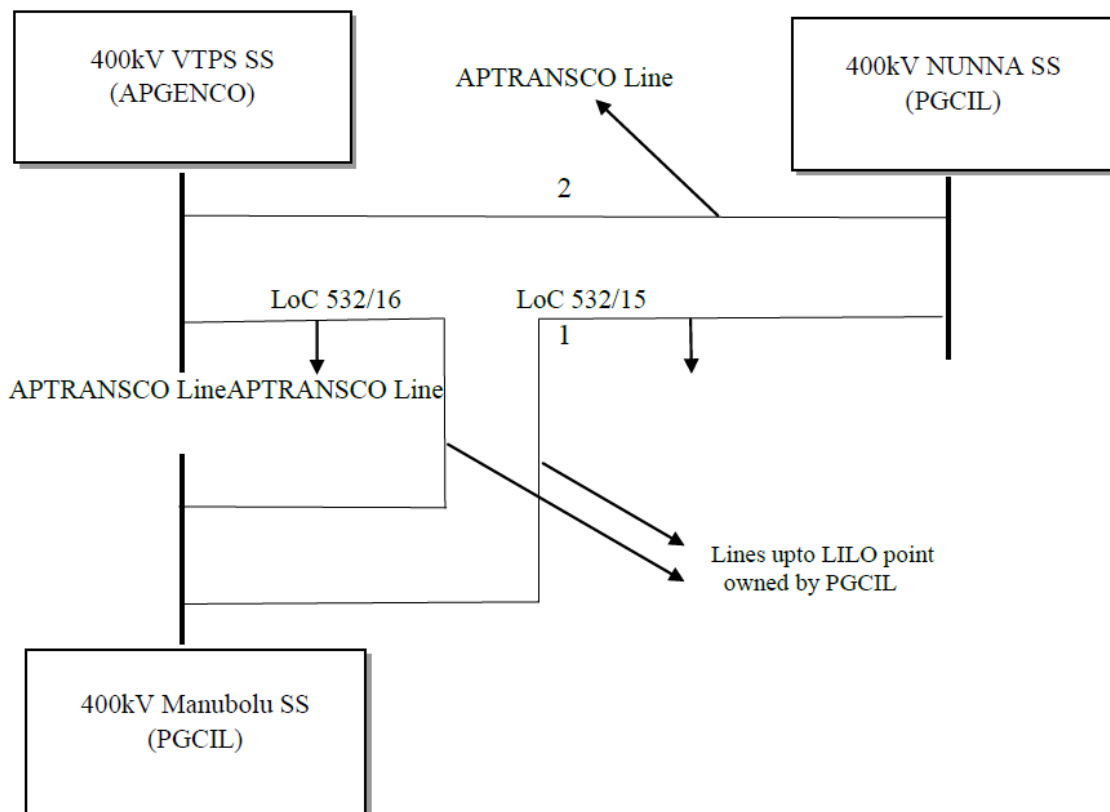


as well as present situation:

### Previous Arrangement



### Present Arrangement



63. On perusal of the above Single line diagrams, the Commission observed the following:

- a. VTPS-Nunna D/C transmission line was originally commissioned as a intra-State transmission line basically to evacuate power from VTPS to Nunna Sub-station of PGCIL and from Nunna Sub-station power is getting disbursed through intra-State as well as inter-State transmission lines.
- b. Under the present arrangement, one circuit of VTPS-Nunna D/C transmission line was LILoed for termination of Vijayawada-Nellore (AP) transmission line without effecting the evacuation of power from VTPS. Further, under the said arrangement LILo was made on the existing line / intra-State transmission system of APTRANSCO and no additional transmission line has been added.
- c. The Petitioner is claiming that after the said LILo, their portion of one circuit of VTPS-Nunna D/C transmission is also being utilized for inter-State power.
- d. As may be seen from the above Single Line Diagram, in the present arrangement also the entire power of VTPS is flowing on VTPS-Nunna D/C transmission line. If the portion of the intra-State line is used to carry inter-State power as claimed by the Petitioner, then it is obvious that inter-State line is used to evacuate power from VTPS-Nunna D/C transmission line because both are mutually inter-dependent.



- e. In a mesh network, it is a natural phenomenon that each transmission system is complementary to each other and it is very difficult to establish which power is flowing where. Therefore, the requirement of system is decided based on the requirement of incremental system viz. from intra-State to interState and inter-State to intra-State system.
- f. For the purpose of optimal development of Gird, it is a common phenomenon to LILO the existing transmission lines of intra-State transmission systems by ISTS and vice versa. The Petitioner's plea is to declare Asset-III as an inter-State Transmission line as its one circuit has been Looped-in and Looped out. However, it is not affecting power evacuation from its generating station, i.e. VTPS. If part of its transmission is being used to carry ISTS power, ISTS system is also being used to evacuate VTPS power.
- g. Further, there is a regulatory process for declaring any transmission line under ISTS. In the instant case, the arrangement of LILO of VTPS-Nunna Ckt-I of APTRANSCO for execution of Vijayawada-Nellore (AP) of PGCIL was a mutual understanding between APTRANSCO and PGCIL.

64. Therefore, in view of the above and the fact that SRPC has not certified Asset-III as ISTS line, the Petitioner's claim does not appear to be reasonable and equitable. As stated above, circuit-1 of the VTPS-Nunna D/C transmission line (after the aforesaid LILO arrangement) is presently used for carrying intra-State as well as inter-State power, which is also less than 50%. In such a situation, we are unable to declare Asset-III as ISTS line as the same is being used to carry intra-State and inter-State power in



a meshed network.

### **Filing Fees and Publication Expenses**

65. The Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 52(1) of the 2014 Tariff Regulations.

### **Sharing of Transmission Charges**

66. The transmission charges for Asset-I and Asset-II as approved vide the instant Order shall be recovered under the 2010 Sharing regulations and the 2020 Sharing Regulations, as applicable.

67. To summarise:

- a) The Annual Fixed Charges (AFC) allowed in respect of the transmission assets for 2014-19 tariff period in the instant order are as follows:

Particulars	(₹ in lakh)		
	2016-17 (pro-rata for 66 days)	2017-18	2018-19
AFC for Asset-I and Asset-II	710.87	3885.28	3712.17

68. This order disposes of Petition No. 247/TT/2020 in terms of the above discussions and findings.

**sd/-**  
**(P. K. Singh)**  
**Member**

**sd/-**  
**(Arun Goyal)**  
**Member**

**sd/-**  
**(I. S. Jha)**  
**Member**

