

GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

Providing nine hours day time free power supply to the Agricultural Sector on a sustainable basis - Establishment of 10,000 MW's of Solar Power Projects - Approval of proposal of APGECL - Orders - Issued.

ENERGY (POWER.I) DEPARTMENT

G.O.Ms.No.18

Dated:15.06.2020

Read:

From the C&MD, APGECL Lr.No.CMD/APGECL/10000MW Solar Power/
D.No.202/2020, Dt.23.04.2020.

ORDER:

The Government of Andhra Pradesh (GoAP) is working towards the mission of achieving sustainable agriculture while lowering cost of cultivation and increasing farmers' income. As part of this, Government has been examining various options to provide nine hours day time free power supply to farmers without increasing financial burden on the State's Distribution Companies.

At present, farmers are being supplied 9 hours continuous power in two groups. The annual agriculture consumption for 18.37 Lakh pumps is about 12,221 MU per year as approved by APERC for FY 2020-21. Subsidy for agriculture has almost tripled from INR 3,186 Cr. in FY 2015-16 to INR 8,354 Cr. in FY 2020-21 due to reduction in cross subsidy from other categories and increase in cost of supply.

Subsidy requirement for agriculture is expected to increase further due to two reasons: Increase in number of pump-sets and increase in cost of supply. Subsidy support for free power supply to agriculture is likely to increase from INR 8,900 Cr. in FY 2020-21 to around INR 17,819 Cr. in FY 2030-31 considering release of new connections of 3% (55,000 - 60,000 new pump-sets) per year.

Hence, there is need to reduce the cost of service while ensuring quality power and 9 hours day time free power supply to farmers. Solar energy has the potential to fulfill these objectives as solar generation happens during day time and the cost of production is less than the average power purchase cost of DISCOMs.

2. SUMMARY OF THE PROPOSED SCHEME

As per the prevailing methodology, APERC is determining agriculture subsidy based on the average cost of supply model. The average cost of supply consists of three components, namely, average power purchase cost, average transmission cost and average distribution cost. It is now proposed to replace the average power purchase cost with solar power and provide 9 hours free day time power supply to agriculture consumers. The State Government will continue to pay the average transmission cost (only applicable APTRANSCO/SLDC charges) and average distribution cost to the DISCOMs. Further, the State Government will pay any balancing cost, back down cost of thermal stations (limited to three years from FY23) after adjusting REC revenue to APDISCOMs to integrate more renewables in the grid. APERC shall determine average cost of supply, balancing cost, back down cost (limited to three years from FY23) and REC revenue from time to time.

3. SOLAR POTENTIAL IN THE STATE AND LAND AVAILABILITY

Andhra Pradesh has more than 300 sunny days with average solar insolation of around 5.75 kWh/m². West Godavari, Chittoor, YSR Kadapa, Anantapur and Kurnool are the districts with highest solar irradiation and account for more than 65% of the total agriculture consumption of the State and have 97% of the installed solar capacity in the state.

Considering the availability of Government lands in YSR Kadapa, Prakasam, Anantapur and Kurnool districts, solar projects are being planned for development in these districts.

Further, distributed solar projects may be planned in districts where Government lands are not available but agricultural consumption in the district is moderate to high, i.e., West Godavari, Chittoor, Nellore, etc.

4. SOLAR CAPACITY TO MEET AGRICULTURE CONSUMPTION

Solar power capacity required to meet agriculture consumption for FY 2020-21 as per the DISCOMs filings is as shown below:

S. No.	Particulars	Units	Value
1.	Agriculture consumption filed for FY 2020-21	MU	13,039
2.	Add: Transmission and Distribution Losses*	MU	1,928
3.	Power purchase requirement to meet above consumption	MU	14,966
4.	Solar capacity required to meet the above power purchase requirement (CUF @~18%)	MWp	9,500 - 10,000

* LT Losses for agriculture category: 12.88%

In order to meet the agricultural consumption from solar sources, the total solar capacity requirement will be around 10,000 MWs.

Government, after careful examination of the matter and keeping the interests of farmers in view, has decided to implement the 'Solar Power Project Scheme' by establishing 10,000 MWs of Solar Power Projects in the State and accordingly, hereby issue the operational guidelines for implementation of the Scheme:

5. GUIDELINES AND MEASURES TO BE TAKEN FOR IMPLEMENTATION OF THE SCHEME:

PROJECT EXECUTION

1. The APGECL shall be the Executing Agency for the project and shall take action to set up 10,000 MWs solar power capacity in a phased manner in order to provide 9 hours day time free power supply to agriculture consumers, and connect the same to the Grid. APGECL shall procure the power through competitive bidding and shall monitor progress of the 10,000 MW's solar initiatives in all aspects by putting an appropriate mechanism in place.
2. APGECL may procure Decentralized solar power at 132 kV Substations and 220 kV Substations wherever feasible.
3. APGECL may participate in VGF based bidding up to 2,500 MW or as per eligibility of AP, for APGECL as Government producer. This is under CPSU scheme phase-II issued by MNRE.
4. APGECL shall be the nodal agency for developing solar parks under Ultra Mega Solar Power Projects scheme and UMREPP scheme of the Govt. of India and APSPCL shall provide required assistance to APGECL.

5. APGECL will act as the nodal agency for development of solar power parks for these projects. APGECL shall prepare the DPRs and submit the same to MNRE for obtaining Central Financial Assistance. APGECL shall be responsible for development of solar parks either through solar power developer or any agency with the grants received from MNRE and also by collecting necessary upfront one time development charges, Local area development charges for five years and annual park O&M charges from solar power developers.
6. Solar Power Developer shall be responsible for development of solar project and internal evacuation infrastructure within the solar park as well as their annual O&M.
7. APGECL shall undertake a detailed study for cost benefit analysis of storage cost vis-à-vis balancing cost and detailed assessment of the storage capacity required to reduce balancing charges.

TRANSPARENT BIDDING

8. A Tender Approval Committee consisting of Secretary to Government, Energy Department, Principal Finance Secretary, Finance Department, CMD, APGECL, CMD/MD, APTRANSCO, MD, APGENCO and VC&MD, NREDCAP, shall be constituted for approval of Tenders.
9. APGECL/APSPCL Purchase Committee shall act as the Purchase Committee for bidding of solar power projects. The Purchase Committee shall conduct the bid process, including but not limited to, issue of bid documents, conducting pre-bid meetings, inviting bids from developers and evaluation of bids received from the bidders. After evaluation of the tenders, the Purchase Committee shall submit their recommendations to the Tender Approval Committee.
10. Bids shall be invited under BOT mode with flat tariff of 15 years and prefixed reduced tariff thereafter to meet O&M and other expenses for the balance contract period of 15 years.
11. O&M charges shall be paid from the 16th year of commissioning, on per unit basis. O&M charges per MW shall be computed every year assuming O&M charges to be 1.25 % of capital cost in the first year with 4% escalation every year.
12. The solar project developer shall ensure that a minimum PLF of 18% is maintained during each year of the contract period.
13. The solar project will be transferred to APGECL at the end of useful life of the project.

PAYMENT FOR POWER PROCURED AND LAND PROCUREMENT

14. The Government of AP, through APGECL, shall pay monthly energy charges to Solar Power Developers. Energy charges will be paid to projects from the date of COD for a period of 30 years (fixed tariff for 15 year and prefixed reduced charges from 16th year).
15. The Finance Department shall issue irrevocable revolving letter of credit equivalent to four months' payments to the successful developers.
16. Payment of subsidy to APDISCOMs shall continue to be made towards network charges (APTRANSCO and Distribution charges), balancing cost, Back down cost after deducting REC revenue as determined by APERC from time to time.
17. Finance Department shall provide the required funds for payment of compensation of any kind required in the Land Acquisition/Procurement Process.

LAND AVAILABILITY

18. Land required for setting up of solar projects will be made available to the developer on lease basis. The land is likely to be a mix of Government Lands, Patta Lands and Assigned lands. The Collectors and District Magistrates of all districts shall identify and ensure availability of Land for the project.
19. Collectors & District Magistrates shall identify Government lands for development of these solar projects in each district immediately. The lands shall be provided on long term lease basis for the development of solar projects.
20. The following revised procedure shall be followed in relation to handing over advance possession of Government lands requested by APGECL for the development of solar projects, since the existing prescribed procedure is likely to delay the implementation of this project.

“After filing of appropriate requisition by APGECL, Collectors & District Magistrates shall carryout survey of proposed lands and prepare required records and conduct Grama sabhas. Even while a proposal is being prepared by the Collector & District Magistrate for submission to CCLA, the Collector & District Magistrate shall handover advance possession of lands to APGECL without waiting for orders from CCLA or Government. Consolidated proposals shall be sent thereafter, to the Government for approval.”

21. Every Land parcel has a mix of Government Land, Assigned land and private patta lands. Revenue Department shall take action for making necessary amendments to Section 3(1) of the Andhra Pradesh Assigned Lands (Prohibition of Transfer) Act of 1977 (PoT Act) as well as other parts of the Act, as deemed fit, to facilitate leasing of Land by APGECL from assignees for establishing Solar Projects.
22. The District Collectors shall prepare the list of pattadars of assigned lands and patta lands and shall furnish the same to the APGECL for concluding the lease agreements with pattadars.
23. Assigned and private lands are proposed to be taken on lease/purchase by APGECL and lease rent would be paid on same terms as proposed in the Renewable Energy Export Policy ie INR 25,000 per acre per annum.

STAMP DUTY AND REGISTRATION FEES EXEMPTION

24. All deeds pertaining to lease/purchase shall stand exempted from payment of any stamp duty and the registration fee be fixed at INR 1/- for every INR 1,000/- of the value of the document.

LEASING OF LANDS BY APGECL

25. APGECL is permitted to lease the Lands to solar power developers by collecting annual lease charges. (INR 31,000 per acre per annum). The collected lease rent, in turn, shall be paid to assignees and private patta land owners at rates approved by Government in the Renewable Energy Export Policy ie INR 25,000 per acre per annum.
26. In case of Government land, APGECL shall transfer the entire lease rental to the State Government or as decided by the State Government. In case of assigned and private lands, any residual amount after paying assignees and private land owners shall be dealt with as directed by the Government.

NON-AGRICULTURAL LAND ASSESSMENT

27. The project stands exempted from payment of Non-Agricultural Land Assessment (NALA) charges. Revenue Department shall take necessary action to amend the NALA Act, as needed.

POWER EVACUATION AND SYSTEM STRENGTHENING: APTRANSCO

28. APTRANSCO shall construct external evacuation infrastructure, i.e., transmission lines/ substations including system strengthening with their own funds and recover charges through ARR of Transmission business. APTRANSCO shall establish Grid substation/ switching substation along with required Bays within 1 km radius of the solar park.
29. The Selected Solar Power Developers shall construct internal evacuation infrastructure including connection of the solar projects to the pooling station as per prescribed standards.
30. Supervision charges payable to APTRANSCO/ APDISCOMs for development of internal evacuation infrastructure within the solar parks and evacuation of power from distributed solar projects stand waived.
31. APTRANSCO shall provide all necessary technical support to APGECL with regard to power evacuation for implementation of this scheme.
32. APGECL will carry out routine periodical supervision of pooling station works and APTRANSCO shall carry out the inspection of critical stages including pre-commissioning, testing and final clearance for pooling station works, each at their own cost.
33. APTRANSCO shall execute the transmission line from pooling station to grid substation with APGECL funds and without levying any supervisory overhead charges. In case of decentralized solar projects, it shall be the responsibility of the developers to connect the solar project to grid substation under the supervision of APGECL/APTRANSCO as per above procedure.

TASKS of APDISCOMs

34. APDISCOMs will hold the rights of RECs generated from these projects and they shall sell the RECs on exchanges or through any other mechanism permitted. Government will pay applicable network charges and balancing charges to APDISCOMs after netting off REC revenue as determined by APERC from time to time.
35. APDISCOMs shall obtain permissions/ necessary approvals from APERC to implement this scheme. State Government will issue appropriate directions to APERC under Section 108 of the Electricity Act, 2003 from time to time for implementation of this scheme.
36. APDISCOMs shall evaluate (i) complete automation of agricultural feeders,(ii) serving 15-20% of the agricultural load through dedicated feeders with automatic demand control, and (iii) installation of smart meters at DTRs. This shall be completed immediately.

Automatic Demand Control shall be implemented based on outcome of the above study by APDISCOMs, while ensuring 9-hour continuous day time supply for all agriculture consumers.

A technical committee headed by the CMD of the DISCOM shall be set up for each DISCOM to carry out this implementation by the three APDISCOMs. The work shall be completed before December, 2021.

37. APDISCOMs shall enter into agreement with APGECL for the supply of power to agricultural consumers and APDISCOMs shall obtain necessary approvals from APERC for this.
38. The energy generated by the Solar Projects is treated as banked with APDISCOMs without any banking charges for the entire life of the projects and the energy settlement is to be done only on a yearly basis, instead of daily or monthly basis. Any surplus in banked energy at the end of the year shall be treated as free power to DISCOMs.
39. APDISCOMs shall take the following steps to ensure that the methodology prescribed by APERC for assessment of Agricultural consumption is followed in letter and spirit. The entire process shall be completed before December, 2020.
 - Indian Statistical Institute (ISI)/any reputed agency may be engaged every year to select a statistically representative sample of DTRs.
 - Smart meters may be fixed immediately on the entire selected sample DTRs and the readings of the smart meters may be obtained directly to the server of APGECL as well as APDISCOMs without human intervention.
 - APGECL shall analyze the readings from the agriculture DTRs so as to arrive at an unbiased estimate.
 - It shall be the duty of DISCOMs to ensure that all meters are in running condition and they shall replace faulty meters within 24 hours of intimation by APGECL. The single point of contact from DISCOMs shall be Director (Operations), who shall be directly responsible for ensuring immediate replacement of non-functional meters.
 - No new connections shall be released under the sample DTRs and the Director (Operations) of the DISCOMs shall ensure this.

JOINT TASKS of APDISCOMs and APSLDC

40. APSLDC and APDISCOMs shall carry out studies and develop a protocol to address real time variations in renewable generation vis-à-vis agricultural consumption, while ensuring 9-hour day time continuous supply to all agriculture consumers.
41. APSLDC, APDISCOMs and APGECL shall develop a digital application for this real-time management.
42. APSLDC and APDISCOMs shall develop a comprehensive mechanism to optimize the power purchase cost at State level - Month ahead, Day ahead and Real time - and sell/ bank energy on exchange/ target States.

JOINT TASKS of APSLDC AND APGECL

43. APGECL and APSLDC shall undertake a detailed study, to be completed by the end of October, 2020, in order to assess the phasing of solar capacity considering grid safety and also considering increase in demand over the next 2-3 years. The study shall include:
 - a) Estimation of the exact quantum of load (other than agriculture) that can be shifted to day time to accommodate higher solar capacity.
 - b) Shifting of the entire agriculture load to day time/ solar hours to synchronize with solar generation.
 - c) Estimation of the Coincidental Renewable Generation and Agricultural demand for each month.

44. APSLDC and APGECL shall undertake a detailed study of the impact of the excess RE generation during lean agriculture season and the ways to address the same.
45. APGECL shall, in coordination with APSLDC, design and implement RE forecasting tool for better forecasting of RE generation in the State. The RE forecasting tool shall be developed and co-located at APGECL and APSLDC. The same shall be completed by June, 2021.
46. To carry out this task, existing weather monitoring stations shall be used wherever available and new ones caused to be set up at each RE project/ location in the State by March, 2021.

TASKS OF APGENCO

47. Flexibilization of APGENCO thermal power plants shall be implemented in SDSTPS (3 x 800 MW), VTPS-VIII (1 x 800 MW) and RTPP-VI (1 x 600 MW) and any other units as deemed fit. The entire execution shall be completed by December, 2021.

A technical committee headed by MD APGENCO shall be set up to carry out the necessary studies and to execute required works for flexibilization of APGENCO Stations.

APGENCO shall carry out a detailed study to hybridize surplus thermal energy/ capacity from APGENCO Stations with renewable energy and offer round the clock power to APDISCOMs/ any other Party.

48. NREDCAP and APGENCO shall undertake a detailed cost benefit analysis of pumped hydro storage projects for the State. The same shall be completed by September, 2020.
49. APGENCO shall develop pumped hydro storage projects, wherever possible, in conjunction with their existing projects.

OTHER ISSUES

50. The project is exempted from requirement of Village/Panchayat approval.
 51. The Water Resources Department shall allocate 20-30 MCFT of water from nearby irrigation canals and reservoirs, depending on availability, for the purpose of these solar projects.
 52. APGECL may appoint consultants, as needed, for assisting the Corporation in running the bid process and to monitor the progress of the 10,000 MW's initiatives in all aspects and for conducting various other studies connected with the Project.
6. The Secretaries / Principal Secretaries / Special Chief Secretaries of the concerned Departments and the MDs, and CMDs, and Chairpersons of the respective Corporations/ Companies shall take immediate action for implementation of the project components following due procedure.
 7. This order issues with the concurrence of the Finance Department.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

G.SAI PRASAD
EX-OFFICIO PRINCIPAL SECRETARY TO GOVERNMENT

To

The Principal Finance Secretary, Finance Department, AP Secretariat.
The Revenue (Lands) Department, AP Secretariat.
The Revenue (Registration) Department, AP Secretariat.
The Secretary to Government, Energy Department, AP Secretariat.
The Industries & Commerce Department, AP Secretariat.
The Mines & Geology Department, Secretariat.
The Chief Commissioner of Land Administration, Gollapudi, Vijayawada.
The Chairman & Managing Director, APGECL, Tadepalli.
The Vice Chairman & Managing Director, NREDCAP, Tadepalli.
The Chairman & Managing Director, APTRANSCO, Vijayawada.
The Managing Director, APGENCO, Vijayawada.
The Panchyat Raj and Rural Development Department.
The Water Resources Department.

Copy to:

The Chairman & Managing Director, APSPDCL, Tirupati.
The Chairman & Managing Director, APEPDCL, Visakhapatnam.
The Chairman & Managing Director, APCPDCL, Vijayawada.

//FORWARDED :: BY ORDER//

SECTION OFFICER