



ಕರ್ನಾಟಕ ನವೀಕರಿಸಬಹುದಾದ ಇಂಧನ ಅಭಿವೃದ್ಧಿ ನಿಯಮಿತ  
**KARNATAKA RENEWABLE ENERGY DEVELOPMENT LIMITED**  
(A Government of Karnataka Undertaking)

KREDL/07/SG/RE Policy 21-26/F-1176/2021/446

Date: 24/2/2021

**Office Memorandum**

**Subject: Inviting Stakeholder Comments on "Draft Karnataka Renewable Energy Policy 2021-2026"**


Karnataka Renewable Energy Development Limited (KREDL) has drafted the "Karnataka Renewable Energy Policy 2021-2026" to deepen the Renewable Energy markets in the state of Karnataka.

**Draft Karnataka Renewable Energy Policy 2021-2016** is hereby circulated for comments of all the concerned stakeholders. Comments/suggestions may kindly be provided on or before **02.03.2021**.

Stakeholders may share their comments/suggestions (in both pdf and word document) to [kredlrepolity@gmail.com](mailto:kredlrepolity@gmail.com) in the format suggested below.

Further, online stakeholder consultation meeting will be organized, and details of the meeting will be intimated later.

Format for Comments/Suggestions is attached in Annexure.

  
**Dr.H.B.Budeppa**  
Managing Director

To

**All Concerned Stakeholders**

#39, 'ಶಾಂತಿ ಗೃಹ', ಭಾರತ್ ಸ್ಕೌಟ್ಸ್ ಮತ್ತು ಗೈಡ್ಸ್ ಕಟ್ಟಡ,  
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# Draft Karnataka Renewable Energy Policy 2021-2026

Government of Karnataka

Karnataka Renewable Energy Development Limited  
24 February 2021

# Table of Contents

<b>1. Preamble</b> .....	<b>4</b>
1.1. Necessity for Karnataka Renewable Energy Policy 2021-2026 .....	4
1.2. Applicability of Karnataka Renewable Energy Policy 2021-2026.....	5
1.3. Legislative Framework for Policy.....	5
<b>2. Abbreviations and Definitions</b> .....	<b>7</b>
<b>3. Policy Overview</b> .....	<b>11</b>
3.1. Vision .....	11
3.2. Objectives .....	11
3.3. Policy Period.....	11
<b>4. Focus Markets</b> .....	<b>12</b>
4.1. Green Energy Corridor.....	12
4.2. Renewable Energy Parks .....	12
4.3. Solar Energy Projects .....	13
4.4. Wind Energy Projects.....	13
4.5. Solar-Wind Hybrid Energy Projects.....	14
4.6. Energy Storage Projects for Renewable Energy .....	14
4.7. Biomass, and Waste to Energy Projects.....	14
4.8. Mini and Small-Hydro Projects .....	14
4.9. New Initiatives/Pilot Projects/Research and Development (R&D) .....	15
<b>5. Policy Measures</b> .....	<b>16</b>
5.1. Mutual Incentives/Supports to all Focus Markets .....	16
5.2. Additional Policy Measures Specific to Focus Markets.....	20
5.2.1. Green Energy Corridor .....	20
5.2.2. Renewable Energy Parks, and Projects Developed within the Park .....	20
5.2.3. Solar Energy Projects.....	22
5.2.4. Wind Energy Projects .....	26
5.2.5. Solar-Wind Hybrid Energy Projects .....	27
5.2.6. Energy Storage Projects for Renewable Energy .....	27
5.2.7. Biomass Projects.....	29
5.2.8. Waste to Energy Projects.....	29
5.2.9. Mini and Small-Hydro Projects.....	30
5.2.10. New Initiatives/Pilot Projects/R&D .....	30
<b>6. Allotment of Project and Land</b> .....	<b>31</b>

6.1. Procedure for Application and Project Allotment .....	31
6.2. Criteria for Allotment of Land to Setup Renewable Energy Projects .....	33
<b>7. Project Development Timelines, Fees and Charges .....</b>	<b>34</b>
7.1. Timelines.....	34
7.2. Fees and Charges.....	35
<b>8. Administration of the Policy.....</b>	<b>38</b>
8.1. Nodal Agency .....	38
8.2. State Level Allotment Committee .....	38
8.3. Power to Remove Difficulties and Interpret .....	39

# 1. Preamble

## 1.1. Necessity for Karnataka Renewable Energy Policy 2021-2026

Karnataka is among the leading States in Renewable Energy (RE) sector in the country with a RE generation capacity of about 15,037 MW<sup>1</sup>. The State has achieved its stature through its effective policy, programs and implementation.

The State is endowed with RE potentials which includes solar, wind, solar-wind hybrid, biomass, waste to energy, small hydro and other renewable energies that makes Karnataka a favorable destination for RE investments in India. Karnataka has about 86,792 MW<sup>2</sup> of estimated RE potential, making it one of the country's top five renewable rich states.

Karnataka is the first southern state in India to notify "Karnataka Renewable Energy Policy 2009-14" in 2009 to harness green, clean renewable energy sources for environmental benefits and energy security. The policy initiatives have enabled the State to achieve the capacity addition of 2,014 MW during the 5 years of policy period. Further, to harness the potential of solar resources in the State, Government of Karnataka had published Solar Policy vide GO no EN 61 NCE 2011 for the period 2011-2016, and subsequently the policy had been amended and published as "Karnataka Solar Policy 2014-21" vide GO no EN 21 VSC 2014 for the period 2014-2021. Karnataka Solar Policy 2014-21 had targeted for development of 6,000 MW solar capacity by 2021 and the State has surpassed the target with a solar installed capacity of 7,366 MW as on December 2020. In order to further harness the potential of RE in the State, the Karnataka Renewable Energy Policy 2021-2026 has been envisaged by the Government of Karnataka.

As RE become cheaper generation source for electricity in India (especially solar and wind energy), efforts are being made to initiate gradual replacement of existing conventional power generation capacities with renewable power generation capacities. The key advantage of conventional power generation is high Plant Load Factor (PLF), firmness and flexibility in power supply. In order to have same attractiveness, RE sources shall have these three attributes and the Karnataka Renewable Energy Policy 2021-2026 may promote such RE projects like solar-wind hybrid with energy storage or any other renewable energy with storage system which shall provide high PLF, firmness and flexibility in supply.

The recent demand<sup>3</sup> for Round-the-Clock (RTC) supply, peak power supply, higher Capacity Utilization Factor (CUF), higher availability and bundling RE with thermal power for RTC supply gives an opportunity for Karnataka to encourage such RE projects in the State. Further, the falling trend of RE tariffs in the country give an additional opportunity for Karnataka to develop further green energy projects in the State which shall help to have cost effective power supply in long term. In addition, the advancement of technologies (i.e. efficiency gain, performance improvements etc..) in solar, wind, and energy storage coupled with declining cost of technologies; and the existence of demand for cost effective renewable energy in the country from other states lays a prospect for Karnataka to develop more RE projects.

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<sup>1</sup> As on December 2020, Source: KREDL

<sup>2</sup> Source: KREDL

<sup>3</sup> Demand from intermediaries such as SECI

Keeping the renewable energy potentials in the State and above opportunities into consideration, the Karnataka Renewable Energy Policy 2021-2026 aims at deepening the RE markets in the State and make Karnataka an attractive destination for investors in the RE sector. The focus of Karnataka Renewable Energy Policy 2021-2026 is to advance the RE market development in the State and facilitate Government of India in meeting the RE target of 175 GW by the year 2022 or any other capacity targeted thereafter.

## **1.2. Applicability of Karnataka Renewable Energy Policy 2021-2026**

This policy will be applicable to projects and programs relating to the focus markets as covered under provision 4 of this policy.

All Solar, Wind, Solar-Wind Hybrid, Energy Storage, Mini and Small-Hydro, Biomass, Waste to Energy projects and new initiatives/pilot projects established in the State of Karnataka during the policy period shall be eligible for benefits under this policy.

Any individual or company or body corporate or association or society or body of individuals, whether incorporated or not shall be eligible for setting up of RE projects, either for the purpose of captive use and/or for selling of electricity to the Distribution Licensee or Third Party whether or not under the Renewable Energy Certificate (REC) mechanism subject to provisions of this policy and in accordance with The Electricity Act 2003, as amended from time to time.

This policy supersedes all the earlier solar and RE policies issued from time to time. This policy will be applicable to all the RE projects sanctioned prior to the commencement of the policy and those RE projects in the process of development except for the timelines, and fees and charges as stated in the provision 7.1 and 7.2 of this policy.

## **1.3. Legislative Framework for Policy**

The legislative framework for this policy included the following provisions:

- a. The Electricity Act, 2003 mandates that the Electricity Regulatory Commissions and the Governments to take necessary steps to promote Renewable Energy;
- b. Section 61(h) of the Act provides that while specifying the terms and conditions of determination of tariff, State Regulatory Commissions shall be guided, inter-alia, by the promotion of cogeneration and generation of electricity from renewable sources of energy;
- c. The National Electricity Policy (NEP) and Tariff Policy notified by the Central Government under the provisions of section 3(1) of the Act have also addressed the issues of untapped potential of energy from non-conventional and renewable energy sources; and
- d. Section 86(1)(e) of the Act mandates State Electricity Regulatory Commissions (SERC's) to notify Renewable Purchase Obligations (RPOs), ensure RPO compliance and invoke penal provisions against defaulting entities.

Orders/regulations or any other dispensation issued by the Karnataka Electricity Regulatory Commission (KERC) from time to time shall be applicable to the provision of this policy including the Acts passed by Government of India. In case of any discrepancy

between the provisions of this policy, orders/regulations issued by KERC will take precedence.



## 2. Abbreviations and Definitions

Unless the meaning is repugnant to the context, the following words shall have the meanings assigned to them.

1. "ABT" means Availability Based Tariff;
2. "Act" means The Electricity Act, 2003, including amendments thereto;
3. "ALMM" means Approved List of Models and Manufacturers as per MNRE;
4. "Biomass Projects" means project which utilizes biomass like bagasse, agro-based industrial residue, crop residues, wood produced through energy plantations, weeds, wood waste produced in industrial operations, etc for energy generation;
5. "CEA" means Central Electricity Authority;
6. "CERC" means Central Electricity Regulatory Commission, constituted under sub-section (1) of Section 76 of the Electricity Act, 2003;
7. "CNG" means Compressed Natural Gas;
8. "CPCB" means Central Pollution Control Board;
9. "CTE" means Consent to Establish;
10. "CTU" means Central Transmission Utility;
11. "CUF" means Capacity Utilization Factor;
12. "Procurer" means electricity distribution companies other than ESCOMs of Karnataka;
13. "DPR" means Detailed Project Report;
14. "DSS" means Distribution Substation;
15. "ESaS" means Energy Storage as Services;
16. "ESCOM" means Electricity Supply Company in the State such as BESCO (Bangalore Electricity Supply Company Limited), MESCOM (Mangalore Electricity Supply Company Limited), HESCO (Hubli Electricity Supply Company Limited), GESCOM (Gulbarga Electricity Supply Company Limited), and CESC (Chamundeshwari Electricity Supply Corporation Limited);
17. "Energy Storage System or ESS" means the system(s) installed in addition to the RE power capacity as part of the Project, that can capture energy produced at one time for use at a later time;
18. "EV" means Electric Vehicle;
19. "GSDP" means Gross State Domestic Product;
20. "GEC" means Green Energy Corridor;
21. "GO" means Government Order;
22. "GoI" means Government of India;

23. “GoK” means Government of Karnataka;
24. “GST” means Goods and Services Tax;
25. “GW” means Gigawatt;
26. “INR” means Indian Rupees;
27. “InSTS” means Intra-State Transmission System using which the projects can sell energy to ESCOMs or open access consumers within the Karnataka;
28. “ISTS” means Inter-State Transmission System using which the projects can sell energy to procurers or open access consumers outside the Karnataka;
29. “KERC” means Karnataka Electricity Regulatory Commission
30. “KPCL” means Karnataka Power Corporation Limited;
31. “KPTCL” means Karnataka Power Transmission Corporation Limited;
32. “KREDL” means Karnataka Renewable Energy Development Limited;
33. “KBJNL” means Krishna Bhagya Jala Nigam Limited;
34. “KSPDCL” means Karnataka Solar Power Development Corporation Limited;
35. “LTA” means Long-Term Access;
36. “Mini and Small Hydro” means hydro power plants of 0.1 MW to 2 MW as Mini Hydro power plants, and hydro power plants of more than 2 MW and less than 25 MW as Small Hydro power plants;
37. “MNRE” means Ministry of New & Renewable Energy, a Government of India Ministry responsible to develop and deploy new and renewable energy for supplementary energy requirement of the country;
38. “MSW” means Municipal Solid Waste;
39. “MW” means Megawatt;
40. “MWac” means Megawatt ac;
41. “MWp” means Megawatt peak;
42. “NEP” means National Electricity Policy;
43. “NIWE” means National Institute of Wind Energy;
44. “NOC” means No Objection Certificate;
45. “Open Access” means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission
46. “P2P” means Peer-to-Peer;
47. “Park developer” may be either any agency of state government; or any agency of central government; or Joint venture or Special Purpose Vehicle (SPV) of state government

agency and central government agency; or private developer; or Public Private Partnership (PPP) of state government agency and private developer.

48. "PFR" means Pre-Feasibility Report;
49. "PGCIL" means Power Grid Corporation of India Limited;
50. "PHS" means Pumped Hydro Storage;
51. "PM-KUSUM" means Pradhan Mantri Kisan Urja Suraksha evem Utthan Mahabhiyan;
52. "PLF" means Plant Load Factor;
53. "Project Developer" means a person who develops and /or maintain Renewable Energy projects and also creates and/or maintain common infrastructure facilities including required power systems;
54. "Policy" means Karnataka Renewable Energy Policy 2021-2026;
55. "PPA" means Power Purchase Agreement;
56. "PPP" means Public Private Partnership;
57. "PV" Photovoltaic;
58. "R&D" means Research and Development;
59. "RE" means Renewable Energy;
60. " RE Projects" means a project generating electrical energy from Renewable energy sources as defined by MNRE, including, but not limited to Solar PV Power Project or Wind Power Project or Hybrid Power Projects or Small Hydro Power project or biomass, biofuel, urban or municipal waste and other such sources as approved by MNRE thereof, with or without Energy Storage System (ESS).
61. "RE Certificate" means Renewable Energy Certificate;
62. "RLMM" means Revised List of Models and Manufacturers;
63. "RPO" means Renewable Purchase Obligation;
64. "RT&C" means Rights, Tenancy & Crops;
65. "RTC" means Round-the-Clock;
66. "SATAT" means Sustainable Alternative Toward Affordable Transportation;
67. "SECI" means Solar Energy Corporation of India Ltd;
68. "SERC" means State Electricity Regulatory Commission;
69. "SLAC" means State Level Allotment Committee constituted under the provision of this policy;
70. "SLDC" means State Load Despatch Centre;
71. "SPV" means Special Purpose Vehicle;
72. "State" means State of Karnataka;
73. "STU" means State Transmission Utility;

74. "ULB" means Urban Local Body;
75. "UMREPP" means Ultra-Mega Renewable Energy Power Parks;
76. "Waste to Energy Project" means project which recovers energy in the form of Biogas or Bio-CNG or Power from Urban, Industrial, Agricultural Waste / Residues and Municipal Solid Waste.
77. "Wind-Solar Hybrid Projects" means a deployment of a combination of solar and wind energy sources for generation of power fed into the grid through a common pooling station/evacuation system wherein the capacity of one resource is as per the National Wind-Solar Hybrid Policy 2018, No.238/78/2017-Wind, Dated 14 May 2018, issued by Ministry of New & Renewable Energy (MNRE) and its amendments or as per the guideline issued by MNRE for Hybrid Projects from time to time.
78. "WRDO" means Water Resources Development Organization;
79. "WTG" means Wind Turbine Generator; and
80. The terms not defined above will have their usual meaning.

## 3. Policy Overview

### 3.1. Vision

To continue Karnataka State's position as a preferred investment destination in RE sector and create an ecosystem for sustainable and green energy developments in the State.

### 3.2. Objectives

Accordingly, the State Government introduces the “**Karnataka Renewable Energy Policy 2021-2026**” with the following objectives:

1. To facilitate development of 20 GW of RE projects with or without energy storage systems in the State, including 2 GW of Rooftop solar PV projects;
2. To attract investment in the RE sector and development of State economy;
3. To tap RE potential in the State and use of available resources for development of RE projects for the purpose of meeting the RE demand within the State and exporting energy outside Karnataka;
4. To achieve the RPO target(s) as specified by KERC from time to time;
5. To develop Renewable Energy Parks including hybrid parks in the State;
6. To encourage private sector participation in transmission network/Green Energy Corridor projects;
7. To develop ecosystem for distributed generation through solarization of agriculture feeders and pumps which can help deferment of transmission and distribution capacity addition and reduction in losses;
8. To promote adaptation of electric vehicle and decarbonize transportation in the State by encouraging use of cleaner renewable energy in the transportation sector;
9. To create energy storage market in the state to integrate more RE into the grid and offer grid support services such as peak reduction, curtailment management, contribution to reliability needs, transmission deferrals, intraday and seasonal variation management, and others;
10. To promote development of wind-solar hybrid projects;
11. To promote development of floating solar including hybridization of floating solar with existing hydro stations;
12. To promote generation of energy through biomass, and waste-to-energy; and
13. To promote new initiatives and emerging energy technologies in the State.

### 3.3. Policy Period

This policy shall come into effect from date of issuance and will be valid for a period of five years or till a new policy is announced.

This policy will be evaluated on regular basis to assess its impact, and to ensure inclusion of any new RE market/guideline of Government of India (GoI)/ Government of Karnataka (GoK) that may evolve over during the policy period.

## 4. Focus Markets

To advance the development of RE markets and to stimulate the sustainable economic growth through green investments in the State, this policy focuses on development of below key markets in the state of Karnataka.



### 4.1. Green Energy Corridor

- a. Karnataka is the leading State in development of RE projects in India, and having the highest installed capacity of renewable energy i.e. about 15,037 MW (as on December 2020) in the country. This positions Karnataka as leader in RE investments among other renewable rich states in India.
- b. To attract more RE investments in the State, Karnataka is strengthening its transmission infrastructures and this policy will focus on development of Green Energy Corridor (GEC) for evacuation of large-scale renewable energy projects.

### 4.2. Renewable Energy Parks

- a. Karnataka is home to one of the World's largest solar parks "Pavagada Solar Park" with a capacity of 2,050 MW which is operational, and the park is contributing to

sustainable development in the State. The State has also hosted private solar farms to accommodate solar power projects in it.

- b. In November 2020, Ministry of New and Renewable Energy (MNRE) has come up with a concept note for development of wind park/wind solar hybrid park in selected renewable rich states of India including Karnataka. Objective of the concept note is to develop Wind – Solar Hybrid Power Park with optimal utilization of land and transmission network. In the concept note, MNRE has identified sites for park development in Karnataka at Chitradurga, Davangere and Ballary estimated to have a cumulative development potential of about 11,065 MW<sup>4</sup>.
- c. To develop further renewable energy parks including Ultra Mega Renewable Energy Power Parks (UMREPP) in Karnataka, this policy focuses on development of solar park or wind park or hybrid renewable energy park within the State.

### 4.3. Solar Energy Projects

- a. Karnataka is leading state in installation of solar energy capacity in the country. As on December 2020, the installed capacity of solar energy in the state is about 7,366 MW<sup>5</sup> which is highest among renewable rich states in India.
- b. To tap the existing solar energy opportunities in the State and to cater to the demand of low-cost solar energy within the country, this policy will focus on promotion and development of following solar markets in the State
  1. Grid connected MW scale solar power projects;
  2. Rooftop Solar PV Power Projects;
  3. Distributed Solar Generation;
  4. Rooftop Solar PV Power Projects for charging the Electric Vehicles (EV's) and Battery Swapping Stations; and
  5. Floating Solar Projects

### 4.4. Wind Energy Projects

- a. Karnataka is one of the leading states in development of wind energy capacity in the country. As on December 2020, the installed capacity of wind energy in the State is about 4,897 MW<sup>6</sup>.
- b. To tap the existing wind energy opportunities in the State and to cater to the demand of low-cost wind energy within the country, this policy will focus on development of below mentioned wind markets in the State
  1. New wind energy projects; and
  2. Repowering of existing wind projects.

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<sup>4</sup> MNRE office Memorandum No.238/75/2017-Wind dated 13 November 2020

<sup>5</sup> Source: KREDL

<sup>6</sup> Source: KREDL

## 4.5. Solar-Wind Hybrid Energy Projects

- a. Karnataka is renewable rich state with availability of both solar and wind resources. Hybridization of solar and wind energy will complement each other in meeting the demand and it also addresses the intra-day and seasonal generation variation hence resulting in higher availability and higher CUF.
- b. To tap the existing solar-wind hybrid energy opportunities in the state and to cater to the demand of low- cost, higher availability and higher CUF renewable energy, this policy will focus on development of below mentioned solar-wind hybrid markets in the State
  1. Hybridization of existing projects; and
  2. Developing new hybrid projects.

## 4.6. Energy Storage Projects for Renewable Energy

- a. Karnataka is a renewable rich state with the renewable penetration of about 50% in term of capacity (as on December 2020) and about 30% in term of energy (as on March 2020). In order to accommodate more RE with optimal operation of renewable capacities in the State, the energy storage system is key element for incorporating further RE projects into the grid.
- b. This policy will focus on development of energy storage market including pumped hydro in the State with the objective of integrating more RE in to the grid which can offer grid support services such as peak reduction, curtailment management, contribution to reliability needs, deferral of transmission, managing intraday variation and seasonal variation, and others, and also, to meet the increasing power demand of the State through renewable energy.

## 4.7. Biomass, and Waste to Energy Projects

- a. Karnataka is one of the leading states in development of biomass in India, as the State has strong agricultural activities with vast biomass resources. The State has installed about 139 MW biomass projects as on December 2020<sup>7</sup>. The State has issued NOCs to various Waste to Energy projects using Municipal Solid Waste (MSW).
- b. To tap the existing biomass, and waste to energy market opportunities, this policy will continue to focus on development of below mentioned markets in the State
  1. New biomass projects; and
  2. New waste to energy projects.

## 4.8. Mini and Small-Hydro Projects

- a. Karnataka is endowed with hydro power potential which is estimated to be about 3,100 MW out of which the State has installed about 903 MW<sup>8</sup> of small hydro capacity as on December 2020.

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<sup>7</sup> Source:KREDL

<sup>8</sup> Source: KREDL



- b. To tap the existing mini and small-hydro market opportunities, this policy will continue to focus on development of mini and small-hydro markets in the State.

#### **4.9. New Initiatives/Pilot Projects/Research and Development (R&D)**

- a. The Government of Karnataka is always a forerunner in evaluating and adapting new RE markets in the country. This policy will continue to support new technologies such as off-shore wind energy, tidal and wave energy, rooftop aero turbine with solar, highway's aero turbine, hydrogen and fuel cells, bio-CNG (Bio-Compressed Natural Gas), Concentrated Solar Power (CSP) and other markets on case to case basis to evaluate the feasibility. State government shall also encourage Research and Development (R&D) activities for advancement of RE in the State.

## 5. Policy Measures

### 5.1. Mutual Incentives/Supports to all Focus Markets

The incentives/supports that shall be provided by the Government of Karnataka for the markets focussed under this policy are

#### a. Energy Sale

1. The RE project developers can sell the energy to ESCOMs/Procurers, intermediaries or any consumer under open access (captive/group captive and third party sale including bulk consumers) both within Karnataka and/or outside the State under this policy to promote Intra State Transmission System (InSTS) and Inter State Transmission System (ISTS) category projects, as per the provision of The Electricity Act, 2003 and in accordance with guidelines issued by CERC/KERC from time to time. The RE project developer may also set up projects under the Renewable Energy Certificate (RE Certificate) mechanism in accordance with CERC (Terms and Conditions for Recognition and Issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, and as amended from time to time.
2. The renewable obligated entities are allowed to set up RE projects to fulfill their Renewable Purchase Obligation (RPO) requirements (Solar and Non-Solar).

#### b. Land

1. It shall be the responsibility of the RE project developer to acquire/lease the land required for the project development.
2. For all wind projects, solar-wind hybrid projects/parks, and mini and small hydro projects approved by the State Level Allotment Committee (SLAC) chaired by the Additional Chief Secretary/Principal Secretary to Government, Energy Department or other RE projects (i.e. solar projects/parks, and energy storage projects, biomass, and waste-to-energy) approved by the Energy Department, Government of Karnataka where permission to purchase agriculture land under section 109 of Karnataka Land Reform Act, 1961 is required, the process of procurement and conversion of land shall be as per the State Industrial Policy and its amendments from time to time. Once the project is approved/issued NOC by SLAC/Energy Department, Government of Karnataka, the land required for the project development is automatically considered as deemed conversion and the project developer shall not require obtaining project approval (excluding applicable statutory approvals) from any other government departments.
3. RE projects developers will be allowed to start the project execution on filing of application for conversion of agriculture land, along with the payment of specific fees. However, the developer shall submit the formal land conversion approval within scheduled commissioning date.
4. All RE projects are proposed to be treated as manufacturing industry and they are eligible for incentives and concessions, as applicable to manufacturing industry

mentioned in the State Industrial Policy and its amendments from time to time, except the investment promotion subsidies.

## **c. Connectivity**

### **c.1. Projects connected to STU**

1. Project developer is allowed to connect the RE project with State Transmission Utility (STU) for InSTS category projects, subject to the evacuation feasibility.
2. The project developer shall enter into the Connectivity Agreement with KPTCL (as per the Standard Format approved by KERC)
3. Project developer shall be responsible for connecting the generation station to the nearest grid sub-station and connected radially with a dedicated transmission line, in accordance with applicable CEA/CERC/KERC Regulations and its amendments issued from time to time.
4. Time bound clearance for transmission evacuation approval from KPTCL will be provided within 60 days from the date of receipt of requisite documents for registration. In case, ESCOM's network is utilized for evacuation, concern ESCOM's shall provide the evacuation approval within 45 days from the date of receipt of requisite documents for registration.
5. Supervision charges for RE projects shall be as per KPTCL notifications issued from time to time.
6. For use of InSTS by the project developer, the applicable transmission charges and losses, as determined by KERC in its tariff order issued time to time shall be applicable for all RE sources transmitting electricity using the network of State transmission licensee.
7. No banking facility is extended for RE projects implemented under InSTS category.
8. Applicability of electricity duty to the RE projects developed under this policy shall be as per the direction of Government of Karnataka issued from time to time.
9. In case of drawl of reactive power for the project, necessary charges shall be payable at the rate prescribed by KERC.
10. The project developers shall comply with KERC regulations on Forecasting, Scheduling, and Deviation Settlement, as applicable and are responsible for all liabilities related to Long-Term Access (LTA), Medium-Term Access (MTA) and Short Term Access (STA), and connectivity.

### **c.2. Projects connected to CTU**

1. Project developer is allowed to connect the RE project with Central Transmission Utility (CTU) for ISTS category projects and the procedure for grant of connectivity with ISTS shall be as per relevant CERC regulations and its amendments issued from time to time.
2. For use of ISTS by the project developer, the applicable transmission charges and losses, as determined by CERC in its tariff order issued time to time shall be applicable for all RE sources transmitting electricity using the network of central transmission licensee.
3. No banking facility is extended for RE projects implemented under ISTS category.
4. In case of drawl of reactive power for the project, necessary charges shall be payable at the rate prescribed by CERC.

5. The project developers shall comply with CERC regulations on Forecasting, Scheduling, and Deviation Settlement, as applicable and are responsible for all liabilities related to Long-Term Access (LTA), Medium-Term Access (MTA) and Short Term Access (STA), and connectivity.
6. The project developers shall follow the procedure laid down by central agencies related to connectivity with CTU network. All liabilities on account of connecting the project to CTU shall be borne by the project developer.

### **c.3. Projects connected to CTU through STU**

1. To make use of the existing Intra-State evacuation infrastructure, the project developers are allowed to connect with nearest available STU substation for connecting with CTU under ISTS category projects. The applicable cost of transmission including cost of construction of line, wheeling charges, State Load Despatch Centre (SLDC)/Scheduling charges, losses, O&M charges as per KERC order issued from time to time and any other applicable charges (as determined by CERC/KERC), from the project up to the interconnection point of CTU shall be borne by the project developer.
2. The project developer(s) shall bear the entire cost of the existing or new external evacuation infrastructure including connecting line, grid substations and upstream network up to the CTU. The construction of new network infrastructure shall be done under the supervision of KPTCL, and the assets shall be handed over to KPTCL before the commissioning. The new network augmentation required for this purpose shall be determined by KPTCL. Further, developers opting for this option shall pay the O&M charges to KPTCL as per KERC order issued from time to time, and they shall also bear the transmission charges and losses.
3. In case the project developer uses InSTS to bring RE power at ISTS point, the project developer shall do the same as per KPTCL specifications duly complying with CEA/CERS/KERC regulations and its amendments issued from time to time.

### **d. Additional Incentives as per Industrial Policy**

1. All RE projects of both InSTS and ISTS shall be eligible for incentives as per the State Industrial Policy and its amendments from time to time, except the investment promotion subsidies.

### **e. Project Allotment**

1. The State will facilitate the project allocation through application process and Karnataka Renewable Energy Development Limited (KREDL) shall be the nodal agency for processing such applications.
2. The allocation of solar projects/parks, and energy storage projects shall be approved by Energy Department, Government of Karnataka on recommendation of KREDL.
3. The allocation of wind projects, solar-wind hybrid projects/parks, and mini and small hydro projects shall be approved by SLAC on recommendation of KREDL.

4. In case of biomass and waste-to-energy projects, the NOC shall be issued by Energy Department, Government of Karnataka on recommendation of KREDL, and after the receipt of consent from respective ESCOMs for purchase of energy.
5. The RE project developer shall submit the pre-feasibility for evacuation from KPTCL/Power Grid Corporation of India Limited (PGCIL) for the proposed projects/park capacity along with the application.
6. Project/Park developer shall submit the tentative land documents and topo sheet along with the application.
7. In order to promote RE in the State, there shall be no limit for renewable energy project/park capacity per taluk, subject to the availability of transmission capacity.

#### **f. Other Government Schemes**

1. The Government of Karnataka will promote RE project/parks as per the prevailing schemes of State Government/Central Government issued from time to time.
2. Any applicable Government schemes (State and Central) can be explored by the RE project/park developer for the purpose of project development under this policy.
3. The Government of India incentives under MNRE RE schemes (or any others), such as Central Financial Assistance, concessional custom duty on specified items and others as applicable shall be extended to the project developer under this policy.
4. The State shall continue to support implementation of RE programs and schemes of the MNRE.

#### **g. Clearances**

1. It shall be the responsibility of the RE project developer to obtain various statutory clearances required for the project development. KREDL shall facilitate project developer in obtaining the consents, clearances, and permits required for the RE projects, by providing letters of recommendation to the concern authorities, as may be requested by the project developer. KREDL shall not be responsible for delays in obtaining the consents, clearances, and permits required for the RE projects.
2. NOC/Consent to Establish (CTE) for RE projects shall be governed as per the Central Pollution Control Board (CPCB)/Karnataka State Pollution Control Board (KSPCB) guidelines and/or notifications issued from time to time.
3. Solar PV modules shall comply with Approved List of Models and Manufacturers (ALMM) as per MNRE or as per the minimum technical specification for Solar PV plant as set out by the MNRE as guidelines from time to time.
4. Wind Turbine Generator (WTG) models shall comply with Revised List of Models and Manufacturers (RLMM) as per the MNRE directions issued from time to time.

#### **h. Energy Storage**

1. RE project is allowed to develop with or without energy storage system under this policy.

### **i. Metering and Connectivity**

1. For interconnection with the grid and metering, the project developer shall abide by applicable Grid Code, Grid Connectivity Standards, Regulations on Communication System for transmission of electricity and other regulations (as amended from time to time) issued by KERC/CERC and Central Electricity Authority (CEA) from time to time.
2. For the purpose of energy accounting, the RE projects shall provide meters at the interface points as per the Central Electricity Authority regulation. Interface metering shall conform to the Central Electricity Authority (Installation and Operations of Meters) Regulations, 2006 as amended from time to time.

## **5.2. Additional Policy Measures Specific to Focus Markets**

The policy measures specific to the focus markets in addition to the mutual incentives/supports to all focus markets under this policy are as below:

### **5.2.1. Green Energy Corridor**

#### **a. Promotion of Green Energy Corridor**

The Green Energy Corridor (GEC) project aims at synchronizing electricity produced from renewable sources, such as solar, wind and others, with conventional energy sources in the grid. The GEC project is being implemented by respective State Transmission Utility (STU) allocating the work through a competitive bidding process.

#### **b. Support for Green Energy Corridor**

1. The Government of Karnataka will encourage private sector investments and/or Public Private Partnership under this policy for developing the transmission network/Green Energy Corridor within the State to cater to the evacuation needs of RE projects including Renewable Energy Parks. The selection of private GEC transmission service provider will be through tariff-based competitive bidding as per the “Tariff Based Competitive Bidding Guidelines for Transmission Service” and “Guidelines for Encouraging Competition in Development of Transmission Projects” (Guidelines) and its amendments issued from time to time under Tariff Policy and section 63 of The Electricity Act, 2003.
2. The Government of Karnataka will promote development of GEC projects as per the guidelines or prevailing schemes of State Government/Central Government issued from time to time.

### **5.2.2. Renewable Energy Parks, and Projects Developed within the Park**

#### **a. Promotion of Renewable Energy Park**

This policy aims to promote development of Renewable Energy Parks in the State which includes solar park and/or wind park and/or hybrid park (i.e. Solar-Wind or any other renewables).

**b. Park Size**

The minimum capacity of each park shall be 50 MW and the maximum park capacity shall be as per the guidelines or schemes of MNRE as issued from time to time.

**c. Park Developer**

The park developer may be either of the following:

1. Any agency of state government;
2. Any agency of central government;
3. Joint venture or Special Purpose Vehicle (SPV) of (1) and (2);
4. Private developer; and
5. Public Private Partnership (PPP) of (1) and (4)

In case of (1) to (3) above, the Government of Karnataka shall designate the Renewable Energy Park developer on nomination basis which may be Karnataka Solar Power Development Corporation Limited (KSPDCL) or any other agency. While in case of (4) and (5) above (i.e. Private Developer and Public Private Partnership (PPP)), the Government of Karnataka shall select the private developer through transparent competitive bidding, for which the state government would develop transparent guidelines in line with the central government guideline (if any) consisting of financial and technical aspects for selection of private park developer.

The Government of Karnataka will promote development of Renewable Energy Park under PPP model with Private sector developers by investing up to 50% equity or any other percentage of equity participation as decided by the State Government. The cost of land allotted and any other infrastructure including transmission system by the State Government can be part of its equity participation under PPP model.

The Government of Karnataka or any other State agency designated by it will promote development of Ultra Mega Renewable Energy Power Park (UMREPP) on its own or through joint venture with Central Public Sector Undertakings.

Apart from above, the private park developers are free to setup the park for development of RE projects under open access route (captive/group captive/ third party sale) for sale of energy within and outside the State. Such parks shall not be eligible to avail CFA under MNRE park schemes.

**d. Projects within Renewable Energy Park**

1. The projects developed within the Renewable Energy Park can sell the energy to ESCOMs/Procurers, intermediaries like SECI or any consumer under open access (captive/group captive and third party sale including bulk consumers) both within Karnataka and/or outside the State to promote InSTS and Inter State ISTS category projects.
2. Hybrid Projects can be Wind-Solar or any other RE sources with or without energy storage system.
3. The rated capacity of one resource (wind or solar) shall be as per the National Wind-Solar Hybrid Policy 2018, No.238/78/2017-Wind, dated 14

May 2018, issued by Ministry of New & Renewable Energy and its amendments or as per the guideline issued by MNRE for Hybrid Projects from time to time.

**e. Other Supports Specific to Renewable Energy Park Development**

1. The Government of Karnataka will promote Renewable Energy Parks as per the guidelines or prevailing schemes of State Government/Central Government including MNRE's scheme for development of Solar Parks and Ultra Mega Solar Power Projects and its amendments, and MNRE's scheme on Wind-Solar Hybrid Park and its amendments.
2. In case of development of private park for open access projects, the State shall facilitate the park allocation through application process.

### 5.2.3. Solar Energy Projects

**a. Promotion of Solar Energy Projects**

This policy aims to promote the Solar Energy Projects including:

1. MW Scale Grid Connected Projects for InSTS category projects i.e. Sale of energy to ESCOMs and/or Open Access consumers within Karnataka;
2. MW Scale Grid Connected Projects for ISTS category projects i.e. Sale of energy to Procurer's and/or Open Access consumers outside Karnataka;
3. Rooftop Solar PV power projects;
4. Distributed Generation i.e. solarization of agriculture feeders and pumps;
5. Rooftop Solar PV power projects for Charging Electric Vehicle (EV) and Battery Swapping Stations; and
6. Floating Solar Projects.

**b. Supports for Promotion of MW Scale Projects**

1. Solar projects having a minimum capacity of 1 MWac shall be considered as MW scale grid connected solar project under this policy. In case of captive/group captive projects, there shall be no minimum capacity limit for allotment of projects.
2. Project developer can install the MW scale solar projects either on land or rooftop or floating area or canal top or combination of either of the above, subject to the evacuation feasibility.

**b.1. Solar Projects for Sale of Energy within Karnataka (InSTS)**

1. Selection of projects under InSTS category shall be through a competitive bidding process, as per the requirement of ESCOMs in the State to fulfill Renewable Purchase Obligation (RPO) target fixed by KERC or any requirements beyond RPO target subject to the approval of KERC.
2. Project developer shall be allowed to develop the MW scale solar projects through open access route under this policy for sale of energy within the Karnataka, subject to the evacuation feasibility.



### **b.2. Solar Projects Implemented within the Premises (Standalone System)**

1. Project developer is allowed to setup the standalone system/off-grid solar project within the same premises for self-consumption.
2. In case, the solar PV project is setup within the premises of a consumer which is connected to the grid interface of ESCOMs or KPTCL, he shall pay the grid support charges and other applicable charges as determined by KERC from time to time. However, the project developer is exempted from payment of such charges, if the project within the premises is not connected to the grid interface (i.e. standalone system).
3. Net-metering facility shall not be applicable for solar projects installed within the premises under this category which are connected to the grid interface of ESCOMs or KPTCL.
4. Any inadvertent injection of energy into the grid from the projects setup within the premises which is connected to the grid interface shall not be compensated/paid by the ESCOMs/KPTCL.
5. For standalone system/off-grid solar projects, the project developer shall obtain the safety approval from Department of Electrical Inspectorate, as per the orders issued by the Government of Karnataka from time to time.

### **b.3. Solar Projects for Sale of Energy outside Karnataka (ISTS)**

1. Selection of projects under ISTS category shall be through a competitive bidding process as conducted by intermediaries such as SECI, NTPC and others.
2. Project developer can also develop the MW scale projects under open access route under this policy for sale of energy outside the Karnataka in accordance with guidelines laid by appropriate authorities from time to time.

### **c. Supports for Promotion of Rooftop Solar PV Power System**

1. It is targeted to achieve 2,000 MW of grid connected Rooftop Solar PV power projects under this policy.
2. Implementation of grid connected rooftop solar PV power projects shall be administered by respective ESCOMs (including registration, approval, metering protocols, safety protocols, and standards).
3. The project developer shall obtain the safety approval from Department of Electrical Inspectorate for rooftop solar PV projects, as per the orders issued by the Government of Karnataka from time to time.
4. The Government of Karnataka will support implementation of Rooftop Solar PV Energy projects as per the prevailing MNRE scheme of “Grid Connected Solar Rooftop Programme” and its amendments or any other forthcoming programs.
5. The Government of India incentives under MNRE schemes (or any others) such as Central Financial Assistance, concessional custom duty on specified items and others shall be extended to the project developer under this policy.

### **c.1. Grid connected Rooftop solar PV projects under Net Metering and Gross Metering**

1. The Government of Karnataka shall promote grid connected rooftop solar PV projects on public building, domestic, commercial and industrial establishments and others through net metering/gross metering arrangements as per the KERC (Implementation of Solar Rooftop Photovoltaic Plants) Regulations, 2016 and its amendments/Tariff Orders/guidelines/orders issued from time to time.

### **c.2. Peer-to-Peer (P2P) Trading of Rooftop Solar PV Energy**

1. Peer-to-peer energy (P2P) trading is the buying and selling of rooftop solar PV energy between two or more grid-connected parties in a secured and reliable way with proper accounting and billing mechanism implemented with the help Block chain technology. Any excess energy from rooftop solar PV can be transferred and sold to other consumers via a secure platform.
2. The Government of Karnataka will promote Peer-to-Peer (P2P) trading of Rooftop Solar PV Energy. The implementation of P2P model shall be as per the guidelines and regulatory framework as notified by the KERC from time to time.

### **c.3. Off-Grid Rooftop Solar PV Power System**

1. Solar projects installed on the consumer rooftop for their captive use isolated from the grid with or without energy storage system shall be treated as standalone and off-grid projects.
2. The Government of Karnataka will promote Off-grid Rooftop Solar PV Plant in this policy subject to safety approval from Department of Electrical Inspectorate, as per the orders issued by the Government of Karnataka from time to time.
3. The project developer shall adhere to the safety codes and standards for safe operation of the off-grid system.

### **d. Support for Promotion of Distributed Solar Generation (i.e. Agriculture Feeder and Pumps Solarization)**

1. The Government of Karnataka will promote solarization of existing grid connected agriculture pumps through feeder solarization i.e. connecting the solar project at Distribution Substation (DSS) bus [subject to the evacuation feasibility], and solarization of off-grid connected solar pumps as per the guidelines or prevailing schemes of State Government/Central Government including Pradhan Mantri Kisan Urja Suraksha evem Utthan Mahabhiyan (PM-KUSUM) or any other forthcoming schemes/programs.
2. ESCOMs will be the implementation agency for feeder level solarization in their respective area, and KREDL may help ESCOMs for tendering and other related activities of installation of solar power plant for feeder level solarization under capex model or RESCO model in accordance with the MNRE guidelines for implementation of feeder level solarization.

3. Existing infrastructure of ESCOM's such as poles and others may be used by the developer for developing the distributed solar generation projects with appropriate commercial arrangements with ESCOM's for use of such infrastructures.

**e. Supports for Promotion of Floating Solar Projects**

1. The Government of Karnataka will promote development of floating solar on existing reservoirs/dams of hydro stations or any other water bodies including reservoirs and lakes.
2. The State will allocate the water body and land of reservoir on long term lease/rental basis for development of projects under InSTS and ISTS programs for sale of energy to ESCOMs/Procurer's or licensed intermediaries like SECI or Urban Local Bodies (ULB's) by utilization the lake water bodies.
3. The project developer is free to make connectivity and open access applications with CTU subject to the consent from CTU, KPTCL, Water Resource Department and Karnataka Lake Conservation and Development Authority (as applicable).
4. Floating Solar Projects can be developed with or without energy storage system.
5. All components of the Floating Solar PV plant shall be in accordance with technical specifications given in relevant IS/ IEC Standards. The design and commissioning shall be as per latest IS/ IEC/ BIS standards and the project shall not cause any environmental concerns to the water bodies.
6. The guidelines for implementation of floating solar projects will be notified by the Government of Karnataka.

**f. Supports for Promotion of Solar Energy for Charging the Electric Vehicles and Battery Swapping Stations**

1. The Government of Karnataka will promote use of RE for charging the electric vehicles and battery swapping stations with the aim of greening the transportation sector. The guideline for use of RE for charging the EV and battery swapping stations will be notified by the Government of Karnataka.
2. The charging station/battery swapping station service providers may set up RE generation plants within their premises for captive use and may also draw renewable power through open access subject to fulfillment of requirements under open access regulations.
3. Rooftop Solar PV Power Plants within same premise can be used for supplying the power to the EV Charging stations/battery swapping stations. For such charging stations, a rebate on the applicable tariff may be evaluated with the consent of KERC.
4. RE for charging the EV's/battery swapping stations can be with or without energy storage.
5. Government land/space on short term lease (with option of renewal) will be allotted for the first 100 renewable energy based EV charging stations and

battery swapping station under this policy. The guideline for allocation of land/space will be notified by the Government of Karnataka.

#### **5.2.4. Wind Energy Projects**

##### **a. Promotion of Wind Energy Projects**

This policy aims to promote the Wind Energy Projects including:

1. New wind energy projects; and
2. Repowering of existing wind energy projects.

##### **b. Additional Supports for Wind Energy Projects**

###### **b.1. New Wind Projects for Sale of Energy within Karnataka**

1. Selection of projects under InSTS category shall be through a competitive bidding process, as per the requirement of ESCOMs in the State to fulfill Renewable Purchase Obligation (RPO) target fixed by KERC or any requirements beyond the RPO target subject to the approval of KERC.
2. Project developer can develop projects under open access route under this policy for sale of energy inside the Karnataka in accordance with relevant guidelines issued from time to time.

###### **b.2. New Wind Projects for Sale of Energy outside Karnataka**

1. Selection of projects under ISTS category shall be through a competitive bidding process conducted by intermediaries such as SECI, NTPC and others.
2. Project developer can also develop projects under open access route under this policy for sale of energy outside the Karnataka in accordance with relevant guidelines issued from time to time.

###### **b.3. Repowering of Existing Wind Energy Projects**

1. The Government of Karnataka will promote repowering of existing wind turbines which have completed at least 10 years in operation. Repowering shall comply with the policy and guidelines of MNRE for repowering the wind power projects issued from time to time, with due consent from ESCOMs i.e., PPA holders.
2. In case of power being procured by State ESCOMs through PPA, the power generated corresponding to average of last three years' generation prior to repowering would continue to be procured on the terms of PPA in-force, as approved by KERC and remaining additional generation may be purchased by ESCOMs as per their requirements at a tariff discovered through competitive bidding, subject to the approval of KERC.
3. The repowered wind projects shall also be allowed to use the additional power for captive/group captive or third party sale within the State.
4. For repowering of wind projects, the pre-feasibility for evacuation of repowered energy through STU or CTU (as the case may be) shall be assessed by the project developer.

## 5.2.5. Solar-Wind Hybrid Energy Projects

### a. Promotion of Solar-Wind Hybrid Energy Projects

1. Hybrid projects can be Wind-Solar energy with and without energy storage system.
2. The rated capacity of one resource (wind or solar) shall be as per the National Wind-Solar Hybrid Policy 2018, No.238/78/2017-Wind, dated 14 May 2018, issued by Ministry of New & Renewable Energy (MNRE) and its amendments or as per the guideline issued by MNRE for Hybrid Projects. Other provisions as per the National Wind-Solar Hybrid Policy 2018, No.238/78/2017-Wind, dated 14 May 2018, issued by Ministry of New & Renewable Energy (MNRE) remains applicable.
3. This policy is applicable for hybridization of existing or under construction Wind or Solar projects into hybrid projects and also for new Wind-Solar Hybrid power generation projects.

### b. Additional Supports for Solar-Wind Hybrid Energy Projects

#### b.1. Regulations

1. The applicable open access charges for solar-wind hybrid projects in the State shall be as per the relevant regulations specified by the KERC from time to time. In case of ISTS category projects, the applicable open access charges shall be as per the relevant regulations specified by the CERC from time to time.

#### b.2. Hybridization of Existing Solar or Wind Energy Projects

1. In case of hybridization of existing projects by either addition of wind or solar energy, the additional generation from such hybrid projects may be purchased by ESCOMs as per their requirements at a tariff discovered through competitive bidding, subject to the approval of KERC.
2. The additional generated energy from existing projects after hybridization is allowed to sell under captive/group captive or third party route within the State as per relevant regulations issued from time to time.
3. For hybridization of existing projects, the pre-feasibility for evacuation of hybrid power through STU shall be obtained by the project developer.
4. Forecasting and scheduling shall be as per the CERC/KERC regulations as appropriate.

## 5.2.6. Energy Storage Projects for Renewable Energy

### a. Promotion of Energy Storage Projects

This policy will focus on development of energy storage market including pumped hydro in the State with the objective of integrating more RE in to the grid which can offer grid services such as grid optimization, peak reduction, curtailment management, contribution to reliability needs, deferral of transmission investments, managing intraday variation and seasonal variation and others, and also to meet the increasing power demand of the State through RE.

Energy storage can play an important role in grid integration and balancing of variable generation sources. By increasing the system's overall flexibility, it can improve power quality, reduce peak demand, enhance capacity of distribution / transmission grids, avoid/reduce deviation penalties etc. Use of energy storage systems by residential, commercial or industrial consumers, in conjunction with renewable energy has potential to improve power quality and reliability for such consumers. This would also allow for minimization of diesel consumption from back-up power applications.

## **b. Additional Supports for Energy Storage Projects**

### **b.1. Energy Storage as Services (ESaS)**

1. Energy storage service providers can tie-up with RE developers or can utilize any energy sources (i.e. energy exchange etc.,) for storing the energy and the stored energy can be sold to ESCOMs/Procurers/ Open Access consumers within Karnataka and outside Karnataka under InSTS and ISTS program.

### **b.2. Location of Energy Storage Projects**

1. Energy storage projects can be either co-located with RE projects (i.e. energy source) or it can be located near the load centers (i.e. sub-station and/or consumer premise).

### **b.3. Energy Storage Regulations**

1. The applicable open access charges for use of energy from the energy storage services in the State shall be as per the relevant regulations specified by the KERC from time to time. In case of ISTS category projects, the applicable open access charges shall be as per the relevant regulations specified by the CERC from time to time.

### **b.4. Use of Existing and New Renewable Energy Assets for Energy Storage**

1. Existing and new RE projects can use energy storage system to manage generation variabilities and offer necessary grid support services/ancillary services to KPTCL/ESCOMs as per its requirements. In case of existing projects, the use of energy storage system in the project to offer grid support services/ancillary services shall be subject to the consent from concerned ESCOM and KERC on the PPA.
2. RE projects (existing and new) developed under captive/group captive and third party sale within the state may use energy storage system to store the excess generation and set off appropriately. The guideline for use of energy storage system in RE captive/group captive and third party sale projects will be issued by the Government of Karnataka.

### **b.5. Utilization of Existing Transmission Capacity**

1. For the purpose of optimal utilization of existing transmission capacity within the State, locations such as retiring thermal power stations and existing Renewable Energy Parks will be evaluated for developing energy storage projects.

### **b.6. Pumped Hydro Storage Projects**

1. The Government of Karnataka will encourage development of Pumped Hydro Storage (PHS) Projects within the State including private investments in PHS projects.
2. Any applicable Government schemes can be explored by energy storage project developers for the purpose of project development.

## **5.2.7. Biomass Projects**

### **a. Promotion of Biomass Projects**

This policy will promote generation of energy through biomass to enable development of bio-energy based projects in the State.

### **b. Additional Support for Biomass Projects**

1. Procurement of energy from biomass based projects shall be based on the tariff based competitive bidding process as per the requirement of ESCOMs, subject to the approval of KERC.
2. Developer of biomass projects is allowed to use the power for captive/group captive or third party sale within and outside the State.
3. The Government of Karnataka will promote biomass projects as per the guidelines or prevailing schemes of State Government/Central Government including the MNRE's schemes such as "Programme on Energy from Urban, Industrial, Agricultural Wastes/Residues and Municipal Solid Waste" or any other forthcoming programs/schemes.

## **5.2.8. Waste to Energy Projects**

### **a. Promotion of Waste to Energy Projects**

This policy will promote generation of energy from wastes to enable development of waste-to-energy projects in the State.

### **b. Additional Support for Waste-to- Energy Projects**

1. Procurement of energy from Waste-to-Energy Projects by ESCOMs shall be as per the tariff determined by the KERC.
2. Developer of waste-to-energy projects is allowed to use the power for captive/group captive or third party sale within and outside the State.

## 5.2.9. Mini and Small-Hydro Projects

- a. **Promotion of Mini and Small-Hydro Projects**  
This policy will promote generation of energy through mini and small-hydro projects in the state.
- b. **Additional Support for mini and Small-Hydro Projects**
  1. Procurement of energy from mini and small-hydro projects shall be based on the tariff based competitive bidding process as per the requirement of ESCOMs, subject to the approval of KERC.
  2. Mini and Small-hydro projects allotted under open access category are permitted to use the power for captive/group captive or third party sale within the State.
  3. The Government of Karnataka will promote Mini and Small Hydro Projects as per the guidelines or prevailing schemes of State Government/Central Government including the MNRE's scheme on "Small Hydro Power Programme" and its amendments or any other forthcoming schemes/programs.
  4. The project developer shall obtain various statutory clearances including but not limited to techno-economic clearances, Forest and Environmental (if necessary) clearances, water rights and others required for the project development.

## 5.2.10. New Initiatives/Pilot Projects/R&D

- a. The Government of Karnataka will promote adaptation of new and emerging technologies in the State. The State will support new initiatives/pilot projects including off-shore wind energy projects, tidal and wave energy, rooftop aero turbine along with solar energy, highway aero turbines, hydrogen and fuel cells, bio-CNG, concentrated solar power and other emerging energy technologies.
- b. For promotion of offshore wind energy projects, the Government of Karnataka will explore development of offshore wind energy projects along with MNRE and NIWE, under the applicable schemes, programs and guidelines of MNRE.
- c. Initiatives from the private sector in Research and Development (R&D) activities for advancement of RE shall be encouraged by the State.
- d. For promotion of bio-CNG generation from wastes, existing schemes such as "Sustainable Alternative Toward Affordable Transportation (SATAT)" under Ministry of Petroleum and Natural Gas will be supported by the Government of Karnataka
- e. KREDL will be nodal agency for promotion of new initiatives/pilot projects in the State.



## 6. Allotment of Project and Land

### 6.1. Procedure for Application and Project Allotment

#### a. Common for all RE projects

1. The applicant shall furnish the details as per the prescribed application form along with required documents by paying application fee as prescribed by the Government of Karnataka from time to time.
2. The net worth of the company shall be at least 30% of the total project cost.
3. The capital cost per MW considered by KERC and its revision from time to time in the respective tariff orders for solar, wind, mini and small hydro, biomass, cogeneration and waste to energy projects shall be used as reference for considering the net worth requirements. However, in case of cogeneration projects, sugar factory cost shall be excluded and only cogeneration power project cost to be considered. In case of Renewable Energy Park, floating solar and energy storage projects, the total project cost shall be considered as per the Detailed Project Report (DPR) for the purpose of arriving the net worth of company.
4. The developer shall identify the site/land area required for the project development. Further, the details of the land required for the proposed project, such as break up of Private/Revenue/Forest land along with tentative survey numbers and records of Rights, Tenancy and Crops (RT&C) shall be submitted by the project developer. In case of wind projects/parks, the extent of land along with WTG's co-ordinates shall be marked in the topo sheet and furnished along with the application.

#### b. Wind and Hybrid Projects/Park (Solar-Wind or other renewable energy-Wind)

1. The project developer shall furnish the application containing the project details including co-ordinates of each WTG along with its survey numbers, required for the implementation of the project.
2. The application shall be received from the project developer for the purpose of issuance of Government Order only, and no facilitation shall be provided for wind resource assessment.
3. KREDL shall scrutinize the application and project details, including Detailed Project Report, and it shall submit the proposal to SLAC for allotment of project.
4. SLAC shall review the proposal and recommend for issuance of Government Order only when the project is feasible.
5. The allottee shall execute an Implementation Agreement with KREDL within 45 days from the date of Government Order.
6. Developer can apply for one time capacity enhancement; however, the completion period of project shall be as per the timeline of original allotted Government Order.

### **c. Solar Project/Park (including floating solar) and Energy Storage Projects**

1. The project developer shall submit the application along with applicable fees and requisite documents.
2. KREDL shall scrutinize the application and documents submitted by the applicant and it shall recommend to Energy Department, Government of Karnataka for issuance of Government Order.

### **d. Mini and Small Hydro**

1. A Detailed Project Report containing the preliminary details required for the implementation of the project shall be furnished along with the application.
2. The details of the land for the proposed small hydro project such as Private/Revenue/Forest along with extent of land required, village map with marking of project location, and records of Rights, Tenancy and Crop shall be submitted by the applicant.
3. KREDL shall scrutinize the application and a letter will be addressed to Forest Department (to ascertain the availability of land if it lies in Forest area), Krishna Bhagya Jala Nigam Limited (KBJNL) (if the project comes under limits of KBJNL), Water Resources Development Organization (WRDO) (if the project comes under vicinity of Cauvery Basin) and Karnataka Power Corporation Limited (KPCL) (if the project comes under vicinity of KPCL projects).
4. On receipt of clearances from Forest Department, KBJNL, WRDO and KPCL, the proposal shall be sent to SLAC for allotment of project.
5. SLAC shall review the proposal and recommend for issuance of Government Order only when the project is feasible.
6. Government Order will be issued by Energy Department, Government of Karnataka.
7. The allottee should execute an Agreement within 45 days from the date of Government Order with KREDL.

### **e. Biomass and Waste to Energy**

1. The developer shall submit Detailed Project Report along with prescribed application and processing fee.
2. In case of biomass or co-generation, waste to energy projects, the developer shall take the following into consideration before applying.
  - a. In case of biomass or co-generation projects, the proposed technology, the fuel availability and location from where the fuel to be sourced shall be provided. The raw materials available in the radius of 40 kms surroundings will be taken into consideration for issuance of NOC of the biomass power projects to avoid the overlapping of the other projects.
  - b. Applications in respect of co-generation will be considered only after sugar cane allotment from the Department of Industries and Commerce, Government of Karnataka.

- c. Applications in respect of waste to energy projects will be considered only after assurance/consent for allotment of waste from the concerned local bodies, details of waste storage shall be furnished along with the initial consent from Pollution Control Board.
3. After verifying the proposal, KREDL will recommend to the Government of Karnataka for issuing the NOC.
  4. Apart from this, the details of the availability of waste in each taluk will be published / uploaded in KREDL web site after the detailed study and with authenticated input from the local governing bodies/authorities including the Municipal Authorities to ensure decentralized energy generation in each taluk. This will also help in minimizing waste transportation and the eradication of the epidemics.
  5. The availability of biomass in each village in each season with its type, quantity and calorific values of each fuels will also be published / uploaded in KREDL website after the detailed study with authenticated input from the local governing bodies / authorities including the Agriculture Department to ensure decentralized energy generation and to increase the economic activities / GSDP of rural Karnataka while creating rural job opportunities.

## 6.2. Criteria for Allotment of Land to Setup Renewable Energy Projects

In order to setup the RE projects based on various technologies, the maximum land area/space which can be allotted to the project developer will be as under

Sl.No	Technology	Maximum area that can be allotted to the project	Remark
1	Solar PV Technology	3 acres per MW <sub>ac</sub>	Any additional land requirement beyond the maximum area shall be evaluated by the Government of Karnataka on case to case basis, depending upon the topography of the location.
2	Solar PV Technology with tracker	3.5 acres per MW <sub>ac</sub>	
3	Wind	2.5 acres per WTG (land requirement for WTGs shall be reviewed time to time based on the models approved by MNRE in the RLMM)	For any additional land requirement beyond the maximum area of 2.5 acres per WTG; the developer shall pay INR 50,000 per acre for incremental area.
4	Solar Rooftop	100 Sq. ft per 1 kWp	-

# 7. Project Development Timelines, Fees and Charges

## 7.1. Timelines

- a. The timeline for completion of the RE projects under captive/group captive and third-party sale (both within and outside the renewable energy parks) is mentioned below. In case the developer fails to complete the project within the stipulated timeline, the time extension fee (as in provision 7.2) shall be applicable as per this policy.

Sl.No	Renewable Energy Projects	Stipulated Commissioning Timeline from G.O Date	Extension of Time from Stipulated Commissioning Timeline with Payment of Applicable Time Extension Fee
1	Solar Energy Project (including floating solar) /Solar Parks with or without Energy Storage System	Within 2 years	Maximum up to 2 years
2	Wind Energy Projects/Parks including hybrid with or without Energy Storage System	Within 2 years	Maximum up to 2 years
3	Biomass and Waste to Energy	Within 2 years	Maximum up to 2 years
4	Energy Storage	Within 1 year (for non- PHS) Within 3 year (for PHS)	Maximum up to 1 year
5	Mini and Small Hydro	Within 3 years	Maximum up to 2 years

- b. The Government of Karnataka will cancel the allotment/NOC issued for the RE projects, after any delay beyond the above time extension period.
- c. Time extension may be recommended by the KREDL to the Government if and only the delays are due to reasons beyond the developer's control. The developer must approach the KREDL at least 3 months before the scheduled commissioning date with the application for seeking extension along with valid justification and supporting documents.
- d. In case the developer fails to commission the project within the stipulated period, KREDL will recommend to the GoK for cancellation of the Government Order and after cancellation of Government Order, the performance bank guarantee will be forfeited.
- e. If the capacity is developed partially in the overall time period, the allotted capacity will be restricted to the commissioning capacity and the remaining capacity will be treated as cancelled capacity. In such a case, the performance bank guarantee will be encashed/forfeited and the amount equivalent to the commissioned capacity shall be refunded to the project developer by the KREDL.

- f. The project developer shall submit quarterly progress reports of the project related to approvals from other concerned departments, Power Purchase Agreement, financial closure and construction from the date of issue of Government Order. The quarterly progress report shall be submitted to KREDL by the project developer.

## 7.2. Fees and Charges

### a. Fees and Charges for Competitive Bidding Projects within the State

The fees and charges applicable for RE projects developed under tariff-based competitive bidding shall be as per the tender conditions and Karnataka Transparency in Public Procurements (KTPP) Act and its amendments issued from time to time.

### b. Fees and Charges for Open Access Projects within the State and outside the State (including ISTS projects under Competitive Bidding)

The fees and charges applicable for open access projects across various categories of RE projects under InSTS and ISTS category (including ISTS projects under competitive bidding) are given below:

Category	Application Fee (INR per MW)	DPR Processing Fee (INR per MW)	Performance Bank Guarantee (INR per MW)	Net-Worth per MW	Time Extension Fee in INR per MW per Year	Transfer Fee (INR per MW)*
<b>Solar (including floating solar)</b>	25,000	2,00,000	5,00,000	30% of the project cost determined by KERC	100,000	1,50,000
<b>Wind</b>	25,000	2,00,000	5,00,000	30% of the project cost determined by KERC	100,000	1,50,000
<b>Wind Solar Hybrid</b>	25,000	2,00,000	5,00,000	30% of the project cost determined by KERC	100,000	1,50,000
<b>Energy Storage</b>	25,000	2,00,000	5,00,000	30% of the project cost determined in the DPR	100,000	1,50,000
<b>Mini and Small Hydro</b>	25,000	2,00,000	5,00,000	30% of the project cost determined by KERC	100,000	1,50,000
<b>Biomass</b>	25,000	2,00,000	5,00,000	30% of the project cost determined by KERC	100,000	1,50,000

Category	Application Fee (INR per MW)	DPR Processing Fee (INR per MW)	Performance Bank Guarantee (INR per MW)	Net-Worth per MW	Time Extension Fee in INR per MW per Year	Transfer Fee (INR per MW)*
<b>Co-generation</b>	25,000	2,00,000	5,00,000	30% of the project cost determined by KERC	100,000	1,50,000
<b>Waste to Energy (WTE)</b>	25,000	1,00,000	2,50,000	30% of the project cost determined by KERC	100,000	50,000
<b>Rooftop Projects (1 to &lt;5 kWp)</b>	500 per project	1,000 per project				
<b>Rooftop Projects (5-50 kWp)</b>	1,000 per project	2,000 per project	-	-	-	-
<b>Rooftop Projects (&gt;50 kWp and up to 1 MWp)</b>	2,000 per project	5,000 per project	-	-	-	-
<b>Rooftop Projects (&gt;1 MWp and &lt;10 MWp)</b>	5,000 per project	10,000 per project	-	-	-	-
<b>Renewable Energy Parks</b>	1,00,000	25,000	5,00,000	30% of the project cost determined in the DPR	100,000	1,50,000

\* Transfer fee is applicable if Company Identification Number (CIN) issued by Registrar of Companies (RoC) are different. In case CIN is same, the applicable charges shall be as per the Government Order No: EN 392 NCE 2008 dated 13.10.2009 and Government Order No: EN 61 NCE 2010 dated 06.07.2010, and its revision issued from time to time.

#### Note:

1. The charges mentioned above may be revised from time to time as notified by the Government of Karnataka.
2. The other fees and charges not specified in this provision shall be applicable as per the Government Order No: EN 392 NCE 2008 dated 13.10.2009 and Government Order No: EN 61 NCE 2010 dated 06.07.2010, and its revision issued from time to time.
3. The application fee shall be non-refundable. In case of non-allocation of projects, the DPR processing fee shall be refunded.
4. The GST as applicable shall be payable in addition to the above fees and charges.

5. The performance bank guarantee shall be returned to the project developer after successful completion of the project.
6. The performance bank guarantee shall be renewed by the project developer before two months of the validity period. In case of non-renewal of performance bank guarantee by the project developer, KREDL shall encash the performance bank guarantee without notice.
7. For wind energy projects including hybrid projects which involves wind energy component, the project developer shall pay the land allotment fee of INR 50,000 per acre to KREDL for any additional land requirement beyond the maximum area mentioned in the provision 6.2 of this policy.
8. IPPs, Captive/Group Captive, REC and ISTS projects applicants should get Government approval duly submitting the application and the relevant documents as detailed in KREDL website "kredlinfo.in".
9. The change of category from InSTS project to ISTS project shall be allowed.

## 8. Administration of the Policy

### 8.1. Nodal Agency

Karnataka Renewable Energy Development Limited (KREDL) is the State Nodal Agency for implementation of this policy. However, the smart grid projects specified under the regulation Karnataka Electricity Regulatory Commission (Smart Grid) Regulations, 2015 shall be implemented by the transmission licensee and/or distribution licensee. Further KREDL may support the transmission licensee and/or distribution licensee for implementation of such smart grid projects under this policy.

### 8.2. State Level Allotment Committee

A State Level Allotment Committee (SLAC) will be constituted for approval of the RE projects under this policy and to fast track its implementation. The SLAC will have the below constitutions:

Sl.No	State Level Allotment Committee (SLAC) Constitutions	Title
1	The Additional Chief Secretary/ Principal Secretary/Secretary to Government, Energy Department	Chairman
2	The Additional Chief Secretary / Principal Secretary/Secretary to Government, Revenue Department	Member
3	The Additional Chief Secretary/ Principal Secretary/Secretary to Government (Forest), Forest, Ecology & Environment Department	Member
4	The Additional Chief Secretary/ Principal Secretary/Secretary to Government, Water Resources Department	Member
5	The Managing Director, Karnataka Renewable Energy Development Limited	Member
6	The Chief Conservator of Forest (Forest Conservation), Government of Karnataka	Member
7	The Director (Technical), Karnataka Power Corporation Limited	Member
8	The Director (Transmission), Karnataka Power Transmission Corporation Limited	Member
9	The Deputy Secretary to Government, Energy Department	Convener

The SLAC for RE projects shall meet once in every three months or on need basis. KREDL will examine and submit applications with relevant details to SLAC along with its recommendations. The developer shall approach different departments for clearance/approvals after the issue of allotment Government Order. The developer may also forward the applications to the relevant departments through KREDL. The concerned department will convey the approval/clearance/observation or comments if any within a stipulated time period of 45 days.

KREDL shall submit a report to the SLAC at least seven days in prior to the meeting date for its review and deliberations. The said report shall cover Note on project clearance issues to be resolved during inter-departmental meeting.



KREDL as a State Nodal Agency shall carry out the following functions:

1. Preparation of guidelines for allocation and implementation of RE projects.
2. Act upon the guidelines of SLAC and in accordance with this policy provisions.
3. Verification and Recommendation of proposal to SLAC.
4. Act as a facilitator to obtain all statutory clearances by issuing facilitation letters.
5. Resolution of policy level issues for accelerating deployment of various RE technologies.
6. Monitoring the progress of project implementation.
7. Recommendation to the Government of Karnataka for cancellation of RE projects upon non-implementation within the stipulated period.
8. Recommendation for extension on case to case basis.

### **8.3. Power to Remove Difficulties and Interpret**

The Energy Department, Government of Karnataka will have power to amend or review or relax or interpret any of the provisions under this policy as and when required. If any difficulty arises in giving effect to this policy, KREDL in consultation with Energy Department, Government of Karnataka and after taking approval from Government of Karnataka, is authorized to issue clarifications as well as interpretations to such provisions, as may appear to be necessary for removing the difficulties either on its own motion or after hearing those parties who have represented for change in any provisions.

If there is any confusion or dispute about the meaning, intent or purpose of any provision of this policy, the interpretation given by Energy Department, Government of Karnataka shall be final and binding to all concerned.

Further, Energy Department, Government of Karnataka will have power to allocate more RE capacity to the project developers beyond the target mentioned in this policy during the policy period.

Not with standing anything contained in this policy, the provisions of The Electricity Act, 2003, MNRE guidelines, applicable CERC regulations, Grid Code, and the applicable regulations issued by KERC from time to time shall prevail for the purpose of implementation of this policy.

**Karnataka Renewable Energy Policy 2021-2026**  
**Government of Karnataka**