

SOUTHERN POWER DISTRIBUTION COMPANY OF AP LTD :: TIRUPATI

From
Chief General Manager (P&MM, IPC)
APSPDCL, Corporate Office,
Beside Srinivasa Kalyanamandapam,
Tiruchanur Road, Tirupathi - 517 501.

To
✓ The Secretary,
APERC, 4th Floor,
Singareni, Bhavan,
Red Hills, Hyderabad.

Lr.No.CGM/P&MM&IPC/APSPDCL/DE-2/F1000MW/D.No.764/18,Dt:27-03.2018

Sir,

Sub: APSPDCL-IPC-SOLAR-APDISCOMs intend to invite tender to procure 1000 MW distributed solar power at the interconnection point of 33 kV/11 kV sub-stations covering the entire state-Approval - Requested-Regarding.

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This is to submit that in order to promote Solar Power Projects in a big way and with a view to promote green energy in the state of Andhra Pradesh, Govt of AP vide G.O Ms. No.8, dated: 12.02.2015 have issued a new Solar policy - 2015 applicable for a period of 5 years wherein GoAP targeted a minimum total solar power capacity addition of 5000 MW by FY 2019-2020.

To achieve above target, GoAP directed APDISCOMs for procurement of 1000 MW Solar Power through competitive bidding process and APDISCOMs entered PPAs for a capacity of 619 MW with consent of Hon'ble APERC. Out of 619 MW, 512 MW has been commissioned.

GoAP have also targeted to set up 4000 MW solar capacity through Solar Parks in Kurnool, Kadapa and Ananthapuramu districts with the support of Gol. In this regard MNRE has accorded approval to GoAP on 15.01.2016 for utilization of total capacity of 4000 MW solar power generated from the four solar parks by the state of Andhra Pradesh.



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Out of targeted capacity of 4000 MW, 1250 MW commissioned so far (250 MW at N.P. Kunta, Anantapuram District and 1000 MW at Gani, Kurnool District). The present installed capacity of Solar Power Projects in the state of Andhra Pradesh as on 31.12.2017 is 2144.88 MW.

Further, the solar parks of SECI 500 MW, APGENCO 400 MW, and NTPC 250 MW at Kadapa are under execution. The said park projects are expected to be commissioned 2018-19/2019-2020. Further it is to submit that M/s. NTPC and M/s. SECI were requested by the Govt vide letters dated 05.12.2017 to initiate the tendering process for balance 750 MW each at Ananthapuram and Kadapa districts respectively.

AP solar capacity target

Andhra Pradesh has set an ambitious target of 18 GW of renewable capacity additions by FY 2022 which is more than 10% of India's target of 175 GW of renewables by FY 2022. AP also has target of 10 GW cumulative solar capacities by 2022. Setting up of 500 MW-1000 MW distributed solar capacity shall help AP state in meeting above solar and renewable capacity targets.

It is observed from the Solar Parks that solar generation at one location is bound to various risks viz.

1.
 - a. Generation risk-Cloud cover hampers generation from total solar capacity,
 - b. Project risk- Evacuation risk due to grid unavailability

- c. Contiguous large tract of land availability, Long distance coverage of transmission lines (Risks related to Right of Way) etc.
2. Moreover, transmission evacuation from solar park is expected to be the range of INR 80 lakh/ MW to INR 120 Lakh/ MW which would translate to charges of approximately INR 90 - 120 paisa/ unit. Besides, the cost of distribution lines till the 33 kV substation is to be incurred by the licensee.
 3. In addition, transmission losses of 3-4% and distribution losses of 3-4% (33 kV losses) are to be incurred by licensee.

Hence, procurement of solar at decentralized generation source will be more cost effective than the park model.

Declining solar tariffs- Competitive with variable cost of coal plants

Solar power penetration in the country has seen multi-fold rise in the last two years in India (3 GW in FY 2015 to 12 GW in FY 2017) with solar tariffs falling over 60 per cent during this period. The inexorable downward trajectory of solar tariffs is projected to gain momentum resulting in further decrease in solar tariffs nationally. For 500 MW solar plant at Bhadla/Rajasthan, solar power tariff of INR 2.44/unit is discovered which is competitive with variable cost of thermal plants. It is estimated that by FY 2022, 160 GW of thermal plants will have a variable cost of more than INR 2.44 per unit suggesting that a large quantum of coal-based generation dispatch can be economically replaced by solar capacities.

Below is the trend of solar tariff discovered in India during 2017 through competitive bidding route under various bids:

S.No.	Bid	Timeline	Capacity (MW)	Tariff (INR/kWh)
1.	Madhya Pradesh	Feb-17	750	3.3
2.	NSM AP	Apr-17	250	3.15
3.	SECI Rajasthan	May-17	350	2.62
4.	SECI Rajasthan	May-17	350	2.44
5.	Tamil Nadu	Jul-17	1500	3.47
6.	Gujarat	Sep-17	500	2.66
7.	SECI Rajasthan	Dec-17	300	2.47
8.	SECI Rajasthan	Dec-17	200	2.48

Currently, many thermal plants (NTPC Simhadri, RTPP) have variable costs much higher than 3.00 Rs/ unit. Hence, solar power generation will help Discoms to reduce the power purchase cost and replace with green power.

In view of the above, APDISCOMs opined that structuring of the tender from a technical and economic standpoint which takes into account the unique aspects of distributed solar power generation can enable the electricity distribution companies in the state of Andhra Pradesh to successfully tap solar energy at an optimal cost and realize the objective of having a sustainable fuel mix. As agricultural consumption has a key bearing on the load incident on the system in Andhra Pradesh, 33 kV/11 kV sub-stations can be selected based on the quantum of agricultural demand at that particular substation.

In view of the advantages in de-centralized solar generation than solar parks, APDISCOMs intend to invite tender to procure 1000 MW distributed solar power at the interconnection point of 33 kV/11 kV sub-stations covering the entire state.

Hence, Hon'ble Commission is requested to grant the permission to APSPDCL to initiate the tender process for procurement of 1000 MW distributed solar power at the interconnection point of 33 kV/11 kV sub-stations covering the entire state.

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CHIEF GENERAL MANAGER
P & MM AND IPC
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