

ISTS Solar Tranche VIII scheme of M/s.SEC to meet out the "Other RPO " obligation fixed by MNRE.

This petition coming up for final hearing on 10-10-2023 in the presence of Tvl. N.Kumanan and A.P.Venkatachalapathy, Standing Counsel for the Petitioner and on consideration of the submissions made by the Counsel for the Petitioner, this Commission passes the following:

ORDER

1. Contentions of the Petitioner:-

1.1. The Government of India has executed, "Paris Agreement COP 21" wherein the country has committed to reduce the emissions intensity of its GDP by 33.35% by 2030 from 2005 levels by increasing the share of non-fossil fuel based energy resources to 40% of installed electric power capacity by 2030. With this commitment, the Government of India has set a target of 100 GW of Solar power, 60 GW of Wind power, 10 GW from bio-power and 5 GW from small Hydro power.

1.2. In order to increase the share of renewable energy in the State of Tamil Nadu, Tamil Nadu Solar Energy Policy 2012 was announced, wherein 3000 MW of solar power plants have to be commissioned by 2015. Subsequently Tamil Nadu Solar Energy Policy 2019 has been announced with an ambitious target of around 9000 MW of solar power plants by 2022.

1.3. The total installed capacity of solar PV power plants viz. Utility Scale Projects under the option of selling the power to TANGEDCO end wheeling the power for captive use/third party sale are furnished below:-

S.No.	Category	No of developers	Capacity in MW as on 30.09.2023
I	UTILITY SCALE PROJECTS		
(A)	SALE TO BOARD CATEGORY		
1	Central Government Schemes	8	21.00
2	Preferential tariff Scheme		
	a) Private developers	76	1409.00
	b) Public sector	8	680.00
3	Tender	15	1364.00
4	REC Scheme	7	21.34
	Total (A)	114	3495.34
(B)	WHEELING CATEGORY		
1	REC Scheme		
a.	Captive	48	83.11
b.	Third Party	55	216.00
2	Preferential tariff scheme		
a.	Wheeling (Captive)	698	2277.87
b.	Wheeling (Third Party)	86	239.41
3	Wheeling through Pooling SS under 10 (1) scheme		
a.	Captive	28	166.68
b.	Third Party	0	0.00
	TOTAL (B)	915	2983.07
	Total (STU) (A) + (B)	1029	6478.41
II	CONSUMER SCALE PROJECTS		
*1	Roof Top/ ground mounted SPV plants (HT Consumers)	466	269.79
*2	Rooftop SPV for LT consumers (as per LT Billing Report as on 31.08.2023)	29157	210.82
	TOTAL	29623	480.61
	TOTAL (STU Connectivity)	30652	6959.02
	CTU Connectivity	1	150.00
	Total (STU + CTU)	30653	7109.02

1.4. In order to achieve the renewable energy targets, "Renewable Purchase Obligation" has been fixed by both Ministry of Power and by the Commission. As per the Ministry of Power Order dated 22.7.2020, Renewable Purchase Obligation (RPO) and Energy Storage Obligation trajectory till 2029-30 has been communicated. While separate RPO has been fixed for wind energy and hydro, "Other RPO" has been fixed which is to be met by energy produced from any RE power project other than wind and hydro.

1.5. Based on the total consumption of the State of 122335.00 MU for the year 2022-23, considering load growth of 5% following is the solar power capacity required in Tamil Nadu to meet out the "Other RPO.

Sl. No.	Year	Total MU	Other RPO Fixed by MNRE	Required Other MU	Accounted wind generation from wind capacity upto 31.03.2022	Accounted MU from bio mass, bagasse	Accounted hydro generation upto 08.03.2019	Needed solar MU	Needed solar capacity in MW	As on 31.03.2023 solar capacity	Shortfall
1	2021-22	115055	10.50	12080.78							
2	2022-23	122335	23.44	28675.32	8053.85	349	5514.11	14758.36	8867.08	6689.23	2177.85
3	2023-24	128213	24.81	31809.65	8053.85	349	5514.11	17892.69	10750.23	1450.00	2611.00
4	2024-25	135346	26.37	35690.74	8053.85	349	5514.11	21773.78	13082.06	1200.00	3742.83
5	2025-26	142876	28.17	40248.17	8053.85	349	5514.11	26331.21	15820.24	1200.00	5281.01
6	2026-27	150825	29.86	45036.35	8053.85	349	5514.11	31119.39	18697.06	1200.00	6957.83
7	2027-28	158745	31.43	49893.55	8053.85	349	5514.11	35976.59	21615.35	1200.00	8676.12

8	2028-29	167081	32.69	54618.78	8053.85	349	5514.11	40701.82	24454.35	1200.00	10315.12
9	2029-30	175855	33.57	59034.52	8053.85	349	5514.11	45117.56	27107.40	1200.00	12957.17

As could be seen from the above, there is shortfall in solar power. Hence, it is necessary for further procurement of solar power in order to achieve the RPO targets and to avoid penalty if any to levied by Ministry of Power for non-compliance of RPO.

1.6. M/s. SECI in their letter dated 09.08.23 have offered solar power available under different schemes available with them for procurement:

Sl. No.	Available capacity for allocation	Discovered tariff through e- RA (INR/kwhr)	Likely impact of BCD in INR/kwhr (Tentative)	Approximate impact of GST in INR/kwhr (Tentative)	Impact of ISTS losses in INR/kwhr)	Likely landed tariff in INR/kwhr	Expected date of commission
I	ISIS Solar Tranche VIII scheme						
1.	100	2.50	0.44	0.08	NIL	3.02	18 Months from signing of PPA
2.	300	2.50	NIL	0.16	NIL	2.66	
3.	200	2.51	0.32	0.10	NIL	2.96	
TOTAL	600 MW						
II	ISIS Solar Tranche IX scheme						
1.	766	2.54	Nil	0.12	Nil	2.66	24 months from signing from of PPA
III	ISIS Solar Tranche IX scheme						
1.	766	2.54	Nil	0.12	Nil	2.66	24 months from signing of PPA
2.	2000	2.42	0.48	0.12	Nil	3.02	60 months from signing of PPA

1.7. M/s. SECI in their letter dated 02.08.2023 have offered 2000 MW of solar power available under ISTS Tranche-XI scheme as follows :

Sl. No.	Discovered tariff through e-RA (INR/kwhr)	Available capacity (MW)
1.	2.60	300
2.	2.60	600
3.	2.60	200
4.	2.60	100
5.	2.60	600
6.	2.61	200
	Total	2000 MW

However for the above Tranche-XI, applicable tariff shall be governed by Electricity (Amendment) Rules 2022 published by MOP dated 29.12.2022. As per provisions of the said rules, the applicable tariff shall be computed by implementing Agency on a monthly basis for solar power category of central pool at which Buying entity shall procure power from that central pool.

In this regard, as per the Ministry of Power Notification, New Delhi, the 29th December, 2022, clause 19,

...."Implementation of Uniform Renewable Energy Tariff for central pool.

(1) (a) There shall be a different central pool for each of the sectors of the renewable energy sources:

Explanation: For the purposes of this rule, the duration of such central pool shall be for five years and for every five years, a new Central Pool shall be formed. " . .

1.8. The following are the terms and conditions of M/s. SECI with regard to the allocation of solar power from the various schemes available with them:

- (i) ISIS transmission charges shall be dealt as per applicable CERC regulations.
- (ii) Mentioned figures regarding impact of BCD & GST are approximate innature & may vary as actual.
- (iii) Change in law claims shall be applicable as per details submitted by Project developers.
- (iv) Allocation of solar power shall be done on first come first served basis.
- (v) SECI's trading margin of INR 0.07/kwhr shall be applicable over & above discovered tariff.

Based on the consent, TANGEDCO has to enter into Power Sale Agreement (PSA) with M/s. SECI and the period of Agreement is for a period of 25 years.

1.9. In order to meet out the RPO requirement, around 13000 MW of solar power is additionally required by 2030. As per the allocation requirement received from M/s.

SECI, the following quantities are available in the order of merit:

Sl. No.	Scheme	Available capacity for allocation	Discovered tariff	Likely impact of BCD in INR/kwhr) (Tentative)	Approximate impact of GST in INR/kwhr) (Tentative)	Impact of ISTS losses in INR/kwhr)	Likely landed tariff in INR/kwhr	Expected date of commission -ing
I	M/s.SECI Letter dt. 09.08.2023							
1.	ISTS Solar Tranche IX scheme	200	2.36	2.36	0.29	0	2.65	18 Months from signing of PPA
2.	ISTS Solar Tranche VIII scheme	300	2.50	0	0.16	0	2.66	18 Months from signing of PPA
3.	ISTS Manufacturing linked scheme	766	2.54	0	0.12	0	2.66	24 Months from signing of PPA

4.	ISTS Solar Tranche VIII scheme	200	2.51	0.35	0.10	0	2.96	18 Months from signing of PPA
5.	ISTS Solar Tranche VIII scheme	100	2.50	0.44	0.08	0	3.02	18 Months from signing of PPA
6.	ISTS Manufacturing linked scheme	2000	2.42	0.48	0.12	Nil	3.02	60 Months from signing of PPA
	Sub Total	2766						
II	M/s.SECI letter dt 2.8.23 (Applicable as per ElecY (Amendment) Rules 2022 published by Mop dt 29.12.2022							
7.	ISTS Solar Tranche XI scheme	1800	2.60	Applicable tariff shall be computed by implementing agency on a monthly basis for solar power category of central pool, at which buying entity shall procure power from that central pool. Further as per the notification a central pool will be formed for every five years.				18 Months from signing of PPA
		200	2.61					
	Sub Total	2000						
	Total	4766						

1.10. Even though the allocation of 1800 MW is available @ Rs.2.60 per unit and 200 MW @ Rs.2.61 per unit, under ISTS Solar Tranche XI scheme, as the allocation is governed by Electricity (Amendment) Rules 2022 published by MOP dated 29.12.2022, the rates are subject to revision every month and further a new central pool is to be formed for every five years. As these are all long terms PPA for a period of 25 years, considering the increase in raw material cost and inflation which may increase the cost of future projects under central pool, the tariff of Rs.2.60 available now may increase every five years.

1.11. Based on the order of merit, M/s. SECI was addressed from this office on 16.9.2023 requesting for allocation of 500 MW of solar power from the following schemes:

Sl. No.	Scheme	Available capacity for allocation	Discovered tariff	Likely impact of BCD in INR/kwhr) (Tentative)	Approximate impact of GST in INR/kwhr) (Tentative)	Impact of ISTS losses in INR/kwhr)	SECI's trading margin INR/kWh	Likely landed tariff in INR/kwhr	Expected date of commissioning
1.	ISTS Solar Tranche IX scheme	200	2.36	0.29	0	0	0.07	2.72	18 Months from signing of PPA
2.	ISTS Solar Tranche VIII scheme	300	2.50	0	0.16	0	0.07	2.73	18 Months from signing of PPA

1.12. In response to TANGEDCO's letter dated 16.9.2023 requesting allotment/sanction for 200 MW from ISTS Solar Tranche IX scheme at a tentative cost of Rs.2.72 per unit and 300 MW from ISIS Solar Tranche VIII scheme at a tentative cost of Rs.2.73 per unit, M/s. SECI in their letter dated 27.9.23 stated that 200 MW power from Tranche IX is not available as SECI is in advance stage of signing of PSA with another buying entity.

Further M/s SECI has stated that replacement of this 200 MW solar power is available under ISTS connected solar tranche VIII scheme at the same estimated landed tariff of Rs.2.65 per unit plus SECI's trading margin of Rs.0.07 /kwhr.

Hence M/s.SECI has allotted 500 MW of solar power from the following schemes:

Sl. No.	Scheme	Available capacity for allocation	Discovered tariff	Likely impact of BCD in INR/kwhr) (Tentative)	Approximate impact of GST in INR/kwhr) (Tentative)	Impact of ISTS losses in INR/kwhr)	SECI's trading margin INR/kWh	Likely landed tariff in INR/kwhr	Expected date of commissioning	Remarks
1.	ISTS Solar Tranche VIII scheme	300	2.50	0	0.16	0	0.07	2.73	18 Months from signing of PPA	Allotment received as per our request
2.	ISTS Solar Tranche VIII scheme	200	2.51	0.14		Nil	0.07	2.72	18 Months from signing of PPA	SPS would claim Rs.0.14/kWh as financial impact on tariff due to implication of BCD and GST or at actual, whichever is lesser. SPD would not claim any impact due to BCD and GST as chance in law from SECI/procuring Discom if the same is beyond Rs.0.14/kWh.

As the tentative landed cost for the revised allocation of 200 MW remains same @ Rs.2.72 per unit, the revised allocation shall be accepted.

1.13. As SECI's offer is very competitive and in order to meet out the RPO obligations, Board of TANGEDCO (through circulation) has accorded approval on 09.10.2023 for procurement of 500MW of solar power from M/s. SECI through ISTS Solar Tranche VIII scheme at the following rates:

- (i) 200 MW @ tentative cost of Rs.2.72 per kwhr (inclusive of trade margin of Rs.0.07 per kwhr)
- (ii) 300 MW @ tentative Rs.2.73 per kwhr

1.14. The Commission has approved for procurement of 500MW of solar power from M/s. SECI at the rate of Rs.2.78/unit (Applicable tariff of Rs.2.711/unit + SECI's trade margin of Rs.0.07/unit) under 1200 MW ISTS connected scheme, Tranche-VI by entering into a long term agreement to meet RPO target fixed to the Statewide order dated 09.06.2020 in M.P.No.8 of 2020. The Power Sale Agreement (PSA) in this regard has been entered between M/s. SECI and TANGEDCO on 05.05.2020.

1.15. The Commission has approved for procurement of 1000MW of solar power from M/s. SECI at the rate of Rs.2.61 per unit (Applicable tariff of Rs.2.54 per unit + SECI's trade margin of Rs.0.07 per unit) under Manufacturing linked ISTS scheme

vide order dated in PPAP No .. The Power Sale Agreement (PSA) in this regard has been entered between M/s SECI and TANGEDCO on 16.9.2021

1.16. In order to meet the RPO compliance fixed to the State, it is necessary to procure 500 MW of solar power from M/s. Solar Energy Corporation of India (SECI) and the offered tentative tariff of Rs.2.73/unit (Applicable tariff of Rs.2.66/unit + trade margin of Rs.0.07/unit) for 300 MW and tentative tariff of Rs.2.72 per unit (Applicable tariff of Rs.2.65 /unit+trade margin of Rs.0.07/unit) under ISTS Solar Tranche VIII scheme and the tariff offered by M/s. Solar Energy Corporation of India is found to be very competitive.

1.17. M/s. SECI in their letter dated 29.9.2023 have suggested that as Uniform Renewable Energy Tariff for central pool shall be implemented shortly, the Power Sale Agreement for the above 500 MW may be executed immediately.

1.18. If the Power Sale Agreement for 500 MW is executed after implementation of uniform renewable energy tariff, the above allocated quantity of 500 MW will also go to central pool and the effective tariff will vary every month .Tariff for a particular month is calculated based on actual energy supplied to end procurer from the Pool like that solar power central pool, wind power central pool by the intermediary procurer and actual amount to be payable for such supply of power shall be on

weighted average basis, as per the Ministry of Power Notification, New Delhi, the 29th December, 2022.

1.19. The Commission shall permit the petitioner to execute Power Sale agreement with M/s. SECI for purchase of 500 MW through ISTS Solar Tranche VIII scheme for a period of 25 years, in the MNRE's approved agreement format.

2. Findings of the Commission:-

2.1. The petitioner stated that the Government of India has executed, "Paris Agreement COP 21" wherein the country has committed to reduce the emissions intensity of its GDP by 33.35% by 2030 from 2005 levels by increasing the share of non-fossil fuel based energy resources to 40% of installed electric power capacity by 2030. With this commitment, the Government of India has set a target of 100 GW of Solar power, 60 GW of Wind power, 10 GW from bio-power and 5 GW from small Hydro power.

2.2. In order to increase the share of renewable energy in the State of Tamil Nadu, Tamil Nadu Solar Energy Policy 2012 was announced, wherein 3000 MW of solar power plants have to be commissioned by 2015. Subsequently Tamil Nadu Solar

Energy Policy 2019 has been announced with an ambitious target of around 9000 MW of solar power plants by 2022.

2.3 The total installed capacity of solar PV power plants as on 30-09-2023 in Tamil Nadu was 7109.02 MW and the total number of developers were 30653 viz. Utility Scale Projects under the option of selling the power to TANGEDCO and wheeling the power for captive use/third party sale and the consumer scale projects

2.4. In order to achieve the renewable energy targets, “Renewable Purchase Obligation“has been fixed by both Ministry of Power and by the Commission. As per the Ministry of Power Order dated 22.7.2020, Renewable Purchase Obligation (RPO) and Energy Storage Obligation trajectory till 2029-30 has been communicated. While separate RPO has been fixed for wind energy and hydro, “Other RPO“ has been fixed which is to be met by energy produced from any RE power project other than wind and hydro.

2.5. The petitioner stated that based on the total consumption of the State of **122335.00** MU for the year 2022-23, considering load growth of 5%, the solar power capacity required in Tamil Nadu to meet out the “Other RPO” would be from 8867.08

MW in 2022-23 to 27107.40 MW in 2029-30 and the shortfall in the needed solar capacity would be from 2177.85 MW in FY 2022-23 to 12957.17 MW in FY 2029-30. Hence, it is necessary for further procurement of solar power in order to achieve the RPO targets and to avoid penalty if any to levied by Ministry of Power for non-compliance of RPO.

2.6. The petitioner stated that M/s SECI in their letter dated 02.08.2023 have offered 2000 MW of solar power available under ISTS Tranche-XI scheme as follows:

Sl. No	Discovered tariff through e-RA (INR/kwhr)	Available capacity (MW)
1.	2.60	300
2.	2.60	600
3.	2.60	200
4.	2.60	100
5.	2.60	600
6.	2.61	200
	Total	2000 MW

2.7. The petitioner also submitted that, even though the allocation of 1800 MW is available @ Rs.2.60 per unit and 200 MW @ Rs.2.61 per unit, under ISTS Solar Tranche XI scheme, as the allocation is governed by Electricity (Amendment) Rules 2022 published by MOP dated 29.12.2022, the rates are subject to revision every month and further a new central pool is to be formed for every five years. As these

are all long terms PPA for a period of 25 years, considering the increase in raw material cost and inflation which may increase the cost of future projects under central pool, the tariff of Rs.2.60 available now may increase every five years.

2.8. The petitioner submitted that, based on the order of merit, M/s SECI was addressed by TANGEDCO on 16.9.2023 requesting for allocation of 500 MW of solar power from the following schemes:

Sl. No	Scheme	Available capacity for allocation	Discovered tariff	Likely impact of BCD in INR/kwh (Tentative)	Approximate impact of GST in INR/kWhr (Tentative)	Impact of ISTS losses in INR/kWh	SECI's trading margin INR/kWh	Likely landed tariff in INR/kWh	Expected date of commissioning
1.	ISTS Solar Tranche IX scheme	200	2.36	0.29	0	0	0.07	2.72	18 months from signing of PPA
2.	ISTS Solar Tranche VIII scheme	300	2.50	0	0.16	0	0.07	2.73	18 months from signing of PPA

2.9. In response to TANGEDCO's letter dated 16.9.2023, M/s SECI in their letter dated 27.9.23 stated that 200 MW power from Tranche IX was not available, as SECI was in advance stage of signing of PSA with another buying entity and further stated that in replacement of that, 200 MW solar power was available under ISTS connected solar tranche VIII scheme at the same estimated landed tariff of Rs.2.65 per unit plus

SECI's trading margin of Rs.0.07 /kwhr. Hence M/s SECI has allotted 500 MW of solar power from the following schemes:

Sl.No	Scheme	Available capacity for allocation	Discove red tariff	Likely impact of BCD in INR/kwh (Tentative)	Approximat e impact of GST in INR/kWhr (Tentative)	Impact of ISTS losses in INR/kWh	SECI's trading margin INR/kWh	Likely landed tariff in INR/kWh	Expected date of commissio ning
1.	ISTS Solar Tranche VIII scheme	300	2.50	0	0.16	0	0.07	2.73	18 months from signing of PPA
2.	ISTS Solar Tranche VIII scheme	200	2.51	0.14		NIL	0.07	2.72	18 months from signing of PPA

2.10. The petitioner stated that as SECI's offer is very competitive and in order to meet out the RPO obligations, Board of TANGEDCO (through circulation) has accorded approval for procurement of 500MW of solar power from M/s.SECI through ISTS Solar Tranche VIII scheme at the following rates:

- i) 200 MW @ tentative cost of Rs.2.72 per kwhr(inclusive of trade margin of Rs.0.07 per kwhr)
- ii) 300 MW @ tentative Rs.2.73 per kwhr (inclusive of trade margin of Rs.0.07 per kwhr)

2.11. The petitioner also stated that the Commission has approved for procurement of 500MW of solar power from M/s.SECI at the rate of Rs.2.781/unit (Applicable tariff of Rs.2.711/unit + SECI's trade margin of Rs.0.07/unit) under 1200 MW ISTS connected scheme, Tranche-VI by entering into a long term agreement to meet RPO target fixed to the State vide order dated 09.06.2020 in M.P.No.8 of 2020 & PPAP No.1 of 2020. The Power Sale Agreement (PSA) in that regard was entered between M/s. SECI and TANGEDCO on 05.05.2020. Earlier in its Order dated 24-04-2018 in MP No.9 of 2018, the Commission approved total Quantum of 1500 MW of Solar Power to meet out the RPO requirement by the petitioner. Further, vide order dated 7.9.2021 in PPAP No.2 of 2021, the Commission has approved for procurement of 1000MW of solar power from M/s.SECI at the rate of Rs.2.61 per unit (Applicable tariff of Rs.2.54 per unit +SECI's trade margin of Rs.0.07 per unit) under Manufacturing linked ISTS scheme. The Power Sale Agreement (PSA) in that regard was entered between M/s SECI and TANGEDCO on 16.9.2021.

2.12. It is also stated that in order to meet the RPO compliance fixed to the State, it is necessary to procure 500 MW of solar power from M/s. Solar Energy Corporation of India (SECI) and the offered tentative tariff of Rs.2.73/unit (Applicable tariff of Rs.2.66/unit + trade margin of Rs.0.07/unit) for 300 MW and tentative tariff of

Rs.2.72 per unit (Applicable tariff of Rs.2.65 /unit+trade margin of Rs.0.07/unit) under ISTS Solar Tranche VIII scheme and the tariff offered by M/s. Solar Energy Corporation of India is found to be very competitive.

2.13. It is also stated that if the Power Sale Agreement for 500 MW is executed after implementation of uniform renewable energy tariff, the above allocated quantity of 500 MW will also go to central pool and the effective tariff will vary every month. Tariff for a particular month is calculated based on actual energy supplied to end procurer from the Pool like that solar power central pool, wind power central pool by the intermediary procurer and actual amount to be payable for such supply of power shall be on weighted average basis, as per the MINISTRY OF POWER NOTIFICATION, New Delhi, the 29thDecember, 2022.

2.14. Hence, the petitioner prayed that in view of the reasons stated above, TANGEDCO shall be permitted to execute Power Sale agreement with M/s SECI for purchase of 500 MW through ISTS Solar Tranche VIII scheme for a period of 25 years, in the MNRE's approved agreement format.

2.15. As per the provisions under section 63 of the Electricity Act, 2003, the State Commission is conferred with powers to adopt tariff, if the tariff has been determined

through transparent process of bidding in accordance with the guidelines issued by the Central Government. While so, section 86 (1) (b) of the said Act, *inter alia* provides that the State Commission shall regulate electricity purchase and procurement process of Distribution Licensee including the price at which electricity shall be procured.

2.16. The Commission, after carefully considering the submissions made by the petitioner, approves the present proposal of procurement of solar power for a period of 25 years of 200 MW at a cost of Rs.2.72 per kwhr and 300 MW @ Rs.2.73 per kwhr (inclusive of Trading Margin of Re.0.07 per kwhr) under ISTS Solar Tranche VIII scheme of M/s SECI to meet out the “Other RPO “obligation fixed by MNRE.

Ordered accordingly.

(Sd.....)
Member (Legal)

(Sd.....)
Member

(Sd.....)
Chairman

/True Copy /

**Secretary
Tamil Nadu Electricity
Regulatory Commission**