



## GOVERNMENT OF KERALA

### Abstract

Power Department - Annual Plan 2022 - 23 - Plan scheme of ANERT - Programmes on Renewable Energy- Administrative Sanction accorded- Orders issued - reg

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### POWER (PS) DEPARTMENT

G.O.(Rt)No.145/2022/POWER Dated,Thiruvananthapuram, 20-08-2022

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- Read 1 Letter No: ANERT/17/2022-T1 dated 06.05.2022 from the Chief Executive Officer, ANERT.
- 2 Minutes of the Special Working Group Meeting for Plan schemes held on 22.06.2022.
- 3 e-anumathi AS Number As/PRD/22/20706

### ORDER

As per the letter read as first paper above, the Chief Executive Officer, ANERT has requested Administrative sanction for the Plan proposals of ANERT based on budget allocation and the plan write up of current year's state budget.

2. An amount of Rs.2156.00 lakh has been earmarked for the scheme "Programme on Renewable Energy" under H/A 2810-00-800-90(06) During the year 2022-23.

3. The Special Working Group met on 22.06.2022 examined the Plan proposals of ANERT in detail and approved the same for issuing administrative sanction. The details of the scheme are given below:-

| SI No | Requirements   | Estimate Amount   |
|-------|--|-------------------|
| 1     | Solar Power Plants in Public Buildings <ul style="list-style-type: none"> <li>• A.1.a. EPC Model</li> <li>• A.1.b. ANERT as RESCO</li> <li>• A.1.c. Changing off-grid Solar Plants in Govt. buildings to on-grid plants .</li> </ul> | Rs. 5,85,00,000/- |

|              |   |                           |
|--------------|---|---------------------------|
| 2            | Solar Thermal Applications  | Rs. 65,00,000/-           |
| 3            | E-Mobility <ul style="list-style-type: none"> <li>• A.3.a Solar EV Charging Stations</li> <li>• A.3.b. Electric Cars on hire project</li> </ul>   | Rs. 5,00,00,000/-         |
| 4            | Promotion of Renewable Energy System <ul style="list-style-type: none"> <li>• A.4.a. Solar pumping scheme for farmers - Component B and C of PM-KUSUM</li> <li>• A.4.b. Micro-grids for Remote hamlets</li> <li>• A.4.c. Pilot Projects on new Renewable Energy Technologies</li> </ul> | Rs. 10,06,00,000/-        |
| <b>Total</b> |   | <b>Rs. 21,56,00,000/-</b> |

4. Government have considered the recommendation of the Special Working Group and examined the above plan proposal submitted by CEO ,ANERT in detail and are pleased to accord administrative sanction for the above Scheme ""Programmes on Renewable Energy"" at a total estimated cost of Rs.21,56,00,000/- (Rupees Twenty One crores fifty six lakh only) as detailed in the table above, subject to the availability of funds and the following general conditions should be followed wherever applicable.

1. Fund released should not be parked in banks.
2. Store Purchase rules shall be strictly adhered to.
3. Tender/e-tender and other stipulated formalities shall be followed wherever necessary.
4. Post creation and purchase of vehicles are not admissible under the scheme.
5. For hiring of project staff/man power as part of project implementation, instructions issued in G.O(P). No. 76/2019/Fin. dated 02/07/2019 & G.O(P) No. 81/2019/Fin dated 09/07/2019 shall be strictly followed.

The expenditure for the above scheme will be met from the H/A 2810-00-800-90(06) (Plan).

(By order of the Governor)  
**SREELAL T V**  
**JOINT SECRETARY**

To:

The Chief Executive Officer, ANERT  
The Chief I&I Division, state Planning Board, Pattom, Tvpm  
The Accountant General(A&E), Kerala, Tvpm  
The Principal Accountant General (Audit), Kerala,Tvpm  
The Finance Dpeartment  
The I&PR(web & new media) Department  
Stock file/Office Copy

Forwarded /By order

Section Officer

### **Appendix**

#### **DETAILS OF PLAN SCHEMES APPROVED AS RECOMMENDED BY THE WORKING GROUP**

##### **A. Programmes on Renewable Energy**

###### **A.1. Solar power Plants in public buildings**

###### **A.1.a. EPC Model**

ANERT proposes to establish solar roof top power plants in major public buildings ensuring green energy partnering with various departments/ organizations, targeting 2 MW during 2022-23. Part of the funds (maximum 10%) would be met by ANERT and the rest by the respective institutions. This will be one of the main thrust areas for Carbon neutral governance. The proposed state share of the programme is ₹ 87 lakh plus project over-head expenses including man power to the tune of ₹ 13 lakh. The total requirement of funds is ₹ 100 lakh.

###### **A.1.b. ANERT as RESCO**

Taking the role of Renewable Energy Service Company, ANERT will establish Solar Roof top Plants in Public Buildings in own and operate mode. The capital cost will be recovered from Departments/ Agencies as a portion of the monthly energy charges currently being paid by them during the project life cycle. The capital cost recovered will be redeployed in upcoming years to scale up the programme. Solar power plants of 7 MW capacity are expected to be established in this mode. The proposed state share of the programme is ₹ 392 lakh plus project overhead expenses @ 15 % including man power to the tune of ₹ 58 lakh. The total requirement of funds is ₹ 450 lakh.

### A.1.c. Changing off-grid Solar Plants in Govt. buildings to on-grid plants .

To convert the off-grid solar power plants installed in Govt. owned buildings to grid connected power plants on expiry of the 5 year comprehensive warranty period. Off-grid solar power plants installed by ANERT under demonstration scheme and deposit work scheme of aggregate capacity 250 kW shall be converted into on grid with the consent of the beneficiaries. The proposed state share of the programme is ₹ 30.50 lakh plus project overhead expenses @ 15% including man power to the tune of ₹ 4.50 lakh. The total requirement of funds is ₹ 35 lakh.

### **A2. Solar Thermal Applications**

It is proposed to install solar concentrator based steam generation systems in the institutions of Govt. /Quasi Govt. /Public sector/Private sector/LSG's for the purposes of community cooking, industrial steam generation applications or for drying purpose. The objective of the scheme is to popularise the application of the advanced solar concentrator technology systems in the State by identifying potential public institutions and studying the feasibility. DPR shall be prepared and submitted, if found feasible. Depending on the size of the system proposed, DPR shall be prepared in house or through MNRE approved agencies. Technical feasibility study and preparation of DPR for 13 locations - ₹ 16.50 lakhs. CST based solar steam cooking/heating/drying systems of 200 sq. m concentrator area - ₹ 40.00 lakhs. The proposed state share of the programme is ₹ 56.50 lakhs plus project overhead expenses @ 15 % including man power to the tune of ₹ 8.50 lakhs. The total requirement of funds is ₹ 65 lakhs.

### **A.3. e-Mobility**

#### A.3.a Solar EV Charging Stations

Electric vehicles are set to become the main mode of transportation in a few years. Government of Kerala has designated ANERT as the nodal Agency for hiring of E- Cars through EESL and also the nodel agency for release of subsidy for charging machines. Lack of public EV fast charging stations is a major constraint for the implementation of E-car project. Currently the charging of the electric vehicles is done using conventional electricity. Energy based green electric cars; the charging also has to be done through renewable energy sources. During 2022-23, ANERT proposes to give incentives for the individuals, agencies, NGO's and commercial institutions for the installation of solar powered public EV fast charging stations. 5kW to 50kW on grid/off grid/hybrid solar public charging stations would be eligible for subsidy based on guidelines/business models on cost of solarisation to address the demand of electric vehicles charging stations. ANERT is also proposes to release the subsidy

for DC fast charging machines in public charging stations.

1. Installation of 6 Nos of Solar EV charging Hub . ₹ 252 lakhs
2. Solarization of EV charging projects in malls, Hotels and Restaurants @ 20,000/- per KW for Solar subsidy Total target 400 KW - ₹ 80 lakhs
3. 250 KVA Transformer, service connection, cabling, HT/LT line Extension, canopy work etc for 6 stations - ₹ 48 lakhs
4. 100 KVA Transformer, HT& LT Line Extension, service connection, roof work, Display boards, canopy, inaugural expenses etc - ₹ 20 lakhs

The proposed state share of the programme is ₹ 400 lakh plus project over-head expenses including man power to the tune of ₹ 60 lakh. The total requirement of funds is ₹ 460 lakh.

#### A.3.b. Electric Cars on hire project

Electric Vehicles are set to become the main mode of transportation in a few years. Government of Kerala has designated ANERT as the Nodal Agency for hiring of E Cars through EESL. During 2022-23, ANERT is planning to distribute 300 Nos. of e-cars to various Govt. departments. Development of Software for lease management of e- cars and public EV charging stations, Hire charge of e-cars for demonstration, Publicity and Awareness programmes are required for the smooth implementation of the project. The proposed state share of the programme is ₹ 35 lakh plus project over-head expenses including man power to the tune of ₹ 5 lakh. The total requirement of funds is ₹ 40 lakh.

#### **A.4. Promotion of Renewable Energy Systems**

##### A.4.a. Solar pumping scheme for farmers -Component B and C of PM-KUSUM

This project aims to solarise agriculture pumps. Solarisation would reduce dependence of these pumps on conventional electricity thus reducing the requirement of subsidised electricity for agriculture and provide additional source of income to farmers who will be in a position to sell the surplus power to the utility. As per the PM - KUSUM project of MNRE, Govt. of India, two schemes are sanctioned to ANERT for installing solar pumps by farmers for agricultural purpose.

i) Component-B of PM -KUSUM 30% of subsidy will be given by MNRE for the installation of stand-alone solar pumps in unelectrified areas and replacement of existing diesel pumps. In Kerala, the number of beneficiaries for this project is very less compared to other states as most of the agriculture lands are electrified. State subsidy up to a maximum of 30% is proposed for the implementation of this project.

ii) Component- C of PM - KUSUM 30% subsidy will be given by MNRE for the solarisation of existing pump set of farmers. Most of the agricultural connections in Kerala are free connections. So most of the farmers are not interested in

implementing this project. The project could be popularised if enhanced State share of matching fund is provided by State on viability gap funding mode. Beneficiary share is limited to 40 % of the tender cost. The remaining cost after MNRE subsidy and beneficiary share will be met from ANERT as state share. The proposed state share of the programme is ₹ 182.60 lakh plus project overhead expenses @ 15 % including man power to the tune of ₹ 27.40 lakh. The total requirement of funds is ₹ 210 lakh.

#### A.4.b. Micro-grids for Remote hamlets

Installation of hybrid/standalone off-grid solar power plants in remote hamlets is proposed where the grid failure is high/areas where solar HLS was provided earlier to uplift the living standard of people in such remote hamlets. Wherever possible, small wind turbines shall also be installed along with solar.

1. Completion of the installation of wind solar hybrid at Thazhethudikki in Attapadi - ₹ 70 lakh
2. Installation of off grid power plants in remotetribal colonies - ₹ 35 lakhs
3. Installation of 2 kW on grid power plants in 500 life mission houses for extremely backward communities - ₹ 500 lakhs

The proposed state share of the programme is ₹ 605 lakh plus project overhead expenses @ 15 % including man power to the tune of ₹ 91 lakh. The total requirement of funds is ₹ 696 lakh.

#### A.4.c. Pilot Projects on new Renewable Energy Technologies

- Solar push carts for vendors-It is proposed to install solar systems with battery to provide light and operate small electrical gadgets in the push cart. Solar PV capacity for each cart shall range from 500 to 600 watt. A demonstration project of 100 such carts for street vendors is proposed for 2022-23 ₹ 35 lakh
- Renewable energy for fishing boats- Solar-small wind hybrid power on a pilot basis on fishing boats engaged in deep sea fishing. This will save substantial amounts of diesel fuel and also provide backup power. About 30 boats are expected to be solarised with 0.8 to 1 kW systems and on successful demonstration and evaluation of the project, the programme can be extended with the financial contribution from the beneficiaries - ₹ 27 lakh
- Solarisation of house boats-In 2022-23, a solar PV capacity of 5 to 6 kW is proposed for each house boat with a 30% subsidy for the power pack limited to a maximum of ₹ 35,000 per kW as support to boat owners for solarisation

of house boats in order to reduce the fossil fuel consumption and thereby reduce pollution of water bodies - ₹ 21 lakh.

- Awareness, demonstration and evaluation - ₹ 4 lakh

The proposed state share of the programme is ₹ 87 lakh plus project overhead expenses @ 15 % including man power to the tune of ₹ 13 lakh. The total requirement of funds is ₹ 100 lakh.