

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 83/TT/2022**

**Coram:**

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

**Date of Order: 31.03.2023**

**In the matter of:**

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 for determination of transmission tariff from COD to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for Asset-1: Tumkur (Pavagada) Pooling station-Devanahally (KPTCL) 400 kV D/C (Quad) line along with associated bays and equipment's at Tumkur (Pavagada) Pooling Station & Devanahally (KPTCL) under "Additional ATS for Tumkur (Pavagada) under Transmission system for Ultra Mega Solar Power Park at Tumkur (Pavagada), Karnataka-Phase II (Part B)" in Southern Region.

**And in the matter of:**

Power Grid Corporation of India Limited,  
"Saudamini", Plot No. 2,  
Sector 29, Gurgaon-122001 (Haryana).

**.... Petitioner**

**Vs.**

1. Tamil Nadu Generation and Distribution Corporation Limited,  
(Formerly Tamil Nadu Electricity Board-NEB),  
NPKRR Maaligai, 800, Anna Salai, Chennai-600 002.
2. Transmission Corporation of Andhra Pradesh Limited,  
Vidyut Soudha, Near Axis Bank, Eluru Road,  
Gunadala, Vijayawada-520 004.
3. Kerala State Electricity Board,  
Vaidyuthi Bhavanam,  
Pattom, Thiruvananthapuram-695 004.
4. Tamil Nadu Electricity Board,  
NPKRR Maaligai, 800, Anna Salai,  
Chennai-600 002.



5. Electricity Department,  
Government of Goa,  
Vidyuti Bhawan,  
Panaji, Goa 403 001.
6. Electricity Department,  
Government of Pondicherry,  
Pondicherry-605 001.
7. Eastern Power Distribution Company of Andhra Pradesh Limited,  
P&T Colony, Seethmmadhara,  
Vishakhapatnam, Andhra Pradesh.
8. Southern Power Distribution Company of Andhra Pradesh Limited,  
Srinivasasa Kalyana Mandapam Backside,  
Tiruchanoor Road, Kesavayana Gunta,  
Tirupati-517 501, Chittoor District, Andhra Pradesh.
9. Southern Power Distribution Company of Telangana Limited,  
6-1-50, Corporate Office, Mint Compound,  
Hyderabad-500 063, Andhra Pradesh.
10. Northern Power Distribution Company of Andhra Pradesh Limited,  
Opp. NIT Petrol Pump,  
Chaitanyapuri, Kazipet,  
Warangal-506 004 Andhra Pradesh.
11. Bangalore Electricity Supply Company Limited,  
Corporate Office, K. R. Circle,  
Bangalore-560 001, Karanataka.
12. Gulbarga Electricity Supply Company Limited,  
Station Main Road, Gulbarga, Karnataka.
13. Hubli Electricity Supply Company Limited,  
Navanagar, PB Road, Hubli, Karnataka.
14. MESCOM Corporate Office,  
Paradigm Plaza, AB Shetty Circle,  
Mangalore-575 001, Karnataka.
15. Chamundeswari Electricity Supply Corporation Limited,  
927, L J Avenue, Ground Floor,  
New Kantharaj Urs Road,  
Saraswatipuram, Mysore-570 009, Karnataka.
16. Transmission Corporation of Telangana Limited,  
Vidhyut Sudha, Khairatabad,



Hyderabad-500 082.

17. Karnataka Solar Power Development Corporation Limited,  
2nd Floor, South Block, Beeja Raja Seed Complex,  
Bellary Road, Hebbala, Bengaluru- 560024, Karnataka.
18. Tamil Nadu Transmission Corporation Limited,  
(Formerly Tamil Nadu Electricity Board -TNEB),  
5B Block 144, Anna Salai,  
Chennai-600 002.
19. Karnataka Power Transmission Corporation Limited,  
Kaveri Bhavan, Bangalore-560 009.

....Respondent(s)

**For Petitioner:** Shri Zafrul Hasan, PGCIL  
Shri S.S. Raju, PGCIL  
Shri Naresh Kumar, PGCIL  
Shri D.K. Biswal, PGCIL  
Shri Ranjeet Kumar Pandey, PGCIL

**For Respondents:** Shri S. Vallinayagam, Advocate, TANGEDCO

### **ORDER**

Power Grid Corporation of India Limited (PGCIL), 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 Tumkur (Pavagada) Pooling Station-Devanahally (KPTCL) 400 kV D/C (Quad) line along with associated bays and equipment at Tumkur (Pavagada) Pooling Station and Devanahally (KPTCL) (hereinafter referred to as the “transmission asset”) under Transmission system for Ultra Mega Solar Power Park at Tumkur (Pavagada), Karnataka - Phase II (Part B) in Southern Region (hereinafter referred to as “transmission project”).

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



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

*2) Condone the delay in execution of the project due to ROW issues.*

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

*4) 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.*

*5) 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.*

*6) 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.*

*7) 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.*

*8) Allow the Petitioner to claim the overall security expenses and consequential IOWC on that security expenses separately.*

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

*10) 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.*

*11) 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 PoC charges.*

*12) Allow Final tariff in accordance with Regulation 10 (5) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for purpose of inclusion in the 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.”*

### **Background**

3. The brief facts of the case as follows:



(a) The Investment Approval (IA) of the transmission project was accorded by Board of Directors (BoD) of the Petitioner vide Memorandum Ref.: C/CP/PA 1718-03-0A-IA003 dated 9.6.2017, for an estimated cost of ₹44589 lakh including IDC of ₹1827 lakh based on February, 2017 price level.

(b) The BoD of the Petitioner had submitted Revised Cost Estimate (RCE-I) of the transmission project vide Memorandum Ref.: C/CP/PA2021-12-0AR-RCE014 dated 1.4.2021, at an estimated cost of ₹67573 lakh including IDC of ₹5241 lakh at June, 2020 price level.

(c) Ministry of Power (MoP), Government of India, vide letter dated 8.1.2015 intimated Petitioner for taking up of transmission system for evacuation of power from 9 solar generating parks to be set up in 7 States along with Pooling Stations as ISTS schemes which includes Tumkur (Pavagada) UMSPP on compressed time schedule basis.

(d) The Commission has accorded regulatory approval under Regulation 3 of the Central Electricity Regulatory Commission (Grant of Regulatory Approval for execution of Inter-State Transmission System to Central Transmission Utility) Regulations, 2010, for execution the transmission project vide order dated 19.8.2016 in Petition No. 36/MP/2016.

(e) The scope of the scheme was discussed and agreed in 39<sup>th</sup> & 40<sup>th</sup> meeting of Standing Committee on Power System Planning in SR held on 28/29.12.2015 and 19.11.2016, respectively. The transmission project has also been agreed in 29<sup>th</sup> Meeting of SRPC held on 5.3.2016 and 30<sup>th</sup> SRPC meeting dated 27.8.2016.

(f) The broad scope of work covered under the transmission project is as follows:



## Transmission Lines

(i) Tumkur (Pavagada) Pooling station-Devanahally (KPTCL) 400 kV D/C (Quad) Line.

## Sub-station

a) 400/220 kV Tumkur (Pavagada) Pooling station (Extension)

- 400 kV Line Bays: 2 numbers

b) 400/220 kV Devanahally (KPTCL) Substation (Extension)\*

- 400 kV GIS Line Bays: 2 numbers

*\*The subject transmission scheme was finalized in 39<sup>th</sup> Standing committee meeting of Southern Region. As per the agreed scope, Construction of 2 nos. 400kV line bays at Devanahally Sub-station for termination of 400kV D/C Tumkur (Pavagada)- Devanahally (KPTCL) line was to be done by M/s KPTCL (Karnataka Power Transmission Company Limited) on deposit work basis on behalf of Petitioner. However, during preparation of DPR, KPTCL did not informed the envisaged cost of aforesaid works and therefore, being the identical nature of work as of Pavagada (AIS) Sub-station extension, cost of Devanahally(AIS) Sub-station was considered same as that of Pavagada (AIS) Sub-station extension on normative basis for cost estimate purpose. However, Devanahally (New) Sub-station is being implemented by M/s KPTCL as 400kV GIS and 220kV AIS and KPTCL allotted 2 Nos. 400kV GIS line bays to the Petitioner.*

(g) The Petitioner has submitted that the entire scope of the transmission project has been completed.

(h) The transmission asset was scheduled to be put into commercial operation within 21 months from the date of IA i.e. 29.5.2017. Therefore, the scheduled COD of the transmission project was 28.2.2019 against which it was put into commercial operation on 1.3.2021. Therefore, there is time over-run of 732 days in case of the transmission asset.

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



5. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notices published in the newspapers by the Petitioner. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), Respondent No. 1, has filed its reply vide affidavit dated 12.8.2022 and raises the issues like time over-run, cost over-run and sharing of transmission charges. The Petitioner, vide affidavit dated 12.12.2022, has filed the rejoinder.

6. The hearing in this matter was held on 20.12.2022 and the order was reserved.

7. This order is issued considering the submissions made by the Petitioner in the petition vide affidavits dated 28.9.2021, 15.3.2022 and 22.7.2022, reply filed by the Respondent, TANGEDCO, vide affidavit dated 12.8.2022 and the Petitioner's rejoinder affidavit dated 12.12.2022.

8. Having heard the representatives of the Petitioner, learned counsel for TANGEDCO and having perused the material on record, we proceed to dispose of the petition.

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

9. The Annual Fixed Charges (AFC) claimed by the Petitioner in respect of the transmission asset for 2019-24 tariff period are as follows:

Particulars	(₹ in lakh)			
	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
Depreciation	227.08	2892.99	3115.18	3151.03
Interest on Loan	100.24	1243.10	1250.47	1170.19



Return on Equity	240.53	3075.13	3317.69	3356.51
O&M Expenses	9.17	115.86	122.99	123.10
Interest on Working Capital	29.16	354.83	366.81	379.09
<b>Total</b>	<b>606.18</b>	<b>7681.91</b>	<b>8173.14</b>	<b>8179.92</b>

10. The details of the Interest on Working Capital (IWC) claimed by the Petitioner in respect of the transmission asset are as follows:

(₹ in lakh)				
Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
O&M Expenses	28.61	29.57	30.57	31.59
Maintenance Spares	51.49	53.22	55.02	56.86
Receivables	879.94	947.08	1007.65	1005.73
<b>Total</b>	<b>960.04</b>	<b>1029.87</b>	<b>1093.24</b>	<b>1094.18</b>
Rate of Interest (in %)	11.25	11.25	11.25	11.25
<b>Interest on Working Capital</b>	<b>9.17</b>	<b>115.86</b>	<b>122.99</b>	<b>123.10</b>

### **Date of Commercial Operation (“COD”)**

11. The Petitioner has claimed actual COD of the transmission asset as 1.3.2021.

12. 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.”*

13. The Petitioner has submitted CEA approval dated 1.2.2021 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 9.3.2021 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).



14. We have considered the submissions of the Petitioner and in view of the CEA approval for energizing electrical installations, SRLDC certificate for successful completion of trial operation and CMD certificate; COD of the transmission asset is hereby approved as 1.3.2021.

### **Capital Cost**

15. Regulation 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 Asset-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 ash disposal and utilization including handling and transportation facility;
- (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 up to 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 Asset-forming part of the project, but not in use, as declared in the tariff petition;
- (b) De-capitalised Asset-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 decapitalised 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 asset.*

- (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.”

16. The Petitioner vide Auditor’s certificate dated 10.7.2021 has claimed the capital cost incurred up to COD and Additional Capital Expenditure (ACE) projected to be incurred from COD to 31.3.2024 in respect of the transmission asset. The details of capital cost claimed are as follows:

FR approved cost	RCE approved cost	Capital cost claimed as on COD	Projected ACE			Total capital cost as on 31.3.2024
			2020-21	2021-22	2022-23	
44588.84	67572.60	51544.94	1396.35	7142.98	1377.90	61462.17

### **Cost Over-run**

17. The Petitioner has claimed capital cost of ₹51544.94 lakh in respect of the transmission asset as on COD. The total completion cost including ACE in respect of the transmission asset is ₹61462.17 lakh against FR approved cost of ₹44588.84 lakh. Therefore, there is cost over-run of ₹16873.33 lakh. Further, the Petitioner has submitted RCE of ₹67572.60 lakh. The total completion cost including ACE in respect of the transmission asset is within the RCE and, therefore, there is no cost over-run w.r.t. RCE.

18. TANGEDCO, has submitted that there is an overall cost escalation of 38% amounting to ₹16873.3 lakh w.r.t. FR cost because of the fact that the Petitioner has neither followed the benchmark costing nor prudent utility practices in cost estimation. The Respondent also submits that the Petitioner has claimed a variation (increase) of cost of about ₹8305 lakh w.r.t. FR cost mainly on account of compensation paid for crops / trees / land and households encountered in line corridor and due to actual



payments made based on compensation orders received from respective District Commissioners. The Respondent states that this variation in cost is 162% w.r.t. FR towards which the Petitioner has not furnished any justification for such a huge variation and whether the compensation paid is in line with MoP's guidelines on RoW compensation. There is 215% increase in sub-station and communication equipment and civil works and 174% in spares w.r.t. FR cost, and that the Petitioner has claimed ₹955 lakh for tools and plants only in the RCE which was not considered in the FR cost. The Respondent again requests the Commission to direct the Petitioner to submit the relevant details for the above variation and proper justification for not considering T&P cost with FR cost, and that the Petitioner may exercise due care in preparation of cost estimates.

19. In response, the Petitioner has submitted that the point wise justification for cost over-run in case of the instant asset have already been submitted vide instant petition and that the compensation that has been paid towards tower base and diminution of land value in the width of Right of Way (RoW) corridor are based on compensation orders received from respective District Commissioners of Ananthapuram, Tumkur, Chikkaballapur and Bangalore districts (rural & urban) in line with MoP guidelines dated 15.10.2015 whereas compensation paid towards crop, tree, PTCC, railway etc. are based on orders received from concerned authorities. As regards increase in sub-station equipment, civil works and communication system is concerned, the transmission project was finalized in 39<sup>th</sup> standing committee meeting of Southern Region and as per the agreed scope, construction of 2 numbers 400 kV line bays at Devanahally Sub-station for termination of 400 kV D/C Tumkur (Pavagada)-Devanahally (KPTCL) line was to be done by KPTCL (Karnataka Power Transmission



company limited) on deposit work basis on behalf of the Petitioner and during preparation of DPR, being the identical nature of work as of Pavagada (AIS) substation extension, cost of Devanahally (AIS) Sub-station was considered same as that of Pavagada (AIS) Sub-station extension on normative basis for cost estimation purposes. During execution of the transmission project, it was intimated by KPTCL that Devanahally Sub-station (New) constructed by KPTCL is 400 kV GIS and 220 kV AIS. The Petitioner's claims that the change in type of bays has increased the project cost and consequential increase in overheads payable to KPTCL. As per the Petitioner, thus, on account of change in type of bays from AIS to GIS, there has been an increase in transmission project cost by around ₹3000 lakh. Further, cost had increased due to inflationary trend prevailing during execution of transmission project and also market forces prevailing at the time of bidding process of various packages etc. Being a Government enterprise, the Petitioner had the obligation for indigenous development of manufacturer as well as to adhere to Government of India guidelines in vogue. Accordingly, the Petitioner has been following a well laid down procurement policy which ensures both transparency and competitiveness in the bidding process and through this 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. The best competitive bid prices against tenders may vary as compared to the cost estimate depending upon prevailing market conditions, design and site requirements; whereas, 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/general practice and that the FR cost estimate of the transmission project is



on the basis of February, 2017 price level. Further, based on the requirement, a provision of T&P for ₹955 lakh has been kept under add-cap. However, as per the Petitioner, any T&P is yet to be procured and the details of the same, if any T&P procured, will be submitted at the time of truing up. The reasons for cost variation are beyond the control of the Petitioner and that the RCE of the project was accorded by BoD of POWERGRID vide Memorandum Ref.: C/CP/PA2021-12-0AR-RCE014 dated 1.4.2021, at an estimated cost of ₹67573 lakh including IDC of ₹5241 lakh, at June, 2020 price level. The Petitioner, therefore, claims that the estimated completion cost is within the approved cost as per RCE.

20. We have considered the submissions of the Petitioner and TANGEDCO.

21. The Petitioner has submitted the details of estimated completion cost vis-à-vis 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)
44588.84	61462.17	16873.33

22. The Petitioner has submitted that the estimated completion cost of the transmission asset is within RCE. Further, the item-wise cost variation between approved cost and estimated completion cost as detailed in Form-5 in this petition is as follows:

(₹ in lakh)				
Sl. No.	Particulars	Cost Details		Variation (-decrease, +increase) c = b - a
		Cost as per FR	Estimated Capital Cost	
		a	b	
1	Preliminary works incl. compensation	5112.8	13417.51	8304.71
2	Towers Steel	9237.20	11237.53	2000.33
3	Conductor	12345.69	15559.58	3213.89
4	Spares	184.08	505.35	321.27



5	Erection, Stringing & Civil works including foundation	5409.12	4344.64	-1064.48
6	Remaining items for Transmission Line	2915.71	2959.87	44.16
7	Sub-stations equipment, Civil works Communication system etc	2264.52	7140.04	4875.52
8	Tools and Plants	0	955.09	955.09
9	Over heads	5293.11	2256.62	-3036.49
10	Interest During Construction (IDC)	1826.64	1661.18	-165.46
11	Foreign Exchange Rate Variation (FERV)	0	1424.75	1424.75
	<b>Grand Total</b>	<b>44588.84</b>	<b>61462.17</b>	<b>16873.29</b>

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

a. **Compensation for transmission line:** Increase in cost of ₹8305 lakh w.r.t.

FR is on account of compensation paid against transmission line construction for crop, tree, PTCC, Railway etc. and compensation towards tower base and diminution of land value in the width of Right of Way (RoW) Corridor. The variation is due to the actual payments made for crops/trees/land and household encountered in line corridor and due to actual payments made based on compensation orders received from respective District Commissioners of Ananthapuram, Tumkur, Chikkaballapur and Bangalore Districts (rural & urban).

b. **Variation in quantities of approved items:** Increase in cost is due to RoW issues encountered during the construction of line, the actual line length and routing changed, which led to increase in line length of the instant line from 152.50 km to 157.42 km. This led to increase in the quantity of tower steel and conductor, which resulted in increasing the cost of tower steel by about ₹2000 lakh and cost of conductor by ₹3213 lakh w.r.t FR.

c. **Addition and deletion of items:** Increase in cost is due to the line bays at Devanahally Sub-station was to be constructed by KPTCL on deposit work basis on behalf of the Petitioner. However, at the time of finalization of DPR of





transmission project, KPTCL did not inform the cost of said works and, therefore, it was decided to consider the cost as AIS type bays on normative basis equivalent to Pavagada Sub-station as the scope of works at Tumkur and Devanahally Sub-stations are same. The 400 kV Devanahally Sub-station constructed by KPTCL is 400 kV GIS and 220 kV AIS and, therefore, termination of line has been done on 400 kV GIS bays instead 400 kV AIS, as envisaged in DPR. The change in type of bays has increased the project cost and consequently increased the overheads payable to SEBs. Thus, on account of change in type of bays from AIS to GIS, there has been an increase in project cost by around ₹3000 lakh. Further, an expenditure of ₹1041 lakh has been incurred in the transmission project towards construction of residential quarters at Pavagada Sub-station as all the quarters which were envisaged in the Pavagada Solar Park Phase-I project have not been constructed. Since, cut off period for Pavagada Solar Park Phase-I is March, 2020 and the instant transmission project scope also involves Tumkur (Pavagada) Extension work, it is considered prudent to include the expenditure against the said residential quarters in the instant transmission project. This led to increase in project cost by ₹1041 lakh as the same was not envisaged at the time of preparation of DPR Cost.

d. **Foreign Exchange Rate Variation (FERV):** Increase in cost is due to the project involves funding from ADB loan as well as awarded package in USD. This led to increase in the completion cost by ₹1400 lakh on account of FERV.

e. **Incidental Expenditure During Construction (IEDC):** Decrease in cost due to the IEDC including contingencies, establishment and other overheads for the transmission asset in approved FR was estimated at ₹5293 lakh, whereas,



based on the actual expenditure incurred, IEDC works out to ₹2256 lakh. Thus, IEDC under the project has decreased by ₹3036 lakh w.r.t. to FR in case of transmission asset. The Petitioner has submitted that during estimation for FR, 3% and 5% of equipment cost and civil works has been considered for contingency and IEDC respectively. The actual IEDC claimed is 3.67% of the hard cost and thus within the limit of 8% as per FR.

f. **Interest during Construction (IDC):** Decrease in cost due to IDC for the asset as per FR cost was estimated at ₹1864 lakh. The actual IDC for the asset works is ₹1661 lakh. Thus, there is a decrease of ₹165 lakh w.r.t. FR in IDC in case of transmission asset. The main reason for the reduction in IDC is attributable to the deployment of loan of lower interest rate as compared to interest rates considered in FR.

g. **Change in taxes & duties:** Increase in cost is due to the FR costs of individual items/materials that are exclusive of taxes and duties which have been indicated under a separate head while the cost of items as per the actual expenditure is inclusive of taxes and duties. Thus, there is an increase in the completion cost of the transmission asset mainly on account of actual taxes & duties, octroi, custom duty, excise duty, GST etc. paid based on the prevailing rate and charges raised by respective districts, states and statutory authorities at the time of execution of transmission project.

24. As regards price variation, the Petitioner has submitted that it is attributable to the compensation paid based on the assessment of Government officials of state and also inflationary trend prevailing during execution of the project and also market forces prevailing at the time of bidding process of various packages, conductor, IEDC and



FERV etc. The Petitioner has submitted that the variation is beyond the control of the Petitioner and has prayed that full tariff may be allowed from COD based on estimated completion cost.

25. We have considered the submissions of the Petitioner and TANGEDCO. The estimated completion cost including ACE is within the approved cost as per RCE. It is observed that the cost variation in case of the instant asset is of ₹16873.33 lakh. As per the submissions of the Petitioner, there is a decrease of ₹425 lakh due to price variation, increase of ₹1721 lakh due to variation in quantities of approved items and increase of ₹3948 lakh due to addition and deletion of items. Out of ₹3948 lakh increase due to addition and deletion of items, an amount of ₹3082 lakh increased due to change of type of bays i.e. 400 kV GIS bays instead of 400 kV AIS bays and an amount of ₹866 lakh is towards construction of residential quarters at Pavagada Sub-station. An amount of ₹12372 lakh has increased due to compensation of transmission line and an amount of ₹754 lakh has increased due to FERV. It is further observed that cost over-run was mainly on account of increase in IDC, IEDC and FERV which was due to severe RoW issues, and on account of enhanced tree/ crop compensation paid to the farmers and the same was in accordance with various orders of Deputy Commissioner and Ministry of Power guidelines dated 15.10.2015. The petitioner has submitted the RCE duly approved by the competent authority and the estimated completion cost including ACE is within RCE. As such we approve cost variation due to price variation, variation in quantities of approved items, land and compensation, FERV, IDC and IEDC.

**Time over-run**

26. As per IA dated 29.5.2017, the transmission asset was scheduled to be put into



commercial operation within 21 months from the date of IA i.e. by 28.2.2019 against which it was put into commercial operation on 1.3.2021. Therefore, there is time over-run of 732 days in case of the transmission asset.

27. The Petitioner has submitted that the delay is due to RoW issues and court cases faced during the construction of line. The Petitioner has submitted the following reasons in support of issues related to right of way/law and order:

**A) Row Issues faced in Tumkur District:**

- **RoW at loc. 8/0 to 14/2:** The 400/220 kV Powergrid Sub-station was located at KSPDCL solar park near Thirumani, Pavagada taluk, Tumkur district. To take off the lines from the Pavagada Sub-station, the line route was aligned through the boundary of KSPDCL solar park area. Solar power developers (SPDs) like Adani, Tata powers etc. objected the construction works, stating that the shadow of the towers hampers the generation of the power from solar panels. Hence, the foundation works from locations: 8/0 to 14/2 (21Nos.) got stalled on 3.1.2018 due to objection from these SPDs. The Petitioner requested CEO, KSPDCL to arrange a joint meeting with SPDs along with KSPDCL officials to resolve the issues. The meeting was held on 15.5.2018. After elaborate discussions and joint inspections during 15.6.2018 to 22.6.2018, SPDs, on 22.6.2018 agreed to sign MOM and allowed the works from loc. 8/0 to 14/2. Due to the above said severe RoW issues, works were held up with a delay of 171 Days.
- **RoW at loc. 3/0, 3/1, 4/8 & 12/0:** During the execution of the foundation works at locations: 3/0, 3/1, 4/8 & 12/0 land owners from Inturayanahalli, Valluru, Kyathaganacherlu etc. stopped the works on 8.5.2019 by demanding monthly lease to the locations and excess compensation over and above the orders



passed by Deputy Commissioner (DC), Tumkur. The matter was brought to the notice of the DC and SP, Tumkur on 10.5.2019. Even after several meetings with the landowners and visits to the site, the issue remained unsettled due to stiff resistance from land owners. Finally, the work could only be started after PSI, Tirumani and/ or RI, Pavadaga along with PGCIL officials visited the respective locations i.e. on 9.7.2019 to the location 3/1; on 18.7.2019 at location 3/0 and on 28.7.2019 to the location 4/8 and convinced the locals to start the work. However, this delay is concurrent to delay in completion of work in above sections. Due to the above said severe RoW issues, works were held up from at location 3/1 with a delay of 62 days (8.5.2019 to 9.7.2019), at location 3/0 with a delay of 71 days (8.5.2019 to 18.7.2019) and at location 4/8 with a delay of 81 days (8.5.2019 to 28.7.2019).

- **RoW at stringing section Pavagada Sub-station Gantry to 16/0:** Few landowners influenced by local political party leaders came to the site and stopped the stringing works. The issue was brought to the notice of Superintendent of Police (SP), Tumkur and SP directed PSI, Thirumani to extend police protection for carrying out stringing works. Further, with the continuous support of police and revenue officials, the balance stringing works in Tumkur districts were completed. Due to the above said severe RoW issues, works were held up with a delay of 52 days (1.10.2019 to 22.11.2019).

**B) Row Issues faced in Anantapuramu District:**

- The construction works in Anantapuramu district commenced on October 2017 and progressed well till December, 2017.



- **RoW at Tower Erection loc. 22/2:**

While working on the tower work at location 22/2 on 25.12.2017, land owners along with villagers obstructed the works and damaged the ropes and tools available at location. The issue was brought to the notice of Tahsildar, Penukonda and it was assured that the said issue will be discussed with RDO, Penukonda and DSP, Penukonda. In the meantime, the RoW issues spread to other parts of the district with the demand for higher compensation for trees and corridor and, hence, the foundation & tower erection works got stalled at locations 16/0, 17/9, 25/2, 33/4, 33/1, 36/8 etc. The DSP and SI, Roddam had had several meetings with the owners of location 22/2 along with the Petitioner and revenue officials after which land owners on 22.5.2018 agreed to commence the tower erection works with the support of police and revenue officials. Due to the above said severe RoW issues, works were held up with a delay of 148 days (i.e. 25.12.2017 to 22.5.2018).

- **RoW at Foundation location 33/4:** In location 33/4, the land owner Sri Suresh and his followers / local Maluguru villagers objected the foundation works on 10.3.2018 demanding re-routing of the transmission line alignment. Even after several meetings between the tehsildar, Hindupur, the Petitioner and the locals, the issue remained unsettled due to stiff resistance from land owners. On 19.4.2018, the Petitioner's officials met Collector, Anantapur and requested his intervention in resolving RoW issues at Maluguru village, Hindupur taluk. The Collector contacted and advised the concerned RDO to take the suitable action to resolve RoW issues. During the meeting chaired by RDO, Penukonda, the Petitioner tried to convince the land owners and was finally given instructions to



continue the works in Maluguru village. Some of the villagers got convinced and told RDO to give one week time for further discussions among villagers. Further, the Petitioner meet SP, Ananthapuramu on 16.5.2018 and requested his intervention in resolving the RoW issues at Maluguru village. Accordingly, SP directed DSP, Penukonda to give necessary support after which the work could resume on 23.5.2018. Due to the above said severe RoW issues, works were held up with a delay of 74 days (i.e. 10.3.2018 to 23.5.2018).

**C) RoW issues faced in Chikkaballapur District:**

- **RoW towards commencement of foundation works:** Considering the RoW issues faced in Anantapuramu and Tumkur district, a request was submitted on 22.2.2018 to DC, Chikkaballapur to issue compensation order towards tower footing and corridor and support to take up the construction works in Chikkaballapur district. Field survey works started on 26.2.2018 from location no: 41/0 in Dinne Hunsenahalli, Gauribidanur taluk, Chikkaballapur district. After the survey worked at Melya, a group of people obstructed the survey works and threatened the Petitioner to leave the site. Efforts were made to take up the field survey works which were stopped by land owners along with Karnataka Rajya Raitha Sangha (KRSS) leaders. On 5.4.2018, Revenue inspector along with village assistants and gram sahayaks visited the Sagenahalli village and explained about the transmission project and tried to convince the land owners to allow to carry out the field survey works. However, stiff resistance from KRSS leaders and local political parties, the land owners did not allow for the survey works and threatened the officials. Land owners disagreed for the compensation disbursement in line with Tumkur & Anantapur districts and demanded higher



compensation and as per the market rates for Tower footing, corridor, etc. On 26.9.2018, the DC, Chikkaballapur issued the compensation order after which the villagers and KRSS leaders started protest and threatened. Since the matter was spreading to the other parts of the Garibidanur taluk, the matter was brought to the notice of the DC, Chikkaballapur with a request for police protection. Subsequently, SP, Chikkaballapur directed Inspector and Sub Inspector of police, Gauribidanur rural & urban to give police support to take up the line construction works. Due to the above said severe RoW issues, works were held up during the period of 22.2.2018 to 25.10.2018 with a delay of 245 days.

- **Farmers agitation at Chikkaballapur district:**

Because of the ongoing protest, the Petitioner's officials met the Chief Secretary, Government of Karnataka on 26.10.2018 requesting his personal intervention. On 27.10.2018, the Chief Secretary conducted a review meeting during which the DC, Chikkaballapur assured to give police protection. After the issue of compensation order on 26.9.2018, land owners, KRSS agitators and leaders and followers of local political parties made strike on 28.10.2018 at work site against the compensation orders issued by DC, Chikkaballapur, for want of higher compensation. The agitations spread to Bangalore rural and urban districts and the line survey works could not be carried out at these districts also. Farmers and SRSS leaders called Gauribidanur strike and protest at taluk office was carried out. The hunger strike protest at Gauribidanur taluk office got huge support from villagers / locals in and around Gauribidanur taluk and day by day the protest was intensified. Hence, the works at Gauribidanur taluk was came to standstill. DC directed the Petitioner to make the compensation towards trees





and crops as per the assessment of Tahsildar, Forest and Horticulture departments. Tower erections location no. 43/2, 43/4, 43/5 were completed on 3.3.2019, 7.3.2019 and 25.3.2019 respectively with the support of police and revenue officials. Due to the above said severe RoW issues, works were held up from 28.10.2018 to 25.3.2019, for 148 days.

- **Row issues in stringing sections:**

After the completion of the foundation and tower erection work villages like Melya, Huchodanahalli and Konapura etc. the Petitioner tried to start the stringing work on 3.3.2019. Some of the KRSS activists influenced landowners to stop the stringing works for want of higher compensation and all the stringing works got stopped by Raitha Sangha activists. The issue was brought to the notice of PSI, Gowribidanur rural who was requested to give police support for carrying out stringing works. However, due to stiff resistance from land owners the issue remains unsettled. Due to the above said severe RoW issues, works were held up for 94 days. Villagers / land owners from Bychapura, Badimalluru and Huchodanahalli etc., came along with Raitha Sangha followers and stopped the stringing works by demanding compensation for Government, assigned lands. The issue was brought to the notice of DC and SP, Chikkaballapur and with police support, the stringing works are recommenced and completed on 15.4.2019. Due to the above said severe RoW issues, works were held up from 11.1.2019 to 15.4.2019 for 94 days. On 7.4.2019, the villagers / land owners from Bychapura, Badimalluru and Huchodanahalli etc. along with Raitha sangha followers stopped the stringing works at 43/0 to 44/0 section by demanding compensation for Government, assigned lands. This was brought to the notice



of the DC and SP, Chikkaballapur on 22.4.2019 and with police support, the stringing works are recommenced on 29.4.2019 at 43/0 to 44/0 and completed on 18.5.2019. Due to this RoW issues, works were held up from 7.4.2019 to 18.5.2019 for 41 Days

- **Row issues at location no. 62/2:**

On 20.5.2019, the Petitioner tried to recommence the foundation works at 62/2. Land owners obstructed the foundation works and threatened with dire consequences and stopped the foundation works. PSI, Manchenahalli visited the location along with revenue officials and discussed with the land owners and Raitha Sangha representatives. The work started with the help of the police on 12.6.2019 and completed on 18.6.2019. Due to the above said severe RoW issues, works were held up from 28.3.2019 to 18.6.2019 for 82 days.

**D) RoW issues faced in Bangalore Rural District:**

- **RoW towards commencement of foundation works:**

Due to huge resistance encountered in Chikkaballapur district, the land owners did not allow the line survey works in Bangalore rural and urban districts. Hence, the foundation works could not be commenced on time in Bangalore rural district. It was decided to commence the works in Bangalore rural district after completion of works in Chikkaballapur district. The Petitioner, on 12.3.2019, requested DC, Bangalore rural district to issue compensation order for tower footing and corridor in Bangalore rural district. After several meetings, the compensation order was passed post which survey works were taken up and foundation works commenced in Bangalore Rural district. Due to the above said



severe RoW issues, works were held up from 12.3.2019 to 27.7.2019 for 137 days.

- **RoW during foundation works:**

Due to stiff resistance from farmers and Raitha sangha agitators, the foundation works progressed very slowly. While carrying out the foundation works on 1.10.2019 at location 68/2 Shri Muniraju along with villagers obstructed the foundation works for want of re- routing the line from Kachahalli village. Tahsildar assured the Petitioner in giving necessary support to resolve the issue and directed revenue inspector, Tubagere hobli to visit the site. On 1.11.2019, the Petitioner tried to commence the foundation works at location 76/0 to 76/4 near Konaghata village. Land owners demanded re- routing of the line from Konaghata village. Further, land owners demanded that the compensation towards trees and crops are not sufficient and to be enhanced as per the life time of trees. Due to the above said severe RoW issues, works were held up with a delay of 95 days. On 13.1.2020, the officials of the Petitioner met DC, Bangalore rural district about the RoW issues encountered in locations 68/2, 68/4, 71/0, 76/0, 76/1, 76/2, 76/4, 81/0, 81/1, 84/0, 84/2, 87/1. DC, Bangalore rural district directed Superintendent of Police, Bangalore rural district to give necessary protection at above locations to take up foundation works.

**Location No: 76/0, 76/2 & 76/4:**

A meeting was organized by PSI, Doddaballapur rural police station with the land owners of Konaghata village after which land owners were convinced for taking up the foundation works at loc. 76/0 to 76/4 in Konaghata village. Accordingly,



foundation works commenced at location 76/4 on 24.1.2020 and completed on 28.1.2020. Similarly, the foundation works at location 76/0 commenced on 28.1.2020 and completed on 7.2.2020. On 4.2.2020, the foundation works were taken up for location no: 76/2 and completed on 18.2.2020. Due to this RoW issues, works were held up from 1.11.2019 to 4.2.2020 for 95 Days.

**Location No: 68/2 & 68/4:**

PSI, Doddaballapur visited the locations of 68/2 & 68/4 at Kachahalli village on 29.1.2010 but the land owners were not convinced and the work could not be commenced. On 4.2.2020, PSI, Doddaballapur sent police force to commence the foundation works at locations 68/2 and 68/4 and the foundation works were executed. Due to the said RoW issues, works were held up from 1.10.2019 to 4.2.2020 for 126 Days.

**Location No. 78/0:**

On 27.1.2020 PSI, Doddaballapur called land owners pertaining to 78/0. On 11.2.2020, the works commenced at location no. 78/0 with the support of police and foundation works completed on 29.2.2020. Due to the said severe RoW issues, works were held up from 10.11.2019 to 11.2.2020 for 93 days.

**Location No: 76/1:**

On 12.2.2020, police officials from Doddaballapur rural police station visited the location 76/1 and convinced the land owners. On 19. 2.2020. The Petitioner took up the excavation works forcibly at location 76/1 with the help of police and revenue officials. Due to the said severe RoW issues, works were held up from 1.11.2019 to 19.2.2020 for 110 days. The foundation works at possible locations were taken up and progressed slowly till February 2020 under stiff resistance



from land owners. Further, for carrying out balance construction / upgradation works, the Petitioner availed shutdown of existing 400 kV Nelamangala-Hoody and 400 kV Yelahanka-Hoody (Twin) transmission line for a period of three months i.e. from 5.3.2020 to 31.5.2020. However, due to COVID-19 pandemic, nation wide lock down was imposed in the country on 25.3.2020 and the works came to stand still in all the parts of the line.

**E) RoW issues faced in Bangalore urban district (Multi Circuit Portion):**

• **RoW to start foundation works @ 115:**

To take up the foundation works in Bangalore urban district (M/C portion), on 28.5.2019, the Petitioner submitted a request to DC, Bangalore Urban district. The Petitioner took up the field survey works at locations 116, 117, 118, 119 and 120, near Navaratna agrahara, Tarabane halli, Meenukunte etc. villages in multi circuit portion of the line. A Mob came and obstructed the survey works by demanding to show any proof from Government to carry out the survey in their lands. Majority of the land owners created obstructions. On 12.7.2019, Revenue Inspector along with Village Assistants and Gram Sahayakas visited these locations and discussed with the land owners. After detailed deliberations villagers agreed for carrying out the survey works at above locations. On 13.8.2019, Sr. General Manager submitted a request to DC, Bangalore urban to issue compensation order. On 10.10.2019, the Petitioner tried to carry out field survey works at locations 143, 144 and 145 near BEML layout, Bagalur village. However, protesters from “Nuthan Soudha Badavaneya Nieshanadarara Kshemabhivrudhi Sangha” (NSBNK) obstructed the survey works by stating that any development in the area marked as ‘New BEML Soudha Layout’ requires



the active participation and consent of the site owners. Hence, the survey works got stalled at above locations. The work got stalled even after PSI talked to the NSBNK Sangha. On 18.12.2019, DC, Bangalore Urban issued compensation order. After receiving the compensation order, on 20.12.2020, the Petitioner started serving of notices to the land owners and foundation works commenced at location No: 115 on 7.1.2020. Due to the above said severe RoW issues, works were held up from 28.5.2019 to 7.1.2020 for 224 days.

- **RoW during foundation works at location no.143 (BEML layout):**

On 16.1.2020, the Petitioner tried to take up the foundation works at location 143. The members of NSBNK Sangh obstructed the foundation works stating that without the approval of association, works cannot be allowed in the layout. Further, they were asking compensation order and other details followed in issuing compensation order to discuss in their meeting among land allottees and association members. Further, due to COVID19 pandemic national wide lock down was imposed and the works came to stand still in all the parts of the line including Bangalore Urban District. Thereafter, representatives of NSBNK Sangha lodged a complaint at Inspector of police, Bagalur police station. DC directed police officials to give necessary protection at loc. No: 143 in BEML layout. Due to the police protection the work was completed on 28.6.2020. Due to the above said severe RoW issues, works were held up for 164 days (i.e. 16.1.2020 to 28.6.2020).

**F) RoW during foundation works at 87/1 in Bangalore rural district:**

On 11.1.2020, the foundation works were obstructed by Sri. G.K. Ravikumar along with local villagers stating that the line route be changed from Jalige



village. The villagers also stated that they already had participated actively in various Raitha sangha agitations carried out in Chikkaballapur district and if the Petitioner commences the works, the agitations would start here also to stop the works. On 13.1.2020, the issue was brought to the notice of DC, Bangalore rural district by the Petitioner's officials. After detailed deliberations, DC, Bangalore rural district directed Superintendent of police, Bangalore rural district to give necessary protection at above locations to take up foundation works. However, seeing the agitation, PSI, Vishwanathpura told to complete the balance foundation works in Bangalore Rural district and works at this particular location will be taken up under police protection. Due to COVID19, nation wide lock down was imposed in India on 25.3.2020 and the works came to stand still in all the parts of the line. On 20.4.2020, DC, Bangalore rural issued a work permit under essential services subject to Government of Karnataka guidelines after which the work restarted. After completion of major portion of foundation works in Bangalore rural district, the foundation works at location no. 87/1 near Jalige village in Bangalore rural district was stopped by Sri G.K. Ravikumar along with local villagers demanding re-routing of the line from Jalige village. On 17.8.2020, the Petitioner approached DC, Bangalore rural district to help in resolving the issue at loc. 87/1 by stating that only this one location is pending in Bangalore rural district and all other foundation works were completed. On 20.10.2020, the Petitioner arranged a meeting with the land owners of 87/1 at Yelahanka Sub-station. During the meeting, MLA, Kalyanadurgam, Andhra Pradesh attended along with the land owners and told the Petitioner to shift the line from the edge of his survey number. However, the Petitioner declined to shift the line and the



meeting was closed without taking any decision. On 11.11.2020, With the support of police and revenue officials, the foundation works were taken up at loc. 87/1 and completed on 13.11.2020. Due to the above said severe RoW issues, works were held up from 11.1.2020 to 11.11.2020 for 305 Days

- **RoW during stringing works at section 68/0 to 70/0 in Bangalore Rural District:**

On 29.11.2020, the Petitioner tried to take up the stringing works at section 68/0 to 70/0 near Karnala, Kachahalli and Sodenahalli villages. While carrying out insulator hoisting works at loc. Nos. 68/3 & 68/4, land owners and villagers from Karnala and Kachahalli villages came to work site and stopped the hoisting works by demanding that the crops are ready for harvesting and hence, works could be taken up after harvesting the crops. The Petitioner officials tried to convince the land owners by stating that the damages will be suitably compensated. The Petitioner and revenue officials assured farmers and land owners that the damages occurring to the crops while carrying out stringing works will be compensated suitably but the farmers were not convinced. On 2.1.2021, the officials of the Petitioner approached DSP, Dodaballapur and requested to provide police protection for starting the stringing works at section 68/0 to 70/0. Accordingly, on 5.1.2021, the works re-commenced at section 68/0 to 70/0 under police protection and completed on 10.1.2021. Due to the above said severe RoW issues, works were held up with a delay of 37 days.

28. the details of the reasons submitted by the Petitioner for time over-run are tabulated in the following table:





Sl. No.	Description	RoW start date	RoW cleared date	Works completion date	Delay in RoW clearance (Days)	Delay w.r.t Sch. Completion (Days)
<b>A</b>	Tumkur District					
1	8/0 to 14/2 - Foundation works (KSPDCL)	3.1.2018	23.6.2018	5.9.2019	171	189
2	Foundations @ 3/1,	8.5.2019	9.7.2019	16.7.2019	62	138
3	Foundations @ 3/0,	8.5.2019	18.7.2019	28.7.2019	71	150
4	Foundations @ 4/8	8.5.2019	28.7.2019	1.8.2019	81	154
5	Stringing works @ PVGD SS to 16/0	1.10.2019	22.11.2019	22.11.2019	52	267
<b>B</b>	Anantapuramu District					
1	Tower Erection works @ loc. 22/2	25.12.2017	22.5.2018	22.5.2018	148	
2	foundation @ loc. 33/4	10.3.2018	23.5.2018	25.5.2018	74	
<b>C</b>	Chikkaballapur District					
1	Commencement of foundation works in Chikkaballapur Foundations @ loc. 41/6,	22.2.2018	25.10.2018	15.11.2018	245	
2	Foundations @ loc. 43/2, 43/4 & 43/5	28.10.2018	25.3.2019	25.3.2019	148	25
3	Stringing @ 41/0 to 42/10 to 43/0	11.1.2019	15.4.2019	15.4.2019	94	46
4	Stringing @ 43/0 to 44/0	7.4.2019	18.5.2019	18.5.2019	41	79
5	Foundations @ loc. 62/2	28.3.2019	18.6.2019	18.6.2019	82	110
<b>D</b>	Bangalore Rural District					
1	Commencement of foundation works in Bangalore Rural, Foundations @ loc. 74/0,	12.3.2019	27.7.2019	16.8.2019	137	169
2	Foundation @ 68/2	1.10.2019	4.2.2020	15.2.2020	126	352
3	Foundation @ 76/0, 76/2, 76/4	1.11.2019	4.2.2020	18.2.2020	95	355
4	Foundation @ 78/0	10.11.2019	11.2.2020	29.2.2020	93	366
5	Foundation @ 76/1	1.11.2019	19.2.2020	29.2.2020	110	366
6	Foundation @ 87/1	11.1.2020	11.11.2020	13.11.2020	305	624
7	Stringing @ 68/0 to 70/0	29.11.2020	5.1.2021	15.1.2021	37	687
<b>E</b>	Bangalore Urban District					
1	Commencement of foundation works in Bangalore Urban Foundation @ 115	28.5.2019	7.1.2020	11.1.2020	224	317



2	Foundation @ 143	16.1.2020	28.6.2020	28.6.2020	164	486
F	Bandhs, Law and Order issues and Floods					
	COVID-19	25.3.2020	20.4.2020	20.4.2020	26	417

29. In response, TANGEDCO has submitted that the reasons for time over-run as enumerated by the Petitioner fall within the definition of controllable factors and the said reasons neither involve any change in scope of work nor attributable to change in statutory levies or change in law. Hence, the reasons submitted by the Petitioner do not constitute *force majeure*, and as such the Petitioner is not entitled to any relief and that the increase in IDC and IEDC claimed on account of delay in completion of the project by the Petitioner should not to be allowed as the same is attributable to the Petitioner.

30. In response, the Petitioner while reiterating the submissions made in the petition submitted that the time over-run was mainly because of RoW issues in executing the line and the said factors being out of the control of Petitioner qualify as “uncontrollable factors” covered under Regulation 22(2) of the 2019 Tariff Regulations.

31. We have considered the submissions of the Petitioner and TANGEDCO. As per IA dated 29.5.2017, the transmission asset was scheduled to be put into commercial operation. by 8.3.2019, against which the transmission asset is put into commercial operation on 1.3.2021 with delay of about 732 days. It is observed that the Petitioner has faced RoW problems at various locations. The foundation works impacted due to RoW problems at location No. 3/0,3/1, 4/8, 8/0 to 14/2, 33/4, 41/6, 43/2, 43/4, 43/5, 62/2, 74/0, 68/2, 76/0, 76/2, 76/4, 78/0, 76/1, 87/1, 115, 143, Tower erection works at location No. 22/2 and stringing works at location no 1/0, 41/0 to 42/10 to 43/0, 43/0 to 44/0, 68/0 to 70/0. The Petitioner has also submitted that the execution of the



transmission asset was also affected by Covid-19 pandemic for 26 days i.e. 25.3.2020 to 20.4.2020. It is observed that the said time period is subsumed in RoW problems faced by the Petitioner.

32. We have perused the correspondence made by the Petitioner with various authorities and the supporting documents. From the submissions of the Petitioner, it is apparent that the Petitioner faced RoW issues from 23.6.2018 to 15.1.2021 (937 days) at various locations and it affected the execution of transmission asset. The Petitioner has compressed the execution time and completed the transmission asset with a time over-run of 732 days. The Commission is of the view that the time over-run of 732 days on account of RoW problems was beyond the control of the Petitioner. Therefore, the overall time over-run of 732 days in execution of the transmission asset is hereby condoned.

#### **Central Financial Assistance (CFA)**

33. Regulation 19(5)(e) 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.

34. In this regard, 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 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 request for sanction of CFA in respect of transmission project works associated with Tumkur Phase-II was submitted by PGCIL to the MNRE vide letter dated 16.1.2018. 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 project 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 will be adjusted accordingly.

35. 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.”*

36. 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.”*

37. In view of the foregoing, the funding net of any grant would form remaining capital structure for the purpose of Debt 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) and Incidental Expenditure During Construction (IEDC)**

38. The Petitioner has claimed IDC in respect of the transmission asset and has



submitted the Auditor's Certificate dated 10.7.2021 in support of the same. The Petitioner has submitted the computation of IDC along with year-wise details of the IDC discharged.

39. The loan amount as on COD has been mentioned in Form-6 and Form-9C. The loan details submitted in Form-9C for 2019-24 tariff period and IDC computation statement have been considered for the purpose of IDC calculation on cash basis and on accrued basis. The un-discharged IDC as on COD has been considered as ACE during the year in which it has been discharged. However, in the statement showing IDC discharged up to COD, the Petitioner has indicated the floating rate of interest of the loans deployed. IDC on cash basis up to COD has been worked out on the basis of loan details given in the statement showing discharge of IDC and Form-9C for the transmission asset. The Petitioner is directed to submit information on actual interest rates at the time of truing-up.

40. Accordingly, based on the information furnished by the Petitioner, IDC considered, is as follows:

(₹ in lakh)

IDC as per Auditor's Certificate	IDC admissible	IDC disallowed (computational difference)	IDC discharged as on COD	IDC Un-discharged as on COD	IDC Discharge During
					2021-22
A	B	C=A-B	D	E=B-D	F
1661.18	1635.32	25.86	1546.45	88.86	88.86

41. The Petitioner has claimed IEDC of ₹2256.62 lakh and has submitted Auditor's Certificate in support of the same. The Petitioner has also submitted that entire IEDC has been discharged as on COD in respect of the transmission asset. Accordingly, IEDC of ₹2256.62 lakh is allowed.



## **Initial Spares**

42. Regulation 23(d) of the 2019 Tariff Regulations provides 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%*”

43. The Petitioner has claimed the following Initial Spares:

<b>Particulars</b>	<b>Plant &amp; Machinery Cost up to cut-off date (₹ in lakh) (excluding IDC and IEDC)</b>	<b>Initial spares claimed (₹ in lakh)</b>	<b>Ceiling (in %)</b>
Transmission Lines	47689.91	467.50	1
Sub-station	7388.71	416.91	6

44. We have considered the submissions of the Petitioner. The initial spares claimed by the Petitioner are within ceiling limit of 1% of transmission line and 6% for Sub-station. The initial spares allowed are as follows:

<b>Particulars</b>	<b>Plant &amp; Machinery Cost up to cut-off date (₹ in lakh) (excluding IDC and IEDC)</b>	<b>Initial spares claimed (₹ in lakh)</b>	<b>Allowable initial spares (₹ in lakh)</b>	<b>Ceiling limit (in %)</b>	<b>Initial spares allowed (₹ in lakh)</b>
Transmission Lines	47689.91	467.50	476.99	1	467.50
Sub-station	7388.71	416.91	445.01	6	416.91

## **Capital Cost allowed as on COD**

45. Accordingly, capital cost allowed in respect of the transmission asset as on COD is as follows:



(₹ in lakh)

Capital cost claimed in Auditor's Certificate as on COD (A)	Less: IDC disallowed as on COD (B)	Less: Undischarged IDC as on COD (C)	Less: adjustment of Grant Received (D)	Capital cost as on COD (E) = (A-B-C-D)
51544.93	25.86	88.87	1892.53	49537.67

#### **Additional Capital Expenditure ("ACE")**

46. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide as follows:

##### ***"24. Additional Capitalization 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 23 of 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."*

##### ***"25. Additional Capitalisation within the original scope and after the cut-off date:***

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

*a) 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;*





- b) Change in law or compliance of any existing law;
- c) Deferred works relating to ash pond or ash handling system in the original scope of work;
- d) Liability for works executed prior to the cut-off date;
- e) Force Majeure events;
- f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and g) Raising of ash dyke as a part of ash disposal system.

(2) In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:

- (a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations.
- (b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;
- (c) The replacement of such asset or equipment is necessary on account of
- (d) The replacement of such asset or equipment has otherwise been allowed by the Commission.”

47. The Petitioner has claimed projected ACE for 2019-24 tariff period on account of balance and retention payments and unexecuted work under Regulation 24(1)(a) and 24(1)(b) for works executed within the cut-off date (31.3.2024). The details are as follows:

(₹ in lakh)

Projected ACE		
2020-21	2021-22	2022-23
1396.36	7142.98	1377.90

48. Further, the Petitioner has submitted the liability flow statement. The details are as follows:

(₹ in lakh)

Vendor Name	Particulars	Discharge		
		2020-21	2021-22	2022-23
KEC International Limited	Transmission Line	0.00	2331.43	467.39
KEC International Limited	Sub-station	0.00	47.40	106.32
KEC International Limited	PLCC	0.00	4.55	22.74
KEC International Limited	IT Equipment	0.00	2.74	2.95



TUV-SUD South Asia Pvt Limited	Transmission Line	0.00	0.00	3.51
<b>Total (A)</b>		<b>0.00</b>	<b>2386.12</b>	<b>602.91</b>
<b>Details of Unexecuted works</b>				
Vendor Name	Particulars	Details of Unexecuted works		
		2020-21	2021-22	2022-23
KEC International Limited	Transmission Line	446.40	0.00	0.00
Compensation	Transmission Line	541.13	2945.86	680.12
KEC International Limited	Sub-station	1.30	111.48	0.00
KEC International Limited	PLCC	0.00	79.94	8.27
KEC International Limited	IT Equipment	0.00	4.16	0.00
TUV-SUD South Asia Pvt Limited	Transmission Line	6.58	0.00	0.00
KPTCL	Sub-station	0.00	106.58	0.00
Tools and Plants	Sub-station	0.00	955.09	0.00
Pasala Veeraju	Building and Civil Works	175.00	0.00	0.00
Kalyani Projects	Building and Civil Works	225.95	553.45	86.60
<b>Total (B)</b>		<b>1396.36</b>	<b>4756.56</b>	<b>774.99</b>
<b>Total ACE (A+B)</b>		<b>1396.36</b>	<b>7142.68</b>	<b>1377.90</b>

49. We have considered the submissions of the Petitioner. ACE claimed is on account of balance and retention payments and unexecuted work and is allowed under Regulation 24(1)(a) and Regulation 24(1)(b) of the 2019 Tariff Regulations. The projected ACE allowed is subject to truing up in respect of the transmission asset is as follows:

Particulars	(₹ in lakh)		
	<b>Proposed ACE</b>		
	2021-22	2022-23	2023-24
Proposed ACE allowed under Regulations 24(1)(a) and 24(1)(b) of the 2019 Tariff Regulations	1396.36	7142.68	1377.90
Add: IDC discharge	0.00	88.87	0.00
<b>Total</b>	<b>1396.36</b>	<b>7231.55</b>	<b>1377.90</b>

### **Capital Cost as on 31.3.2024**

50. Accordingly, capital cost allowed in respect of the transmission asset as on 31.3.2024 is as follows:



Capital Cost allowed as on COD	Projected ACE			Total Capital Cost as on 31.3.2024
	2020-21	2021-22	2022-23	
49537.67	1396.36	7231.55	1377.90	59543.49

(₹ in lakh)

### **Debt-Equity Ratio**

51. 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.”

52. The details of debt-equity considered for the purpose of computation of tariff for 2019-24 period in respect of the transmission asset is as follows:

Particulars	Capital cost as on COD (₹ in lakh)	(in %)	Capital cost as on 31.3.2024 (₹ in lakh)	(in %)
Debt	34676.37	70.00	41680.44	70.00
Equity	14861.30	30.00	17863.05	30.00
<b>Total</b>	<b>49537.67</b>	<b>100.00</b>	<b>59543.49</b>	<b>100.00</b>

### **Depreciation:**

53. 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 Asset-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 asset*

*(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.”

54. We have considered the submissions of the Petitioner. The IT equipment has been considered as part of the Gross Block and depreciated using Weighted Average Rate of Depreciation (WAROD). WAROD has been worked out and placed as Annexure-I after considering the depreciation rates of IT and non-IT assets as prescribed 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. Depreciation allowed in respect of the transmission asset for the 2019-24 tariff period is as follows:

(₹ in lakh)					
	Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
A	Opening Gross Block	49537.67	50934.03	58165.59	59543.49
B	Addition during the year 2019-24 due to projected ACE	1396.36	7231.55	1377.90	0.00
C	Closing Gross Block (A+B)	50934.03	58165.59	59543.49	59543.49
D	Average Gross Block (A+C)/2	50235.85	54549.81	58854.54	59543.49
E	Weighted average rate of Depreciation (WAROD) (in %)	5.32	5.30	5.29	5.29
F	Lapsed useful life at the beginning of the year (Year)	0.00	0.00	1.00	2.00
G	Balance useful life at the beginning of the year (Year)	34.00	34.00	33.00	32.00
H	Aggregated Depreciable Value	45229.95	49112.87	52987.64	53607.84
I	<b>Depreciation during the year (D*E)</b>	<b>226.96</b>	<b>2891.61</b>	<b>3113.79</b>	<b>3149.64</b>
J	Cumulative Depreciation at the end of the year	226.96	3118.57	6232.36	9382.00
K	Remaining Aggregate Depreciable Value at the end of the year	45002.99	45994.30	46755.27	44225.84



## **Interest on Loan (“IoL”)**

55. 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 asset, 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”.*

56. The weighted average rate of interest of IoL has been considered on the basis of the rates prevailing as on COD for respective loans. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2019-24



tariff period will be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of true-up.

57. In view of the above, IoL has been worked out in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed in respect of the transmission asset is as follows:

(₹ in lakh)					
	Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
A	Gross Normative Loan	34676.37	35653.82	40715.91	41680.44
B	Cumulative Repayments up to Previous Year	0.00	226.96	3118.57	6232.36
C	Net Loan-Opening (A-B)	34676.37	35426.86	37597.34	35448.08
D	Addition due to ACE	977.45	5062.09	964.53	0.00
E	Repayment during the year	226.96	2891.61	3113.79	3149.64
F	Net Loan-Closing (C+D-E)	35426.86	37597.34	35448.08	32298.44
G	Average Loan (C+F)/2	35051.62	36512.10	36522.71	33873.26
H	Weighted Average Rate of Interest on Loan (in %)	3.365	3.403	3.422	3.453
I	<b>Interest on Loan (G*H)</b>	<b>100.19</b>	<b>1242.50</b>	<b>1249.91</b>	<b>1169.66</b>

### **Return on Equity (“RoE”)**

58. Regulation 30 and Regulation 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 cut-off date beyond the original scope excluding Additional Capitalization due to Change in Law, 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:

$$\text{Rate of return on equity} = 15.50/(1-0.2155) = 19.758\%$$

(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.”

59. The Petitioner has submitted that MAT rate is applicable to it. MAT rate applicable in the year 2019-20 has been considered for the purpose of RoE which shall be trued up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed in respect of the transmission asset is as follows:

(₹ in lakh)					
	Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
A	Opening Equity	14861.30	15280.21	17449.68	17863.05
B	Addition due to ACE	418.91	2169.47	413.37	0.00
C	Closing Equity (A+B)	15280.21	17449.68	17863.05	17863.05
D	Average Equity (A+C)/2	15070.76	16364.94	17656.36	17863.05
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500
F	Tax Rate applicable (in %)	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (Pre-tax)	18.782	18.782	18.782	18.782
H	<b>Return on Equity (Pre-tax) (D*G)</b>	<b>240.41</b>	<b>3073.66</b>	<b>3316.22</b>	<b>3355.04</b>



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

60. The O&M Expenses claimed by the Petitioner for the transmission asset are as follows:

Particulars	(₹ in lakh)			
	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
<b>Sub-station Bays</b>				
400 kV: Pavagada:400 kV Line Bays at Tumkur (Pavagada)	2	2	2	2
400 kV: Line Bays at Devanahalli	2	2	2	2
<b>Total</b>				
400 kV (AIS)	2	2	2	2
400 kV (GIS)	2	2	2	2
<b>Norms</b>				
400 kV (AIS)	33.28	34.45	35.66	36.91
400 kV (GIS)	23.296	24.115	24.962	25.837
<b>Total Sub-station Bays O&amp;M Expenses</b>	<b>113.15</b>	<b>117.13</b>	<b>121.24</b>	<b>125.49</b>
<b>AC Lines</b>				
400 kV D/C (Quad) Tumkur Pool (Pavagada)-Devanahalli Transmission Line	157.420	157.420	157.420	157.420
<b>Norms</b>				
D/C Bundled with 4 or more sub-conductor)	1.368	1.416	1.466	1.517
<b>Total Transmission Line</b>	<b>215.35</b>	<b>222.91</b>	<b>230.78</b>	<b>238.81</b>
<b>Communication System</b>				
PLCC	739.35	739.35	739.35	739.35
<b>Norms (in %)</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Total Communication System (C)</b>	<b>14.79</b>	<b>14.79</b>	<b>14.79</b>	<b>14.79</b>
<b>Total O&amp;M Expenses</b>	<b>29.16</b>	<b>354.82</b>	<b>366.81</b>	<b>379.09</b>

61. Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations provide as follows:

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

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
<i>Norms for sub-station Bays (₹ Lakh per bay)</i>					
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



<b>Particulars</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
132 kV and below	16.08	16.64	17.23	17.83	18.46
<b>Norms for Transformers (₹ Lakh per MVA)</b>					
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
<b>Norms for AC and HVDC lines (₹ Lakh per km)</b>					
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
<b>Norms for HVDC stations</b>					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	834	864	894	925	958
Gazuwaka HVDC Back-to-Back station (₹ 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 scheme (Rs Lakh) (3000 MW)	2,563	2,653	2,746	2,842	2,942



*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  $\pm 500$  kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for  $\pm 500$  kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);*
- iv. the O&M expenses of  $\pm 800$  kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for  $\pm 800$  kV, Bishwanath-Agra HVDC bi-pole scheme;*
- v. the O&M expenses of  $\pm 800$  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  $\pm 800$  kV, Bishwanath-Agra HVDC bi-pole scheme; and*
- vi. 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.*

**(4) Communication system:** *The operation and maintenance expenses for the communication system shall be worked out at 2.0% of the original project cost related to such communication system. The transmission licensee shall submit the actual operation and maintenance expenses for truing up."*

62. The Petitioner has claimed O&M Expenses separately for the PLCC under Regulation 35(4) of the 2019 @2% of its original project cost in the instant petition and



the Petitioner has made similar claim in other petitions as well. Though PLCC is a communication system, it has been considered as part of the sub-station in the 2014 and 2019 Tariff Regulations and the norms for sub-station has been specified accordingly. Accordingly, the Commission vide order dated 24.1.2021 in Petition No. 126/TT/2020 has already concluded that no separate O&M Expenses can be allowed for PLCC under Regulation 35(4) of the 2019 Tariff Regulations even though PLCC is a communication system. Therefore, the Petitioner's claim for separate O&M Expenses for PLCC @2% is not allowed.

63. The O&M Expenses allowed are as follows:

(₹ in lakh)				
Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
<b>Sub-station Bays</b>				
400 kV: Pavagada:400 kV Line Bays at Tumkur (Pavagada)	2	2	2	2
400 kV: Line Bays at Devanahalli	2	2	2	2
<b>Total</b>				
400 kV (AIS)	2	2	2	2
400 kV (GIS)	2	2	2	2
<b>Norms</b>				
400 kV (AIS)	33.28	34.45	35.66	36.91
400 kV (GIS)*	23.296	24.115	24.962	25.837
<b>Total Sub-station Bays O&amp;M Expenses</b>	<b>113.15</b>	<b>117.13</b>	<b>121.24</b>	<b>125.49</b>
<b>AC Lines</b>				
400 kV D/C (Quad) Tumkur Pool (Pavagada)-Devanahalli Transmission Line	157.420	157.420	157.420	157.420
<b>Norms</b>				
D/C Bundled with 4 or more sub-conductor)	1.368	1.416	1.466	1.517
<b>Total Transmission Line</b>	<b>215.35</b>	<b>222.91</b>	<b>230.78</b>	<b>238.81</b>
<b>Total O&amp;M Expenses</b>	<b>27.90</b>	<b>340.04</b>	<b>352.02</b>	<b>364.30</b>

\*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 ("IWC")**

64. Regulation 34(1)(c), Regulation 34(3), Regulation 34(4) and Regulation 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. Definition** - *In these regulations, unless the context otherwise requires:-*

*(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;”*

65. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2020. The Petitioner has considered the rate of IWC as 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21 and 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points) for 2021-24. The components of the working capital and interest allowed thereon in respect of the transmission asset are as follows:



(₹ in lakh)

	Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M expenses for One month)	27.38	28.34	29.34	30.36
B	Working Capital for Maintenance Spares (15% of O&M expenses)	49.28	51.01	52.80	54.65
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost / annual transmission charges)	877.60	943.80	1004.30	1002.40
<b>D</b>	<b>Total Working Capital (A+B+C)</b>	<b>954.25</b>	<b>1023.14</b>	<b>1086.44</b>	<b>1087.40</b>
E	Rate of Interest of working capital (in %)	11.25	10.50	10.50	10.50
<b>F</b>	<b>Interest of working capital (D*E)</b>	<b>9.12</b>	<b>107.43</b>	<b>114.08</b>	<b>114.18</b>

### **Annual Fixed Charges for 2019-24 Tariff Period**

66. The transmission charges allowed in respect of the transmission asset for 2019-24 tariff period are as follows:

(₹ in lakh)

Particulars	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
Depreciation	226.96	2891.61	3113.79	3149.64
Interest on Loan	100.19	1242.50	1249.91	1169.66
Return on Equity	240.41	3073.66	3316.22	3355.04
O&M Expenses	27.90	340.04	352.02	364.30
Interest on Working Capital	9.12	107.43	114.08	114.18
<b>Total</b>	<b>604.58</b>	<b>7655.24</b>	<b>8146.02</b>	<b>8152.82</b>

### **Filing Fee and Publication Expenses**

67. The Petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. The Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

### **Licence Fee and RLDC Fees and Charges**

68. The Petitioner shall be entitled for reimbursement of licence fee in accordance





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

### **Goods and Services Tax**

69. 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.

70. We have considered the submissions of the Petitioner. Since GST is not levied on transmission service at present, we are of the view that Petitioner's prayer is premature.

### **Security Expenses**

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

72. 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 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 in Petition No. 260/MP/2020. The said petition has already been disposed of by the Commission vide order dated 3.8.2021. Therefore, 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**

73. The Petitioner has sought reimbursement of capital spares at the end of transmission 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**

74. The Petitioner has prayed that tariff for 2019-24 period may be allowed to be recovered on monthly basis in accordance with Regulation 57 of the 2019 Tariff Regulations and shall be shared by the beneficiaries as per applicable 2020 Sharing Regulations.

75. TANGEDCO has submitted that the order dated 19.8.2016 in Petition No. 36/MP/2016 whereby regulatory approval for the transmission project was granted, makes it clear that about 400 MW solar power will be tied up with other State beneficiaries. Further, the transmission charges liabilities till the generators declare COD will rest with solar generators / SPPDs. Therefore, as per the mandate of the 2020 Sharing Regulations, 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. Regulation 13(3) of the Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2020, provides that the generator is liable to pay the transmission charges till COD of the generating station. Therefore, the Petitioner may be directed to bring on record the details of generator-wise / SPD-wise COD covered under Phase II (1000 MW) and bill the transmission charges bilaterally to the generators for the



mismatch period.

76. In response, the Petitioner has submitted that subsequent to the Commission's regulatory approval, transmission system for Tumkur (Pavagada) UMSPP was reviewed in the 40<sup>th</sup> meeting of Standing Committee on Power System Planning of Southern Region held on 19.11.2016, and the following was decided in respect of Phase-2:

- a. 400 kV Tumkur (Pavagada)-Devanhalli D/C (Quad) line may be implemented as additional transmission strengthening scheme for Tumkur (Pavagada) solar park.
- b. Fixed series capacitor (40%) on 400 kV Tumkur (Pavagada)-Tumkur (Vasantnarsapura) D/C (Quad) line may be included in Ph-II transmission scope of Tumkur UMSPP.

77. Further, the Commission vide order dated 7.9.2017 in Petition No. 131/MP/2017 has accorded regulatory approval under Regulation 3 of the Regulatory Approval Regulations for the said addition and modification in the scope of work for execution of the transmission project. Further, regarding the details of generators commissioned and LTA operationalized, it is submitted that 1050 MW solar capacity from Pavagada Solar Park (Phase-II) is declared under commercial operation till 31.12.2019. With regard to the LTA operationalization, it was submitted by the Petitioner that 200 MW LTA was made operational from 30.12.2019 and additional 850 MW from 3.5.2020. Details of generation commissioning and LTA as submitted by the Petitioner are as follows:



Sl. No.	Applicant	Connectivity granted (MW)	LTA quantum (MW)	status of LTA Operationalization	Generator name/Status of Generation
1	Karnataka Solar Power Development Corporation Limited	1050	1050	LTA operationalized w.e.f. 30.12.2019 (200 MW) and 3.5.2020 (850 MW)	<p>Azure Power:50 MW: 6.3.2019</p> <p>Tata Power:50 MW:6.3.2019</p> <p>Azure Power:50 MW:12.3.2019</p> <p>Renew Power:100 MW:20.3.2019</p> <p>Tata Power:50 MW: 22.3.2019</p> <p>Tata Power:50 MW: 25.3.2019</p> <p>Renew Power:50 MW: 28.3.2019</p> <p>Fortum Solar:100 MW:15.7.2019</p> <p>Fortum Solar:50 MW:18.7.2019</p> <p>Fortum Solar:50 MW:3.8.2019</p> <p>Fortum Solar:50 MW:5.8.2019</p> <p>Avada Solarise:50 MW:8.11.2019</p> <p>Avada Solarise:50 MW:21.11.2019</p> <p>Avada Solarise:50 MW:27.11.2019</p> <p>Karnataka REDL:50 MW:20.10.2019</p> <p>SBG Cleantech:200 MW: 30.12.2019</p> <p><b>(Total 1050 MW till 31.12.2019)</b></p>



78. We have considered the submissions of the Petitioner and TANGEDCO. We feel it appropriate to refer here to relevant extracts of the regulatory approval for execution of the transmission system granted vide order dated 19.8.2016 in Petition No. 36/MP/2016 and the addition and modification in the scope of work for execution of transmission scheme for Phase-II vide order dated 7.9.2017 in Petition No. 131/MP/2017. The relevant portion of the order dated 19.8.2016 is 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 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 400 kV 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
- (v) 8 Numbers 220 kV Line bays at Tumkur (Pavagada) Pooling Station for Solar Inter-connection

**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) 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)
- (vii) 8 nos. 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 sub-station at Devanhally including inter-linking 400 kV and 220 kV lines before Phase-II at Ultra Mega Solar Power Park.*

*31. In regard to development of transmission system matching with generation projects in the Solar Park at Tumkur (Pavagada), CTU is directed to coordinate with the SPPD who is responsible for development of internal transmission system. CTU shall pace the development of transmission system matching with the progress of different phases of*



the Solar Park. We further direct the CTU to submit quarterly progress report as per Annexure to this order which shall also contain the status of execution of the transmission system for which regulatory approval has been accorded, the progress of solar based generation projects in the Solar Power Park and the internal transmission system within the solar park. Perusal of quarterly reports submitted by CTU vide its letter dated 4.5.2016 in Petition Nos. 29/MP/2015 and 228/MP/2015 reveals that CTU signed LTA Agreement with SPPDs on 17.12.2015 for evacuation of power from NP Kunta Solar Park. However, in respect of REWA Ultra Mega Solar Power Park, CTU had not signed LTA Agreement with SPPDs till 4.5.2016. It is noted that PGCIL in its Petition No. 26/TT/2016 has submitted that the transmission system related to NP Kunta-Part-A has been commissioned on 25.4.2016. Accordingly, we direct CTU to sign LTA Agreement with SPPDs immediately, if not signed.

32. With regard to recovery of transmission charges on account of delay in commissioning of solar generation, in the Statement of Reasons for the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-state Transmission and related matters) (Fifth Amendment) Regulations, 2015, and Central Electricity Regulatory Commission (Grant of Regulatory Approval for execution of Inter-State Transmission Scheme to Central Transmission Utility) (First Amendment) Regulations, 2015, the following has been clarified:

*“8.2.1 With regard to the suggestions of PGCIL, it is clarified that SPPD who shall apply for Connectivity/Long term Access shall be liable to deposit Application Bank Guarantee/Construction Bank Guarantee as required under Connectivity Regulation. Further, SPPD shall also be liable for payment of transmission charges for delay in commissioning of generator and relinquishment charges towards transmission access under Connectivity Regulations and Sharing Regulations. Regulation 7(1)(u) of the Sharing Regulations provides that "No transmission charges for the use of ISTS network shall be charged to solar based generation" is applicable only when the power is evacuated through the transmission system to the beneficiaries after the commercial operation of the generating station. Therefore, transmission charges for delay in commissioning of solar power generators shall be payable by such solar generators/SPPD on the same line as the liability for payment by the thermal and hydro generating station in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.*

*8.2.2 With regard to delay of internal system, it is clarified that SPPD shall be executing internal system on behalf of solar power generators. The treatment of delay or other modalities should be covered in Agreement between solar power generators and SPPD. In regard to NTPC's comments on development of transmission matching with generation, it is clarified that CTU shall carry out coordination with the SPPD/solar power generators in accordance with Section 38 of the Act.*

*Therefore, the transmission charges for delay in commissioning of solar power generators shall be paid by such solar generators/SPPD in accordance with the relevant regulation of the Commission.”*



79. The Commission vide order dated 7.9.2017 in Petition No. 131/MP/2017, while granting regulatory approval observed 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 (Vasanthnarsapura) D/C (Quad) line at Tumkur (Pavagada) PS end \* \*

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

**Modification in the scope**

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

- 220 kV bays (8nos.) at Tumkur (Pavagada) 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.”*

80. It is observed that out of the total LTA of 2000 MW, 1000 MW was to be implemented under Phase-I and the remaining under Phase-II. The transmission asset is part of Phase-II and it has been implemented for the purpose of reliable evacuation of power from Tumkur (Pavagada) Solar Park Phase-II (1050 MW). As per the order dated 19.8.2016 in Petition No. 36/MP/2016, the transmission assets are implemented for Pavagada Solar Park Phase-II generation i.e. 1050 MW.

81. It is further observed that total solar generation of 1050 MW under Phase-II of Solar Park achieved COD prior to COD of the transmission system. Therefore, the transmission charges from the date of COD i.e. 1.3.2021 shall be included in PoC Pool.



82. The COD of the transmission asset is approved as 1.3.2021. With effect from 1.11.2020, sharing of transmission charges is governed by the 2020 Sharing Regulations. Accordingly, the billing, collection and disbursement of the transmission charges of the transmission asset shall be recovered in terms of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

83. To summarise:

(i) AFC allowed in respect of the transmission asset for 2019-24 tariff period in the instant order are as follows:

Particulars	(₹ in lakh)			
	2020-21 (Pro-rata for 31 days)	2021-22	2022-23	2023-24
Total	604.58	7655.24	8146.02	8152.82

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

85. This order disposes of Petition No. 83/TT/2022 in terms of the above discussions and findings.

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

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

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





**Annexure-I**

2019-24 Capital Expenditure as on COD	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 as per Regulations			
		2020-21 (₹ in lakh)	2021-22 (₹ in lakh)	2022-23 (₹ in lakh)			2020-21 (₹ in lakh)	2021-22 (₹ in lakh)	2022-23 (₹ in lakh)	2023-24 (₹ in lakh)
Building	0.00	400.95	553.45	86.60	1041.00	3.34	6.70	22.63	33.32	34.77
Transmission Line	43182.11	994.11	5354.76	1151.02	50682.00	5.28	2306.26	2473.87	2645.62	2676.01
Sub Station	5556.31	1.30	1230.52	106.32	6894.45	5.28	293.41	325.93	361.22	364.03
PLCC	622.41	0.00	85.61	31.01	739.03	6.33	39.40	42.11	45.80	46.78
IT Equipment and software	176.84	0.00	7.22	2.95	187.01	15.00	26.53	27.07	27.83	28.05
<b>Total</b>	<b>49537.67</b>	<b>1396.36</b>	<b>7231.55</b>	<b>1377.90</b>	<b>59543.49</b>		<b>2672.29</b>	<b>2891.61</b>	<b>3113.79</b>	<b>3149.64</b>
					<b>Average Gross Block (₹ in lakh)</b>		50235.85	54549.81	58854.54	59543.49
					<b>Weighted Average Rate of Depreciation (in %)</b>		5.32	5.30	5.29	5.29

