CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 200/MP/2019

Coram:

Shri P.K. Pujari, Chairperson
Shri Arun Goyal, Member
Shri P. K. Singh, Member

Date of Order: 26th November, 2021

In the matter of:

Petition under Section 38(2) of the of the Electricity Act, 2003 read with Section 79(1)(c) and Section 79(1)(k) of the Act, along with (i) Central Electricity Regulatory Commission (Grant of Regulatory Approval for execution of Inter-State Transmission Scheme to Central Transmission Utility) Regulations, 2010; (ii) Regulation 111 & 114 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and (iii) Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 for execution of the Transmission System for 18.5 GW of Solar and Wind Energy Zones in Southern Region.

And

In the matter of

Power Grid Corporation of India Limited,
Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi.
and
Corporate office: Saudamini, Plot No. 2, Sector-29,
Gurgaon (Haryana) - 122 001.

……Petitioner

Vs

1. Tamil Nadu Generation and Distribution Corporation Ltd,
   (Represented by its Chairman)
   NPKRR Maaligai, 800, Anna Salai,
   Chennai – 600 002.
2. Transmission Corporation of Andhra Pradesh Limited (APTRANSCO),
   (Represented by its Chairman)
   Vidyut Soudha,
   Hyderabad– 500082.

3. Kerala State Electricity Board Limited (KSEB),
   (Represented by its Chairman)
   Vaidyuthi Bhavanam, Pattom,
   Thiruvananthapuram – 695 004.

4. Karnataka Power Transmission Corporation Limited (KPTCL),
   (Represented by its Chairman)
   Kaveri Bhavan,
   Bangalore – 560 009.

5. Electricity Department,
   Government of Goa,
   (Represented by Chief Engineer (Electrical))
   Vidyuti Bhawan,
   Panaji, Goa 403001.

6. Electricity Department
   Government of Pondicherry,
   (Represented by its Chief Secretary)
   Pondicherry – 605001.

7. Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL),
   (Represented by its Managing Director)
   P&T Colony, Seethmmadhara,
   Vishakhapatnam, Andhra Pradesh.

8. Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL),
   (Represented by its Managing Director)
   Srinivasasa Kalyana Mandapam Backside,
   Tiruchanoor Road, Kesavayana Gunta,
   TIRUPATI-517 501, Chittoor District, Andhra Pradesh.

9. Central Power Distribution Company of Andhra Pradesh limited (APCPDCL),
   (Represented by Its Managing Director)
   Corporate Office, Mint Compound,
   Hyderabad – 500 063, Andhra Pradesh.

10. Northern Power Distribution Company of Andhra Pradesh Limited (APNPDCL),
    (Represented by Its Managing Director)
    Opposite NIT Petrol Pump,
    Chaitanyapuri, Kazipet, Warangal- 506 004, Andhra Pradesh.

11. Bangalore Electricity Supply Company Limited (BESCOM),
    (Represented by its Managing Director)
    Corporate Office, K.R.Circle,
    Bangalore – 560 001, Karnataka.

12. Gulbarga Electricity Supply Company Limited (GESCOM),
    (Represented by its Managing Director)
    Station Main Road, Gulburga,
    Karnataka.

13. Hubli Electricity Supply Company Limited (HESCOM),
    (Represented by Its Managing Director)
    Navanagar, PB Road,
    Hubli, Karnataka

14. MESCOM Corporate Office,
    (Represented by Its Managing Director)
    Paradigm Plaza, AB Shetty Circle,
    Mangalore – 575 001, Karnataka.

15. Chamundeswari Electricity Supply Corporation Limited (CESC),
    (Represented by Its Managing Director)
    # 927, L J Avenue, Ground Floor,
    New Kantharaj Urs Road,
    Saraswatipuram,
    Mysore – 570 009, Karnataka.

16. Transmission Corporation of Telangana Limited,
    (Represented by Its Managing Director)
    Vidhyut Sudha, Khairatabad,
    Hyderabad - 500082.

17. Tamil Nadu Transmission Corporation,
    (Represented by its Chairman)
    NPKRR Maaligai, 800, Anna Salai
    Chennai – 600 002.

18. Solar Energy Corporation of India Limited
    (Represented by its Chairman)
    D-3, A Wing, 1st Floor, Religare Building, District Centre, Saket,
    New Delhi – 110017.

…..Respondents

Parties present:

Shri M. G. Ramachandran, Sr. Advocate, PGCIL and SECI
Ms. Tanya Sareen, Advocate, SECI
Shri Ravi Nair, Advocate, SECI
Shri S. Vallinayagam, Advocate, TANGEDCO and AP Discoms
Ms. Stephania Pinto, Advocate, BESCOM, HESCOM, KPTCL
Shri Shahbaaz Husain, Advocate, BESCOM, HESCOM, KPTCL
Shri Anil Kr Meena, CTUIL
Shri Ankush Patel, CTUIL
Shri Swapnil Verma, CTUIL
Shri Subir Sen, CTUIL
Shri Shreedhar Singh, SECI
Shri Kaustav Roy, SECI
Shri R. K. Aggarwal, SECI
Ms. R. Ramalakshmi, TANGEDCO
Shri R. Srinivasan, TANGEDCO
Dr. R. Kathiravan, TANGEDCO

ORDER

The present Petition has been filed by the Petitioner, Power Grid Corporation of India Limited (PGCIL) under Section 38(2) of the Electricity Act, 2003 (hereinafter referred to as the "2003 Act") read with Section 79(1)(c) and 79(1)(k) of the 2003 Act for grant of Regulatory approval for execution of the transmission system for 18.5 GW of Solar and Wind Energy Zones in Southern Region (SR). Subsequent to filing of this petition, Central Transmission Utility of India Limited (CTUIL) has become a separate entity that has been carved out of PGCIL and is the Central Transmission Utility in terms of the 2003 Act. Therefore, the Petition is treated as having been filed by CTUIL. The Petitioner has made the following prayers:

> *"(a) Grant Regulatory approval for taking up implementation of identified transmission system at Enclosure - VII.*
> *(b) Grant of approval for recovery of transmission charges of the assets through CERC (Sharing of Transmission charges and losses for ISTS) Regulations, 2010 and its amendment(s) notified by CERC from time to time.*
> *(c) Grant of approval for inclusion of the above system under the TSA notified by CERC"*

Submission of the Petitioner

2. The Petitioner has mainly submitted as under:

a) The Government of India has set a target of establishing 175 GW of renewable energy (RE) capacity by 2022, which includes 100 GW solar and 60 GW wind capacity. Ministry of New and Renewable Energy (MNRE) vide its order dated 8.6.2018 had constituted a sub-committee to identify ISTS connectivity for renewable energy projects from the potential Solar Energy Zones (SEZs) and potential Wind Energy Zones (WEZs) of about 50 GW and 16.5 GW respectively. SEZs and WEZs envisaged in seven RE-rich States, namely, Tamil Nadu, Andhra Pradesh, Karnataka, Gujarat, Rajasthan, Maharashtra and Madhya Pradesh were identified by Solar Energy Corporation of India (SECI) in association with MNRE and in consultation with RE power developers.

b) In respect of 66.5 GW solar and wind generation potential, region-wise transmission system for evacuation of power from solar and wind power projects has been planned as under:

Sr. No.	Region	RE Capacity (GW)		
		Phase - I	Phase - II	Total
1.	Northern Region	8.9	11.1	20
2.	Western Region	10.5	17.5	28
3.	Southern Region	10	8.5	18.5
	Total	29.4	37.1	66.5

c) Out of 66.5 GW potential, 18.5 GW is envisaged to be developed in Southern Region, which includes 10 GW of solar generation and 8.5 GW of wind generation, both in Phase-I and Phase-II. The details of SEZs and WEZs along with phasing as per transmission system planning is as under:

State/ District	Solar		Wind		Total (GW)
	Phase-1 (GW)	Phase-2 (GW)	Phase-1 (GW)	Phase-2 (GW)	
	2020	2021	2020	2021	
Andhra Pradesh					
Kurnool	2.5		2	1	5.5
Ananthpuram		2.5			2.5
Karnataka					
Koppal			2.5		2.5
Gadag		2.5			2.5
Bidar		2.5			2.5
Tamil Nadu					
Karur			1.5	1	2.5
Tirunelveli				0.5	0.5
Total	**2.5**	**7.5**	**6**	**2.5**	**18.5**

d) Out of the 18.5 GW identified SEZs and WEZs, transmission system for evacuation of 8.5 GW of power from Phase-I and Phase-II Wind Energy Zone in Southern Region and additional 1.5 GW of Phase-I of Solar Energy Zone in Kurnool area totalling Renewable Energy Zone of 10 GW (as part-A Transmission Schemes) and 8.5 GW of SEZ in Karnataka and Andhra Pradesh (as part-B Transmission Schemes) were agreed in the 1st and 2nd SRSCT (Southern Region Standing Committee on Transmission) meetings held on 07.09.2018 and 10.06.2019, respectively. It was also decided in the said meetings of SRSCT that the schemes would be taken-up for implementation as ISTS consequent to grant of LTA by the Petitioner.

e) The proposed Transmission System includes following elements:

Part - A:

1. Tirunelveli and Tuticorin Wind Energy Zone (Tamil Nadu) (500MW):

(i) Addition of 1x500 MVA, 400/230kV ICTs (4th) at Tuticorin-II GIS sub-station.

***Operation of Tuticorin Pooling Station – Dharmapuri (Salem) 765kV D/C line (presently operating at 400kV) at its rated voltage. (i.e. 765kV) & 5th ICT (500 MVA) at Tuticorin-II PS would be reviewed for dispersal of more than 2000MW RE generation*

2. Karur / Tiruppur Wind Energy Zone (Tamil Nadu) (2500MW):

(i) Establishment of 5x500 MVA, 400/230 kV Karur Pooling Station (at a location in between Karur Wind zone and Tiruppur wind zone)

(ii) LILO of both circuits of Pugalur – Pugalur (HVDC) 400 kV D/c line (with Quad Moose ACSR Conductor) at Karur PS

(iii) 9 Nos. of 230 kV line bays for interconnection of wind projects

(iv) 2x125 MVAr, 400 kV Bus reactors at Karur PS

3. Koppal Wind Energy Zone (Karnataka) (2500MW):

(i) Establishment of 5x500 MVA, 400/220 kV pooling station near Munirabad /suitable location in Koppal distt.

(ii) Pooling station (near Munirabad /suitable location in Koppal distt.) - Narendra (New) 400 kV D/c Line (with Quad Moose ACSR conductor)

(iii) 9 Nos of 220kV line bays for interconnection of wind projects

(iv) 2x125 MVAr, 400kV bus reactor at Pooling station (near Munirabad /suitable location in Koppal distt.)

(v) Adequate space provision for future expansion

4. Kurnool(AP) WEZ (3000MW) and SEZ (1500MW) :

(i) Establishment of 3x1500 MVA, 765/400 KV and 9x500 MVA 400/220kV Pooling station at suitable location in Kurnool Distt. (Kurnool-III)

(ii) Kurnool-III Pooling station - Kurnool(new) 765 kV D/c Line

(iii) Kurnool-III PS - Maheshwaram(PG) 765 kV D/c Line

(iv) 220 kV line bays for interconnection of wind projects (15 nos)

(v) 1x330 MVAr (765kV) & 1x125MVAr (400kV) bus reactor at Kurnool-III PS

(vi) 240 MVAr Switchable line reactors at both ends of Kurnool-III PS – Maheshwaram (PG) 765 kV D/c Line

Part B :

1. Transmission scheme for SEZ in Andhra Pradesh (3500 MW)

a) Ananthapur and Kurnool SEZ (Ananthapur-2500 MW & Kurnool-1000 MW)

(i) Establishment of 7x500 MVA, 400/220 kV Ananthpur pooling station at suitable border location between Anantapur & Kurnool Distt

(ii) Ananthpur PS - Kurnool-III PS 400 kV (High capacity equivalent to quad moose) D/c Line

(iii) Anantapur PS - Cuddapah 400 kV (High capacity equivalent to quad moose) D/c Line with suitable line reactors

(iv) 220 kV line bays for interconnection of wind/solar projects (12 nos)

(v) 2x125 MVAr (400kV) bus reactor at Anantapur PS

2. Transmission Scheme for Solar Energy Zone in Karnataka (5000 MW)

a) Gadag SEZ (2500 MW)

(i) Establishment of 5x500 MVA, 400/220 kV Gadag Pooling Station

(ii) Gadag PS - Koppal PS 400 kV (high capacity equivalent to quad moose) D/C Line

(iii) Gadag PS - Narendra (new) PS 400 kV (high capacity equivalent to quad moose) D/C Line

(iv) 220 kV line bays for interconnection of solar projects (8 nos)

(v) 1x125MVAr (400 kV) bus reactor at Gadag PS

(vi) Upgradation of Narendra New to its rated voltage of 765kV level alongwith 2x1500 MVA, 765/400kV ICTs and 1x330 MVAr Bus Reactor

(vii) Upgradation of Kolhapur (PG) to its rated voltage of 765kV level alongwith 2x1500 MVA transformer and 1x330 MVAr Bus Reactor
(viii) Upgradation/charging of Narendra new - Kolhapur (PG) 765 kV D/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable Line Reactor on Kolhapur (PG) end of each circuit

b) Bidar SEZ (2500 MW)
(i) Establishment of 3x1500 MVA, 765/400 kV and 5x500 MVA, 400/220 kV pooling station at suitable border location near Bidar.
(ii) Bidar PS – Maheshwaram (PG) 765 kV D/C line along with 1x240 MVAr switchable Line Reactor on Bidar PS end of each circuit.
(iii) 220 kV line bays for interconnection of solar projects (8 nos).
(iv) 1x240 MVAr (765kV) & 1x125 MVAr (400 kV) bus reactor at Bidar PS.

3. Common Transmission System Strengthening in Southern Region for export of power from Solar & Wind Energy Zone in Southern Region
(i) Upgradation of Tuticorin PS to its rated voltage of 765kV level alongwith 2x1500 MVA, 765/400kV ICTs and 1x330 MVAr Bus Reactor
(ii) Upgradation of Dharmapuri (Salem New) to its rated voltage of 765kV level alongwith 2x1500 MVA, 765/400kV ICTs and 1x240 MVAr Bus Reactor
(iii) Upgradation of Madhugiri (Tumkur) to its rated voltage of 765kV level alongwith 2x1500 MVA, 765/400kV ICTs and 1x240 MVAr Bus Reactor
(iv) Upgradation/charging of Tuticorin PS - Dharmapuri (Salem New) 765 kV D/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable Line Reactor on both end of each circuit.
(v) Upgradation/charging of Dharmapuri (Salem New) - Madhugiri (Tumkur) 765 kV 2xS/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable Line Reactor on Dharampuri (Salem New) end of both ckts.
(vi) Upgradation/charging of Madhugiri (Tumkur) - Narendra New 765 kV D/c line (initially charged at 400 kV) to its rated voltage of 765 kV along with 1x330 MVAr switchable Line Reactor on both end of each circuit.
(vii) Conversion of 400 kV Line Reactors installed on 765 kV circuits/ lines (initially charged at 400 kV) mentioned at Sl No. vi, vii, viii and ix into 400 kV bus Reactor with suitable arrangements at respective substations.

f) It was also discussed in the said meetings of SRSCT that transformation capacity at various stations and certain elements would be reviewed based on applications for LTA. The transmission system as agreed in the meetings of SRSCT would serve as broad master plan for integration of RE generation in Tamil Nadu, Karnataka and Andhra Pradesh for a period up to 2021-22 and their implementation would be undertaken in stages. Considering the large scale capacity additions from RE sources in Southern States, completion of generation projects from conventional sources by 2021-22 and the likely electricity demand in the year 2021-22, the load generation balance for Southern Region was prepared collectively by the constituents for the year 2021-22 in the joint study meeting held on 01/02 of May, 2019 at SRPC,

Bengaluru along with CEA, SRPC, CTU & POSOCO.

g) As per the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2017, minimum 22% Capacity Utilization Factor (CUF) for wind farms and 19% CUF for Solar PV projects is required to be considered. Accordingly, the RPO obligations shall be met by States / Union Territories from RE generation including ISTS connected RE generation by 2021-22.

h) Further, from the load-generation sheet, it is observed that during the evening peak load conditions, Southern region may have deficit conditions and require import of power of about 6800 MW from NEW grid. Accordingly, the transmission system within Southern region and the inter-regional links between SR Grid and NEW Grid shall have to be robust and flexible enough to facilitate import of power to meet the power deficit during the evening peak conditions and also facilitate export of surplus power of about 29,000 MW during high RE & off-peak conditions.

i) After meeting RPO obligations, 15,000 MW to 17,000 MW of surplus power can be exported from Southern Region with up-gradation of existing/ under implementation sub-stations from 400 kV to 765 kV rated voltage level and charging of corresponding transmission lines to their rated voltage at 765 kV level. However, for export of surplus power of 29,000 MW from Southern Region, inter-regional system strengthening may also be required. For further transfer of power within Western Region and beyond to Northern Region or Eastern Region, transmission system augmentation may be required, which shall be identified based on all-India studies.

j) Part-A transmission system was discussed with the stakeholders in the 1st meeting of SRSCT held on 07.09.2018 wherein it had been agreed that the scheme would be implemented as ISTS, consequent to grant of LTA by the Petitioner. Subsequently, the transmission system was also discussed and agreed in the 2nd meeting of National Committee on Transmission (04.12.2018), in the 3rd meeting of Empowered Committee on Transmission

(21.12.2018), in the 35th SRPC meeting (02.02.2019), in the 4th meeting of Empowered Committee on Transmission (12.07.2019) and in the 36th SRPC meeting (12.07.2019).

k) Part-B transmission system was discussed with the stakeholders in the 2nd meeting of SRSCT held on 10.06.2019. The scheme has also been discussed in the 36th SRPC meeting held on 12.07.2019.

l) The details of the scheme, its justification, estimated cost and impact on tariff, results of the system studies, study assumptions, stakeholders' consultation and approval details were published on the Petitioner's website on 10.07.2019.

m) The estimated cost of the proposed transmission system is Rs.9,485 crore.

n) Ministry of Power, Government of India, vide letter ref. 25-11/2/2019-PG dated 11.7.2019 issued directions under Section 107 of the 2003 Act and conveyed the following:

> *"2. As the gestation period of RE projects is much shorter in comparison to the implementation period of the transmission facilities and significant quantum of RE capacity targeted to be tendered out in the current financial year, it is necessary that the present system of transmission planning and implementation for RE projects need to be carried out in Mission Mode. The transmission activities need to be started much ahead of the generation so that both of them are completed in matching time-frame to achieve the target set by Govt. of India. Thus, in the said background, it has been decided by the Government to accord the identified transmission schemes for aforementioned 66.6 GW of RE generation, comprising around 28 GW under Phase – I and 38.5 GW under Phase – II as 'Projects of National Importance'."*
>
> Further, it has also been directed that:
>
> "*Prior requirement of LTA applications and associated BGs, to be deferred for the interim period till the RE project is awarded to successful bidder, for taking up the implementation of associated transmission systems for balance RE Capacity under 66.5 GW of RE. It is however, clarified that the due regulatory procedure of LTA and Connectivity will be followed by the successful bidder*".

o) In line with the aforesaid direction of the Ministry of Power, the Petitioner has filed the present Petition for regulatory approval under proviso

3(1)(i) read along with proviso 8 (Power to Relax) and proviso 9 (Power to remove difficulties) of Central Electricity Regulatory Commission (Grant of Regulatory Approval for execution of Inter-State Transmission Scheme to Central Transmission Utility) Regulations, 2010 (in short, "the Regulatory Approval Regulations").

p) The Petitioner has calculated cost of energy considering only solar CUF and capacity of 8,900 MW, whereas capacity in the petition is 18.5 GW comprising of solar and wind which have different CUF. Project Inception Report provides that the annual transmission charges for the subject scheme at an estimated cost of about Rs.9,485 crore would be about Rs.1,614 crore.

Hearing dated 25.07.2019

3. The Commission admitted the Petition during the hearing held on 25.07.2019 and sought certain information from Petitioner.

4. The Petitioner vide affidavit dated 02.08.2019 submitted that it had not received any LTA application for the transmission system till date and in absence of LTA applications, no information pertaining to signing of PPAs was available with the Petitioner. The Petitioner also submitted that comments had been received from Karnataka Power Transmission Corporation Limited (KPTCL) vide their letter dated 30.7.2019 wherein KPTCL concurred with the proposed transmission scheme and opined that as agreed in 2nd SRSCT meeting, the transmission schemes should be implemented consequent to grant of LTA applications by the Petitioner.

5. The Petitioner vide affidavit dated 01.10.2019 has submitted that based on the inputs from MNRE/SECI, a meeting was held in CEA on 30.8.2019 for prioritization of the already identified transmission systems with the 66.5 GW potential RE capacity. During the meeting, it was informed that the generation

projects are scheduled for commissioning by December 2020, December 2021 and beyond 2021. Accordingly, the phasing and location-wise details as regards 18.5 GW RE generation potential planned to be implemented in Southern Region has been worked out. Estimated cost of transmission system to be implemented by December 2021 (for 10.5 GW) is Rs.4,435 crore, while the same to be implemented beyond December 2021 (8 GW) is Rs.4207 crore.

Submissions by Respondent No.1 TANGEDCO

6. The Respondent No. 1, Tamil Nadu Generation and Distribution Corporation (TANGEDCO) vide affidavit dated 9.8.2019 has submitted as under.

a) The Regulation 3(1) of the Regulatory Approval Regulations clearly mandates that schemes under ISTS should be evolved in consultation with CEA and beneficiaries. The proposed schemes in the present petition are evolved based on erroneous inputs and assumptions and are also inconsistent with the studies conducted in other regions viz. Western and Northern Regions.

b) Proposed transmission system for integrating the assessed RE potential of 66.5 GW needs a detailed analysis and examination. The proposed up-gradation schemes will create a huge redundancy in the transmission system which is uneconomical, inefficient and unwarranted. Since the schemes have not been agreed to by TANGEDCO due to the deficiencies in the planning studies, it was not concurred in the Standing Committee and SRPC meetings and a request was made to conduct All India based joint studies to finalise the schemes.

c) The scheme would give a tariff shock to the distribution utilities.

d) During the 2nd meeting of SRSCT held on 09.07.2018 at Bangalore, TANGEDCO strongly opposed the proposal for common transmission system strengthening in Southern Region since the study was not carried out on All India basis. However, it was recorded in the minutes of the meeting, which

were issued one day before the 35th TCC meeting, that the above schemes are agreed by the Committee. Subsequent to the communication of the minutes of the meeting, the same proposal was brought in the 35th meeting of the TCC and 36th meeting of the SRPC.

e) During the 35th TCC meeting held on 11.7.2019 and 36th SRPC meeting held on 12.7.2019, the Petitioner included the subject "Up-gradation proposal" as an additional agenda to the 35th meeting of the TCC without giving any time to the beneficiaries to analyse the proposal. TANGEDCO vehemently opposed the proposal as the system studies were not carried out on All India basis.

f) The Ministry of Power has issued directions to CERC to give regulatory approval to the schemes proposed by the Petitioner. These directions are illegal and patently wrong. Directions under Section 107 of the Act can be policy decisions taken by the Government of India and not regulatory orders. If the Commission is to act as per the directions of MoP under Section 107 of the Act, there is no necessity for approval by the Commission. The Act does not provide for such interference with the jurisdiction of the Commission in matters relating to grant of regulatory approval. Grant of approval requires a detailed consultative process as provided under the Regulations and Rules read with the Act. A regulatory approval by the Commission will entitle the Petitioner to claim tariff for the transmission system. In matters relating to determination of tariff, it is the Commission which is the only authority recognized under the Act. No direction can be given to the Commission in matters where the end result will be payment of tariff by consumers. At best the policy decision of Government under section 107 of the Act can have only guiding value. The policy decision of GOI cannot be extrapolated to direct a Regulator to act in a certain manner to benefit a particular Public Sector Undertaking i.e. the Petitioner. Moreover, there shall be benefit purely of financial nature to the petitioner from the tariff it will be entitled to get once the transmission scheme is approved by the Commission. The tariff to be claimed by the Petitioner subsequent to the approval of the scheme will be borne by the consumers. Therefore, any direction under Section 107 of the Act cannot bind the

Commission in its duty to conduct prudent check before grant of approval to the scheme.

g) The above becomes all the more crucial because the transmission system as proposed by PGCIL was opposed by TANGEDCO, which the Petitioner did not consider. Moreover, the objections of TANGEDCO were not even recorded in the minutes of meeting. To this effect, TANGEDCO has written two letters to the Standing Committee expressing its concern that the objections raised by TANGEDCO were not recorded in the minutes of the 2nd meeting of SRSCT held at Bengaluru on 10.7.2019.

h) TANGEDCO has prayed that the Petition may be dismissed and a joint study involving all stakeholders be conducted by the Petitioner. The Petitioner may be directed to place on record the detailed RE potential assessment report of NIWE or SECI or other agencies.

Rejoinder of the Petitioner to the submissions of TANGEDCO

7. Petitioner vide affidavit dated 14.10.2019 has submitted the rejoinder to reply of Respondent No. 1 TANGEDCO and has submitted as below.

a) The Petitioner has diligently carried out consultation with all the stakeholders which is also evident from the submissions of the Respondent itself.

b) Gestation period for development of generation projects is quite small as compared to development of transmission system and, therefore, the requirement of transmission system to facilitate evacuation of power from renewable energy generations on potential basis is required to be assessed in advance.

c) The Respondent has been a party to all the Joint Study meetings and Standing Committee meetings wherein the transmission system was evolved in consultation and after deliberations with the stakeholders. Further, the load-generation balance of the Southern Region has been formulated after

considering the inputs provided by the Respondent and STUs during Joint Study meeting held at SRPC, Bengaluru during 1st & 2nd May 2019. The Respondent had not raised any contention or reservations on the referred Load Generation Balance (LGB) as is evident in the minutes of the Joint Study meeting. Based on LGB worked out by the respective STUs during the Joint study meeting, the comprehensive transmission scheme was evolved for integration of RE generation of 18.5 GW in Southern Region. Further, it was also identified that for export of large surplus power of Southern Region, additional inter-regional links and strengthening in NEW (North-East-West) Grid may be required for supply of power to beneficiaries in WR, NR & ER. The same shall be identified subsequently on the basis of all India system studies as per the requirements.

d) At this juncture, when proposal was discussed and deliberated in SRPC, TANGEDCO raised objections to the transmission scheme. It is quite evident that such objections raised by the Respondent are afterthoughts and mainly guided by the anticipated enhanced commercial liability which TANGEDCO is expecting with the implementation of transmission system. It may be noted that the Respondent has not rejected the technical requirement of the transmission system for integration of RE generations of Southern Region and only seeking all India studies for identification of requirement of the inter-reginal links which shall be done in due course along with the realization/ harnessing of the RE potential. Further opposition of the transmission system may lead to stranding of RE generations.

e) The proposed transmission systems are either (i) generation linked or (ii) system strengthening due to operational constraints or to meet the load requirements in view of load growth projections as per Electric Power Survey of Central Electricity Authority. The Respondent itself has faced severe problems in the past due to lack of sufficient inter-regional lines between NEW grid and SR grid and within region between S1 & S2 areas.

f) In the absence of firm drawl points for the various potential REZs in

Southern Region, the joint studies were conducted which were focused on identification of immediate integration of generation projects in REZs with ISTS. Further three scenarios Peak Load, Off-peak Load and maximum RE generation were worked out along with the stakeholders in the Joint Study meeting. The load flow studies were conducted in the most critical case and the same were included in the report circulated to STUs, DISCOMs, CEA, POSOCO, SRPC and also uploaded on the CTU website. The transmission system evolved in such scenario shall cater to generally all other scenarios supporting generation in other regions wherein the transmission system shall be less constrained.

g) Notwithstanding the above, the behaviour of the planned system on a common all India file to identify any additional transmission system/ reactive power requirement with detailed Load Generation Balance shall also be assessed after firming up the drawl points and quantum of power transfer. Further import/ export requirements shall be identified/ determined through all India studies in due course in association with CEA and other stake holders.

h) In accordance with the paragraph 5.3.1 of the Detailed Procedure for Connectivity to projects based on Renewable Energy sources to ISTS "*the terminal bays at the ISTS sub-station shall be under the scope of transmission licensee owning the ISTS sub-station*". Accordingly, the number of downstream feeder bays at 220 kV or 230 kV has been considered in the proposed scheme.

i) CTU/CEA has considered RE potential as per the information provided by MNRE in consultation with the SNA/STU/CEA/NIWE through various meetings wherein the representative of Tamil Nadu was also present.

Observations of POSOCO

8. The Petitioner has submitted that on uploading the details of the transmission system on its website, POSOCO vide letter dated 24.8.2019 has observed as follows:

a) After comparing both cases [Case-1 (NR):- All India 21-22 RE Ph-2 CTU REZ ALT12 updated rev5 Alt 2; Case-2 (SR):- PSSE-2021-22 Off Peak_ll_website], it is found that the load generation balance (LGB) considered in southern region's RE transmission planning case is drastically different from the LGB considered in northern region's RE planning case.

b) As seen, generation in northern region has been reduced to only 31678 MW in SR RE transmission planning study case. This has resulted in increase in NR Import from 2270 MW in NR transmission planning study case to 36500 MW in SR transmission planning study case. Though import of 36,000 MW by northern region is a possible scenario, the same is highly unlikely to occur in high RE scenario as northern region is also expected to have significant capacity of renewable generation by 2021-22. As transmission planning studies have been carried out for high RE scenario, the generation of 31.6 GW considered in northern region seems improbable. Further, the RE planned under SEZs and WEZs in northern region has not even been completely modelled in the study case.

c) Further, generation in ER has also been increased from 10809 MW in NR transmission planning case to 25024 MW in SR TS planning case. ER being a net exporter during the high RE period is also highly unlikely.

d) In addition to different LGB assumptions, the network topology is also vastly different in these two cases.

e) With the significant change in LGB and network topology in the two study cases, the direction of inter-regional as well as intra-regional flows is also changing significantly. The vast difference in LGB and network topology in 2 cases may result in overlooking of potentially insecure real-time operating conditions and may lead to RE curtailment in future. Therefore, even in case of region-specific studies, there is a need to ensure that the base case files must correspond to a common scenario on All India basis.

f) The issue was also highlighted by POSOCO in the meeting of the 2nd Standing Committee on Transmission of SR held on 10.06.2019 where it was

decided that all-India studies would be conducted with the participation of CEA, CTU, POSOCO and concerned beneficiaries/ STUs for evolution of additional (over and above the above proposed scheme) transmission scheme for export of power from Southern grid to rest of all-India grid.

g) Subsequently, vide email dated 16.07.2019, CEA requested POSOCO to share operational and SCADA data of last 3 years for carrying out All India Studies. The data was shared by POSOCO with CEA vide email dated 25.07.2019. However, the All India Studies as decided in 2nd Standing Committee on Transmission of SR are yet to be carried out.

h) The transmission planning scheme (for 18.5 GW RE in SR) uploaded by CTU on its website mentions that the Off-peak LGB (for 2021-22 time frame) finalized in the joint study meeting held on 1st & 2nd May 2019 at SRPC, Bengaluru has been considered for study purpose. However, LGB considered in the case is different from the one decided in the meeting.

i) It has been mentioned by CTU in the study assumptions (uploaded on CTU website) that dispatch of 80% of the installed capacity has been considered for the prioritized WEZs & SEZs for evolving the transmission system for immediate evacuation. However, different dispatch in case of solar generation has been observed in the case.

j) As more than 70% solar dispatch is considered in southern region, solar generation dispatch in other regions should also be around this value. However, it has been observed that very less solar generation (around 4435 MW) has been considered in northern region, whereas total installed solar generation capacity in northern region is expected to be around 35000 MW by 2021-22.

k) The Swing Bus Generation (CGPL Mundra) in the case is -9283 MW. The capacity of the plant is 4150 MW. Even if 55% generation (technical minimum) is considered at CGPL Mundra, a change of around 12,000 MW has to be made in LGBR. Such large change in LGBR will result in significant change in tie line flows especially in WR-SR corridor.

l) Flow on HVDC Talcher-Kolar is 1000 MW, Bhadrawati is 100 MW & Gazuwaka is 200 MW. All three HVDC flows are towards SR. When SR is exporting around 28 GW, there is scope of reversing flows on these HVDCs. Any constraint arising in SR or other regions due to reversal of power in these HVDCs may also be identified and addressed during the planning stage itself.

m) High voltage at many 765 kV and 400 kV buses viz., Cuddapah, Nellore PS, Bidar, Kurnool, Solapur, and Thiruvalem etc. has also been observed.

n) Voltages as high as 440 kV can be seen at 400 kV Koyambedu and 400 kV Manalmedu. It is evident that reactive power compensation is not enough to control the over-voltage during the low wind & solar period. There is need for additional reactive power compensation to take care of the high voltages.

o) A total of 13 STATCOM devices are planned/ under operation across the Indian grid. However, out of 13 STATCOMs, only 5 have been modelled in the case while STATCOMs at Hyderabad, Udumalpet, Trichy, Kishanganj, Solapur, Satna, Aurangabad, Satna and Gwalior have not been modelled in the case.

p) Further, in base case, 26 additional STATCOMs with max. 9999 VAR support have been modelled. Out of these 26 additional STATCOMs, 18 have been kept “on” in the case. Most of these STATCOMs have been placed at both ends of HVDC terminals and it seems that they have been modelled as a replacement of filters.

q) The transmission planning studies have been carried out only for high RE scenario in which SR is exporting around 28 GW of power to Western and Eastern Region. This scenario will change completely during low RE period when SR will become the net importer. This reversal of power in low RE period may lead to system constraints which might have got overlooked as system behaviour in low RE scenario has not been studied. Already in the high RE

scenario study case of CTUIL, high voltages to the tune of 440 kV have been observed in SR. The problem is bound to be more severe in low RE period. Therefore, low RE scenario needs to be studied in order to identify and address system constraints like high voltage nodes, reversal of power etc. during the planning stage itself so that the additional system required for addressal of these issues also comes within the same time frame.

Petitioner's response to POSOCO's observations

9. The Petitioner has submitted the response to POSOCO's observation as follows:

a) The load-generation scenario for Southern Region was prepared collectively by the constituents for the year 2021-22 in joint study meeting held on 1st and 2nd May 2019 at SRPC, Bengaluru along with CEA, SRPC & POSOCO wherein the data file has been prepared as per the above scenario. The dispatches of the various generations were considered in consultation with the respective States.

b) As per the above scenario, system studies were carried out for off-peak scenario wherein Southern Region was expected to be surplus by 29700 MW. However, during the course of studies, it was observed that 1500 MW generation at NP Kunta has been reflected in State of Andhra Pradesh as well as ISTS-RE in the above-considered LGB. Accordingly, it was reviewed in the preparation of PSSE file, thereby reducing the net export to 27,900 MW. Further, total load and losses of 43,900 MW have been considered in the data file.

c) Total RE potential in Kurnool and Ananthapuram zone is 8 GW (SEZ-5 GW & WEZ-3 GW) and, accordingly, dispatch of 6.4 GW i.e., 80 % of RE potential has been considered in the Kurnool & Ananthapuram zone.

d) Further Talcher-Kolar HVDC flow was considered after consultation with the States in the Joint Study meeting looking into Talcher-II generation.

e) Regarding high loading on inter-regional links and in certain corridors in

Western Region, it is to mention that the transmission system has been identified for immediate connectivity and integration of RE generation potential as provided by MNRE/SECI in Tamil Nadu, Karnataka and Andhra Pradesh. Further, additional transmission system augmentation shall be required for export of surplus power of 27900 MW from Southern Region and further transfer of power within Western region and beyond to Northern region or Eastern Region and the same shall be identified upon identification of drawal states. In addition to above transmission system requirements, the transformation capacity augmentation shall also be identified at 765 kV and 400 kV sub-stations on regular basis. This has already been mentioned in the proposal uploaded on CTU website & 2nd SR SCT held on 10.07.2019.

f) Reactive power planning and fault level analysis is being carried out by the Petitioner as a part of regular exercise. As part of the same, number of reactors have already been identified at various ISTS and STU sub-stations. Further schemes for controlling the short circuit level at Nellore, Neyveli complex and Thiruvelam were also agreed in Standing Committee on Transmission. Nevertheless, a comprehensive study for the same is being taken-up for the future timeframe.

g) A number of inter-regional links viz., Bidar-Parli (new) PG 765 kV D/c, Raichur-Sholapur 765 kV 2nd D/c, Narendra - Kolhapur 765 2" D/c and Kolhapur (PG) - Pune GIS 765 kV D/c lines were proposed in the system studies to cater to the export requirement of 27,900 MW as per the load-generation scenario. In the absence of above IR links, the "N-1" criteria under the Transmission Planning Criteria is not met by the presently under-construction/ planned IR links between NEW-SR Grid. However, as per the decision in the 2nd meeting of SRSCT, the above IR links shall be finalized based on the transfer requirements and firming-up of generation projects.

Submissions of Solar Energy Corporation of India (SECI)

10. The Respondent No. 18, Solar Energy Corporation of India (SECI) vide affidavit dated 22.10.2019 has submitted as under:

a) SECI has, so far, awarded RE Projects for a total RE capacity of 25.04

GW out of which 14.24 GW is of solar and 10.8 GW is of wind/ hybrid. The total commissioned capacity is 6.59 GW which includes 5.0 GW of solar, 1.58 GW for wind and balance capacities are under various stages of commissioning.

b) During 2019-20, so far, RE projects for a capacity of 6.10 GW have already been awarded and four tenders for a total capacity of 10.6 GW are under different stages of bidding and award process. These tenders will be awarded during the period between November-December 2019 and thereafter bidding for a further capacity of around 6 GW will be carried out for their award by March 2020. Tenders are being invited by SECI on regular basis for a capacity in lot size of 1.2-1.8 GW and at any point of time, there are 3-4 tenders at various stages of procuring. During 2019-20, award for a capacity of around 15-20 GW is planned upto March 2020. Similar trend for inviting of bids and award will be followed during 2020-21 and it is expected that capacities of around 20-25 GW will be bid and awarded.

c) SECI has initiated the work of aggregating public and/or private land with the help of respective State Governments, to facilitate the land availability to the developers in the RE rich potential areas so as difficulties are not faced by the developers at a later date which is one of the reasons of delay in commissioning of RE Projects. Already the Government of AP, Karnataka, Rajasthan and Gujarat have responded positively and work of identification and securing land around the proposed CTU sub-station is on.

d) Since significant quantum of RE capacity is targeted to be tendered in the current financial year, it is necessary that the present system of transmission planning and implantation of RE projects need to be carried out in Mission Mode. The transmission activities need to be started much ahead of the generation so that both of them are completed in matching time frame to achieve the target set up by Government of India as the gestation period of RE projects is much shorter (18 months) in comparison to the implementation period of the transmission facilities.

e) The RE developers are allowed directly to apply for Stage-II connectivity to CTU on the basis of award received from SECI and, thereafter, they apply for LTA. Therefore, LTA applications for the planned transmission capacity of 18.5 GW in Southern Region is scheduled to be utilized by the RE developers progressively matching to the award of RE capacities in the same manner as is happening in NR and WR.

f) As per SECI's bidding documents, scheduled COD for RE Project will be 18 months from the date of signing of PPA. PPA will be signed within a period of 90 days from the date of issue of LOA. Accordingly, commissioning of generating plants will be achieved for the total target capacity of 66.5 GW.

Further submissions by Respondent TANGEDCO

11. TANGEDCO vide affidavit dated 29.10.2019 has further submitted as follows:

a) The hasty planning process of the Petitioner and CEA and the consequential upshot in the form of study report and the power evacuation proposal for the Wind Energy zones and Solar energy zones establishes that these agencies have neither applied any rational planning philosophies nor followed any regulatory/ planning guidelines for creation of efficient and optimal transmission system.

b) The transmission schemes need to be developed based on the citing of the generation projects and the location of the beneficiaries/ target beneficiaries. TANGEDCO has been consistently raising the issue of assessment of developable RE potential and the prospective beneficiaries for the surplus generation capacity in each region before all the forums. The Petitioner has not shared the above basic input data obtained from the concerned authorised agencies which is very vital for the planning study.

c) It is obvious that the gestation period of RE generation projects is short. However, commissioning of RE projects largely depends on (i) availability of suitable land for development of RE projects and (ii) tie-up with beneficiaries.

d) As far as the instant petition is concerned, the proposed transmission schemes for all the three Regions viz. Southern, Western and Northern Region are evolved purely based on mythical scenarios without following any planning philosophies. The central issue is that the Petitioner has manipulated the all India network data to conveniently suit its illegitimate proposals/ schemes in the three Regions. The planning process has also been criticised by POSOCO which is responsible for seamless operation of Indian power system.

Petitioner's response to TANGEDCO's further submissions

12. The Petitioner vide affidavit dated 20.11.2019 has responded to the specific queries raised by TANGEDCO. It has submitted that POSOCO has not denied the necessity of requirement of the referred transmission scheme and has only raised queries related to the study file which were adequately replied by the Petitioner vide letter dated 01.10.2019. The Petitioner has submitted that behaviour of the planned system on a common all India file to identify any additional transmission system including strengthening of IR links/ reactive power requirement with detailed Load Generation Balance shall also be assessed after firming up drawl points and quantum of power transfer. Further, import/ export requirements shall be identified/ determined through all India studies in due course in association with CEA and other stakeholders.

Hearing dated 11.12.2019

13. During the hearing held on 11.12.2019, learned counsel for TANGEDCO and AP Discoms submitted that the Petitioner has not addressed the queries raised by the Respondent, TANGEDCO. Learned counsel further submitted that the Respondents have also not received the All India Study results.

14. During the hearing, the Commission observed that despite specific direction dated 15.10.2019, SECI has provided only generic information not specific to SR, where the transmission system in the present petition proposed to be built. Therefore, the Commission directed the Petitioner to furnish the following details for instant transmission scheme:

(a) Details of the identified land;

(b) Status of the RE bidding process; and

(c) Status of implementation of transmission system (including awarding schedule of different transmission elements).

15. On directions of the Commission, the Respondent, SECI has, vide affidavit dated 26.12.2019, submitted that land is identified only for a part of the capacity and submitted the details of such identified land and also submitted the status of the RE bidding process. Similarly, the Petitioner has, vide affidavit dated 26.12.2019, submitted the detailed status of the Implementation of transmission system.

Submissions of the Petitioner vide affidavit dated 7.1.2020

16. In compliance of ROP of hearing dated 11.12.2019, the Petitioner vide affidavit dated 7.1.2020 has submitted additional information as under:

a) A meeting was held on 18.10.2019 at CEA for discussions on Load-Generation balance (LGB) to carry out All India Studies for upcoming RE capacity. The study files, load-generation scenario assumptions considered in the studies and study results were circulated to all the constituents in the Southern Region and POSOCO for their observations/ comments/ suggestions vide email dated 19.11.2019.

b) LGB & system studies were discussed in the joint study meeting held at CEA on 21-22 November 2019, wherein POSOCO representative and SR constituents requested for some more time to forward their comments/ observations on the all-India load-generation scenario for RE integration.

c) Comments were received from POSOCO vide letter dated 29.11.2019 and the same were discussed in a meeting was held with participation from CEA, POSOCO & CTU at CEA on 10.12.2019 wherein detailed deliberations were held on the observations received. After detailed deliberations, considering the variations in generation and demand in various regions, 9 scenarios were prepared for the months of June 2021, August 2021 and February 2022 for afternoon peak, evening peak and night off-peak scenario. It was further decided that the scenarios prepared as per the deliberations shall be circulated to SR constituents for their comments/ observations/ suggestions and shall be discussed/ deliberated with the Southern Region constituents.

d) All-India studies circulated to SR constituents vide email dated 19.11.2019 were discussed in the 1st SRPCTP meeting held on 16.12.2019 at Hyderabad wherein it was informed that CTU has not received any comments/ observations/ suggestions from any of the SR constituents on the circulated All-India system studies except POSOCO.

e) After the 1st SRPCTP meeting held on 16.12.2019, comments have been received from TSTRANSCO vide email dated 18.12.2019 and TANTRANSCO vide email dated 23.12.2019.

f) As per the inputs from MNRE/SECI, a meeting was held in CEA on 30.08.2019 for prioritization of the already identified transmission system with 66.5 GW potential RE capacity.

Submissions of TANGEDCO vide affidavit dated 6.2.2020

17. TANGEDCO vide affidavit dated 6.2.2020 has submitted as follows:

a) Though SECI vide its affidavit dated 24.12.2019 has furnished the land availability details and status of bidding, as far as Tamil Nadu is concerned, SECI has not furnished any land details for the proposed 2.5 GW RE capacity and has rather stated that the developers will arrange land directly. Neither has SECI provided details of developable potential available in Tirunelveli and Pugalur area.

b) With regard to potential areas in Andhra Pradesh and Karnataka, SECI has not furnished any commitment given by the concerned State governments regarding allotment of land for the purpose of development of ISTS connected RE projects. SECI has to bring such details on record. Further, there is no successful bid awarded by SECI so far in respect of Southern Region.

c) SECI is mandated/ liable to apply for Connectivity/ LTA for the purpose of evolving transmission schemes and procurement and selling of power from the RE generators. Without such arrangements, CTU cannot proceed with development of transmission schemes.

d) TSTRANSCO has pointed out in its comments that the demand projections are wrong and the major load on account of lift irrigation project has not been considered in the study case which will further reduce the surplus available in the region. Also, it has been pointed out from the study conducted by Telangana that the inter-regional lines are loaded below 30% during 2021-22 timeframe. The stranded capacity in SR after relinquishment of LTA by IPPs is 6,665 MW and, hence, it has been requested to re-plan the transmission proposal without new investment on 765 kV and 400 kV sub-stations by utilising the redundant capacity.

e) During 36th TCC and 37th SRPC meetings held on 31.1.2020 and 1.2.2020 at Hyderabad, CTU confirmed that eight scenario studies will be shared and deliberated in a special meeting shortly. Further, it was informed that the proposed presentation by SECI will be made on 11.2.2020 at TANGEDCO head office and all the SR constituents were requested to participate in the presentation and deliberate the issues.

Submissions of KPTCL vide affidavit dated 7.2.2020

18. Karnataka Power Transmission Corporation Limited (KPTCL), vide affidavit dated 7.2.2020, has submitted as under:

a) During 1st SRPC (TP) meeting held on 16.12.2019, it was agreed that further studies will be conducted by the Petitioner for 6 different scenarios of

load generation with all-India PSSE file for analysis and evaluation of transmission scheme after receipt of comments from STUs on the circulated PSSE file w.r.t transmission network. Additionally, during the discussion at the meeting, SECI informed that KREDL has initiated the process for acquisition of land and stated that the project is likely to be wind/ solar hybrid type. Hence, SECI shall firm up the type of the generation proposed at Koppal and in case wind project is considered necessary, wind study report will to be furnished to ascertain the quantum of generation possible after duly considering commissioned and sanctioned wind projects by KREDL. If there is any change in type of generation proposed in Koppal, necessary joint studies have to be conducted before taking up the project for execution.

b) Proposed transmission scheme of SEZs at Gadag, Koppal and Bidar in Karnataka shall be taken up for implementation only after firming of LTA by the Petitioner with due revision/ modification in transmission scheme based on the output of the studies conducted by the Petitioner for different scenarios of all India network as discussed in 1st SRPC (TP) meeting of CEA.

Hearing dated 12.02.2020

19. The learned counsel for the Respondent, TANGEDCO submitted that a meeting was held with SECI, CTU and NIWE on 11.2.2020 at TANGEDCO headquarter in relation to the issues in the present Petition and also the issue related to availability of land was discussed. Learned counsel further submitted that TANGEDCO has not agreed to the transmission system covered in the Petition. In the said meeting, SECI and CTU have stated to revise RE capacity since NIWE had submitted that while arriving at wind potential, availability of land has not been factored into. Accordingly, the RE potential for Wind Energy Zones in Tamil Nadu is to be re-assessed. CTU agreed to conduct nine (09) scenario studies and to share the study report during the meeting. Learned counsel raised apprehension on the land availability in Karur and suggested that SECI should take LTA.

20. The Representative of SECI submitted that land availability in Karur is limited and not corresponding to indicated potential. In Koppal, the land availability is not an issue and SECI would invite the tender shortly. As regards Ananthpur and Kurnool, while the land availability is there, the Government of Andhra Pradesh has presently put the land on hold. As regards Gadag and Bidar, there are no issues pertaining to land and SECI has received favourable response.

21. After hearing the parties, the Commission directed the Petitioner to confirm whether there are any issues regarding the specified locations and whether the transmission system at above three places, namely Koppal, Gadag and Bidar can be implemented without the complete system.

Submissions of the Petitioner vide affidavit dated 4.5.2020

22. The Petitioner vide affidavit dated 4.5.2020 has submitted the details of identified land and status of the RE bidding process as under:

a) SECI, vide its letter dated 25.2.2020, has stated that the Government of Andhra Pradesh has informed that it is not in a position to give land at Kurnool/ Anantapur area to SECI for developments of renewable power parks.

b) SECI has requested to consider grant of regulatory approval while putting the construction of transmission system infrastructure for Kurnool/ Anantapur on hold till clarification and/or approval from MNRE/ Government of AP is received to implement the RE generation projects as planned. SECI has further stated that there is no issue with respect to land availability at other locations (Koppal, Gadag and Bidar area in Karnataka) and, therefore, transmission system for Koppal, Gadag and Bidar REZ can be implemented without the complete system envisaged for 18.5 GW in Southern Region.

c) During meeting held on 11.2.2020 at TANGEDCO headquarters for discussion on various issues related to identification of RE potential in Southern

Region, TANGEDCO told that the transmission system may be planned only based on LTA applications and not by the potential assessed by SECI/MNRE. In response, CTU informed that not a single application has been received for the entire assessed potential of 18.5 GW in Southern Region. TANGEDCO insisted that the system must be planned based on the developable potential and that the implementable RE potential must be ascertained before evolving proposals. Also, concurrence from the State Nodal Agency and Expression of Interest (EoI) from the developer must be obtained. KPTCL expressed concern over additional wind potential of about 20,172 MW projected by NIWE/SECI. KPTCL stated that only based on the technical assessment and without verifying the ground realities, SECI projected RE potential for 2.5 GW in Koppal (Phase-I) and 2.5 GW each at Gadag and Bidar districts (Phase-II). Considering this theoretical potential, CTU has identified Transmission system and seeking Regulatory Approval from CERC without receipt of LTA applications from RE generators or REIA under CERC Regulations. This unnecessary investment in the transmission system will have commercial implications on transmission charges by stakeholders which will in turn burden the DISCOMS and ultimately the consumers of the States. Also, KPTCL opined that during Off-peak condition, the proposed generation at Koppal WEZ and Gadag SEZ along with State's RE generation, mainly wind, may lead to congestion in the 400 kV and 220 kV network of Karnataka. Further, KPTCL also stated that in Koppal area, government land may not be available for wind generation projects though there is possibility of private land for solar generation projects. TANGEDCO insisted for implementation of the proposed transmission schemes in phased manner. It was also informed that around 3000 MW spare capacity is available in the STU network already established for evacuation of RE due to poor response from developers. CTUIL replied that out of 6 nos. 500 MVA CTs proposed for their Tuticorin pooling station, only 3 nos. 500 MVA CTs were approved while 4th ICT is under regulatory approval and stated that 5th & 6th ICT will be taken up depending on the requirements. It was stated that the transformer capacity, augmentation can be done in 15-18 months' time and can be implemented in matching timeframe of the RE generation projects and therefore, shall only be implemented on grant of LTA

by CTU.

Hearing dated 11.06.2020

23. During the hearing held on 11.06.2020, in response to the specific query of the Commission as to why SECI doesn't apply for connectivity/ LTA as per the Regulations which can be subsequently transferred to successful bidders/ developers, the representative of SECI submitted that for Koppal, tender of 2500 MW for setting up of a Solar Project in Solar Park has already been issued and it would be the Solar Park Developing Agency who would be applying for connectivity and LTA. Similar action will be taken for Gadag also. The representative of SECI further submitted that there are other tenders for around 11,000 MW capacity (out of which, 2000 MW Wind tender on 9.7.2020, 2000 MW Solar tender on 22.6.2020 and 5000 MW RTC tender on 3.7.2020) are under process and the RE generators/ developers are expected to come up thereunder and apply for connectivity.

24. The representative of CTUIL submitted that the results of All India Studies were uploaded on its website as well as circulated to stakeholders for comments/ observations in December 2019. He further submitted that CTU has complied with the provisions of the Central Electricity Regulatory Commission (Planning, Coordination and Development of Economic and Efficient Inter-State Transmission System by Central Transmission Utility and other related matters) Regulations, 2018 (in short, “the 2018 Transmission Planning Regulations”) and status of RPC recommendations has already been submitted. The representative of CTU further added that Koppal PS which was initially planned for Wind Energy Zone as per potential identified by SECI/MNRE, has now been covered in the Solar Energy Zone generation potential pursuant to issuance of SECI's tender for Solar Projects.

Additional submissions of KPTCL vide affidavit dated 4.5.2020

25. Respondent No. 4 Karnataka Power Transmission Corporation Limited (KPTCL) vide affidavit dated 22.6.2020 has made following additional submissions:

a) The solar and wind energy potential schemes were discussed in the 37th SRPC meeting held on 1.2.2020. TSTRANSCO informed that it had added 3600 MW Renewable Energy generation during the last three years without any additional transmission lines in the system by adopting distributed generating schemes. TSTRANSCO had addressed a letter to CTU requesting to plan RE generation in Telangana in distributed manner to utilize the existing transmission system. The proposed dedicated EHV transmission system may contribute high voltages in the network and lead to increase in PoC rates.

b) KPTCL endorsed the views of TSTRANSCO as regards adopting distributed solar generating schemes and stated that it is good for system operation. In few cases, there was fall of 650 MW generation (from 1850 MW to 12001 MW) observed at Pavagada Solar Park and they had managed with available hydro generation.

c) In the absence of generators, SECI should apply for LTA for developable potential as assessed by SECI and only upon grant of LTA by CTU, the transmission system may be taken for implementation.

d) No works are proposed by KPTCL in the downstream network for the transmission system for 18.5 GW of Solar and Wind Energy Zones in the Southern Region.

Hearing dated 6.8.2020

26. The learned senior counsel for the Petitioner submitted that a meeting was held on 23.07.2020 with CEA, CTU and POSOCO regarding All-India system studies for discussing all 9 different scenarios and to also take a view on the comments received from constituents on earlier studies that were circulated on 20.5.2020.

Detailed system studies for all 9 scenarios were uploaded on CTU`s website and the same were circulated to Southern Region constituents on 3.8.2020. On the basis of All-India studies, it has been found that the requirement of the identified transmission system for 18.5 GW REZ in Southern Region has not changed and that such system shall be required in case the potential as envisaged by SECI materializes.

27. In response to a specific query of the Commission as to how availability of land for setting up the projects was being ensured, the representative of SECI submitted that except for the cases where the tenders are issued for setting up Solar Parks, the RE developers are themselves responsible for acquiring the requisite lands. In case of Solar Parks, Solar Park Implementing Agency identifies the land. He further submitted that SECI has already received letters from the Karnataka Solar Power Development Corporation Limited (KSPDCL) dated 17.6.2020 and Government of Andhra Pradesh dated 8.7.2020 indicating the availability of land in the States of Karnataka and Andhra Pradesh respectively. As per letter from KSPDCL, owners of 8310 acres of land in Gadag have expressed their interest to sign the agreement with SECI, whereas for Bidar, 2885 acres of land has been identified. For Koppal also, land requirement of about 12000 acres has been identified, though the letter for which is not on record.

28. In response to the Commission`s query regarding identification of areas where the issue of availability of land is not there, the representative of SECI stated that for Koppal and Gadag in the State of Karnataka, there is no issue regarding availability of land.

29. Learned senior counsel for TANGEDCO submitted that TANGEDCO has already pointed out that there is no land available for development of solar/ wind

farms in the identified REZ in Tamil Nadu. He added that the Petitioner ought to be directed to prepare a checklist for each of the identified REZ in the States of Andhra Pradesh, Karnataka and Tamil Nadu indicating the availability of land, status of bidding and whether LTA applications have been received. The identified transmission system should be approved and taken-up for implementation based on the above assessment and not merely on the basis of projections made by SECI.

30. Learned counsel for Karnataka Power Transmission Corporation Limited (KPTCL) submitted that transmission system relating to Koppal, Gadag and Bidar REZs may be taken up after finalization/ firming-up of LTAs and till RE generators apply for LTA, SECI should apply for the LTA in accordance with applicable Regulations.

31. After hearing the parties, the Commission directed the Petitioner and SECI to furnish the following information on affidavit:

a) Land identified by solar park developer, if any, at each location;
b) Availability of land other than land identified by solar park developer at each location; and
c) Based on assessment of land availability and expected LTA applications, recommended priority of the transmission systems to be taken up.

32. In response, the Petitioner vide affidavit 26.8.2020 has submitted as under:

a. Adequate land is available for establishment of wind/solar power generation in Koppal and Gadag (Part-A & Part-B). LTA applications are yet to be received by the CTU. Presently, no ISTS infrastructure is available in Koppal & Gadag area. Therefore, the identified transmission system is required for integration as well as evacuation of renewable energy from these zones. Accordingly, implementation of identified transmission system for Koppal and Gadag REZ may be taken-up on priority.

b. Implementation of the transmission system for Kurnool and Ananthapur REZ may be taken-up as and when location specific bidding is issued by SECI for development of RE projects. Accordingly the same may be put on-hold now.

c. Implementation of the identified transmission system in all other RE zones may be kept on hold.

Hearing dated 15.4.2021

33. Learned counsel for the Respondent No.1, TANGEDCO submitted that the Respondent is not only objecting to the transmission schemes relating to Karur and Tuticorin REZs as located in the State of Tamil Nadu but also for the other REZs, where there are no LTA applications since as per the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 (in short, "the 2020 Sharing Regulations"), TANGEDCO will be required to share its costs on the proportionate basis. It was further submitted that in RPC meetings, the constituents have opposed to the implementation of such schemes without the LTA applications and that as per the Petitioner's own affidavit dated 26.8.2020, there is no land availability in the State of Tamil Nadu.

34. Power Company of Karnataka Limited (PCKL) which represents all the ESCOMs in Karnataka vide affidavit dated 28.4.2021 has submitted as under:

a) Yearly Transmission Charges (YTC) for the proposed transmission system should be included in the National Component as per the 2020 Sharing Regulations.

b) RPO equivalent capacity requirement of Karnataka for the financial year 2021-2022 is 9810 MW. However, the State has already established installed capacity of about 14890 MW from Renewable Energy Source as on August 2020. As Karnataka ESCOMs have already fulfilled RPO, they have not entered into any PPA towards purchase of the renewable energy power

proposed to be developed by CTUIL.

c) The proposed transmission system is being developed purely for inter-State sale of power, and as such CTUIL shall ensure that ESCOMs are not solely burdened with any additional transmission charges for having constructed the line/ project in Karnataka State or due to any downstream lines that may constructed on need basis at a later date.

Submissions of the Petitioner vide affidavit dated 29.4.2021

35. The Petitioner vide affidavit dated 29.4.2021 has submitted as follows:

a) During meeting with CEA regarding development of Common Transmission System for Connectivity, held on 16.10.2020 for review of 66.5 GW RE linked Transmission schemes and 12th meeting of the Monitoring Committee on Inter-State Transmission System (ISTS) for 66.5 GW REZs held on 22.10.2020, it was decided that transmission system identified for integration of REZ may be taken-up for implementation after grant of LTA.

b) It was also decided that the transmission system for evacuation of power from RE sources in Bidar, Karur, Kurnool and Anantapur area may be put on hold due to non-availability of LTA applications.

c) Subsequently, Connectivity/ LTA applications have been received in Koppal, Gadag and Karur REZ. The details of quantum of Stage-II connectivity and LTA granted/ agreed for grant in these REZs are as below:

REZ	St-II connectivity (MW)	LTA (MW)	Remarks
Koppal	600	300	• For 300MW, Connectivity & LTA respectively sought from 15-01-2022 & 01-10-2022. • Connectivity for 300MW sought from 01.08.2022.***
Gadag	160	0	Connectivity sought from 01.05.2022.
Karur	310	100	LTA sought from 01.06.2022.
Tuticorin	1880.1	1100.1	The Tuticorin-II PS has been implemented with 2x500 MVA ICTs as part of Green Energy Corridor for total potential of 2.5 GW. Further based on requirement 1x500 MVA ICT-3 is under advanced stage of implementation. Against this potential, LTA of 950.1 MW has been granted & under operation and additional LTA of 150 MW is agreed for grant in Tuticorin Area. However, no LTA application is received against potential of 500 MW for which regulatory approval of 4th ICT at Tuticorin-II PS is sought.
Kurnool	0	0	
Anathapur	0	0	
*** *Application made on 31.03.2021 by Ayana Renewable Power Six Pvt Ltd*			

d) Implementation of the transmission scheme for Karur/ Tiruppur Wind Energy Zone (Tamil Nadu) and Gadag may be taken-up on priority as per phasing and timelines decided during 4th NCT meeting held on 20.01.2021.

e) Regulatory approval may be considered for execution of the proposed transmission system for Koppal, Gadag, Karur and Tiruniveli/Tuticorin.

f) Further, CTU shall request SECI to coordinate with the concerned authorities in Karnataka and Tamil Nadu Governments for finalization of the lands.

g) Matters concerning Bidar in Karnataka and Ananthapur, Kurnool in Andhra Pradesh and common transmission system strengthening in Southern region shall be deferred for the present and the Petitioner will file the necessary pleadings and seek regulatory approval in such places progressively as and when Stage-II connectivity/ LTA applications mature in the same manner as in the case of Koppal, Gadag and Karur.

h) The Petitioner sought the details from respective generation project

developers (ReNew Surya Ojas Pvt Ltd at Koppal, JSW Renew Energy Ltd at Karur and Vena Energy Vidyuth Private Limited at Gadag) and status of land availability for establishment of RE generation projects submitted by the RE generation applicants at Koppal, Gadag and Karur has been submitted.

i) The Petitioner is proceeding to place these developments in the meeting of the SRPC and will place before the Commission, the developments and outcome of the decision in the said meeting.

Submissions of SECI vide affidavit dated 225.2020

36. SECI vide affidavit dated 22.6.2021 has submitted the consolidated updated information in regard to the location of the identified sub-station for transmission system for renewable energy project in southern region; the land availability identified by renewable energy park developer; and priority of transmission system to be taken up based on land availability and expected LTA (Long Term Access) Application as under:

Sl. No.	Location of Identified Sub- station	Land availability /identified by RE park developer as submitted by SECI	Availability of land other than land identified by park developer as submitted by SECI and Stage II Connectivity/LTA	Priority of Transmission System to be taken up based on land availability and expected LTA applications
1	Koppal RE Zone, Karnataka (2500MW):	Karnataka Solar Power Development Corporation Ltd. (KSPDCL) has confirmed the land availability of 13000 acres. The land requirement for establishment of 2500 MW RE is estimated around 9,000-10,000 acres only. Therefore, land is available as identified by RE park developer.	RE developers are acquiring land themselves to set up the projects based on awards won by them through competitive bidding. **A1. Stage-II connectivity granted: 900 MW** 1. ReNew Surya Ojas Pvt Ltd: 300 MW(start date:15.01 .2022) 2. Adani Renewable Energy Holding Fifteen Ltd: 300 MW(start date: 30.12 .2022) 3. Ayana Renewable Power Six Private Ltd: 300 MW (start date:01.08.2022) d **A2. Stage-II connectivity**	900MW Stage -II connectivity and 300 MW LTA already granted. Application under process for further 300 MW stage-II Connectivity & 300 MW LTA Accordingly, the implementation of transmission system for Koppal REZ for 2500 MW is required to be taken-up on priority.

		The location specific bids for some pooling stations, including Koppal PS have been invited and are in process of being completed.	**application under process: 300 MW** 1. Renew Solar Power Pvt. Ltd:300MW(start date: 30.10.2022) **B1. LTA granted: 300 MW** 1.ReNew Surya Ojas Pvt Ltd- 300 MW(start date: 01.10.2022 or availability of common transmission system for LTA whichever is later) **B2. LTA Application under process: 300 MW** 1. Renew Solar Power Pvt Ltd 300 MW (Start date: 30.10.2022) More stage-II connectivity/LTA are expected.	
2	Gadag RE Zone, Kamataka (2500MW)	KSPDCL vide letter dated 17.06.2020 has confirmed the land availability for 8310 acres, however total land requirement for establishment of 2500 MW RE is estimated around 9,000 acres. The location specific bids for some pooling stations including Gadaq PS have been invited and are in process of being completed.	RE developers are acquiring land themselves to set up projects based on the award of the project through competitive bidding. **A. Stage-II connectivity granted: 460 MW** 1. Vena Energy Vidyuth Pvt Ltd:160 MW (start date : 01.05.2022) 2. Renew Solar Power Pvt. Ltd: 300MW(start date: 30.10.2022) **B. LTA Application under process be taken based on total LTA : 460 MW** 1. Vena Energy Vidyuth Pvt Ltd: 160 MW(start date: 31.03.2023) 2. Renew Solar Power Pvt. Ltd: 300MW (start date: 30.10.2022) More stage II connectivity/ LTA are expected.	460MW Stage -II connectivity already granted LTA applications under process for 460 MW Accordingly, the implementation of transmission system of phase-I (1000 MW) for Gadag REZ is required to be taken-up on priority. Phase-II (1500 MW) of the scheme to be taken up for LTA applications beyond 1000 MW at Gadag/1500 MW at Koppal PS. Part-B to be taken based on total LTA applications at Gadag/Koppal PS.
3	Karur / Tiruppur Wind Energy Zone (Tamil	No land is identified for RE park. The RE developers to	RE developers are acquiring land themselves against awards won through competitive bidding.	460 MW Stage -II connectivity & 100 MW LTA already granted.

	Nadu) (2500MW) :	arrange land on their own. The location specific bids for some pooling stations have been invited and are also in process and it also includes Karur / Tiruppur PS.	**A. Stage-II connectivity granted:460 MW** 1. JSW Renew Energy Ltd. 310MW(start date: 31.10.2022) 2. JSW Future Energy Ltd: 150 MW (start date: 31.10.2022) **B. LTA granted: 100 MW** 1. JSW Renew Energy Ltd:100 MW (start date: 01.06.2022 or availability of common transmission system for LTA whichever is later) More stage II connectivity/ LTA are expected.	Accordingly, the implementation of phase-I of transmission system for Karur / Tiruppur PS is required to be taken-up on priority. Phase-II of the scheme would be taken up after receipt of LTA beyond 1000 MW.
4	Tirunelveli and Tuticorin Wind Energy Zone (Tamil Nadu) (500MW)	No land is identified by any RE park developer or by State Government for development of RE park. The project developers will arrange land on their own. The location specific bids for some pooling stations have been invited and are also in process and it also includes Tuticorin PS.	RE developers are acquiring land themselves against awards won through competitive bidding. Connectivity of 1000.1 MW & LTA for 950.1 MW already operationalized at Tuticorin. Further, following stage-II & LTA has been granted: **A. Stage-II connectivity granted: 1259.2 MW** 1.GRT Jewellers (India) Pvt Ltd:150MW(start date:15.12.2021) 2.NTPC:230 MW (start date: 01.09.2021) 3.JSW Renew Energy Ltd: 500MW (start date:31.10.2022) 4. JSW Future Energy Ltd:300MW(start date: 31.10.2022) 5.Viento Renewables Pvt Ltd: 79.2 MW (start date: 15.03.2022) **B. LTA granted: 150 MW** 1. GRT Jewellers (India) Pvt Ltd: 150MW (start date: 01.01.2022)	Total stage-II Connectivity for 2259.3MW & LTA for 1100.1 MW has been granted at Tuticorin. Further, application for enhancement of 40 MW stage-II Connectivity for JSW Renew Energy Ltd is under process. Existing Tuticorin PS has transformation capacity of 3x500 MVA. Implementation of 4th 1x500 MVA, 400/230kV ICT at Tuticorin would be taken up after receipt of LTA applications beyond 1500 MW.
5	Bidar RE Zone (2500 MW) :	KSPDCL vide letter dated 17.06.2020 has confirmed the land availability for only	RE developers are acquiring land themselves against awards won through competitive bidding.	No application for connectivity /LTA is received at this location. Implementation of the

		2885 acres, however total land requirement for establishment of 2500 MW RE is estimated around 9,000 acres.		transmission may be taken up on receipt of Stage-II connectivity /LTA.
6	Kurnool(AP) Wind Energy Zone (2500MW) Kurnool(AP) Wind Energy Zone (500MW) and Solar Energy Zone (1500MW) Ananthapur and Kurnool SEZ (Ananthapur-2500 MW & Kumool-1000 MW)	Government of AP vide letter dated 08.07.2020 intimated for land availability of 1,00,611 acre. The land availability as intimated by State Government of A.P. is much more than the required land for development of RE capacity.	RE developers are acquiring land themselves against awards won through competitive bidding.	No application for connectivity /LTA is received at this location. Implementation of the transmission may be taken up on receipt of Stage-II connectivity / LTA.

Hearing dated 25.06.2021

37. The Petitioner submitted that, based on information filed by SECI, the implementation of transmission systems for Koppal REZ and Phase-I of Gadag REZ, Karur/ Tiruppur PS are required to be taken on priority. For Bidar REZ and Kurnool REZ, since no application for connectivity/ LTA has been received, implementation of transmission systems is proposed to be taken up after the receipt of applications for Stage-II connectivity/ LTA.

38. TANGEDCO submitted that despite the Commission's direction vide RoP for the hearing dated 15.04.2021 to conduct SRPC meeting for discussing the developments and implementation of transmission scheme in phase-wise manner with constituents of Southern Region and to place on record the minutes of the meeting, no such meeting has been conducted. TANGEDCO further submitted that:

(a) Government of Tamil Nadu has already indicated non-availability of land for RE projects. As per the affidavit of SECI, for REZs in Tamil Nadu, the land acquisition has been left to the developers. However, there is no confirmation from the developers regarding land being firmed up.

(b) These transmission schemes are evolved based on the assessed potential of RE by NIWE/SECI instead of evolving a proposal based on realistic developable potential duly considering the land availability, already exploited potential and other issues including the adequacy of existing intra-State and ISTS networks.

(c) No all India study compiling the proposals of all three regions (WR, NR and SR) has been done and the studies which have been undertaken are in fragmented manner for each of these three regions. Also, the studies undertaken were on the basis of year 2020-21 scenario on the basis of 19th Electric Power Survey ('EPS') projections. However, considering the fresh studies ought to be conducted as per revised projections and time horizons beyond 2023.

(d) As is indicative from the minutes of the 4th NCT meeting, based on the insistence of PFCCL and SECI citing the grounds of RoW and RE generations respectively, NCT has agreed for inclusion of two 500 MVA ICTs and LILO of both 400 KV ckt. of Pugalur-Pugalur (HVDC) line at Karur pooling station instead of CTU's original proposal of single 500 MVA capacity under Phase-I along with LILO of one 400 kV line at Karur. This is not as per the provisions of the 2018 Transmission Planning Regulations.

39. During the hearing, the Commission directed the Petitioner to co-ordinate with the secretariat of RPC and directed SRPC to hold the RPC meeting within 15 days from the date of issuance of RoP in order to discuss the developments and implementation of the transmission schemes in phase-wise manner with the constitutes of the Southern Region and the Petitioner was directed to file the minutes of meeting in this regard. The Commission also directed the Petitioner and SECI to

furnish the available details regarding acquisition of land by the RE developers in the States of Tamil Nadu and Karnataka. The Commission further directed the Petitioner to ensure that any investment be made only after the existing system is utilized.

Additional submissions of TANGEDCO vide affidavit dated 6.7.2021

40. TANGEDCO vide affidavit dated 6.7.2021 has additionally submitted as under:

a) Land availability is not firmed up / confirmed with the State government authorities.

b) The proposal is devoid of comprehensive All India study combining the proposals of all the three regions, ie, Southern Western and Northern regions and study has been conducted in a fragmented way for each of the three regions.

c) The adequacy of the existing transmission system (Both ISTS and Intra state transmission) is not ascertained based on the present network conditions.

d) There is no RE generator / identified beneficiary and neither SECI nor the Solar / Wind power park developer has applied for LTA with CTU as per their projections.

e) It is evident from the affidavit dated 29.04.2021 filed by the Petitioner that a total of 10.5 GW out of the proposed 18.5 GW is put on hold due to non-receipt of LTA applications. Based on the firmed up generation capacity and time line of implementation, a fresh study needs to be conducted and a fresh proposal needs to be approved by the RPC on transmission and concurred by the RPC.

f) Karnataka Discoms have already fulfilled their RPO and the installed capacity in the State is 14890 MW against RPO equivalent of 9810 MW and, hence, none of the Discoms have entered into any PPA to avail the RE power from the proposed projects. Similarly, TANGEDCO has RE installed capacity of 13029 MW and additional 1000 MW is under implementation and has not entered into any PPA to avail the RE power from the proposed projects. The Petitioner has not furnished any data on State-wise installed capacity, RPO and

possible PPA tie-up with State Discoms in Southern Region, Western Region and Northern Region for the proposed RE capacity addition of 66.5 GW and also in the target Region, if any.

g) Under these circumstances, without firm tie-up within the Region or in any other Region, the investment in the generation projects would become redundant. In the absence of identified beneficiaries, the inter-regional transmission schemes would become a National waste and will create unnecessary operational problems like over voltage issues and idle charging of major transmission lines. The Indian power sector has already witnessed such a huge mess in implementing the High capacity power transmission corridors.

h) Under the 2020 Sharing Regulations, the cost of transmission assets created under NC-RE across the country are shared among DICs in the ratio of LTA+MTOA quantum. TANGEDCO's share in NC-RE is in the range of 8.5%-9% on all India basis. Since there is a huge financial liability fastened on TANGEDCO on account of these RE assets established across the country without reaping any benefit, this proposal will cause irreparable damages to TANGEDCO and its end consumers.

i) It is observed from the minutes of the 4th NCT meeting submitted by the Petitioner along with the affidavit dated 29.04.2021 that CTU had proposed to install 1x500 MVA with LILO of one circuit of Pugalur-Pugalur(HVDC) 400 kV D/c line considering the connectivity requirement of 310MW in the first phase and also stated that N-1 criteria is not applicable for RE generators. However, PFCCL and SECI had insisted for 2x500 MVA transformer capacity and LILO of both the circuits of 400 kV D/c lines citing the reliability and RoW issues and to attract response of the bidders for substation projects. NCT had accepted the contentions of PFCCL and SECI and approved the proposal. NCT cannot bend the provisions of Planning criteria and Regulations to suit the requirements of the bid process coordinators. These issues should have been deliberated in the Regional Transmission Planning Committees and the concurrence of the concerned State Utilities should have been obtained.

Information submitted by SECI vide affidavit dated 15.7.2021

41. Respondent No. 18 SECI, vide affidavit dated 15.7.2021, has submitted status of the land arranged (as per the information received from RE developers) as follows:

Sl. No.	Name of RE Developer	Location & State	Capacity Granted by CTU to RE developers (MW)		Quantum of Land (in Acres) required /Govt. order issued or acquired/under process			
			Stage-II	LTA	Required	Acquired	under Process	REMARK
1.	JSW	KARUR/ Tamilnadu	270	100	550	256	294	
2.	JSW	KARUR/ Tamilnadu	150*	Yet to apply	308	52	256	
3	JSW	Tuticorin/ Tamilnadu	540	540*	1100	368	732	
4	JSW	Tuticorin/ Tamilnadu	300*	Yet to apply	610	121	489	
5	GRT Jewellers	Tuticorin/ Tamilnadu	150	150	550	220	330	
6.	RENEW	Koppal/ Karnataka	300	300	868.24		Under progress	G.O. available for 113.55 MW from KREDL
7	RENEW	Koppal/ Karnataka	300	300*	515.6		Under progress	G.O. available for 157.245 MW from KREDL
8.	Ayana	Koppal/ Karnataka	160	Yet to apply	626		Under progress	126 acres on purchase & 520 acres through lease
9.	Adani	Koppal/ Karnataka	300*	Yet to apply	-	-	-	Land identified and acquisition start post signing of PPA

Sl. No.	Name of RE Developer	Location & State	Capacity Granted by CTU to RE developers (MW)		Quantum of Land (in Acres) required /Govt. order issued or acquired/under process			
			Stage-II	LTA	Required	Acquired	under Process	REMARK
10.	VENA	Gadag/ Karnataka	160	160*	400	GO issued	Under progress	G.O. issued 128.7 MW for entire land for wind project for solar no G.O. required from Government of Karnataka
11.	RENEW	Gadag/ Karnataka	300*	300*	557	GO issued	Under progress	G.O. available for 301.455 MW from KREDL

Information submitted by the Petitioner vide affidavit dated 28.7.2021

42. The Petitioner vide affidavit dated 28.07.2021 has submitted additional information mainly as below:

a) As per the directions of this commission, a special meeting of SRPC was held on 14.07.2021 to discuss development and implementation of the transmission schemes in phase-wise manner with constitutes of the Southern Region.

b) During the meeting, CTU proposed transmission system for 10.5 GW solar & wind energy zones in Southern Region viz. Koppal (2.5 GW), Karur (2.5 GW), Gadag Part-A (2.5 GW), Gadag Part-B (2.5 GW) and Tuticorin-II (0.5 GW)

c) Following was recommended by SRPC in the minutes of the meeting;

(i) Revised study is needed to be carried out by CTUIL in consultation with CEA based on the 2022-23 scenarios as well as considering the transmission system planned by STUs.

(ii) Impact on the transmission charges of the States due to the implementation of transmission schemes for integration/ evacuation of the REZ would be apprised to the States by CTUIL.

(iii) The transmission scheme for integration of REZ, finalised by SRPC (TP) based on the revised study would be implemented in a phased manner strictly based on the LTA granted.

d) Regulatory approval may be granted to undertake phase-wise execution based on receipt of corresponding LTA applications of the proposed transmission system for 8 GW SEZ and WEZ in Southern Region, namely, Koppal (2.5 GW), Karur (2.5 GW), Gadag (2.5 GW) and Tuticorin-II (0.5 GW).

Information submitted by SECI vide affidavit dated 8.9.2021

43. Respondent No. 18, SECI vide affidavit dated 8.9.2021 has submitted the status of grant of connectivity and LTA at the Pooling Stations in Southern Region (SR) and the quantum of new capacities concluded in the Competitive Bidding [e-Reverse Auction (eRA) result] of Hybrid Tranche-IV Scheme and Tranche-XI Wind Scheme held on 23.08.2021 and 02.09.2021, respectively. The successful bidders in the said schemes will also avail the facilities of the identified pooling stations as detailed in the table below:

Sub-Station	Project capacity awarded (MW)	Tender under bidding
KARUR	420	
KOPPAL	1800	600 MW RE park tender pre-bid meeting held and bids yet to be opened a awarded
GADAG	1110	600 MW RE park tender pre-bid meeting held and bids yet to be opened & awarded
TUTICORIN	1140	
TOTAL SR	4470	

Information submitted by the Petitioner vide affidavit dated 15.9.2021

44. The Petitioner vide affidavit dated 15.9.2021 has submitted that a meeting was held on 11.8.2021 under the chairmanship of Member (Power Systems), CEA wherein the requirement of the phasing of transmission system associated with Koppal REZ was also discussed. During the meeting, SECI informed as follows:

> *"Out of 1200 MW Stage-ll connectivity granted at Koppal P.S., LT A for 600 MW has already been granted. Discussions for PSA signing with Rajasthan for additional 600 MW is expected to be concluded (by 13.08.2021) and LTA application for the same shall be submitted to CTU shortly. In addition, the following bids are in pipeline:*
>
> *(i) 1200 MW Hybrid pan-lndia tender whose e-RA was scheduled in third week of August'2021*
>
> (ii) *1200 MW SECI-XI Wind I STS location specific tender (Gadag,Koppal, Kallam and Rajgarh) whose e-RA would be scheduled after 1200 MW Hybrid pan-lndia tender.*
>
> (iii) *600 MW Solar Park tender for Koppal.*
>
> (iv) *600 MW Solar park tender for Gadag.*
>
> *It is expected that conclusion of above bids would result in LTA of more than 1500 MW at Koppal P.S. Accordingly, the bidding may be carried out for Transmission Scheme for evacuation of total identified potential of 2500 MW for Koppal REZ instead of phasing the scheme."*

45. The Petitioner has submitted that total Stage-ll connectivity of 1200 MW and LTA of 600 MW has already been granted at Koppal PS. Additionally, application for grant of Stage-II connectivity for 110 MW has been received by the Petitioner at Koppal PS in the month of August 2021.

Hearing dated 17.9.2021

46. The matter was heard on 17.9.2021 and the order was reserved. The Petitioner was directed to furnish certain information and documents on affidavit.

47. In compliance, the Petitioner vide affidavit dated 08.10.2021 has submitted as under:

a) Based on the deliberations in the special SRPC meeting held on 14.07.2021 on the implementation of the transmission schemes in phase-wise manner in the prioritized REZ in SR, CTUIL carried out studies for integration of 8 GW of REZ in Koppal, Gadag, Karur and Tuticorin REZ wherein LTA applications have been received and same was discussed in the 3rd SRPC (TP) meeting held on 24.8.2021. Details of the connectivity and LTA granted are as follows:

REZ	Stage-II Connectivity (MW)	LTA (MW)
Koppal	1200	600
Gadag	460	460
Karur	420	100
Tirunelveli/ Tuticorin	2220.1	1640*

** LTA of 540 MW granted with 4th ICT at Tuticorin-II PS*

b) In the 3rd SRPC (TP) meeting held on 24.8.2021, transmission system (at Annexure-I of this order) was agreed to be undertaken for phase-wise implementation based on receipt of corresponding LTA applications for 8 GW solar & wind energy zones in Southern Region viz. Koppal (2.5 GW), Karur (2.5 GW), Gadag (2.5 GW) and Tuticorin-II (0.5 GW) , as detailed below.

A. <u>Transmission scheme for Evacuation of power from RE sources in Koppal Wind Energy Zone (Karnataka) (2500MW):</u>

- *Establishment of 3x500 MVA, 400/220 kV pooling station near Munirabad /suitable location in Koppal distt.*
- *Pooling station (near Munirabad /suitable location in Koppal distt.) - Narendra (New) GIS 400 kV D/c Line (with Quad Moose ACSR conductor)*
- *400 kV GIS line bays at Narendra (new) for Koppal PS- Narendra (New) GIS PS 400 kV D/c line*
- *5 Numbers of 220 kV line bays for interconnection of wind projects#*
- *2x125 MVAr, 400 kV bus reactor at Pooling station (near Munirabad /suitable location in Koppal Distt.)*
- *Space provision for additional future expansion*
  - *Space for future 400kV line bay with switchable line reactor: 6 nos.*
  - *Space for future 400/220kV ICT along with associated bay: 3 nos.*
  - *Space for future 220kv line bay: 7 nos.*

Commissioning schedule of 18 months

- *Augmentation of 2x500 MVA, 400/220 kV ICTs at pooling station near Munirabad /suitable location in Koppal distt.*
- *4 Numbers of 220 kV line bays for interconnection of wind projects*

Commissioning schedule of 24 months.

B. <u>Transmission scheme for evacuation of power from Gadag SEZ (2500 MW) - Part A:</u>

Phase-I (1000 MW):

- *Establishment of 400/220 kV, 2x500 MVA Gadag Pooling Station*
- *Gadag PS - Narendra (new) GIS PS 400 kV (high capacity equivalent to quad moose) D/C Line*
- *400 kV GIS line bays at Narendra (new) for Gadag PS- Narendra (New) GIS PS 400 kV D/c line*
- *220 kV line bays for interconnection of solar projects (4 nos)*
- *1x125MVAr (400 kV) bus reactor at Gadag PS*
- *Future provisions * :*
    - *Space for 400 kV Line bay with switchable line reactor: 8 nos.*
    - *400/220kV ICT along with associated bay: 4 nos.*
    - *220 kV:*
        - *Bus sectionalizer bay: 2 nos. (One no. bay for each Main Bus)*
        - *Bus coupler bay: 2 nos.*
        - *Transfer Bus coupler bay: 2 nos.*
        - *Space for future 400/220kV ICT bay: 4 nos.*
        - *Space for future line bay: 8 nos.*

The schedule of implementation would be matching with schedule of RE developers or 18 months from the date of transfer of SPV whichever is later.

Phase-II (1500 MW):

- *Augmentation of 400/220 kV, 3x500 MVA ICTs at Gadag Pooling Station*
- *Gadag PS - Koppal PS 400 kV (high capacity equivalent to quad moose) D/C Line*
- *400 kV line bays at Koppal PS for Gadag PS- Koppal PS 400 kV D/c line*
- *220 kV line bays for interconnection of solar projects (4 nos)*

Phase-II scheme shall be taken up only after receipt of Connectivity/LTA applications beyond 1000 MW at Gadag or beyond 1500 MW at Koppal P.S.

**Note – Future provisions under Gadag Solar Energy Zone, Karnataka (2500 MW), Part -A Phase-I (1000 MW) include space provisions for Phase-II (1500 MW) also*

C. <u>Transmission Scheme for Evacuation of power from RE sources in Karur/ Tiruppur Wind Energy Zone (Tamil Nadu) (2500 MW):</u>

Phase-I (1000 MW):

- *Establishment of 2x500 MVA, 400/230 kV Karur Pooling Station (at a location in between Karur Wind zone and Tiruppur wind zone)*
- *LILO of both circuits of Pugalur – Pugalur (HVDC) 400 kV D/c line (with Quad Moose ACSR Conductor) at Karur PS*
- *4 Numbers of 230 kV line bays for interconnection of wind projects*
- *2x125 MVAr, 400 kV Bus reactors at Karur PS*
- *Space provision for Phase-II :*
    - *400/230kV ICTs along with bays: 3 nos.*
    - *230kV line bays: 5 nos.*
    - *230 kV Bus Sectionaliser bays : 2 nos.*

- *Adequate space provision for future expansion for*
  - *400/230kV ICTs along with bays: 3 nos.*
  - *400kV line bays: 6 nos.*
  - *230kV line bays: 7 nos*

The schedule of implementation would be matching with schedule of RE developers or 18 months from the date of transfer of SPV whichever is later.

Phase-II (1500MW):

- *Augmentation of 3x500 MVA, 400/230 kV ICTs at Karur PS*
- *5 Numbers of 230 kV line bays for interconnection of wind projects*

Phase-II scheme to be taken up only after receipt of Connectivity/LTA applications beyond 1000 MW at Karur.

D. <u>Tirunelveli and Tuticorin Wind Energy Zone (Tamil Nadu) (500 MW):</u>

- *Addition of 1x500 MVA, 400/230kV ICTs (4th) at Tuticorin-II GIS sub-station.*

c) Regarding mapping of the transmission scheme, CTUIL has submitted that the overall scope of works required for evacuation of 8 GW REZ in Southern Region that had been submitted by the Petitioner vide affidavit dated 26.08.2020 remains same. However, for clarity, "400 kV line bays at Narendra (new) for Gadag PS-Narendra (New) PS 400 kV D/c line" and "400 kV line bays at Koppal PS for Gadag PS- Koppal PS 400 kV D/c line" have now been explicitly mentioned under the scope of Phase-I and Phase-II of the "Transmission Scheme for Solar Energy Zone in Gadag (1000 MW), Karnataka- Part A" respectively approved in the 4th NCT meeting held on 20.01.2021 & 28.01.2021 as well as MOP gazette dated 19.07.2021.

d) Considering CUF of 20%, tentative renewable power generated per annum from the RE projects for Phase-I shall be about 8760 MU [Energy in MU = (5000x0.20x8760) / 10^3] and for Phase-II, the same shall be about 5256 MU [Energy in MU = (3000x0.20x8760) / 10^3].

e) Estimated cost of proposed transmission system is about Rs.1628 crore (Phase-I: Rs.1267 crore and Phase-II: Rs.361 crore). Further, expected increase in transmission charges per MW for DICs comes to be about Rs.1720 per MW of LTA per month for Phase-I transmission system and about Rs.490 per MW of LTA per month for Phase-II transmission system.

f) Details of the expected increase in transmission charges are as under:

Sr. No.	REZ Scheme	Phase-I			Phase-II			Total		
		Potential (MW)	Cost (Rs.crore)	Levelized (@15%) cost (Rs.crore)	Potential (MW)	Cost (Rs.crore)	Levelized (@15%) cost (Rs.crore)	Potential (MW)	Cost (Rs.crore)	Levelized (@15%) cost (Rs.crore)
1.	Koppal (Karnataka)	2500	647	97.1				2500	647	97.1
2.	Gadag Part-A (Karnataka)	1000	338	50.7	1500	262	39.3	2500	600	90.0
3.	Karur / Tiruppur (Tamil Nadu)	1000	245	36.8	1500	99	14.9	2500	344	51.6
4.	Tirunelveli and Tuticorin (Tamil Nadu)	500	37	5.6				500	37	5.6
	Total	**5000**	**1267**	**190.1**	**3000**	**361**	**54.2**	**8000**	**1628**	**244.2**

g) Following details are submitted towards calculation of increase in transmission charges:

(i) Total all India LTA quantum (A) (August 2021) = 101904 MW

(ii) RE LTA under waiver (B) = 9800 MW

(iii) Tariff payable by LTA beneficiaries = (A) minus (B) = 92104 MW

(iv) Increase in transmission charges on account of Phase-I:

Rs.190.1/(92104x12) crore = about Rs.1720 per MW of LTA/month

(v) Increase in transmission charges on account of Phase-II:

Rs.54.2/(92104x12) crore = about Rs.490 per MW of LTA/month

(vi) Increase in transmission charges on account of Phase-I and Phase-II:

Rs.244.2/(92104x12) crore = about Rs.2210 per MW of LTA/month

h) Tentative timelines of two phases of the transmission scheme identified for four REZs are as under:

i) Koppal Wind Energy Zone, Karnataka (2500 MW)

- 3x500 MVA, 400/220 kV ICTs at Koppal PS and 5 Numbers of 220 kV line bays for interconnection of wind projects - April 2023 (assuming 18 months from considering grant of regulatory approval and award of the scheme in October 2021)
- Balance 2x500 MVA, 400/220 kV ICTs at Koppal PS and 4 Numbers of 220 kV line bays for interconnection of wind projects – October 2023

(assuming 24 months from considering grant of regulatory approval and award of the scheme in October 2021)

ii) Gadag Solar Energy Zone, Karnataka (2500 MW), Part -A

- Phase-I - June 2023 (assuming 18 months from considering grant of regulatory approval in October 2021 and award of the scheme in December 2021)
- Phase-II - To be taken up only after receipt of Connectivity/ LTA applications beyond 1000 MW at Gadag or beyond 1500 MW at Koppal P.S.

iii) Karur/ Tiruppur Wind Energy Zone (Tamil Nadu) (2500 MW)

- Phase-I - June 2023 (assuming 18 months from considering grant of regulatory approval in October 2021 and award of the scheme in December 2021)
- Phase-II - To be taken up only after receipt of Connectivity/ LTA applications beyond 1000 MW at Karur

iv) Tirunelveli and Tuticorin Wind Energy Zone (Tamil Nadu) (500 MW)

- March 2023 matching with the generation schedule (assuming 15 months from considering grant of regulatory approval in October 2021 and award of the scheme in December 2021)

Analysis and Decision

48. The Petitioner had initially submitted that 18.5 GW solar (10 GW) and wind (8.5 GW) generation potential is envisaged to be developed in Southern Region progressively by 2021 in Phase-I and Phase-II. The Petitioner had submitted that scheme was discussed and agreed in the 35th SRPC meeting and 36th SRPC meeting held on 02/02/2019 and 12/07/2019, respectively and 4th meeting of Empowered Committee on Transmission held on 12/07/2019. The Petitioner had also submitted that the details of the scheme, its justification, estimated cost and its tariff impact, results of the system studies, study assumptions, stakeholder consultation/ approval details etc. were published on the Petitioner's website in terms of the 2018 Transmission Planning Regulations. The estimated cost of the proposed transmission system was Rs.9,485 crore. The Petitioner prayed for regulatory

approval under Regulation 3(1)(i) read with Regulation 8 (Power to Relax) and Regulation 9 (Power to remove difficulties) of the Regulatory Approval Regulations.

49. The Respondent SECI had supported the proposal of the Petitioner. On the other hand, the Respondents TANGEDCO, KPTCL, PKCL and TANTRANSCO had either opposed the proposal of the Petitioner or had suggested several modifications to be made before implementing the proposed transmission scheme. Primary opposition of the Respondents were regarding lack of transparency in preparing the proposal, lack of availability of land, lack of PPAs, uncertain status of generation projects and lack of applications for LTA/ connectivity by generation projects. There was also question as to the requirement and demand for such RE power and likely impact on transmission charges. POSOCO had also submitted its comments, primarily related to system studies and assumptions therein, to the Petitioner when the same was uploaded on the website of the Petitioner.

50. Several hearings were held in the matter and views of the Petitioner and the Respondents were taken on record. During the period of pendency of this petition, a number of meetings were also held at various levels to discuss the issues involved in the Petition. The Commission, through record of proceedings of hearings, sought various information and the same were submitted by the Petitioner, SECI and other respondents. As these have been reproduced in the earlier part of the order above, the same are not repeated for sake of brevity.

51. During the hearing dated 25.06.2021, the Commission directed the Petitioner to co-ordinate with the SRPC secretariat and also directed SRPC to hold the RPC meeting with the constituents of the Southern Region within 15 days from the date of

issuance of RoP of the hearing, to work out the phase-wise implementation of the transmission schemes. The Petitioner was directed to file the minutes of meeting in this regard. The Commission also directed the Petitioner and SECI to furnish the details of available land and acquisition of land by the RE developers in the States of Tamil Nadu and Karnataka. The Commission further directed the Petitioner to plan the transmission system in a manner so as to ensure that any investment be made only after the existing system is utilized.

52. In accordance with the above directions, the Petitioner vide affidavit dated 28.07.2021, has submitted that it is now seeking regulatory approval to undertake phase-wise execution of transmission system for only 8 GW based on receipt of corresponding LTA applications in the solar and wind energy zones in Southern Region, namely, Koppal (2.5 GW), Karur (2.5 GW), Gadag (2.5 GW) and Tuticorin-II (0.5 GW). The Petitioner has submitted that the estimated cost of proposed transmission system is about Rs.1,628 crore (Phase-I: Rs.1,267 crore and Phase-II: Rs.361 crore).

53. The Petitioner has subsequently submitted that it has discussed the proposed revised scheme for 8 GW (revised from erstwhile proposal of 18.5 GW) in the 3rd SRPC (TP) meeting held on 24.08.2021 and the scheme was agreed to be undertaken for phase-wise implementation based on receipt of corresponding LTA applications.

54. We observe that after a number of hearings in the matter over a period of two years, on the persistent queries of constituents in various RPC meetings and in the hearings of the Commission and on the analysis of various factors including

availability of land, comprehensive All India study and applications for LTA as directed by the Commission, CTUIL has finally scaled down the proposal of transmission system for regulatory approval from 18.5 GW to 8 GW.

55. We are of the view that this scaling down of the proposal of transmission system for regulatory approval from 18.5 GW to 8 GW raises a serious question mark on the entire process of transmission planning and approval. In our view, there was gross lack of due diligence by statutory planning agencies such as CTUIL and intermediary agency like SECI and the competent authority which approved the scheme for the 18 GW. The basic ingredients of planning, namely availability of land, applications for LTA, comprehensive All India study and respecting the view-points of stakeholders, especially those who finally bear the cost of the transmission system through transmission charges were conveniently neglected and overlooked. It was the persistent nudging by the Commission and repeated voicing of concerns of the stakeholders that led these agencies to accept the reality, albeit reluctantly, and revise the scheme downwards.

56. We observe that the estimated cost of the originally proposed 18.5 GW transmission system was Rs.9,485 crore, whereas the estimated cost of the scaled down transmission system of 8 GW is only Rs.1,628 crore. Thus, because of scaling down of the transmission system to 8 GW, the expected additional annual transmission charges would be substantially lower than what would have been with the transmission system of 18.5 GW. Thus, had the Commission not taken the view that it took, the consumers would have been unnecessarily burdened with additional

transmission charges and there would have been un-necessary capital expenditure incurred and in addition, there could have been stranded assets.

57. At this juncture, it is pertinent to consider the direction issued by the Ministry of Power, Government of India, vide letter ref. 25-11/2/2019-PG dated 11.7.2019 under Section 107 of the 2003 Act. Section 107 of the 2003 Act is extracted under:

> *"Section 107. (Directions by Central Government): (1) In the discharge of its functions, the Central Commission shall be guided by such directions in matters of policy involving public interest as the Central Government may give to it in writing. (2) If any question arises as to whether any such direction relates to a matter of policy involving public interest, the decision of the Central Government thereon shall be final."*

58. Therefore, in matters of policy involving public interest, the Commission is guided by the directions issued by the Central Government under the said section. Similar provisions are contained in Section 108 of the 2003 Act. With regard to the directions of the State Government under Section 108 of the 2003 Act, we also like to take note of the observations of the Appellate Tribunal in its judgment dated 4.10.2012 in Appeal No. 200 of 2011 (M/s Maruti Suzuki India Ltd. vs Haryana Electricity Regulatory Commission & Ors.) as under:

"28. Section 78A of Electricity (Supply) Act 1948 and Section 12 of DERA 2000 were similar to Section 108 of the 2003 Act. These sections are set out as under:

Section 108 of the Electricity Act, 2003
108. Directions by State Government.—(1) In the discharge of its functions, the State Commission shall be guided by such directions in matters of policy involving public interest as the State Government may give to it in writing.
(2) If any question arises as to whether any such direction relates to a matter of policy involving public interest, the decision of the State Government thereon shall be final.

29. The Hon'ble Supreme Court in the case of APTRANSCO vs Sai Renewable Energy Pvt. Ltd. [(2011)11SCC 34] has held that State Commission is not bound by any policy directions issued by the Government under the Act if such directions

hamper the statutory functions of the Commission. The relevant extracts of the Hon'ble Supreme Court's judgment dated 8.7.2010 is quoted below:

> *"27. The Reform Act, 1998 was enacted, primarily, with the object of constituting two separate corporations; one for generation and other for transmission and distribution of electrical energy. The essence was restructuring, so as to achieve the balance required to be maintained in regard to competitiveness and efficiency on the one part and the social objective of ensuring a fair deal to the consumer on the other. This Act is also intended for creation of a statutory regulatory authority. Section 3 of the Act requires the State Govt. to establish by notification a Commission to be known as Andhra Pradesh Electricity Regulatory Commission. This was done by notification dated 3rd April, 1999. As already noticed, Section 11 detailed the functions of the Regulatory Commission and primarily it had advisory as well as regulatory functions. In terms of Section 11(1)(c) it was required to issue licenses in accordance with the provisions of the Act and determine the conditions to be included in the license. However, 11(1)(e) gave it much wider power and duty to regulate the purchase, distribution, supply and utilization of electricity, the quality of service, the tariff and charges payable keeping in view both the interest of the consumer as well as the consideration that the supply and distribution cannot be maintained unless the charges for the electricity supplied are adequately levied and duly collected. In terms of Section 11(1)(l) it was to undertake all incidental or ancillary things to the functions assigned to it under the provisions of the Act. Section 12 of the Act vests the State Govt. with the power to issue policy directions on matters concerning electricity in the State including the overall planning and co- ordination. All policy directions shall be issued by the State Govt. consistent with the objects sought to be achieved by this Act and, accordingly, shall not adversely affect or interfere with the functions and powers of the Regulatory Commission including, but not limited to, determination of the structure of tariffs for supply of electricity to various classes of consumers. The State Govt. is further expected to consult the Regulatory Commission in regard to the proposed legislation or rules concerning any policy direction and shall duly take into account the recommendation by the Regulatory Commission on all such matters. Thus the scheme of these provisions is to grant supremacy to the Regulatory Commission and the State is not expected to take any policy decision or planning which would adversely affect the functioning of the Regulatory Commission or interfere with its functions. This provision also clearly implies that fixation of tariff is the function of the Regulatory Commission and the State Govt. has a minimum role in that regard. Chapter VII of this Act deals with tariff. In terms of Section 26(2), the Regulatory Commission, in addition to its power of issuing licence, is entitled to fix terms and conditions for determination of the licensee's revenue and tariffs by regulations which are to be duly published. The expression 'tariff' has not been defined in any of the Acts, with which we are concerned in the present appeals, despite the fact that the expression 'tariff' has been used repeatedly in both the Acts. Under the Electricity Act, 2003 'tariff' has neither been defined nor explained in any of the provisions of the Act. Explanation (b) to Section 26 of the Reform Act, 1998 states what is meant by 'tariff'. This provision states that 'tariff' means a schedule of standard price or*

charges or specified services which are applicable to all such specified services provided to the type or types of customers specified in the 'tariff' notification. This is an explanation to Section 26 which deals with licenses, revenues and tariffs. In other words, this explanation may not be of greater help to the Court in dealing with the case of generating companies. Similarly, the expression 'purchase price' has neither been defined nor explained in any of the afore-stated Acts." {Emphasis added}.

30. Thus, the judgments cited by the Appellant as above have been overruled by the Hon'ble Supreme Court in APTRANSCO vs Sai Renewable Energy Pvt. Ltd. [(2011)11SCC 34].

31. Further, this Tribunal in Polyplex Corporation vs Uttrakhand Electricity Regulatory Commission in Appeal no. 41, 42 and 43 of 2010 has held that

"The State Commission is independent statutory body. Therefore the policy directions issued by the State Government are not binding on the State Commission, as those directions cannot curtail the power of the State Government (sic Commission) in the matter of determination of tariff. The State Government may have given any such policy direction in order to cater to the popular demand made by the public but while determining tariff the State Commission may take those directions or suggestions for consideration but it is for the State Commission which has statutory duty to perform either to accept the suggestion or reject those directions taking note of the various circumstances. It is purely discretionary on the part of the State Commission on acceptability of the directions issued by the State Government in the matter of determination of tariff."

59. We observe that SECI, vide affidavit dated 22.6.2021, has submitted status of land availability at the proposed locations for scaled down 8 GW as follows:

(a) Koppal - Karnataka Solar Power Development Corporation Ltd. (KSPDCL) has confirmed the land availability of 13,000 acres. The land requirement for establishment of 2,500 MW RE is estimated around 9,000-10,000 acres only.

(b) Gadag - KSPDCL vide letter dated 17.06.2020 has confirmed the land availability for 8,310 acres. However, total land requirement for establishment of 2500 MW RE is estimated around 9,000 acres. Further RE developers are acquiring land themselves to set up the projects based on awards won by them through competitive bidding.

(c) At Karur and Tirunelveli/ Tuticorin, no land is identified for RE park and the RE developers shall themselves arrange land.

60. The Petitioner is seeking from the Commission the Regulatory Approval for the transmission system as given in paragraph 47(b) above under the provisions of Regulation 3(1)(i) of the Regulatory Approval Regulations. The relevant provisions of Regulation 3 are extracted under:

"***3. Scope and applicability***

(1)These regulations shall apply to:

(i) an ISTS Scheme proposed by Central Transmission Utility, for which generators have sought long-term access as per the Central Electricity Regulatory Commission (Grant of Connectivity, Long-Term Access and Medium Term Open Access to the Inter-State Transmission and Related Matters) Regulations, 2009, and for which consultation with Central Electricity Authority and beneficiaries if already identified has been held for setting up the ISTS Scheme, but for which Power Purchase Agreements with all the beneficiaries have not been signed on the date of application.

(ii) an ISTS Scheme for system strengthening/up-gradation, identified by Central Transmission Utility to enable reliable, efficient, co-ordinated and economical flow of electricity within and across the region for which consultation with Central Electricity Authority and beneficiaries if identified has been held.

(iii)ISTS Scheme proposed by CTU, for which the Central Government authorised Solar Power Park Developer has sought long term access, and for which consultation with CEA and beneficiaries wherever identified has been held for setting up the ISTS scheme and the Solar Power Park Developer undertakes to bear all liabilities on behalf of the solar power generators to be set up in the Solar Park.

(2)These regulations shall not apply to ISTS Scheme, for which all the beneficiaries/ respective STUs have signed Bulk Power Transmission Agreement to share the transmission charges."

61. Regulation 3(1)(i) provides that the Regulatory Approval Regulations shall apply to the ISTS scheme proposed by the Petitioner for which the generators have sought LTA. However, for the identified transmission system proposed to be constructed by the Petitioner, full quantum of LTA has not been sought by the generators.

58. The Petitioner vide affidavit dated 08.10.2021 has submitted the details of location-wise Connectivity and LTA granted as under:

REZ	Capacity	Stage-II Connectivity (MW)	LTA (MW)
Koppal	2.5 GW	1200	600
Gadag	2.5 GW	460	460
Karur	2.5 GW	420	100
Tirunelveli/ Tuticorin	0.5 GW	2220.1	1640*

** LTA of 540 MW granted with 4th ICT at Tuticorin-II PS*

62. The Petitioner has submitted the estimated cost of proposed transmission system for 8 GW REZ is about Rs.1,628 crore (Phase-I: Rs.1267 crore; Phase-II: Rs. 361 crore). Further, expected increase in transmission charges per MW for DICs comes out to be about Rs.1,720 per MW of LTA per month for Phase-I transmission system and about Rs.490 per MW of LTA per month for Phase-II transmission system. The Petitioner has submitted that considering CUF of 20% in case of RE projects, tentative renewable power generated per annum from such RE projects for Phase-I shall be about 8760 MU and for Phase-II, the same shall be about 5256 MU. The Petitioner has also submitted the implementation plan for proposed transmission system at each location along with tentative timelines of two phases of the transmission scheme identified for REZs at the proposed four locations.

63. As noted above, the prayers of the Petitioner in the instant Petition for grant of Regulatory approval does not squarely fall under the provisions of Regulation 3(1)(i) of the Regulatory Approval Regulations since LTA for capacity has not been sought by generators. However, the Petitioner during hearing on 21.8.2019 prayed to exercise the Power to relax under Regulation 8 of the Regulatory Approval Regulations.

64. With due regard to the guiding principle of promoting renewable energy as enshrined under Section 61(h) of the Act, we, in exercise of our Powers under

Regulation 8 of the Regulatory Approval Regulations, relax the provisions of Regulation 3(1)(i) of the Regulatory Approval Regulations and grant Regulatory approval for execution of the proposed transmission system (along with proposed timelines and phasing) for 8 GW as given in Annexure-I to this order.

65. Having done so, the issues and concerns expressed by the Respondents and other stakeholders are also required to be balanced while granting such relief. The Commission is guided by the principles, as provided under Section 61(d) of the Act i.e. safeguarding of consumer's interest and at the same time, recovery of the cost of electricity in a reasonable manner. Thus, the Commission has a statutory responsibility to balance the interest of developers and consumers of electricity.

66. In view of above, it is directed that Petitioner shall ensure that the transmission system is taken up for implementation matching with progress of generation projects. We observe from various minutes of meetings of SRPC, SRSCT, NCT and ECT that the transmission schemes are agreed for implementation after receipt of LTA. The recovery of transmission charges as well as treatment of mismatch between COD of generating station and transmission system shall be governed by provisions of the Central Electricity Regulatory Commission (Sharing of inter-state transmission charges and losses) Regulations, 2020 as amended from time to time. The regulatory approval granted in this order is subject to the condition that the distribution companies and consumers shall be liable for payment of transmission charges after the renewable generating stations achieve COD. In case the generating stations as envisaged do not materialize and transmission system is commissioned, CTUIL may seek appropriate remedies such

as grants and/or subsidies from GOI/ State Governments till the associated generating stations achieve COD. CTUIL may also approach the Commission for appropriate relief and directions.

67. CTUIL shall submit quarterly progress report as regards execution of the transmission scheme to the Ministry of Power, GOI and CEA. The report shall contain pace of construction of transmission systems and the extent of LTAs granted and PPAs signed.

68. Petition No. 200/MP/2019 is disposed of in terms of the above. The Annexure-I given herein after shall for part of the order.

Sd/	**Sd/**	**Sd/**
(P. K. Singh)	**(Arun Goyal)**	**(P.K. Pujari)**
Member	**Member**	**Chairperson**

Annexure-I

i) Transmission scheme for Evacuation of power from RE sources in Koppal Wind Energy Zone (Karnataka) (2500MW)

- Establishment of 3x500 MVA, 400/220 kV pooling station near Munirabad /suitable location in Koppal distt.
- Pooling station (near Munirabad /suitable location in Koppal distt.) - Narendra (New) GIS 400 kV D/c Line (with Quad Moose ACSR conductor)
- 400 kV GIS line bays at Narendra (new) for Koppal PS- Narendra (New) GIS PS 400 kV D/c line
- 5 Nos of 220 kV line bays for interconnection of wind projects#
- 2x125 MVAr, 400 kV bus reactor at Pooling station (near Munirabad /suitable location in Koppal Distt.)
- Space provision for additional future expansion
  - Space for future 400kV line bay with switchable line reactor: 6 nos.
  - Space for future 400/220kV ICT along with associated bay: 3 nos.
  - Space for future 220kv line bay: 7 nos.

Commissioning schedule of 18 months

- Augmentation of 2x500 MVA, 400/220 kV ICTs at pooling station near Munirabad /suitable location in Koppal distt.
- 4 Nos of 220 kV line bays for interconnection of wind projects

Commissioning schedule of 24 months.

ii) Transmission scheme for evacuation of power from Gadag SEZ (2500 MW) - Part A :

Phase-I (1000 MW) :

- Establishment of 400/220 kV, 2x500 MVA Gadag Pooling Station
- Gadag PS - Narendra (new) GIS PS 400 kV (high capacity equivalent to quad moose) D/C Line
- 400 kV GIS line bays at Narendra (new) for Gadag PS- Narendra (New) GIS PS 400 kV D/c line
- 220 kV line bays for interconnection of solar projects (4 nos)
- 1x125MVAr (400 kV) bus reactor at Gadag PS
- Future provisions * :
  - Space for 400 kV Line bay with switchable line reactor: 8 nos.
  - 400/220kV ICT along with associated bay: 4 nos.
  - 220 kV:
    - Bus sectionalizer bay: 2 nos. (One no. bay for each Main Bus)
    - Bus coupler bay: 2 nos.
    - Transfer Bus coupler bay: 2 nos.
    - Space for future 400/220kV ICT bay: 4 nos.
    - Space for future line bay: 8 nos.

The schedule of implementation would be matching with schedule of RE developers or 18 months from the date of transfer of SPV whichever is later.

Phase-II (1500 MW):

- Augmentation of 400/220 kV, 3x500 MVA ICTs at Gadag Pooling Station
- Gadag PS - Koppal PS 400 kV (high capacity equivalent to quad moose) D/C Line
- 400 kV line bays at Koppal PS for Gadag PS- Koppal PS 400 kV D/c line
- 220 kV line bays for interconnection of solar projects (4 nos)

Phase-II scheme shall be taken up only after receipt of Connectivity/LTA applications beyond 1000 MW at Gadag or beyond 1500 MW at Koppal P.S.

**Note – Future provisions under Gadag Solar Energy Zone, Karnataka (2500 MW), Part -A Phase-I (1000 MW) include space provisions for Phase-II (1500 MW) also*

iii) <u>Transmission Scheme for Evacuation of power from RE sources in Karur/ Tiruppur Wind Energy Zone (Tamil Nadu) (2500 MW) :</u>

Phase-I (1000 MW) :

- Establishment of 2x500 MVA, 400/230 kV Karur Pooling Station (at a location in between Karur Wind zone and Tiruppur wind zone)
- LILO of both circuits of Pugalur – Pugalur (HVDC) 400 kV D/c line (with Quad Moose ACSR Conductor) at Karur PS
- 4 Nos. of 230 kV line bays for interconnection of wind projects
- 2x125 MVAr, 400 kV Bus reactors at Karur PS
- Space provision for Phase-II :
  - 400/230kV ICTs along with bays: 3 nos.
  - 230kV line bays: 5 nos.
  - 230 kV Bus Sectionaliser bays : 2 nos.
- Adequate space provision for future expansion for
  - 400/230kV ICTs along with bays: 3 nos.
  - 400kV line bays: 6 nos.
  - 230kV line bays: 7 nos

The schedule of implementation would be matching with schedule of RE developers or 18 months from the date of transfer of SPV whichever is later.

Phase-II(1500MW) :

- Augmentation of 3x500 MVA, 400/230 kV ICTs at Karur PS
- 5 Nos. of 230 kV line bays for interconnection of wind projects

Phase-II scheme to be taken up only after receipt of Connectivity/LTA applications beyond 1000 MW at Karur.

iv) <u>Tirunelveli and Tuticorin Wind Energy Zone (Tamil Nadu) (500 MW):</u>
Addition of 1x500 MVA, 400/230kV ICTs (4^{th}) at Tuticorin-II GIS sub-station.