CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 652/TT/2020

Coram:

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

Date of Order: 17.02.2022

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 the 2019-24 tariff period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for Fixed Series Capacitor (40%) on Circuit-I and II of 400 kV Tumkur (Pavagada)-Tumkur (Vasantnarsapura) D/C Quad Line at Tumkur (Pavagada) PS end under Transmission System for Ultra Mega Solar Power Park at Tumkur (Pavagada), Karnataka-Phase-II Part-C in Southern Region.

And in the matter of:

Power Grid Corporation of India Limited,
'SAUDAMINI', Plot No-2, Sector 29,
Gurgaon-122001 (Haryana). **…..Petitioner**

Versus

1. Tamil Nadu Generation and Distribution Corporation Limited,
NPKKR Maaligai, 800, Anna Salai,
Chennai-600002.

2. Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha,
Hyderabad-500082.

3. Kerala State Electricity Board,
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram-695004.

4. Tamil Nadu Electricity Board,
NPKRR Maaligai, 800, Anna Salai,
Chennai-600002.

5. Electricity Department,
Government of Goa,
Vidyuti Bhawan,

Panaji, Goa-403001.

6. Electricity Department,
Government of Pondicherry,
Pondicherry-605001.

7. Eastern Power Distribution Company of Andhra Pradesh Limited,
P&T Colony, Seethmmadhara, Vishakhapatnam,
Andhra Pradesh.

8. Southern Power Distribution Company of Telangana Limited,
Corporate Office, Mint Compound,
Hyderabad-500063 (Hyderabad).

9. Central Power Distribution Company of Andhra Pradesh Limited,
Corporate Office, Mint Compound,
Hyderabad-500063.

10. Northern Power Distribution Company of Telangana Limited,
Opposite NIT Petrol Pump, Chaitanyapuri,
Kazipet, Warangal-506004.

11. Bangalore Electricity Supply Company Limited,
Corporate Office, K. R. Circle,
Bangalore-560001.

12. Gulbarga Electricity Supply Company Limited,
Station Main Road,
Gulburga, Karnataka.

13. Hubli Electricity Supply Company Limited,
Navanagar, PB Road,
HUBLI, Karnataka.

14. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore-575001 (Karnataka).

15. Chamundeswari Electricity Supply Corporation Limited,
927, LJ Avenue, Ground Floor, New Kantharaj URS Road,
Saraswatipuram,
Mysore-570009 (Karnataka).

16. Transmission Corporation of Telangana Limited,
Vidhyut Sudha, Khairatabad,
Hyderabad-500082.

17. Karnataka Power Transmission Corporation Limited,
Kaveri Bhavan,
Bangalore-560009.

18. Karnataka Solar Power Development Corporation Limited,
2nd Floor, South Block, Beeja Raja Seed Complex,
Bellary Road, Hebbala,
Bengaluru-560024 (Karnataka). **…..Respondents**

For Petitioner	**:**	Shri S. S. Raju, PGCIL Shri D. K. Biswal, PGCIL Shri A. K. Verma, PGCIL Shri Ved Prakash Rastogi, PGCIL
For Respondents	**:**	Shri S. Vallinayagam, Advocate, TANGEDCO Dr. R. Kathiravan, TANGEDCO Shri R. Ramalakshmi, TANGEDCO Shri R. Srinivasan, TANGEDCO

ORDER

The Petitioner, Power Grid Corporation of India Limited, has filed the instant petition for determination of transmission tariff for the period from COD to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as "the 2019 Tariff Regulations") in respect of Fixed Series Capacitor (40%) on Circuit-I and II of 400 kV Tumkur (Pavagada)-Tumkur (Vasantnarsapura) D/C Quad Line at Tumkur (Pavagada) PS end (hereinafter referred to as "the transmission asset") under Transmission System for Ultra Mega Solar Power Park at Tumkur (Pavagada), Karnataka-Phase-II Part-C in Southern Region (hereinafter referred to as "the transmission system").

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

"1) Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation incurred / projected to be incurred.

2) Approve the Transmission Tariff for the tariff block 2019-24 block for the asset covered under this petition, as per para –8.4 above.

3) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided in Tariff Regulation 2019 as per para 8 above for respective block.

4) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.

5) Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.

6) Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2019-24 period, if any, from the beneficiaries.

7) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses as mentioned at para 8.9 above.

8) Allow the petitioner to claim the capital spares at the end of tariff block as per actual.

9) Allow the Petitioner to bill and recover GST on Transmission Charges separately from the respondents, if GST on transmission is levied at any rate in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.

10) Allow interim tariff in accordance with Regulation 10 (3) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for purpose of inclusion in the Point of Connection (PoC) charges.

and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice."

3. **Backdrop of the case**

a) Ministry of New and Renewable Energy (MNRE), Government of India vide letter dated 14.7.2015 had notified Karnataka Solar Power Development Corporation Private Limited (KSPDCL) as the Solar Power Park Developer for 2000 MW Solar Power Park at Pagavada Taluk, Tumkur district in Karnataka.

b) KSPDCL, a Joint Venture company of Karnataka Renewable Energy Development Limited and Solar Energy Corporation of India Limited (SECI) had made an application to CTU for grant of connectivity/ LTA for 2000 MW Ultra Mega Solar Park to be set up in Tumkur District of Karnataka as per the Central Electricity Regulatory Commission (Grant of Connectivity, Long Term Access and Medium term Open Access in inter-State transmission and related matters) Regulations, 2009.

c) The Solar Power Park was to be developed in two phases (2x1000 MW) with their scheduled commissioning by April 2017 and September 2017. However, due to ROW issue, timelines for completion of Phase-I and Phase-II of the Solar Power Park was kept as September 2017 and September 2018 respectively.

d) The Petitioner had identified the transmission system comprising of the following:

Phase-I

i. LILO of 400 kV Gooty-Tumkur (Vasantnarsapur) D/C at Tumkur (Pavagada) Pooling station;
ii. Tumkur (Pavagada) Pooling station-Hiriyur 400 kV D/C;
iii. LILO of 400kV Bellary Pool-Tumkur (Vasantnarsapur) D/C (Quad) (both circuits) [KPTCL line] at Tumkur (Pavagada) Pooling station;
iv. Establishment of 3x500 MVA, 400/220 KV Pooling station at Tumkur (Pavagada) along with 1x125 MVar bus reactor; and
v. 8 numbers 220 kV line bays at Tumkur (Pavagada) Pooling Station for Solar Interconnection.

Phase-II

i. Hiriyur-Mysore 400 kV D/C line[$];
ii. Tumkur (Pavagada) Pooling station - Devanhalli (KPTCL) 400kV D/C (Quad)*;
iii. Augmentation of 2x500 MVA, 400/220 KV transformer at Tumkur (Pavagada) Pooling station;
iv. 1x125 MVAR bus reactor (2nd) at Tumkur (Pavagada) Pooling Station;
v. Third 400/220 kV, 1x500 MVA transformer at Tumkur (Vasantnarsapur) S/s;
vi. 1x80 MVAR switchable Line reactor at Mysore end of Hiriyur-Mysore D/C (each ckt); and
vii. 8 numbers 220 kV line Bays at 400/220 kV Tumkur (Pavagada) Pooling station for Solar interconnection.

[$] *With the completion of this line, it would be connected with Tumkur (Pavagada) Pooling station- Hiriyur 400kV D/C line to form Tumkur (Pavagada)-Mysore D/C line*

* *KPTCL would complete establishment of 400/220 kV substation at Devanahally including inter-linking 400 kV and 220 kV lines before Phase-II at Ultra Mega Solar Power Park*

e) On 26.11.2014, Ministry of Power (MoP), Government of India had convened a meeting with the representatives of the Central Electricity Authority, the Petitioner, MNRE, SECI and the Commission in which MoP had clarified the scope of work to the Petitioner. In the said meeting, MoP had directed the

Petitioner to seek regulatory approval from the Commission to construct the transmission system.

f) The issue of implementation of the transmission system was discussed in the 39th meeting of the Standing Committee on Power System Planning of Northern Region held on 28/29.12.2015.

g) In terms of the Central Electricity Regulatory Commission (Grant of Regulatory Approval for execution of Inter-State Transmission Scheme to Central Transmission Utility) Regulations, 2010 (hereinafter referred to as "the Regulatory Approval Regulations"), the Regulatory Approval with respect to the transmission system was granted by the Commission vide order dated 19.8.2016 in Petition No. 36/MP/2016 (with IA. No. 9/2016) [hereinafter referred to as "the Regulatory Approval Order 1"].

h) In the 40th meeting of the Standing Committee on Power System Planning of Southern Region held on 19.11.2016, the transmission system was reviewed and, accordingly, addition and modification of the scope covered under Phase-II was agreed as follows:

Addition in the scope

- Fixed series capacitor (40%) on 400 kV Tumkur (Pavagada)-Tumkur (Vasantnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end **

*** formed after LILO of 400 kV Bellary pool-Tumkur (Vasantnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end*

Modification in the scope

- Hiriyur-Mysore 400 kV D/C line (after completion of this line, one circuit of this line would be connected with one ckt of Tumkur-Hiriyur line so as to make Tumkur-Mysore direct line); and

- 220 kV bays (8 numbers) at Tumkur (Pavagada) PS for interconnection with solar project (earlier 16 numbers of 220 kV bays)

i) Subsequently, as per the Regulatory Approval Regulations, the Regulatory Approval to the said addition and modification to the transmission system was granted by the Commission vide order dated 7.9.2017 in Petition

No. 131/MP/2017 along with IA No. 38/2017 (hereinafter referred to as "the Regulatory Approval Order 2").

j) The Petitioner has submitted that it was entrusted with implementation of the transmission system with its scope discussed and agreed in the 40th meeting of Standing Committee on Power System Planning of Southern Region held on 19.11.2016 followed by its ratification by SRPC in the 31st SRPC meeting held on 25.2.2017.

k) Investment Approval (IA) for the transmission system was accorded by the Board of Directors of the Petitioner's company (in its 348th meeting held on 6.1.2018) vide Memorandum Ref. No.: C/CP/PA1718-10-0A-IA011 dated 15.1.2018 at an estimated cost of ₹9213.00 lakh including IDC of ₹519.00 lakh (based on August 2017 Price Level) with the broad scope of work as follows:

Sub-station:

400/ 220 kV Tumkur (Pavagada) Pooling Station (Extension)

- Fixed Series Capacitor (40%) on 400 kV Tumkur (Pavagada)-Tumkur (Vasantnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end*****

***** *formed after LILO of 400 kV Bellary Pool-Tumkur (Vasantnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end*.

l) As per IA and the Petitioner's submissions, the scope of work covered under the transmission system is complete and is covered in this petition.

m) As per IA dated 6.1.2018, the transmission system was scheduled to be put into commercial operation within 20 months from the date of I.A. i.e. by 5.9.2019 against which date of commercial operation (COD) is 1.9.2019 (as claimed by the Petitioner in this petition). Therefore, there is no time over-run in the commissioning of the transmission asset.

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

5. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has 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. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), Respondent No., 1 has filed its reply vide affidavit dated 25.10.2021 and has raised issues of recovery of transmission charges from Solar Power Generators (SPGs)/ Solar Power Park Developers (SPPDs) as per the Regulatory Approval Order 2 and the 2020 Sharing Regulations and sharing of transmission charges. The Petitioner vide affidavit dated 22.11.2021 has filed rejoinder to TANGEDCO's reply.

6. This order is issued considering the submissions made by the Petitioner in the petition vide affidavit dated 13.3.2020, the Petitioner's affidavit dated 15.9.2021 filed in response to technical validation letter, TANGEDCO's reply filed vide affidavit dated 25.10.2021 and the Petitioner's rejoinder filed vide affidavit dated 22.11.2021.

7. The hearing in this matter was held on 26.10.2021 through video conference and the order was reserved. Having heard the learned counsel for TANGEDCO and representatives of the Petitioner and after perusal of the materials on record, we proceed to dispose of the petition.

DETERMINATION OF ANNUAL FIXED CHARGES FOR THE 2019-24 TARIFF PERIOD

8. The details of the transmission charges as claimed by the Petitioner for the transmission asset for the 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	2019-20 (Pro-rata for 213 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	180.93	401.95	440.11	440.11	440.11
Interest on Loan	172.30	364.37	370.55	337.21	303.70
Return on Equity	204.92	448.75	489.81	489.81	489.81
O&M Expenses	10.03	21.23	22.62	22.22	21.77
Interest on Working Capital	37.42	66.56	68.90	71.32	73.82
Total	**605.60**	**1302.86**	**1391.99**	**1360.67**	**1329.21**

9. The details of the Interest on Working Capital (IWC) as claimed by the Petitioner for the transmission asset for the 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	2019-20 (Pro-rata for 213 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	5.36	5.55	5.74	5.94	6.15
Maintenance Spares	9.65	9.98	10.34	10.70	11.07
Receivables	127.94	160.93	171.62	167.75	163.43
Total Working Capital	142.95	176.16	187.70	184.39	180.65
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	10.03	21.23	22.62	22.22	21.77

Date of Commercial Operation

10. The Petitioner has claimed COD of the transmission asset as 1.9.2019.

11. Regulation 5 of the 2019 Tariff Regulations provides as follows:

*"**5. Date of Commercial Operation:** (1) The date of commercial operation of a generating station or unit thereof or a transmission system or element thereof and associated communication system shall be determined in accordance with the provisions of the Grid Code.*

(2) In case the transmission system or element thereof executed by a transmission licensee is ready for commercial operation but the interconnected generating station or the transmission system of other transmission licensee as per the agreed project implementation schedule is not ready for commercial operation, the transmission licensee may file petition before the Commission for approval of the date of commercial operation of such transmission system or element thereof:

Provided that the transmission licensee seeking the approval of the date of commercial operation under this clause shall give prior notice of at least one month, to the generating company or the other transmission licensee and the long term customers of its transmission system, as the case may be, regarding the date of commercial operation:

Provided further that the transmission licensee seeking the approval of the date of commercial operation of the transmission system under this clause shall be required to submit the following documents along with the petition:

(a) Energisation certificate issued by the Regional Electrical Inspector under Central Electricity Authority;
(b) Trial operation certificate issued by the concerned RLDC for charging element with or without electrical load;
(c) Implementation Agreement, if any, executed by the parties;
(d) Minutes of the coordination meetings or related correspondences regarding the monitoring of the progress of the generating station and transmission systems;
(e) Notice issued by the transmission licensee as per the first proviso under this clause and the response;
(f) Certificate of the CEO or MD of the company regarding the completion of the transmission system including associated communication system in all respects.

(3) The date of commercial operation in case of integrated mine(s), shall mean the earliest of —

a) the first date of the year succeeding the year in which 25% of the Peak Rated Capacity as per the Mining Plan is achieved; or
b) the first date of the year succeeding the year in which the value of production estimated in accordance with Regulation 7A of these regulations, exceeds total expenditure in that year; or
c) the date of two years from the date of commencement of production:

Provided that on earliest occurrence of any of the events under sub-clauses (a) to (c) of Clause (3) of this Regulation, the generating company shall declare the date of commercial operation of the integrated mine(s) under the relevant sub-clause with one week prior intimation to the beneficiaries of the end-use or associated generating station(s);

Provided further that in case the integrated mine(s) is ready for commercial operation but is prevented from declaration of the date of commercial operation for reasons not attributable to the generating company or its suppliers or contractors or the Mine Developer and Operator, the Commission, on an application made by the generating company, may approve such other date as the date of commercial operation as may be considered appropriate after considering the relevant reasons that prevented the declaration of the date of commercial operation under any of the sub-clauses of Clause (3) of this Regulation;

Provided also that the generating company seeking the approval of the date of commercial operation under the preceding proviso shall give prior notice of one month to the beneficiaries of the end-use or associated generating station(s) of the integrated mine(s) regarding the date of commercial operation."

12. The Petitioner has submitted CEA Approval dated 14.8.2019 for Energizing Electrical Installations under Regulation 43 of the Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulations, 2010 (as amended to date), SRLDC Certificate dated 27.9.2019 for successful completion of trial operation, issued by Power System Operation Corporation Limited, in accordance with Regulation 5(2) of the 2019 Tariff Regulations and CMD Certificate as per the 2019

Tariff Regulations and the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 (for Inter State Transmission System).

13. We have considered the submissions of the Petitioner and after taking into consideration the CEA Approval for Energizing Electrical Installations, SRLDC Certificate for successful completion of trial operation and CMD Certificate, COD of the transmission asset is approved as 1.9.2019.

Capital Cost

14. Regulations 19 of the 2019 Tariff Regulations provides as follows:

> ***"19. Capital Cost:*** *(1) The Capital cost of the generating station or the transmission system, as the case may be, as determined by the Commission after prudence check in accordance with these regulations shall form the basis for 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;*
> *(c) Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*
> *(d) Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*
> *(e) Capitalised initial spares subject to the ceiling rates in accordance with these regulations;*
> *(f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*
> *(g) Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;*
> *(h) Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;*
> *(i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
> *(j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;*
> *(k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;*
> *(l) Capital expenditure on account of emission control system necessary to meet the*

revised emission standards and sewage treatment plant;

(m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;

(n) Expenditure on account of change in law and force majeure events; and

(o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

(3) The Capital cost of an existing project shall include the following:

(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued-up by excluding liability, if any, as on 1.4.2019;

(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;

(c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;

(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;

(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and

(f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.

(4) The capital cost in case of existing or new hydro generating station shall also include:

(a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and

(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.

(5) The following shall be excluded from the capital cost of the existing and new projects:

(a) The assets forming part of the project, but not in use, as declared in the tariff petition;

(b) De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:

Provided that in case replacement of transmission asset is recommended by Regional Power Committee, such asset shall be de-capitalised only after its redeployment;

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.

(c) In case of hydro generating stations, 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 transparent process;

(d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and

(e) 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."

15. The Petitioner has submitted that the instant petition for determination of tariff is filed in line with proviso (1) of Regulation 9 of the 2019 Tariff Regulations applicable for the 2019-24 period. Also, this petition covers approval of tariff based on actual expenditure incurred up to COD and Additional Capital Expenditure (ACE) projected to be incurred from COD to 31.3.2021 in respect of the transmission asset as per the details submitted. Further, the details of capital cost incurred up to COD and projected to be incurred during 2019-20 and 2020-21 as duly certified vide Auditor's Certificate dated 2.12.2019 are as follows:

(₹ in lakh)

Apportioned Approved Cost (as per FR)	Expenditure up to COD	Projected ACE		Estimated Completion Cost (as on 31.3.2024)
		2019-20	2020-21	
9212.77	5284.01	1972.87	1435.99	8692.87

16. We have considered the submissions of the Petitioner regarding capital cost and have given our findings on the same in the relevant portions of this order.

<u>Cost Over-run</u>

17. The Petitioner has submitted the details of estimated completion cost *vis-à-vis* apportioned approved cost (FR) for the transmission asset covered in this petition as follows:

(₹ in lakh)

Approved Cost (a)	Estimated Completion Cost (b)	Cost Variation (c) = (b-a)
9212.77	8692.87	-519.90

18. The Petitioner has submitted that the estimated completion cost of the transmission asset based on the Auditor's Certificate works out to ₹8692.87 lakh

including IEDC and IDC, which is within the approved apportioned cost as per FR. Further, the item-wise cost variation between apportioned approved cost and estimated completion cost as detailed in Form-5 in this petition is as follows:

(₹ in lakh)

Particulars	Cost Details		Variation(+ within, - increase) w.r.t. FR
	FR	Completion	
Sub-station equipment	7717.08	8411.93	(-) 694.85
Overheads/IEDC	977.00	227.13	749.87
IDC	518.69	53.81	464.88
Total	**9212.77**	**8692.87**	**519.90**

19. The Petitioner has submitted the reasons of cost variation as follows:

a) **IDC:** Decrease in IDC is attributable to variation in rate of interest considered in FR as against actuals, decrease in overall capital cost with respect to FR and deployment of funds based on actuals. In FR, IDC was calculated considering rate of interest for domestic loans at 10.50%. However, in actual, the Weighted Average Rate of Interest (WAROI) on loans is around 7.58%. The actual IDC accrued up to COD has been considered at the time of tariff claim.

b) **IEDC:** During FR estimation, 10.75% and 3% of equipment cost and civil works has been considered for IEDC and Contingency respectively whereas actual amount of IEDC has been considered at the time of tariff claim.

c) **Cost variation in the Equipment Cost including civil works:** Through open competitive bidding process, lowest possible market prices for required product/ services as per detailed designing is obtained and contracts are awarded on the basis of lowest evaluated eligible bidder on overall basis. The best competitive bid prices against tenders may vary as compared to the cost estimate depending upon prevailing market conditions, design and site requirements. The estimates are prepared by the Petitioner as per well-defined procedures for cost estimate. The FR cost estimate is broad indicative cost worked out generally on the basis of average unit rates of recently awarded contracts as a general practice. The cost estimate of the transmission system is on the basis of August 2017 Price Level.

20. Regarding variation in cost of individual item in S/S packages, the Petitioner has submitted that the packages comprise of a large number of items and the same are awarded through open competitive bidding. In the said bidding process, bids are received from multiple parties quoting different rates for various BOQ items under the said package. Further, lowest bidder can be arrived at/ evaluated on overall basis only. Hence, item-wise unit prices in contracts and its variation over unit rate considered in FR estimates are beyond the control of the Petitioner.

21. In view of the above, the Petitioner has prayed that full tariff may be allowed from COD based on estimated completion cost.

22. We have considered the submissions of the Petitioner and observe that the cost variation is primarily on account of variation in estimated prices and final competitive prices. Further, against the total apportioned approved cost as per FR of ₹9212.77 lakh, the estimated completion cost (including projected ACE during the 2019-24 period) is ₹8692.87 lakh, which is within the apportioned approved cost, and, accordingly, the cost variation is allowed.

Time Over-run

23. As per IA dated 6.1.2018, the transmission asset was scheduled to be put into commercial operation within 20 months from the date of I.A. i.e. by 5.9.2019 against which COD is 1.9.2019. Therefore, there is no time over-run in the commissioning of the transmission asset.

Central Financial Assistance (CFA)

24. Regulation 19(5) of the 2019 Tariff Regulations provides for exclusion of grant (from the capital cost) 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.

25. The Petitioner has submitted as follows:

a) CFA for development of Solar Park and associated external transmission system was provided by MNRE and vide order ref: 30/26/2014-15/NSM dated 12.12.2014, administrative guidelines for release of fund for implementation of scheme for development of Solar Park and Ultra Mega Solar Power projects was issued which were amended vide Office Memorandum No. F. No. 30/26/2014-15/NSM dated 29.9.2016, the relevant extracts of which as submitted, are as follows:

> *"The CFA for development of solar park and for development of external transmission system will be apportioned in the ratio of 60:40 i.e. Rs 12 lakh per MW or 30% of the project cost, whichever is lower may be provided to the Solar Power Park Developers (SPPDs) towards development of solar parks and Rs. 8 lakh per MW or 30% of the project cost, whichever is lower will be provided to the CTU or STU towards development of external transmission system……….."*

b) The details for release of CFA by MNRE vide letter dated 16.1.2018 had been submitted. CFA grant had been sanctioned by MNRE vide Office Memorandum No. F. No. 320/6/2017/NSM dated 29.6.2018, the relevant extracts of which as submitted, are as follows:

> *"2. It is mention that this ministry vide its sanction order no. 30/52/2014-15/ NSM dated 28.02.2017 released central finance assistance (CFA) of Rs 28,28,00,000/- (Rupees twenty Crore and twenty eight lakhs only) to SECI for further disbursement of Rs. 28,00,00,000/- (Rupees twenty eight crore only) to PGCIL towards development of external power evacuation system for evacuation of 1000 MW (phase-I) solar power from Pavagada solar park, Karnataka and Rs. 28,00, 000/- (Rupees Twenty eight lakhs only) to SECI towards fund handling charges. Further, Ministry vide its sanction order no. 320/6/2017-NSM dated 29.12.2017 released CFA of Rs. 12,12,00,000/- (Rupees twelve Crore and twelve lakhs only) to SECI for further disbursement of Rs. 12,00,00,000/- (Rupees Twelve Crore only) to PGCIL for development of external power evacuation system for evacuation of 1000 MW (Phase-I) solar power from Pavagada Solar Park, Karnataka and Rs. 12,00,000/- (Rupees twelve lakhs only) to SECI towards fund handling charges @1%.*
>
> *3. As per Administrative Guidelines 30/26/2014-15/NSM, dated 12.12.2014 and subsequent clarification vide OM no. 30/26/2014-15/NSM dated 29.09.2016, administrative guidelines 30/26/2014-15/NSM dated 21.03.2017 & OM no. 320/14/2017 –NSM dated 18-01-2018 an amount of Rs 40,40,00,000/- (Rupees Forty Crore Forty Lakh only) is due to SECI, New Delhi towards award of work for external power evacuation system of Pavagada Solar Park phase-II of external power evacuation system of Pavagada Solar Park (1000MW) in Karnataka. The amount of Rs 40,40,00,000/- (Rupees Forty Crore Forty Lakh only) includes Rs 40,00,00,000/- (Rupees Forty Crore only) towards development of external power evacuation system Phase-I of Pavagada Solar Park, Karnataka and Rs 40,00,000/- (Rupees Forty Lakh only) towards fund handling charges to SECI.*
>
> *4. Accordingly, sanction of the President of India is hereby conveyed for release of Rs. 40,40,00,000/- (Rupees Forty Crore Forty Lakh only) to Solar Energy Corporation of India (SECI), New Delhi as CFA towards development of external*

power evacuation system of Pavagada Solar Park (Phase-II,1000 MW) in Karnataka".

c) Based on Capacity of 1000 MW, grant under Phase II was applied by the Petitioner at ₹8000 lakh. 50% of the grant applied was released by MNRE through SECI on 29.6.2018 towards the Transmission System for Ultra mega Solar Power Park at Tumkur (Pavagada), Karnataka-Phase-II and the remaining 50% is yet to be disbursed. The said grant received as on date has been adjusted in the capital cost of the transmission asset covered in this petition.

d) The balance 50% of approved grant for Phase-II (Part A, Part B and Part C) yet to be disbursed shall be adjusted accordingly.

26. We have considered the submissions of the Petitioner. The details of grant allocated and adjustment in the capital cost of the transmission asset are as follows:

(₹ in lakh)

Grant Allocation	**Adjusted from COD**	**Adjusted from Accrued IDC discharged in 2020-21**
391.03	376.15	14.88

27. Proviso (iii) of Regulation 18(1) of the 2019 Tariff Regulations provides as follows:

"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."

28. We note that the Commission vide order dated 14.4.2020 in Petition No. 34/TT/2019 had decided to adjust the grant received from the capital cost. The relevant paragraphs of the order dated 14.4.2020 in Petition No. 34/TT/2019 are as follows:

"29. We have considered the submission of the Petitioner and noted that in line with the above provisions, funding through grant is not required to be considered for debt:equity ratio. Therefore, funding sans any grant would form remaining capital structure for the purpose of debt: equity ratio as per Regulation 19 of the 2014 Tariff Regulations and the same has been considered in the relevant para of this Order."

29. In view of the foregoing, the funding net of any grant would form remaining capital structure for the purpose of Debt to Equity ratio as per Regulation 18 of the

2019 Tariff Regulations and the same has been considered in the relevant portion of this Order.

Interest During Construction (IDC)

30. The Petitioner has submitted the details of the accrued IDC as considered under ACE during the year of discharge in this petition. Also, out of the total IDC of ₹53.81 lakh, ₹32.56 lakh has been discharged up to COD. The balance IDC of ₹21.25 lakh has been discharged during 2020-2021. The expenditure other than the above accrued IDC has been considered on cash basis in the Auditor's Certificate dated 2.12.2019. The accrued IDC to be discharged during 2020-21 has not been included in ACE for the respective year as per Auditor's Certificate. The transmission tariff has been calculated based on audited cost and considering accrued IDC to be discharged thereafter. The statement of cash IDC has been submitted in this petition.

31. The Petitioner vide affidavit dated 15.9.2021 has submitted all the forms and IDC Statement showing the methodology for calculation of rate of interest used for computation of IDC.

32. In view of the above, the Petitioner has prayed to allow IDC on the basis of cash outflow.

33. We have considered the submissions and claim of the Petitioner and note that IDC of ₹53.81 lakh in respect of the transmission asset has been claimed by the Petitioner in support of which the Auditor's Certificate dated 2.12.2019 has been submitted. Also, the computation of IDC along with year-wise details of the IDC discharged has been submitted.

34. In view of the foregoing, loan details submitted in Form-9C for the 2019-24 tariff period and IDC computation sheet have been considered for the purpose of IDC calculation on cash basis and accrual basis. The un-discharged IDC as on COD has been considered as ACE during the year in which it has been discharged, and,

accordingly, based on the information furnished by the Petitioner, IDC considered, is as follows:

(₹ in lakh)

IDC as per Auditor's Certificate	IDC allowed on Accrual basis	IDC dis-allowed due to computational difference	IDC discharged as on COD	IDC un-discharged as on COD	IDC discharged during 2020-21
A	**B**	**C=(A-B)**	**D**	**E=(B-D)**	**F**
53.81	53.81	0.00	32.56	21.25	21.25

<u>Incidental Expenditure During Construction (IEDC)</u>

35. The Petitioner has submitted that the entire IEDC amount mentioned in the Auditor's Certificate is on cash basis and is paid up to COD.

36. We have considered the submissions of the Petitioner and note that IEDC of ₹227.12 lakh has been claimed by the Petitioner in support of which the Auditor's Certificate has been submitted. Also, the entire IEDC of ₹227.12 has been discharged as on COD in respect of the transmission asset. As IEDC claimed is within the percentage (as projected in I.A.) of the hard cost, IEDC of ₹227.12 lakh is allowed.

<u>Initial Spares</u>

37. Regulation 23(d) of the 2019 Tariff Regulations provides as follows:

> ***"23. Initial Spares: Initial spares shall be capitalised as a percentage of the Plant and Machinery cost, subject to the following ceiling norms:***
> ....
> *(d) Transmission system*
>
> *(i) Transmission line - 1.00%*
> *(ii) Transmission Sub-station*
> *- Green Field - 4.00%*
> *- Brown Field - 6.00%*
> *(iii) Series Compensation devices and HVDC Station - 4.00%*
> *(iv) Gas Insulated Sub-station (GIS)*
> *- Green Field - 5.00%*
> *- Brown Field - 7.00%*
> *(v) Communication system - 3.50%*
> *(vi) Static Synchronous Compensator - 6.00%*
> *…………………………………………………………….."*

38. The Petitioner has submitted that Initial Spares claimed are within the specified limit under Regulation 23 of the 2019 Tariff Regulations and the same are as follows:

Particulars	Plant & Machinery Cost up to cut-off date (excluding IDC and IEDC) (₹ in lakh)	Initial Spares claimed (₹ in lakh)	Ceiling (in %)
Sub-station (GIS-Brownfield)	8411.93	323.50	7.00

39. We have considered the submissions and claim of the Petitioner and observe that Fixed Series Capacitor (FSC) is a series compensation device and as per Regulation 23(d)(iii) of the 2019 Tariff Regulations, the allowable Initial Spares are 4%. The Initial Spares claimed by the Petitioner are within the ceiling of 4% and, accordingly, the Initial Spares allowed are as follows:

Particulars	Plant & Machinery Cost up to cut-off date (excluding IDC and IEDC) (₹ in lakh)	Allowable Initial Spares (₹ in lakh)	Ceiling limit (in %)	Initial Spares allowed (₹ in lakh)	Discharge of Initial Spares as on COD (₹ in lakh)
Fixed Series Capacitor (FSC)	8411.93	337.02	4.00	323.50	323.50

Capital Cost allowed as on COD

40. In view of the above, the capital cost in respect of the transmission asset allowed (as on COD) is summarized as follows:

(₹ in lakh)

Capital Cost claimed in Auditor's Certificate (as on COD)	Less: Un-discharged IDC (as on COD)	Less: Adjustment of Grant Received	Capital Cost (as on COD)
A	**B**	**C**	**D= A-B-C**
5284.01	21.25	376.15	4886.61

Additional Capital Expenditure

41. Regulation 24 of the 2019 Tariff Regulations provides as follows:

"24. Additional Capitalisation within the original scope and up to the cut-off date

(1) The additional capital expenditure in respect of a 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:

(a) Undischarged liabilities recognized to be payable at a future date;
(b) Works deferred for execution;
(c) Procurement of initial capital spares within the original scope of work, in

accordance with the provisions of Regulation 23of these regulations;

(d) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority or order or decree of any court of law;

(e) Change in law or compliance of any existing law; and

(f) Force Majeure events:

Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.

(2) The generating company or the transmission licensee, as the case may be shall submit 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."

42. Based on the Auditor's Certificate dated 2.12.2019, details of ACE claimed by the Petitioner are as follows:

Year	Particulars	Transmission Line	Sub-station	IT Equipment and software	Total
2019-20	ACE	0.00	1956.37	16.50	**1972.87**
2020-21	ACE	0.00	1440.59	**1.77**	**1442.36**

43. The Petitioner has submitted that admissibility of ACE incurred after COD is to be dealt in accordance with the provisions of Regulation 24 of the 2019 Tariff Regulations. Further, ACE incurred/ projected to be incurred is mainly on account of Balance and Retention Payments and, therefore, the same may be allowed under Regulations 24(1)(a) and 24(1)(b) of the 2019 Tariff Regulations. The reasons for ACE have been mentioned in respective Form-7 submitted in this petition.

44. The Petitioner vide affidavit dated 15.9.2021 has submitted that ACE claimed is within the cut-off date and is within the original scope of work. Further, the party-wise outstanding liability as on COD, liability discharged and un-executed work recognized has been submitted.

45. We have considered the submissions and claims of the Petitioner and note that ACE projected for the 2019-24 tariff period is on account of balance and retention payments due to un-discharged liability projected for works executed within the cut-off

date (31.3.2022) and, accordingly, ACE claimed is allowed under Regulations 24(1)(a) and 24(1)(b) of the 2019 Tariff Regulations.

46. Accordingly, the capital cost considered for the 2019-24 tariff period is as follows:

(₹ in lakh)

Total Capital Cost (as on 1.4.2019)	2019-20	2020-21	2021-22	2022-23	2023-24	Total Capital Cost (as on 31.3.2024)
4886.61	1972.87	1442.36*	0.00	0.00	0.00	8301.84

**includes discharged IDC of ₹21.25 lakh and grant adjustment of ₹14.88 lakh.*

Debt-Equity Ratio

47. Regulation 18 of the 2019 Tariff Regulations provides as follows:

*"**18. Debt-Equity Ratio:** (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. 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:

i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
ii. 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, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds 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 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of a generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019, if *the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;*

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 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.

(6) Any expenditure incurred for the emission control system during the tariff period as may be admitted by the Commission as additional capital expenditure for determination of supplementary tariff, shall be serviced in the manner specified in clause (1) of this Regulation."

48. The debt-equity considered for the purpose of computation of tariff for the 2019-24 period is as follows:

Funding	Capital Cost (₹ in lakh) (as on COD)	(in %)	ACE (2019-20)	ACE (2020-21)	Capital Cost (₹ in lakh) (as on 31.3.2024)	(in %)
Debt	3420.63	70.00	1381.01	1009.65	5811.29	70.00
Equity	1465.98	30.00	591.86	432.71	2490.55	30.00
Total	**4886.61**	**100.00**	1972.87	1442.36	**8301.84**	**100.00**

Depreciation

49. Regulation 33 of the 2019 Tariff Regulations provides as follows:

"33. Depreciation: *(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. 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:*

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 a 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 the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

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

Provided also 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 unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(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-I*** *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 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2019 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 five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.

(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 de-capitalized asset during its useful services.

(9)Where the emission control system is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the emission control system are the same, depreciation of the generating station or unit thereof including the emission control system shall be computed in accordance with Clauses (1) to (8) of this Regulation.

(10) Depreciation of the emission control system of an existing or a new generating

station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of-

a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or
b) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or
c) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life."

50. The IT equipment has been considered as part of the Gross Block and depreciated using Weighted Average Rate of Depreciation (WAROD). WAROD at Annexure-I has been worked out after considering the depreciation rates of IT and non-IT assets as specified in the 2019 Tariff Regulations. The salvage value of IT equipment has been considered nil, i.e. IT asset has been considered as 100% depreciable. The depreciation allowed for the transmission asset for the 2019-24 tariff period is as follows:

(₹ in lakh)

	Particulars	**2019-20 (Pro-rata for 213 days)**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
A	Opening Gross Block	4886.61	6859.48	8301.84	8301.84	8301.84
B	Addition during the year 2019-24 due to projected ACE	1972.87	1442.36	0.00	0.00	0.00
C	Closing Gross Block (A+B)	6859.48	8301.84	8301.84	8301.84	8301.84
D	Average Gross Block [(A+C)/2]	5873.05	7580.66	8301.84	8301.84	8301.84
E	Average Gross Block (90% depreciable assets)	5864.80	7563.28	8283.57	8283.57	8283.57
F	Average Gross Block (100% depreciable assets)	8.25	17.39	18.27	18.27	18.27
G	Depreciable value (excluding IT equipment and software) [(E*90%)]	5278.32	6806.95	7455.21	7455.21	7455.21
H	Depreciable value of IT equipment and software	8.25	17.39	18.27	18.27	18.27
I	Total Depreciable Value (G+H)	5286.57	6824.33	7473.48	7473.48	7473.48
J	Weighted average rate of Depreciation (WAROD) (in %)	5.29	5.30	5.30	5.30	5.30
K	Elapsed useful life at the beginning of the year (Year)	0.00	0.00	1.00	2.00	3.00

L	Balance useful life at the beginning of the year (Year)	25.00	25.00	24.00	23.00	22.00
M	**Depreciation during the year** [(D*J)]	**180.93**	**401.95**	**440.11**	**440.11**	**440.11**
N	Aggregate Cumulative Depreciation at the end of the year	180.93	582.88	1022.99	1463.11	1903.22
O	Remaining Aggregate Depreciable Value at the end of the year [(I-N)]	5105.63	6241.45	6450.49	6010.38	5570.26

Interest on Loan (IoL)

51. Regulation 32 of the 2019 Tariff Regulations provides as follows:

*"**32. Interest on loan capital:** (1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2019-24 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.

(5a) The rate of interest on loan for installation of emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company 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 changes to the terms and conditions of the loans shall be reflected from the date of such re-financing."

52. The Petitioner has submitted that WAROI on loan has been calculated on the basis of the rates prevailing as on 1.4.2019 and has prayed that the change in interest rate due to floating rate of interest applicable, if any, during the 2019-24 tariff period may be adjusted.

53. We have considered the submissions of the Petitioner. As the Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during the 2019-24 tariff period be adjusted. Accordingly, the floating rate of interest, if any, will be considered at the time of true-up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed for the transmission asset for the 2019-24 tariff period is follows:

(₹ in lakh)

	Particulars	**2019-20 (Pro-rata for 213 days)**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
A	Gross Normative Loan	3420.63	4801.64	5811.29	5811.29	5811.29
B	Cumulative Repayments up to Previous Year	0.00	180.93	582.88	1022.99	1463.11
C	Net Loan-Opening (A-B)	3420.63	4620.70	5228.41	4788.29	4348.18
D	Addition due to ACE	1381.01	1009.65	0.00	0.00	0.00
E	Repayment during the year	180.93	401.95	440.11	440.11	440.11
F	Net Loan-Closing (C+D-E)	4620.70	5228.41	4788.29	4348.18	3908.07
G	Average Loan [(A+F)/2]	4020.67	4924.56	5008.35	4568.24	4128.13
H	Weighted Average Rate of Interest on Loan (in %)	7.58	7.58	7.58	7.58	7.57
I	**Interest on Loan (GxH)**	**177.27**	**373.09**	**379.44**	**346.09**	**312.59**

Return on Equity (RoE)

54. Regulations 30 and 31 of the 2019 Tariff Regulations provide as follows:

*"**30. Return on Equity**: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.*

(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 return on equity in respect of additional capitalization after cutoff date beyond the original scope, excluding additional capitalization on 7 account of emission *control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%.*

Provided further that:

i. *In case of a new project, the rate of return on equity shall be reduced by 1.00% 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) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;*

ii. *in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;*

iii. *in case of a thermal generating station, with effect from 1.4.2020:*

a) *rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;*

b) *an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:*

Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.

(3) The return on equity in respect of additional capitalization on account of emission control system shall be computed at the base rate of one year marginal cost of lending rate (MCLR) of the State Bank of India as on 1st April of the year in which the date of operation (ODe) occurs plus 350 basis point, subject to ceiling of 14%;"

"31. Tax on Return on Equity. *(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations 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 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 paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded 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:

Rate of pre-tax return on equity = 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 a generating company or a transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:

Rate of return on equity = 15.50/(1-0.2155) = 19.758%

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

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;
(b) Estimated Advance Tax for the year on above is Rs 240 crore;
(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;
(d) 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 2019-24 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 truing up, shall be recovered or refunded to beneficiaries or the long term customers, as the case may be, on year to year basis."

55. The Petitioner has submitted that it is liable to pay Income Tax at MAT rate specified under the Taxation laws (Amendment) Ordinance 2019. Further, RoE has been calculated @18.782% after grossing up RoE with MAT rate of 17.472% (Base Rate 15% + Surcharge 12% + Cess 4%) based on the formula given in Regulation 31(2) of the 2019 Tariff Regulations for 2019-24 tariff period. As per Regulation 31(3) of the 2019 Tariff Regulations, the grossed-up rate of RoE at the end of every financial year shall be trued-up 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 IT authorities pertaining to 2019-24 tariff period on actual gross income. However, if any penalty arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the Petitioner. Any under-recovery or

over-recovery of grossed-up rate on RoE after truing up shall be recovered or refunded to beneficiaries or the long term customers on yearly basis. The Petitioner has further submitted that any adjustment due to additional tax demand including interest duly adjusted for any refund of tax including interest received from IT authorities shall be recoverable/ adjustable during 2019-24 tariff period on yearly basis on receipt of Income Tax assessment order.

56. We have considered the submissions of the Petitioner. MAT rate applicable in 2019-20 has been considered for the purpose of RoE, which will be trued-up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed for the transmission asset for the 2019-24 tariff period is as follows:

(₹ in lakh)

	Particulars	**2019-20 (Pro-rata for 213 days)**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
A	Opening Equity	1465.98	2057.84	2490.55	2490.55	2490.55
B	Addition due to ACE	591.86	432.71	0.00	0.00	0.00
C	Closing Equity (A-B)	2057.84	2490.55	2490.55	2490.55	2490.55
D	Average Equity [(A+B)/2]	1761.91	2274.20	2490.55	2490.55	2490.55
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
F	Tax Rate applicable (in %)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (Pre-tax)	18.782	18.782	18.782	18.782	18.782
H	Return on Equity (Pre-tax) (DxG)	192.59	427.14	467.78	467.78	467.78

<u>Operation & Maintenance Expenses (O&M Expenses)</u>

57. Regulation 35(3)(a) of the 2019 Tariff Regulations provides as follows:

35. Operation and Maintenance Expenses:

…

(3) Transmission system: *(a) The following normative operation and maintenance expenses shall be admissible for the transmission system:*

Particulars	***2019-20***	***2020-21***	***2021-22***	***2022-23***	***2023-24***
Norms for sub-station Bays (Rs. Lakh per bay)					
765 kV	*45.01*	*46.60*	*48.23*	*49.93*	*51.68*
400 kV	*32.15*	*33.28*	*34.45*	*35.66*	*36.91*
220 kV	*22.51*	*23.30*	*24.12*	*24.96*	*25.84*
132 kV and below	*16.08*	*16.64*	*17.23*	*17.83*	*18.46*
Norms for Transformers (Rs. Lakh per MVA)					
765 kV	*0.491*	*0.508*	*0.526*	*0.545*	*0.564*
400 kV	*0.358*	*0.371*	*0.384*	*0.398*	*0.411*
220 kV	*0.245*	*0.254*	*0.263*	*0.272*	*0.282*

132 kV and below	*0.245*	*0.254*	*0.263*	*0.272*	*0.282*
Norms for AC and HVDC lines (Rs. Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	*0.881*	*0.912*	*0.944*	*0.977*	*1.011*
Single Circuit (Bundled conductor with four sub-conductors)	*0.755*	*0.781*	*0.809*	*0.837*	*0.867*
Single Circuit (Twin & Triple Conductor)	*0.503*	*0.521*	*0.539*	*0.558*	*0.578*
Single Circuit (Single Conductor)	*0.252*	*0.260*	*0.270*	*0.279*	*0.289*
Double Circuit (Bundled conductor with four or more sub-conductors)	*1.322*	*1.368*	*1.416*	*1.466*	*1.517*
Double Circuit (Twin & Triple Conductor)	*0.881*	*0.912*	*0.944*	*0.977*	*1.011*
Double Circuit (Single Conductor)	*0.377*	*0.391*	*0.404*	*0.419*	*0.433*
Multi Circuit (Bundled Conductor with four or more sub-conductor)	*2.319*	*2.401*	*2.485*	*2.572*	*2.662*
Multi Circuit (Twin & Triple Conductor)	*1.544*	*1.598*	*1.654*	*1.713*	*1.773*
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	*834*	*864*	*894*	*925*	*958*
Gazuwaka HVDC Back-to-Back station (Rs. Lakh per 500 MW)	*1,666*	*1,725*	*1,785*	*1,848*	*1,913*
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	*2,252*	*2,331*	*2,413*	*2,498*	*2,586*
±500 kV Talcher-Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	*2,468*	*2,555*	*2,645*	*2,738*	*2,834*
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	*1,696*	*1,756*	*1,817*	*1,881*	*1,947*
±800 kV, Bishwanath-Agra HVDC bipole	*2,563*	*2,653*	*2,746*	*2,842*	*2,942*

scheme (Rs Lakh)(3000 MW)					

Provided that the O&M expenses for the GIS bays shall be allowed as worked out by multiplying 0.70 of the O&M expenses of the normative O&M expenses for bays;

Provided further that:
(i) the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;
(ii) the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;
(iii) the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2500 MW)shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);
(iv) the O&M expenses of ±800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme;
(v) the O&M expenses of ±800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW)shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme; and
(v) the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three years.

(b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of sub-station bays, transformer capacity of the transformer (in MVA) and km of line length with the applicable norms for the operation and maintenance expenses per bay, per MVA and per km respectively.

(c) The Security Expenses and Capital Spares for transmission system shall be allowed separately after prudence check:

Provided that the transmission licensee shall submit the assessment of the security requirement and estimated security expenses, the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification."

58. The Petitioner has submitted that the transmission charges submitted in this petition is inclusive of O&M Expenses derived for the transmission asset based on the norms for O&M expenditure for Transmission System as specified under Regulation 35(3)(a) of the 2019 Tariff Regulations but excludes security expenses and capital spares as provided in the said Tariff Regulations.

59. The O&M Expenses as claimed by the Petitioner in respect of the transmission asset are as follows:

(₹ in lakh)

Particulars	**2019-20 (Pro-rata for 213 days)**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Sub-station bays					
400 kV Pavagada: FSC Bays	2	2	2	2	2
Norm (₹ lakh/bay)					
400 kV	32.15	33.28	34.45	35.66	36.91
Total Sub-station O&M	37.42	66.56	68.90	71.32	73.82

60. We have considered the submissions of the Petitioner. The allowable O&M Expenses for the transmission asset for the 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	**2019-20 (Pro-rata for 213 days)**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Sub-station bays					
400 kV Pavagada: FSC Bays	2	2	2	2	2
Norm (₹ lakh/bay)					
400 kV (GIS)*	22.51	23.30	24.12	24.96	25.84
Total Sub-station O&M	45.01	46.59	48.23	49.92	51.67
Total O&M Expenses	26.19	46.59	48.23	49.92	51.67

** O&M Expenses for the GIS bays shall be allowed by multiplying 0.70 of the O&M Expenses of the normative O&M Expenses for bays.*

Interest on Working Capital

61. Regulations 34(1)(c), 34(3), 34(4) and 3(7) of the 2019 Tariff Regulations provide as follows:

*"**34. Interest on Working Capital**: (1) The working capital shall cover:*

…..

(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:

(i) Receivables equivalent to 45 days of annual fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and

(iii) Operation and maintenance expenses, including security 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 1.4.2019 or as on 1st April of the year during the

tariff period 2019-24 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:

Provided that in case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24."

"(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."

"3. Definitions …

*(7) '**Bank Rate**' means the one year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points;"*

62. The Petitioner has submitted that it has computed IWC for the 2019-24 tariff period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest considered is 12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, for 2020-21 has been considered as 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) whereas 2021-22 onwards has been considered as 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon for the transmission asset for the 2019-24 tariff period are as follows:

(₹ in lakh)

	Particulars	**2019-20 (Pro-rata for 213 days)**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
A	Working Capital for O&M Expenses (O&M expenses for One month)	3.75	3.88	4.02	4.16	4.31
B	Working Capital for Maintenance Spares (15%xA)	6.75	6.99	7.23	7.49	7.75
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost / annual transmission charges)	123.89	156.28	166.96	163.02	158.62

D	Total Working Capital [(A+B+C)]	134.39	167.15	178.22	174.67	170.67
E	Rate of Interest of Working Capital (in %)	12.05	11.25	10.50	10.50	10.50
F	Interest of Working Capital [(DxE)]	9.42	18.80	18.71	18.34	17.92

Annual Fixed Charges of the 2019-24 Tariff Period

63. The transmission charges allowed for the transmission asset for the 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	2019-20 (Pro-rata for 213 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	180.93	401.95	440.11	440.11	440.11
Interest on Loan	177.27	373.09	379.44	346.09	312.59
Return on Equity	192.59	427.14	467.78	467.78	467.78
O& M Expenses	26.19	46.59	48.23	49.92	51.67
Interest on Working Capital	9.42	18.80	18.71	18.34	17.92
Total	**586.41**	**1267.57**	**1354.27**	**1322.25**	**1290.07**

Filing Fee and Publication Expenses

64. The Petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. The Petitioner is 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 70(1) of the 2019 Tariff Regulations.

Licence Fee & RLDC Fees and Charges

65. The Petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for the 2019-24 tariff period. The Petitioner shall also be entitled for recovery of RLDC fee and charges in accordance with Regulation 70(3) of the 2019 Tariff Regulations for the 2019-24 tariff period.

Goods and Services Tax

66. The Petitioner has submitted that, if GST is levied at any rate and at any point of time in future on charges of transmission of electricity, the same shall be borne and additionally paid by the Respondent(s) to the Petitioner and the same shall be charged and billed separately by the Petitioner. Further additional taxes, if any, are to be paid by the Petitioner on account of demand from Government/ Statutory Authorities, the same may be allowed to be recovered from the beneficiaries.

67. We have considered the submissions of the Petitioner. Since GST is not levied on transmission services at present, we are of the view that Petitioner's prayer is pre-mature.

Security Expenses

68. The Petitioner has submitted that security expenses in respect of transmission asset are not claimed in the instant petition and it would file a separate petition for claiming the overall security expenses and the consequential IWC.

69. We have considered the above submissions of Petitioner. The Petitioner has claimed consolidated security expenses for all the transmission assets owned by it on projected basis for the 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The Commission vide order dated 3.8.2021 in Petition No. 260/MP/2020 approved security expenses from 1.4.2019 to 31.3.2024. Therefore, the security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. Accordingly, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.

Capital Spares

70. The Petitioner has sought reimbursement of capital spares at the end of tariff period. The Petitioner's claim, if any, shall be dealt with in accordance with the provisions of the 2019 Tariff Regulations.

Sharing of Transmission Charges

71. TANGEDCO has placed reliance on the directions/ observations of the Commission in the Regulatory Approval Order1 dated 19.8.2016 and submitted as follows:

> a) The transmission charges for delay in commissioning of SPGs (solar power generators) shall be payable by such SPGs/ SPPDs on the same line as the liability for payment by the thermal and hydro generating station in accordance with the 2014 Tariff Regulations.
>
> b) The transmission charges for delay in commissioning of solar projects by SPGs shall be paid by such SPGs/ SPPDs in accordance with the relevant Regulations of the Commission.
>
> c) The Petitioner's commitment towards tying up about 400 MW solar power with other State beneficiaries and till the generators declare COD, the transmission charges liabilities to rest with SPGs/ SPPDs.

72. TANGEDCO, placing its reliance on the mandate and provisions of Regulations 7(1)(y) and 8(6) of the 2010 Sharing Regulations, has submitted as follows:

> a) The Petitioner is duty bound to recover the transmission charges from the generators that have not commissioned their project on the date of commercial operation of the associated transmission system.
>
> b) Waiver of the transmission charges to certain category of RE generators is applicable only from COD of the generation projects.

c) The generator is liable to pay the transmission charges till COD of the generating station.

73. In view of the above submissions, TANGEDCO has requested that the Petitioner is required to bring on record the details of generator-wise/ SPD-wise COD covered under Phase-II (1000 MW) for ascertaining the applicability of transmission charges.

74. In response, the Petitioner has submitted as follows:

a) 1050 MW solar capacity from Pavagada Solar Park (Phase-II) is declared under commercial operation wherein last generating station got commissioned by 30.12.2019.

b) 200 MW LTA for the Solar Park was made operational from 30.12.2019 and additional 850 MW from 3.5.2020 upon commissioning of Hiriyur-Mysore 400 kV D/C line.

c) The details of commissioning of generation and status of operationalization of LTA are as follows:

Applicant	Connectivity granted (MW)	LTA quantum (MW)	Status of LTA Operationalization*	Generator name/ Status of Generation (in MW) Date of Commissioning
Karnataka Solar Power Development Corporation Limited	1000	1000	LTA operationalized w.e.f. 30.12.2019 (200 MW) and 3.5.2020 (850 MW)	- Azure Power: 50 MW: 06.03.2019 - Tata Power: 50 MW: 06.03.2019 - Azure Power: 50 MW: 12.03.2019 - Renew Power: 100 MW: 20.03.2019 - Tata Power: 50 MW: 22.03.2019 - Tata Power: 50 MW: 25.03.2019 - Renew Power: 50 MW: 28.03.2019 - Fortum Solar: 100 MW: 15.07.2019 - Fortum Solar: 50 MW: 18.07.2019 - Fortum Solar: 50 MW: 03.08.2019 - Fortum Solar: 50 MW: 05.08.2019 - Karnataka REDL: 50 MW: 20.10.2019 - Avada Solarise: 50 MW: 08.11.2019 - Avada Solarise: 50 MW: 21.11.2019 - Avada Solarise: 50 MW: 27.11.2019 - SBG Cleantech: 200 MW: 30.12.2019

**LTA operationalized is 1050 MW as against initial granted connectivity and LTA of 1000 MW*

75. Regulation 8(5) and Regulation 8(6) of the 2010 Sharing Regulations provides as follows:

"(5) Where the Approved Withdrawal or Approved Injection in case of a DIC is not materializing either partly or fully for any reason whatsoever, the concerned DIC shall be obliged to pay the transmission charges allocated under these regulations:

Provided that in case the commissioning of a generating station or unit thereof is delayed, the generator shall be liable to pay Withdrawal Charges corresponding to its Long term Access from the date the Long Term Access granted by CTU becomes effective. The Withdrawal Charges shall be at the average withdrawal rate of the target region:

Provided further that where the operationalization of LTA is contingent upon commissioning of several transmission lines or elements and only some of the transmission lines or elements have been declared commercial, the generator shall pay the transmission charges for LTA operationalised corresponding to the transmission system commissioned:

Provided also that where the construction of dedicated transmission line has been taken up by the CTU or the transmission licensee, the transmission charges for such dedicated transmission line shall be payable by the generator as provided in the Regulation 8 (8) of the Connectivity Regulations:

Provided also that a generating station drawing start-up power or injecting infirm power before commencement of LTA shall be liable to pay the withdrawal or injection charges corresponding to the actual injection of infirm power or withdrawal start-up power during a month (concerned month) and the amount received on account of such payments shall be reimbursed to the DICs in the month following the month of billing, in proportion to the billing of the DICs during the concerned month.

Provided also that CTU shall maintain a separate account for the above amount received in a quarter and deduct the same from the transmission charges of ISTS considered in PoC calculation for the next application period.

(6) For Long Term Transmission Customers availing power supply from inter-State generating stations, the charges attributable to such generation for long term supply shall be calculated directly at drawal nodes as per methodology given in the Annexure-I. Such mechanism shall be effective only after commercial operation of the generator. Till then it shall be the responsibility of the generator to pay transmission charges."

76. We have considered the submissions of the Petitioner and TANGEDCO. The Commission in Regulatory Approval Order 1 dated 19.8.2016 observed as follows:

"30. We are of the view that the transmission system needs to be implemented matching with the time schedule of the generation projects so that the generation from Ultra Mega Solar Power Projects in Tumkur (Pavagada) District in the State of Karnataka do not get stranded. Accordingly, we accord regulatory approval under Regulation 3 of the Regulatory Approval Regulations for execution of the following transmission scheme:

Phase-I

(i) LILO of 400kV Gooty-Tumkur (Vasantnarsapur) D/C at Tumkur (Pavagada) Pooling station

(iii) Tumkur (Pavagada) Pooling station - Hiriyur 400 kV D/C

(iii) LILO of 400kV Bellary Pool-Tumkur (Vasantnarsapur) D/C (Quad) (both circuits) [KPTCL line] at Tumkur (Pavagada) Pooling station

(iv) Establishment of 3x500 MVA, 400/220 KV Pooling station at Tumkur (Pavagada) along with 1x125MVar bus reactor

(v) 8 numbers 220kV Line bays at Tumkur (Pavagada) Pooling Station for Solar Interconnection

Phase-II
(i) Hiriyur - Mysore 400 kV D/C line$

*(ii)Tumkur (Pavagada) Pooling station - Devanhalli (KPTCL) 400kV D/C (Quad)^^*

(iii) Augmentation of 2x500 MVA, 400/220KV transformer at Tumkur (Pavagada) Pooling station

(iv) 1x125MVAR bus reactor (2nd) at Tumkur (Pavagada) Pooling Station

(v) Third 400/220kV, 1x500 MVA transformer at Tumkur (Vasantnarsapur) S/s

(vi) 1x80 MVAR switchable Line reactor at Mysore end of Hiriyur- Mysore D/C (each ckt)

(vii) 8 numbers 220kV line Bays at 400/220kV Tumkur (Pavagada) Pooling station for Solar interconnection

$With the completion of this line, it would be connected with Tumkur (Pavagada) Pooling station- Hiriyur 400kV D/C line to form Tumkur (Pavagada)-Mysore D/C line.

^^KPTCL would complete establishment of 400/220 kV sub-station at Devanahally including inter-linking 400 kV and 220 kV lines before Phase-II at Ultra Mega Solar Power Park."

77. The Commission in Regulatory Approval Order 2 dated 7.9.2017 in Petition No.131/MP/2017 are as follows:

"12. We are of the view that the transmission system needs to be implemented matching with the time schedule of the generation projects so that the generation from Ultra Mega Solar Power Projects in Tumkur (Pavagada) District in the State of Karnataka do not get stranded. Accordingly, we accord regulatory approval under Regulation 3 of the Regulatory Approval Regulations for the following addition and modification in the scope of work for execution of the transmission scheme:

Addition in the scope

*- Fixed Series Capacitor (40%) on 400 kV Tumkur (Pavagada)-Tumkur (Vasantnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end * **

*** formed after LILO of 400 kV Bellary pool-Tumkur (Vasantnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end*

Modification in the scope

- Hiriyur-Mysore 400 kV D/C line (after completion of this line, one circuit of this line would be connected with one ckt of Tumkur-Hiriyur line so as to make Tumkur-Mysore direct line)

- 220 kV bays (8 numbers) at Tumkur (Pavgada) PS for interconnection with solar project (earlier 16 nos of 220 kV bays)

13. All other terms and conditions of the order dated 19.8.2016 in Petition No. 36/MP/2016 remains unchanged."

78. We note that the transmission asset has been implemented for the purpose of reliable evacuation of power from Tumkur (Pavagada) Solar Park Phase-II (1000 MW) wherein FSC (fixed series capacitor) has been installed to improve the power handling capacity of 400 kV Tumkur (Pavgada)-Tumkur (Vasantnarsapura) 400 kV D/C Transmission Corridor while maintaining Grid stability and security under various operating conditions. As per the Regulatory Approval Order 2, the transmission asset has been implemented for Pavagada Solar Park Phase-II generation i.e. 1000 MW. In response to submissions of TANGEDCO, details of commissioning dates of the associated generation (within the Pavagada Solar Park) and LTA operationalization for the Pavagada Solar Park have been furnished by the Petitioner.

79. The COD of the transmission asset was 1.9.2019, before the SCOD of 5.9.2019. From table at paragraph 74(c) above, we observe that 650 MW generation capacity was commissioned before the COD of the transmission asset (i.e. 1.9.2019), while 400 MW generation capacity was commissioned after the COD of the transmission asset. We note that while the initial grant of Connectivity as well as LTA was for 1000 MW, ultimately LTA of 1050 MW has been operationalized for the Pavagada Solar Park and also, the generation capacity commissioned inside the Pavagada Solar Park is stated to be 1050 MW. Therefore, we have dealt with sharing of transmission charges considering the solar power generation capacity of 1050 MW.

80. Accordingly, in terms of the Regulatory Approval Order 1 dated 19.8.2016 read with Regulatory Approval Order 2 dated 7.9.2017 for the transmission asset of the Pavagada Solar Park, the transmission charges for 650 MW of generation capacity (commissioned within the COD of the transmission asset i.e. commissioned up to 1.9.2019) shall be included in the common pool with effect from COD of the transmission asset, while for the balance 400 MW of generation capacity (not commissioned within the COD of the transmission asset i.e. commissioned after 1.9.2019), transmission charges shall be payable by KSPDCL (Respondent No. 18) as follows:

COD of the transmission asset	Solar generation capacity (MW) commissioned within the solar park	Date of commissioning of solar generation capacity	Liability of transmission charges
1.9.2019	650	On various dates up to 1.9.2019 (i.e. before COD of the transmission asset)	Transmission charges proportionate to 650 MW shall be included in the common pool from 1.9.2019 (COD of transmission asset) to 19.10.2019 while for 400 MW, it shall be borne by KSPDCL
	50	20.10.2019	Transmission charges proportionate to 700 MW shall be included in the common pool from 20.10.2019 to 7.11.2019 while for 350 MW, it shall be borne by KSPDCL
	50	8.11.2019	Transmission charges proportionate to 750 MW shall be included in the common pool from 8.11.2019 to 20.11.2019, while for 300 MW, it shall be borne by KSPDCL
	50	21.11.2019	Transmission charges proportionate to 800 MW shall be included in the common pool from 21.11.2019 to 26.11.2019, while for 250 MW, it shall be borne by KSPDCL
	50	27.11.2019	Transmission charges proportionate to 850 MW shall be included in the common pool from 27.11.2019 to 29.12.2019, while for 200 MW, it shall be borne by KSPDCL
	200	30.12.2019	Full transmission charges shall be included in the common pool from 30.12.2019.

81. We further observe that as per TANGEDCO's submissions, since the asset has been put under commercial operation on 1.9.2019, the 2010 Sharing Regulations

are applicable to the project till 30.10.2020 and as per the Regulation 8(5) of the 2010 Sharing Regulations, the Petitioner is required to recover transmission charges from generators who failed to commission their projects on COD of the transmission asset. Also, as per TANGEDCO, Regulation 7(1)(y) of the 2010 Sharing Regulations provides waiver to certain category of RE generators is applicable only from COD of generation projects and Regulation 8(6) of the 2010 Sharing Regulations provides that a generator is liable to pay transmission charges till COD of the generating station. The Petitioner has not provided any specific reply to the said contentions of TANGEDCO.

82. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission systems was governed by the provisions of the 2010 Sharing Regulations and with effect from 1.11.2020 (after repeal of the 2010 Sharing Regulations), sharing of transmission charges is governed by the 2020 Sharing Regulations. Accordingly, the liabilities of DICs for arrears of transmission charges determined through this order shall be computed DIC-wise and shall be recovered from the concerned DICs through Bills under Regulation 15(2)(b) of the 2020 Sharing Regulations. Billing, collection and disbursement of transmission charges for subsequent period shall be recovered in terms of provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

83. To summarise:

a) The Annual Fixed Charges allowed for the transmission asset for the 2019-24 tariff period in the instant order are as follows:

(₹ in lakh)

2019-20 (Pro-rata for 213 days)	2020-21	2021-22	2022-23	2023-24
586.41	1267.57	1354.27	1322.25	1290.07

84. Annexure-I given hereinafter form part of the order.

85. This order disposes of Petition No. 652/TT/2020 in terms of the above discussions and findings.

sd/-	**sd/-**	**sd/-**	**sd/-**
(P. K. Singh)	**(Arun Goyal)**	**(I. S. Jha)**	**(P. K. Pujari)**
Member	**Member**	**Member**	**Chairperson**

Annexure-I

2019-24	Admitted Capital Cost as on COD (₹ in lakh)	ACE		Admitted Capital Cost as on 31.3.2024 (₹ in lakh)	Rate of depreciation (in %)	Annual Depreciation				
Capital Expenditure as on COD		**2019-20 (₹ in lakh)**	**2020-21 (₹ in lakh)**			**2019-20 (₹ in lakh)**	**2020-21 (₹ in lakh)**	**2021-22 (₹ in lakh)**	**2022-23 (₹ in lakh)**	**2023-24 (₹ in lakh)**
Sub-station	4886.61	1956.37	1440.59	8283.57	5.28	309.66	399.34	437.37	437.37	437.37
IT Equipment and Software	0.00	16.50	1.77	18.27	15.00	1.24	2.61	2.74	2.74	2.74
TOTAL	**4886.61**	**1972.87**	**1442.36**	**8301.84**		**310.90**	**401.95**	**440.11**	**440.11**	**440.11**
				Average Gross Block (₹ in lakh)		5873.05	7580.66	8301.84	8301.84	8301.84
				Weighted Average Rate of Depreciation (in %)		5.29	5.30	5.30	5.30	5.30