

# **DRAFT OF “SOLAR ENERGY POLICY AND RENEWABLE” (GOA)-2014**

**Drafted by Goa Energy Development Agency (GEDA)  
for the approval by the Govt. of Goa**

## **1. PREAMBLE:**

Solar energy is the most secure of all energy sources. It is abundantly available. It can be easily converted into electrical energy. Production of electrical power and its easy availability at affordable rates is an established benchmark of development. No major economic activity can be sustained without adequate and reliable sources of power. The challenges of Climate Change and Global Warming resulting from burning of fossil fuels are continuously threatening the world community. Renewable Power generation including Solar Photovoltaic (PV) and Solar Thermal (ST) power / steam / hot water generation offer an environmentally safe and sustainable alternatives.

Goa is richly endowed with natural renewable resources for generating electricity with moderate climate and bright sunshine for almost 270 days in a year. In view of the fact the State of Goa does not generate its own electricity, excepting under private initiative where power is produced based on use of fossil fuel, the challenge before the State Government is not only to meet the ever growing demand for power but also to progressively increase the share of renewable sources in the energy - mix so as to achieve overall energy security and also to meet the Renewable Purchase Obligation (RPO). It can be done by promoting the systematic tapping of the solar energy potential to the maximum. It is expected that in near future the solar PV, Solar thermal and Solar PV+ Wind hybrid systems will be set up by both the State Government, Institutions, Agencies and Private Entrepreneurs/ Institutions for the captive consumption as well as for export.

An appropriate policy framework is therefore essential to promote these renewable energy generation initiatives. Therefore, the State Government is pleased to introduce the “**Solar and Renewable Energy Policy (Goa) -2014**”, as under:

## **2. POLICY:**

### **(2.1)OBJECTIVES**

The state Government introduces the “**Solar and Renewable Energy Policy (Goa) -2014**”, with the following objectives:-

- 2.1.1 To promote use of solar energy for generation of power, steam and hot water for use in industrial, commercial, domestic and other applications.
- 2.1.2 To promote Private Sector, Corporate Sector and individual participation to harness solar energy for power generation and heating application.
- 2.1.3 To promote investment, competition, efficiency in operation and economy in the field of solar energy undertakings in the State.
- 2.1.4 To contribute to productive use of wastelands or abandoned mines and utilize the open space provided by these sites for Solar Power plants.
- 2.1.5 To promote establishment of local manufacturing facilities for manufacture of components, subassemblies, assemblies for solar PV and solar thermal planes.
- 2.1.6 To build capacity in the State to initiate and sustain, use and effective management of state-of-art solar energy technologies.
- 2.1.7 To help the State Electricity Department, Open Access Users and other obligated entities to meet the RPOs.
- 2.1.8 To enhance skills and create employment opportunities at various levels in the State of Goa
- 2.1.9 To spread environmental awareness among the general public.
- 2.1.10 To promote R&D activities related to efficient use of solar energy applications

## **(2.2) SOLAR ENERGY OPTIONS**

The Solar Energy options for Goa are as follows: -

- 2.2.1 Solar Photovoltaic Power Generation (land based / roof top)
- 2.2.2 Solar Thermal power generation (land based)
- 2.2.3 Solar steam /hot water generation for application in domestic commercial and industrial sectors (land based / roof top)

## **(2.3) RESOLUTION**

### **(2.3.1) Title:**

This policy shall be known as the “**Solar and Renewable Energy Policy (Goa)-2014**”.

**(2.3.2) Operative period:**

This policy will come into effect from the date of issuance and shall remain in operation up to 31<sup>st</sup> July 2023. However, this is subject to modifications as may be made by Government of Goa from time to time.

**(2.3.3) Applicability:**

This policy shall be applicable for Solar Photovoltaic power and Solar Thermal power / steam/ hot water generation.

**(2.3.4) Installed capacity(Power generation):**

For a private sector undertaking maximum of 5 MW Solar Power Generation shall be allowed for installation at a given location during the operative period of the policy. Such plants upto 5 MW at each location capacity can be erected at different locations. The minimum capacity of a solar photovoltaic (SPV) power project for individual roof-top shall be 1 KW.

It is obligatory for local DISCOM/Government of Goa, to purchase all the power produced from Solar / Renewable sources. The individual shall have right to sale power to third party excess of captive consumption.

However there shall not be any maximum capacity cap for projects developed by State / Central Government, Corporations / Bodies.

**(2.3.5) Nodal Agency**

The Goa Energy Development Agency (GEDA) the State Nodal Agency for the Ministry of New and Renewable Energy (MNRE) and Joint Electricity Regulatory Commission (JERC), shall act as facilitator for implementation of “**Solar and Renewable Energy Policy ( Goa) -2014**”.

**(2.3.6) Minimum Capacity**

Minimum capacity of a solar thermal (ST)power project shall be governed by non – IBR (Indian Boiler Regulation) Accordingly the pressurized steam generation hold up capacity will be 25 liters. In the event of boiler capacity in the IBR range, approval of the system will be assessed on the merit of individual cases.

**(2.3.7) Categories of Solar Power Projects**

- Category I : Projects selected by GEDA as per the competitive bidding process and for selling power to distribution licensee in the State of Goa and for meeting the said distribution licensee's RPO obligation as specified.
- Category II : Project set up on private land including roof tops of non government buildings for captive use or sale of power to 3<sup>rd</sup> party within or outside the state or project set up on private land under Renewable Energy Certificate (REC) mode.
- Category III : Project set up on Government land including roof-tops of government buildings for captive use or sale of power to 3<sup>rd</sup> party within or outside the state or project set up on Government land under Renewable Energy Certificate (REC) mode.
- Category IV : Projects under Jawaharlal Nehru National Solar Mission (JNNSM) program of MNRE, Govt. of India

### **(2.3.8) Selection of Solar Power Developers**

#### **i) Category I projects:**

Government of Goa will promote setting up of solar power projects for direct sale of electricity to the Department of Electricity of the state of Goa. The total capacity of project under this category will be as per the RPO target specified by JERC from time to time or as decided by Government of Goa.

Government of Goa / GEDA shall invite proposals from time to time for selection of Solar Power Projects under this category, through tariff based competitive bidding process. There shall be a set of qualification criteria fixed by Government of Goa/ GEDA for the prospective Developers of solar projects. Developers executing the solar energy projects on turnkey basis shall be Channel Partners / approved Manufacturers of Ministry of New and Renewable Energy (MNRE). Prospective bidders shall submit their proposals in accordance with bidding document.

#### **ii) Category II projects:**

Under this category, any prospective developer can establish solar power projects (solar PV/ solar Thermal) on private land subject to approval by JERC and / or Government of Goa as required. Prospective developers shall submit all the required information/ documents to GEDA as per the application form (available in Annexure -I; subject to revision)

Under this type, solar power projects to be installed in the state of Goa shall be eligible for incentives.

iii) **Category III projects:**

Under this category, Government of Goa/ GEDA shall invite proposals from the prospective developers who want to set up solar power projects on Government land (if available) in the state of Goa on the prescribed format as per Annexure –II(A) and Annexure –II(B). Separate offer would be invited by Government of Goa/ GEDA for identified Government land.

The prospective developers shall submit their proposals in two separate envelopes containing all the required documents / information as per Annexure –II (A) in the first envelope and its offer for providing maximum free energy (in MUs) per MW as per the form available in Annexure-II (B) in second envelope.

The sealed envelope containing application form with all the required documents / information as per Annexure –II (A) shall be marked as “Application form for submitting proposals for Category -III projects under “Solar Energy Policy (Goa)- 2014; and the second sealed envelope containing the offer for providing maximum free energy (in MUs) per MW shall be marked as “Offer for the maximum free energy (in MUs) per MW for Category III projects under “Solar Energy Policy (Goa)- 2014”.

The second envelope of only those developers shall be opened whose applications are shortlisted by Government of Goa / GEDA.

The application of the prospective developer shall not be accepted if it submits the application form as per Annexure-II (A) and its offer for providing maximum free energy per MW as per Annexure –II (B) together in the same envelope.

iv) **Category IV projects:**

The Government of Goa / GEDA shall invite proposals from prospective developers as per the guidelines issued by Ministry of New and Renewable energy, Govt. of India under JNNSM and as amended from time to time.

**(2.3.9) Allotment of Government Land to the successful bidder:**

1. Government of Goa / GEDA in accordance with the existing land revenue rules / law of Goa (which may be amended from time to time) shall identify the Government land owned by Revenue Department, Gram Panchayat, local Comunidade or any other State Government Department. The Government of Goa shall take possession of the land and subsequently issue permission for use of land on lease to the successful developer.
2. The Government land (if available) shall be provided to the project developer on long term lease for 15 years as per the applicable land revenue rules / law of Goa for the installation of Solar Power projects. The lease can be further extended for 05 -10 years depending on the continuation of the power generation project.

3. The permission for utilization of Government land (if available) will be done as per the provision of Goa land revenue rules/ law.
4. Only such selected projects shall be eligible for incentives under this policy.
5. In case the Government land is found to be used for purposes other than related to the projects, the lease permission will be cancelled with immediate effects. The construction carried out by the Developer and equipments on such land will be seized and vested with the Government of Goa.
6. After completion of lease period the land along with all equipments, evacuation arrangements and all other facilities shall be vested in the state Government. However the amount to book value of the infrastructure shall be paid to the concerned developer by the Government of Goa/ GEDA.

#### **(2.3.10) Land Requirement**

**(a)** For setting up of solar Power Plant (Solar PV or Solar thermal) with different technologies, maximum land use permission for Government land, if available, to the solar power developer shall be 2.5 hectare per MW

**(b)** Identification of Private land

- i. Developers may identify suitable lands for their projects within the state of Goa.
- ii. If the developers purchase private or public land especially marked for renewable energy projects, then they will be eligible for an exemption of 50% on stamp duty and if they do not install the solar project on this land within the stipulated time period, then the given exemption will be withdrawn and recovery will be made with interest @ 18% p a as per the procedure.
- iii. In case developer is using the agriculture land for establishing Solar Power Plant under this policy then he would be exempted from paying 50% conversion rate (if any).
- iv. In case the land is found to be used for purposes other than renewable energy projects, the land use permission will be cancelled with immediate effect. The construction carried out by the developer and equipments on such land will be seized and be treated as vested in the Government of Goa, penalty will be imposed to the extent of power production tariff for 5 years.
- v. All the statutory clearances / approvals for land acquisition for implementing the renewable energy projects shall be obtained by the developers of the projects.

It is further stated that the purchase of land by the private developers would be in accordance with the existing land revenue / law of Goa (Which may be amended from time to time.)

### **(2.3.11) Decentralized and off-grid solar projects**

The Government of Goa will promote decentralized and off grid solar applications, including (Solar + Wind) hybrid systems as per guidelines issued by MNRE up to 100 KW for residential areas and up to 5 MW for the industrial areas and mass production.

### **(2.3.12) PROMOTING SOLAR ROOF TOP SYSTEMS**

The government of Goa will promote solar rooftops through the following measures

#### **i) Domestic Rooftop Generation Based Incentives(GBI)**

All domestic consumers will be encouraged to put up roof-top solar installation. A generation based incentives (GBI) of Rs. .... per unit for first two years for all solar or solar wind hybrid rooftops being installed before 31<sup>st</sup> march 2015 .

Consumers desirous of availing GBI shall necessarily install separate meters to measure rooftop generation

#### **ii) Promoting rooftop in government**

All new government / local body buildings shall necessary install solar rooftops.

Existing government / local body buildings will be provided with solar rooftops in phased manner.

### **(2.3.13) PROMOTION OF SOLAR WATER HEATING SYSTEMS**

#### **i) Public buildings**

The government of Goa will issue amendments to the building rules through government orders , making the use of solar water heating systems mandatory for all designated new houses / buildings/ marriage halls/ hotels etc.

The state will promote solar water heating systems by suitably amending the relevant acts of Municipalities / corporations.

#### **ii) Industries**

Installation of Solar Water heating systems will be made mandatory for industries having hot water boilers/ steam boilers using fossils fuels.

### **(2.3.14) Eligible Entities:**

All the registered companies, business firms, institutions, societies, Central and State Government power generation companies and private / public sector of solar power and Renewable energy projects shall be eligible for setting up of Solar Energy Projects under this Policy.

**(2.3.15) Restriction for use of fossils fuel:**

No fossil fuel viz: coal , gas , lignite, naphtha, wood etc. shall be allowed to be continuously used in Renewable power projects except for initial ignition of the system or maintaining continuity of operation of generation if required .The data on the usage for this purpose will have be mentioned in the DPR.

**(2.3.16)Wheeling charges**

The wheeling of electricity from solar power captive generators to the desired location for self use within the state shall be without any wheeling charges for the energy fed to the grid. This will be applicable in the case of drawing solar PV power for captive consumption from the energy parks.

The drawal of Reactive power by the solar power plant shall be charged as decided by JERC regulations.

**(2.3.17)Exemption from payment of electricity duty:**

Electricity generated from the solar power generation and used for self consumption / sale to third party / sale to licensees shall be exempted from payment of electricity duty.

**(2.3.18) Sale of energy:**

The Tariff for Renewable Energy will be guided by the tariffs decided by the Joint Electricity Regulatory Commission. Till Specific tariff orders are issued by JERC, the Tariff shall be guided by Central Electricity regulatory Commission (CERC) as per Regulation No. 19 under JERC-10/2009 for terms and conditions for determination of Tariff.

Under this policy, the State Government may provide the following benefits:

1. Exemption of VAT on construction of Renewable Power Plants.
2. MNRE gives subsidy towards capital cost up to 30%. As long as it is available from MNRE, the State Govt. will release the amount of 30% subsidy as per applicable from MNRE within three months from the date of successful commissioning and proper functioning of the installation for two continuous months. The State Government will claim it back from MNRE.



### **(2.3.19)Tariff**

#### **(a) Category –I Projects**

For the projects allotted under tariff based competitive bidding route for sale of power to the Dept. of Electricity / DISCOM of Goa , the Power Purchase Agreement will be executed between Dept. of Electricity /DISCOM of Goa and successful bidders as per the tariff arrived by tariff-based bidding. However the rates shall be in tune with the rates specified by JERC and with pay back period of 7 years.

#### **(b) Category –II and Category –III projects**

In case of third party sale within or outside the state or for captive use, the power Purchase Agreement will be executed between the Power Producer and the Procurer on mutually agreed rates.

In case of solar power projects established under Renewable Energy Certificates (REC) mechanism, the power Purchase agreement as required, will be executed between solar power producers and the procurer as per the regulations / orders of JERC and/or CERC issued from time to time in this regard.

A separate agreement will be executed for banking of power with DISCOM of Goa for such banking. The wheeling agreement with DISCOM of Goa/ or with other grid or network as appropriate will be executed separately.

#### **(c) Category –IV Projects**

For Projects under JNNSM, the power Purchase Agreement will be executed between the solar power producer and the Procurer as per guidelines of MNRE, Govt. of India under JNNSM.

##### Performance based incentives on tariff

It is known that over the period the PV performance of the solar PV panels diminishes. At the same time it is to be noted that the panel quality and percent power conversion are increasing with newer types of PV technology being developed. So also there is uncertainty in the output of power over the period of years. In order to maintain the same output and also to keep scope for inducting newly developed technology, the regime of incentives in tariff will be introduced as under:

- i) Although the agreement for the solar PV plant will be made for the minimum duration of 15 years further extendable by minimum 5 years, the revision in tariff will be made every 5 years.
- ii) The vendor will have opportunity to update the technology and add more power generation capacity to the set up keeping the area same.
- iii) After the first quarter year of operation excluding the rainy season months June - Sept, the capacity of the plant will be fixed. It will be considered as rated capacity of the plant.

- iv) Fixed tariff will apply for  $\pm 10\%$  of the rated capacity. If the power production exceeds by more than 10% of the rated capacity by way of either better equipments or enhanced technology, an incentive of ₹ 1.00 will be paid for every unit of KW above the rated power generation. In the event the average quarterly output falls below the rated capacity, Rs. 0.50 will be paid less for the reduced production.

### **(2.3.20) Performance guarantee**

#### **a) Category I projects:**

As per the guidelines specified in the qualification / selection document issued by Government of Goa.

#### **b) Category II projects ,Category III and Category IV projects availing policy benefits:**

The developer shall submit Performance Bank Guarantee (for projects being set up on Government land at the rate of Rs. 5.0 Lac / MW or part thereof to Goa Energy Development Agency (GEDA). The Bank Guarantee shall be valid for a period of twenty four (24) months for solar PV projects and for a period of forty (40) months for solar thermal projects respectively.

- i) The Bank Guarantee shall be released in stages to the project developer after evaluating the achievements and project benchmarks (as per clause 20).
- ii) In case the project developer fails to achieve the desired progress and the project is cancelled (as per the provisions under clause 21), the balance remaining Bank Guarantee at the time of cancellation of the project shall be forfeited and encashed as penalty. The decision of Government of Goa shall be final in this regard.
- iii) In case the project cannot be set up for want of an approval from the State or the Central Government, the performance guarantee amount shall be released. The decision of Government of Goa shall be final in this regard.
- iv) In case the project is set up on private land even then the developer has to submit the implementation schedule to the State Government and abide by it.

### **(2.3.21) Security deposit:**

The developer shall be required to provide bank guarantee @ Rs. 2500.00 (Rs. Two Thousand Five Hundred) per KW at the time of signing of power purchase agreement with distribution licensee. In case the developer fails to achieve commercial operation within time period mentioned in power purchase agreement, the bank guarantee shall be forfeited. The bank guarantee shall be refunded, if the developer achieves commercial operation within time period mentioned in power purchase agreement.

### **(2.3.22) Administrative Approval:**

Applications received as per the provisions shall be examined and accorded approval, if found acceptable by the Government of Goa within a period of thirty (30) days from the date of submission of all the documents.

**(2.3.23) Plant and machinery:**

Only new plant and machinery shall be used for installation under this policy.

**(2.3.24) Grid connected to Solar PV Projects**

Grid connected solar power projects will be implemented on suitable land banks identified and procured either by the local body, Government Department or by the developer. In case of Projects to be set up on Government land or space, selection of the developer will be done by the Department or Nodal Agency through a transparent process.

**(2.3.25) TARGET FOR PROMOTION OF SOLAR ENERGY IN THE STATE:**

It is proposed to generate 50 MW of solar PV power and install 20,000 units of 100 LPD hot water equivalent of solar thermal installations by 2018.

**a. TIME FRAME FOR IMPLEMENTATION OF PROJECT:**

Developer shall be required to complete and commission the allotted Solar Power Projects within 12 months from the date of sanction.

**b. RENEWABLE PURCHASE OBLIGATION (RPO)**

The quantum of power that can be injected in the grid from all renewable resources i.e. purchased by distribution licensees plus captive consumption plus third party sale would not be restricted. Goa State Government will promote renewable energy production to any extent and even for export to other states. The RPOs will be in line with the regulation no. JRC-19/14/2010 as amended from time to time.

**c. SOLAR PURCHASE OBLIGATION (SPO)**

The State will mandate to purchase / generate electricity (in kWh) from Solar Energy @ 6% of the total consumption in its area during a year (starting with 2% till December 2014 & 6% from January 2015) for the following category of consumers:

**a. HT Consumers**

1. Special Economic Zones(SEZ)
2. Industries guaranteed with 24X7 Power Supply
3. IT Parks, Telecom Towers
4. All Technical Institutions, Hotels with minimum 1000 Sq. Mtrs built up area
5. Buildings with a built up area of 20,000 Sq. m. or more

**b. LT Consumers**

1. Cottage and tiny industries
2. LT Industrial Consumers

### **3. SOLAR POWER PARK AS COMMON PRODUCTION FACILITY**

The State Government will promote and encourage development of SOLAR POWER PARKS adjoining to the State Industrial Estates to accelerate the development of solar power generation projects and associated manufacturing facilities. These will be implemented after checking the availability of large areas of suitable land, provision of common infrastructure including grid connection for power evacuation, water access, as well as facilitating the permitting process, internal access roads etc.

These solar parks may be established at appropriate locations in the state of Goa either by private developer on its own or through PPP model on cost sharing basis.

Individual industries can either set up their own solar power facility or can contribute to the common pool of production of solar energy undertaken by the State Nodal Agency (SNA) i.e. GEDA.

### **4. MONTHLY PROGRESS REPORT AND PROJECT CANCELLATION:**

- a) The Developer shall submit monthly progress report in the prescribed format with related documents from the date of registration till the commercial operation date.
- b) The progress will be compared against the timelines and benchmarks as specified in clause 20. Explanation will be sought from the developers in case of any delays and slippages in this regard. On receipt of explanations the Developer will be given a reasonable opportunity of being heard and the Govt. of Goa shall pass appropriate orders accordingly.

### **5. BENCHMARKS AND TIMELINES FOR SOLAR POWER PROJECTS**

Sr. no	Benchmark	Timeline (from zero day)		Percentage refund of performance guarantee (%)
		Solar PV	Solar Thermal	
1	Date of issue of administrative approval	Day 0	Day 0	
2	Letter of land possession / land use permission / allotment	3 months	3 months	10% (within 15 days of the submission of proof)
3	Power purchase agreement	5 months	5 months	20% (within 15 days of

				the submission of proof)
4	Financial closure	11 months	11 months	30% (within 15 days of the submission of proof)
5	Project commissioning	18 months	12 months	400% (after 6 months of successful operation a from the date of project commissioning)

## **6. PROCEDURE FOR ALLOTMENT OF PROJECTS**

- I.** For each type of projects, Government of Goa/GEDA, shall invite proposal from interested developers through advertisement in News papers in accordance with procurement rules of Government of Goa from time to time.

The developers interested in type- II projects will submit the application to Government of Goa/ GEDA in the prescribed Performa's appended with the Policy at Annexure -I. Land the developer interested in Type III projects will submit the application to Government of Goa / GEDA in the prescribed Performa's appended with the Policy at Annexure -II (A) and Annexure -II (B).

The following documents, as applicable will be required for both Type -II Projects and type-III projects:-

- i)** A certified copy of the Memorandum and article of Association of the Company.
- ii)** Certified copy of the registration certificate.
- iii)** Certified copy of the partnership deed (if applicable).
- iv)** Certified copy of the Authority conferring powers on the person(s) who is (are) competent to execute the MOU / the Agreement with Government of Goa / GEDA/ DISCOM of Goa.
- v)** Solar Data Assessment Report for the site where the plant is to be developed.
- vi)** Detailed Project Report (in two hard copies and one soft copy). The detailed Project Report should include location of land, technology proposed, financing arrangements, arrangement of power evacuation system and availability of water to meet the process and maintenance requirements.
- vii)** Demand Draft for processing fees (non -refundable) Rs. 25000/- per MW and part thereof in favor of Member Secretary, GEDA, payable at Pilerne, Goa.

- viii)** Annual Report of the Company for last three years.
- ix)** Certificate from the Chartered Accountant showing the “Net Worth” of the Company.
- x)** Tie-up / collaborations /supply assurance letter from the parent company with the copy of agreements of solar power developer with technology / equipment supplier.
- xi)** Documentary regarding evidence for technical ability of the company / consortium to ensure and meet the schedule for project completion and commencement of the power supply along with its undertaking on company letter head.
- xii)** Undertaking for PV modules / inverter systems to be deployed are complaint with applicable latest IEC standards and complaint with applicable standards as specified by Central Electricity Authority.
- xiii)** Undertaking for meeting technical requirements specified by MNRE for Grid Solar Power Plant.
- xiv)** In case the applicant wants to get benefits under Clause 29(II) of this Solar Energy Policy, he shall have to file Entrepreneur’s Memorandum Part-I / industrial Entrepreneurs Memorandum Part –A, in concerned District Industry Centre / Ministry of Commerce and Industry , Department of Industrial Policy and Promotion, Secretariat of Industrial Assistance , Government of India for setting up solar energy project and a copy of its acknowledgement shall have to be enclosed with the proposal.

- II.** The proposals received within stipulated time frame the prospective developers under each type of projects shall be scrutinize and shortlisted by the Technical Appraisal Committee(TAC) formulated by Government of Goa / GEDA based on the prescribed financial and technical qualification criteria per **Annexure-III**

#### **7. OTHER FACILITIES**

- I. All Solar energy equipments, components, application products and items related to the solar equipments will be exempted from tax and VAT.
- II. If any, financial / infrastructural support is provided by Govt. of India for pollution free green technologies under National Manufacturing Policy, the benefits of this support shall also be admissible for the projects set up under Solar Energy Policy.

#### **8. ROLL OF DEPARTEMENT OF ELECTRICITY, GOA**

The Department of Electricity shall have the following responsibility under this policy.

- a) To mainstream solar applications by pioneering installation of the solar power plants around the substations facilitating the close grid connectivity.
- b) To evolve and upgrade standards of grid connectivity for the solar power systems at LT and HT level and notify to promote decentralized solar power generation.
- c) To assess the feasibility and provide connectivity to grid connected solar power in timely manner to the private solar power plants and solar power park and solar power park location.
- d) Resort to tariff based bidding for solar energy in meeting RPO, if required on the guidelines of Joint Electricity Regulatory Commission (JERC).
- e) To develop necessary transmission infrastructure based on a renewable power master plan.
- f) To provide banking facility for solar energy, incentives in the form of exclusion from open access charges, wheeling charges, T & D loss for solar power.
- g) To collaborate with GEDA to render single window service provider in association with other state agencies to all grid connected solar plants.

## **9. RENEWABLE ENERGY / GREEN POWER OPTIONS**

The Green Power options for Goa are as follows: -

- i) Small wind power projects up to 1-25 KW and higher capacities.
- ii) Solar photovoltaic power generation, Solar Thermal power generation, solar – wind hybrid power systems and solar applications in domestic and industrial sector.
- iii) Municipal and Industrial liquid/solid waste power projects.
- iv) Biomass briquetting and bio-fuels based on the materials of plant origin.
- v) Biogas projects by utilizing agriculture residues, food and animal waste.
- vi) Hydro power projects ranging from Pico , Micro to Small

While the items (i), (ii) and (iii) above are well-known, item (iv) i.e. biomass briquetting and bio-fuels is new in the state of Goa .It needs to be promoted

### **SOLAR TECHNOLOGIES**

#### **(A) Solar Photovoltaic**

Solar Photovoltaic (SPV) cells convert solar radiation (sunlight) into electricity. A solar cell is a semi-conducting device made of silicon materials, which when exposed to sunlight, generates electricity. Solar cells are connected in series and parallel combinations to form modules that provide the required power. PV modules are manufactured by assembling the solar cells after stringing, tabbing and providing other interconnections.

**Types of SPV Technology**

Range of technological products in solar cells need different area coverage for power generation.

Cell Type	Efficiency of cell	Land per MW
Mono crystalline silicon	Around 18% - 24%	3-4 acres
Poly / Multi crystalline silicon	Around 14% - 18%	4-5 acres
Thin Film (different types)	Amorphous silicon 6% - 10%	7.5 to 9 acres
	Cadmium Telluride 10% - 11%	
	Copper Indium Gallium Diselenide 12% - 14%	

The choice of technology will be left to the individual entrepreneur. These will be evaluated differently for tariff application.

**(B) Concentrated Solar Power (CSP) based Solar Thermal Power Plant**

Solar thermal power systems, also known as concentrating solar power Systems, use concentrated solar radiation as a high temperature energy source to produce electricity using the thermal route.

High temperature solar energy collectors are basically of two types will find scope in the State of Goa:

i) **Parabolic Trough Systems**

Trough type Solar Systems use parabolic curved /trough shaped reflectors that focus the sun’s energy onto a receiver pipe running along the focus of the reflector. The concentrated thermal power on the pipe heats the heat transfer fluid (HTF), usually oil, flowing through the pipe. This fluid is then used to generate steam which can be utilized for different purposes depending up on the temperature and pressure of the steam. In a parabolic through system, the temperatures of the order of 400 C can be achieved and can produce high pressure steam for generating electricity.

ii) **Parabolic Dish Systems**

The solar dish generates electricity by focusing the sun’s rays onto a receiver. This can be effectively used for cooking at a distance, heating water to high



temperature and generate steam. The large parabola type reflectors are constructed out of suitably sized rectangular mirror pieces.

### **(C) Promoting Solar Rooftop Systems**

The Government of Goa will promote solar rooftops implementing the following measures:

#### **i. Domestic Rooftop Generation**

The Tariff for solar Roof Top systems will be guided by the Joint Electricity Regulatory Commission (JERC), New Delhi. Till Specific tariff orders are issued by JERC, the Tariff shall be guided by Central Electricity Regulatory Commission (CERC) as per regulation No. 19 under JERC-10/2009 for terms and conditions discussed later for determination of Tariff. These roof top solar power systems will be established either by an individual roof top owners or erected by third party in agreement with the owners.

#### **ii. Promoting Rooftops in Government Establishments**

- a.** All new Government / local body buildings with more than 200 m<sup>2</sup> roof top area shall necessarily install solar rooftop PV units along with solar hot water units if there is need for hot water.
- b.** Existing Government / local body buildings will be provided with solar rooftops PV power / solar water heating facility in a phased manner.

### **(D) Promoting Solar Water Heating Systems**

The State of Goa is currently promoting Solar Water Heating systems on the roof tops for the individual house owners, societies and business establishments like hotels. It will be further boosted by adopting the key strategy of making installation of such solar water heating systems mandatory in the following potential categories:

- a)** All industrial buildings where hot water is required for processing.
- b)** All Government / private hospitals and nursing homes.
- c)** All Hotels, Resorts, motels, banquet halls, catering units and industrial canteens which consume hot water.
- d)** Individual residential buildings with an area of 200 sq. mts. and above within the limits of municipality / Panchayat / corporation including housing complexes set by group housing societies and housing boards.
- e)** Hostels in Educational institutions / private hostels, testing labs/ laboratories of educational institutes / hospitals.

- f) Barracks of police department, police training schools, jails.
- g) Private / Government guest houses, Govt. tourist hotels, inspection bungalows, circuit houses and retiring rooms of railways.
- h) Health centers , sport complexes

### **GREEN BUILDINGS**

The cooperative housing complexes, office and business complexes will be encouraged to adopt the green building norms. These buildings will be certified by agencies like Sustainable Habitat Division of The Energy Research Institute, New Delhi or the State Level institutions of professional architects. These buildings will be given tax rebate for the period of first 05 years depending upon the location. The local municipal corporations will have to pass resolutions on the tax rebates for such green housing complexes.

### **BIOMASS BRIQUETTING**

In the green state of Goa, there is abundant availability of various types of biomass raw materials. These include wet as well as dry biomass. Most of it can be productively utilized to produce renewable fuels like briquettes, bio-diesel, biogas.

- i) Briquetting is a new technology in which all types of low density agriculture waste, forestry waste and organic industrial waste is converted into high density solid cylindrical shape blocks using very high mechanical hydraulic pressure without the help of any chemical or binder, product is called briquette / Bio-coal / Pellet or white coal.
- ii) The briquette raw material may also comprise of bagasse, rice husk, dried cow dung cake, segregated organic municipal waste and or any other type of dry agriculture waste.
- iii) Briquettes/pallets are eco-friendly, renewable in nature, non polluting and economical. Hence use of biomass briquette-stove for cooking will be encouraged.
- iv) Briquettes are ready substitute of lignite / coal / wood in industrial boilers and brick kilns for thermal application. They leave no carbon footprints.
- v) Briquetting is an industry which protects nature by reducing pollution. It also avoids the decay of agriculture waste contributing to methane pollution and help farmers to get supplementary income.

Apart from briquetting, other types of power projects will be given encouragement. These will be:

- a) Biomass based power projects,
- b) Biomass based gasification projects,
- c) Bio-methanation projects from industrial/ hotel waste.

#### **Incentives for biomass utilization**

- i)** 80% depreciation on plant & machinery in the income tax.
- ii)** No sales tax for the first 05 years on production over the sales.
- iii)** No excise duty on production in the state for the first 05 years.

Government will encourage manufacture of briquettes with various types of agricultural waste to protect the farmer's/plantation owner's interest, and to facilitate its use in various applications and generate rural employment

#### **SINGLE WINDOW PROJECT CLEARANCE MECHANISM**

- i)** Setting up of RE projects involves sanctions/ clearances from number of Government agencies/departments. The state Government will facilitate and provide requisite clearances through a "Single Window Clearance Mechanism". It will be operated through GEDA.
- ii)** For this purpose a high level empowered committee with GEDA Member Secretary as head of the committee will be constituted to accord necessary approvals/clearances.
- iii)** Similarly, "Single Window Clearance Mechanism" for execution of Power Purchase Agreement (PPA) and for payment to the private entrepreneurs for the electricity sold to the Distribution companies will be considered.
- iv)** GEDA will be the main Agency to be approached for the sanction of the project. GEDA will have powers to appoint appropriate evaluating and certifying body/institution for certification of the projects and submit the proposals to the concerned Government Departments.

#### **HYDRO POWER PROJECTS**

After detailed assessment of hydropower in Goa state, suitable mechanism will be developed for grid connectivity.

#### **BENEFIT TO COMMUNITY**

RE projects supplement rural energy needs on a sustainable basis and provide decentralized energy supply for agriculture, industry, commercial and household

sectors. RE projects reduce & mitigate the environmental pollution caused by the fossil fuels protecting the climate change, apart from generating direct & indirect employment opportunities for rural people leading to socio-economic development in hilly and backward regions. RE projects also offer CDM benefits that can be shared with community/local bodies.

## **10. PROMOTING R&D AND CAPACITY BUILDING**

R&D on solar PV/thermal and other RE technologies and testing facilities towards the development of these technologies will be encouraged. Technology demonstrations and implementation of novel, innovative but economically feasible projects will also be encouraged after due assessment. New projects involving the innovative ideas on renewable energy topics will be initiated and implemented through educational institutions and NGOs. The State can sponsor prototype development for patentable ideas by individuals in association with institutions within the State.

To effectively implement this policy and to achieve the intended objectives the Goa Energy Development Agency (GEDA) will promote capacity building in the area of Renewable energy through academic and professional institutions by sponsoring R & D projects and facilitating patenting.

## **11.AMENDMENTS / RELAXATION / INTERPRETATION OF PROVISIONS OF THE POLICY**

Government of Goa will have powers to amend/relax/interpret any of the provisions under this policy.

## **12. APPLICABILITY**

This policy would become effective from the date of its notification in the official Gazette of Government of Goa for the period of 10 years.

## **13. REFERENCES**

Solar / Renewable Energy policies promulgated by Kerala , Gujarat, Tamil Nadu , Madhya Pradesh , Uttarakhand , Chattishgad, and Karnataka.

**Annexure-I**

**APPLICATION FORM FOR SUBMITTING PROPOSALS FOR (Category-II)  
PROJECTSM UNDER “SOLAR AND RENEWABLE ENERGY POLICY(GOA)-2014”**

Application for setting up of .....(Title of the Project with capacity in KW / MW) on .....(full address of the private land ) for ..... (Captive use or Sale of Power to 3<sup>rd</sup> party within the state or sale of power to other states through open access or project setup under REC Mode )

**I.COMPANY DETAILS**

- 1 Name of the applicant / organization :
- 2 State whether the applicant /organization is a :  
(a)Company registered under Indian Companies Act 1956;  
(b) cooperative Society;  
(c) any other corporate entity
- 3 Address :  
**i) Office**  
(a)Telephone no  
(b)Fax no.  
(c) e-mail address

**ii) Name and address of the authorized person**

- (a)Name
- (b)Address
- (c)Telephone no
- (d)Fax no
- (e) e-mail address
- 4 In case of any other corporate entity , give details of partners / directors / owners :
- 5 Whether income tax assessed. If yes, please state the year up to which assessment made (copies of assessment for last three years to be enclosed) :
- 6 If answer to 5 is no, state whether the promoter is an assessed entity. :
- 7 Income tax permanent A/C no. :
- 8 Present activity / business carried on by the applicant / organization :
- 9 Give details of the turnover of the organization in last three years (copies of the profit and loss accountant and balance sheet / annual report to be enclosed) :
- 10 Do you propose to set up the plant in the name of existing company or SPV or propose some sister concern :

**II. PROPOSED POWER PROJECT**

- 1 (a)Proposed Gross Capacity (MW) :
- (b)Auxiliary Consumption(MW)
- (c) Net Capacity (MW) ...lacs Kwh
- (d)Plant Load Factor (PLF)%
- (e)Net expected power generation per annum
- 2 (a)location of proposed site with details :
- (b)land details of the power plant site
- i)Name of village
- ii)Khasra nos.
- iii)Area of land from each Khasra No.
- iv)Land map with clear markings of land required for the projects
- v)Name of the owner of Pvt. Land
- vi)Type of land(agriculture or other)
- 3 Nearest railway Station :
- 4 Name of the manufacturer with address for supply, installation and commissioning of the power generation system , if identified :
- 5 Financing arrangements :
- (a)Own funds (promoters)
- (b)Financial Institution / Commercial Banks
- (c) Equity
- (d)others
- 6 Time frame and pert chart for major activities :
- i)Acquisition of land
- ii)Signing of PPA.
- iii)Expected financial closure
- iv)Date of Commissioning/ synchronization
- v)Proposed Commercial Operation Date (COD)

- 7 Power Plant proposed to be set up for / under :
  - (a)Captive use
  - (b)Sale of power to third party within the state
  - (c)Sale of power to third party outside the state
  - (d)Renewable Energy Certificate (REC) mode (if yes, then to whom the generating electricity from the proposed projects shall be sold and at what rate)

### **III.ELECTRICAL DETAILS**

- 1 Transmission of Power and Evacuation plan / interconnection :  
facility for the proposed plan
- 2 Interfacing scheme proposed :
- 3 For captive power plant :
  - i)present consumption of Electricity
  - a) From DISCOM of Goa
  - b)Captive Generation
  - ii)connected load of the company.
  - iii)HT/LT consumer
  - iv)nearest sub-station of DISCOM and distance from the proposed power plant
  - v)Voltage ratio of the DISCOM sub-station

### **IV.FINANCIAL DETAILS**

- 1 Estimated cost of the project proposed :
- 2 Cost of power generation per unit (please enclose cash flow chart : .... Rs./kWh  
also
- 3 How do you propose to raise the required finance for the project :
  - a)Equity share capital
  - b)Promoters contribution
  - c)Term loans
- 4 Do you envisage any foreign collaboration , if so please furnish :  
the details
- 5 Details of the application / processing fee remitted :
  - (a)amount Rs.
  - (b)Demand Draft / Cheque no.
  - (c) Date
  - (d) Bankers Name and address
- 6 Can you get / access bilateral grants / concessional loans from :  
any agency / FI to provide soft loan for your project (if yes, give  
details of the agency and preliminarily terms and conditions)

### **V. ANY OTHER RELEVANT INFORMATION**

### **VI. DECLARATION**

- i. I/We certify that all information furnished is true to the best of my/our knowledge.
- ii. I/We agree that Government of Goa / GEDA is the final authority to allot us the project

- iii. I/We shall not have any dispute with Government of Goa / GEDA for non –allotment of the project.
- iv. I/We agree to sign necessary agreements with Government of Goa / GEDA /DISCOM.
- v. I/We agree to comply with the terms and conditions of “ Renewable and Solar Power Policy (Goa)-2014”

Signature of the authorized  
Signatory of the Organisation with Seal

Date :  
Place:

**VI. DOCUMENTS TO BE ENCLOSED (as applicable)**

- i. A certified copy of the Memorandum and article of Association of the Company
- ii. Certified copy of the registration certificate
- iii. Certified copy of the partnership deed (if applicable)
- iv. Certified copy of the Authority conferring powers on the person(s) who are competent to execute the MOU / the Agreement with Government of Goa / GEDA/ DISCOM of Goa.
- v. Solar Data Assessment Report
- vi. Detailed Project Report
- vii. Processing fee in the form of D.D. no. .... dated.....in favour of Member Secretary , GEDA, payable at Pilerne, Goa for Rs.....
- viii. Annual Audited accounts of the Company for last three years and for the current year un-audited , if available
- ix. Certificate from the Chartered Accountant showing the “Net Worth” of the Company.
- x. Tie-up / collaborations /supply letter with the copy of agreements of solar power developer with technology / equipment supplier.
- xi. Documentary regarding evidence for technical ability of the company / consortium to ensure and meet the schedule for project completion and commencement of the power supply along with its undertaking on company letter head.
- xii. Undertaking for PV modules / inverter systems to be deployed are complaint with applicable latest IEC standards and complaint with applicable standards as specified by Central Electricity Authority.
- xiii. Undertaking for meeting technical requirements specified by MNRE for Grid Solar Power Plant.

**Annexure-II(A)**



**APPLICATION FORM FOR SUBMITTING PROPOSALS FOR CATERGORY-III**  
**PROJECTS UNDER “SOLAR AND RENEWABLE ENERGY POWER POLICY (GOA)-**  
**2014”**

Application for setting up of .....(Title of the Project with capacity in KW / MW) on .....(full address of the Government land ) for ..... (Captive use or Sale of Power to 3<sup>rd</sup> party within the state or sale of power to other states through open access or project setup under REC Mode )

**I.COMPANY DETAILS**

- 1 Name of the applicant / organization :
- 2 State whether the applicant /organization is a :  
(a)Company registered under Indian Companies Act 1956;  
(b) cooperative Society;  
(c) any other corporate entity
- 3 Address :  
**i) Office**  
(a)Telephone no  
(b)Fax no.  
(c) e-mail address  
  
**ii) Name and address of the authorized person**  
(a)Name  
(b)Address  
(c)Telephone no  
(d)Fax no  
(e) e-mail address
- 4 In case of any other corporate entity , give details of partners / :  
directors / owners
- 5 Whether income tax assessed. If yes, please state the year up to :  
which assessment made (copies of assessment for last three years  
to be enclosed)
- 6 If answer to 5 is no, state whether the promoter is an assessed :  
entity
- 7 Income tax permanent A/C no. :
- 8 Present activity / business carried on by the applicant / :  
organization
- 9 Give details of the turn over of the organization in last three years :  
(copies of the profit and loss accountant and balance sheet /  
annual report to be enclosed)
- 10 Do you propose to set up the plant in the name of existing :  
company or SPV or propose some sister concern

**II.PROPOSED POWER PROJECT**

- 1 (a)Proposed Gross Capacity (MW) :  
(b)Auxiliary Consumption(MW)  
(c) Net Capacity (MW)

- (d)Plant Load Factor (PLF)% ...lacs Kwh  
(e)Net expected power generation per annum
- 2 (a)location of proposed site with details :
- (b)land details of the power plant site  
i)Name of village  
ii)Khasra nos.  
iii)Area of land from each Khasra No.  
iv)Land map with clear markings of land required for the projects  
v)Name of the owner of Pvt. Land  
vi)Type of land(agriculture or other)
- 3 Nearest railway Station :
- 4 Name of the manufacturer with address for supply, installation and commissioning of the power generation system , if identified :
- 5 Financing arrangements :  
(a)Own funds (promoters)  
(b)Financial Institution / Commercial Banks  
(c) Equity  
(d)others
- 6 Time frame and pert chart for major activities :  
i)Acquisition of land  
ii)Signing of PPA.  
iii)Expected financial closure  
iv)Date of Commissioning/ synchronization  
v)Proposed Commercial Operation Date (COD)
- 7 Power Plant proposed to be set up for / under :  
(a)Captive use  
(b)Sale of power to third party within the state  
(c)Sale of power to third party outside the state  
(d)Renewable Energy Certificate (REC) mode (if yes, then to whom the generating electricity from the proposed projects shall be sold and at what rate)

### **III.ELECTRICAL DETAILS**

- 1 Transmission of Power and Evacuation plan / interconnection facility for the proposed plan :
- 2 Interfacing scheme proposed :
- 3 For captive power plant :  
i)present consumption of Electricity  
a) From DISCOM of Goa  
b)Captive Generation  
ii)connected load of the company.  
iii)HT/LT consumer  
iv)nearest sub-station of DISCOM and distance from the proposed power plant  
v)Voltage ratio of the DISCOM sub-station

### **IV.FINANCIAL DETAILS**

- 1 Estimated cost of the project proposed :
- 2 Cost of power generation per unit (please enclose cash flow chart : .... Rs./kWh  
also
- 3 How do you propose to raise the required finance for the project :
  - a)Equity share capital
  - b)Promoters contribution
  - c)Term loans
- 4 Do you envisage any foreign collaboration , if so please furnish :  
the details
- 5 Details of the application / processing fee remitted :
  - (a)amount Rs.
  - (b)Demand Draft / Cheque no.
  - (c) Date
  - (d) Bankers Name and address
- 6 Can you get / access bilateral grants / concessional loans from :  
any agency / FI to provide soft loan for your project (if yes, give  
details of the agency and preliminary terms and conditions)

#### **V. ANY OTHER RELEVANT INFORMATION**

#### **VI. DECLARATION**

- i. I/We certify that all information furnished is true to the best of my/our knowledge.
- ii. I/We agree that Government of Goa / GEDA is the final authority to allot us the project.
- iii. I/We shall not have any dispute with Government of Goa / GEDA for non -allotment of the project.
- iv. I/We agree to sign necessary agreement with Government of Goa / GEDA /DISCOM.
- v. I/We agree to comply with the terms and conditions of “ Renewable and Solar Power Policy (Goa)0-2014”

Signature of the authorized  
Signatory of the Organization with Seal

Date :  
Place:

#### **VII. DOCUMENTS TO BE ENCLOSED (as applicable)**

- i. A certified copy of the Memorandum and article of Association of the Company
- ii. Certified copy of the registration certificate
- iii. Certified copy of the partnership deed (if applicable)
- iv. Certified copy of the Authority conferring powers on the person(s) who are competent to execute the MOU / the Agreement with Government of Goa / GEDA/ DISCOM of Goa.

- v. Solar Data Assessment Report
- vi. Detailed Project Report
- vii. Processing fee in the form of D.D. no. .... dated.....in favour of Member Secretary , GEDA, payable at Pilerne, Goa for Rs.....
- viii. Annual Audited accounts of the Company for last three years and for the current year un-audited , if available
- ix. Certificate from the Chartered Accountant showing the “Net Worth” of the Company.
- x. Tie-up / collaborations /supply letter with the copy of agreements of solar power developer with technology / equipment supplier.
- xi. Documentary regarding evidence for technical ability of the company / consortium to ensure and meet the schedule for project completion and commencement of the power supply along with its undertaking on company letter head.
- xii. Undertaking for PV modules / inverter systems to be deployed are complaint with applicable latest IEC standards and complaint with applicable standards as specified by Central Electricity Authority.
- xiii. Undertaking for meeting technical requirements specified by MNRE for Grid Solar Power Plant.

**Annexure-II(B)**

**OFFER FOR THE MAXIMUM FREE ENERGY PER MW**  
 (TO BE FILLED BY THE SHORTLISTED PROSPECTIVE DEVELOPER)  
**FOR CATEGORY-III PROJECTS PROPOSED ON GOVERNMENT LAND UNDER**  
**“ SOLAR AND RENEWABLE ENERGY POLICY(GOA)-2014”**

Location of the Government and its area where Solar Power Project is proposed to be installed.....

**I.COMPANY DETAILS**

- 1 Name of the applicant / organization :
- 2 State whether the applicant /organization is a :
  - (a)Company registered under Indian Companies Act 1956;
  - (b) cooperative Society;
  - (c) any other corporate entity
- 3 Address :
  - i) Office**
  - (a)Telephone no
  - (b)Fax no.
  - (c) e-mail address
  - ii) Name and address of the authorized person**
  - (a)Name
  - (b)Address
  - (c)Telephone no
  - (d)Fax no
  - (e) e-mail address

**II. DETAILS OF THE GOVERNMENT LAND WHERE SOLAR POWER PROJECT IS PROPOSED TO BE INSTALLED**

- 1 Government land details of the Solar Power Project Site (shall be provided by Goa at the time of availability) :
  - (a)Name of the Village

- (b)Khasra no.  
(c)Area of land from each Khasra no.
- 2 Total area of the land (shall be provided by Goa at the time of availability) :

**III. PROPOSED SOLAR POWER PROJECT ON THE GOVERNMENT LAND**

- 1 (a)Proposed Gross Capacity (MW) :  
(b)Auxiliary Consumption(MW)  
(c) Net Capacity (MW) : ...lacs Kwh  
(d)Plant Load Factor (PLF)%  
(e)Net expected power generation per annum

**IV. FREE ENERGY OFFERED BY.....(NAME OF THE DEVELOPER)**

- 1 Free energy offered per MW per annum Estimated cost of the project proposed : ...lacs Kwh

Signature of the authorized  
Signatory of the Organization with Seal

Date :  
Place:

**Annexure –III**

The Developer desirous to set up Solar Power Plant in State of Goa must fulfill the following minimum financial criteria and technical criteria

**A. Financial Qualification Criteria for Solar PV Projects and Solar Thermal Projects**

**NET WORTH**

The “Net Worth” of the company should be equal to or greater than the value calculated at rate of Rs. 3 crore or equivalent US\$ per MW of the Project Capacity. The computation of Net worth shall be based on unconsolidated audited annual accounts of the company. For the purpose of the computation of net worth, the best year in the Last four years shall be considered. The company, would thus be required, to submit annual audited accounts for last three financial years and current year (Un-Audited) if available, while indicating the year, which should be considered for evaluation, along with a certificate from the Chartered Accounts to demonstrate the fulfillment of the criteria.

For Companies, which are newly incorporated, the Net Worth criteria should be met seven days prior to the date of submission of application by the Project Developer. To demonstrate fulfillment of the criteria, the Project Developer shall submit a certificate from a chartered Accountant certifying the NET Worth on the date seven days prior to submission of application. Further, the project Developer shall submit the un-audited financial statement of the company for the date on which the certificate of Chartered Accountant has been obtained.

**Note:** For the Qualification Requirements, if data is provided by the Project Developer in foreign currency, equivalent rupees of Net Worth will be calculated using bills selling exchange rates (Card rate) USD/ INR of State bank of India prevailing on the date of closing of the accounts for the respective financial year as certified by the Project Developer's bankers.

For currency other than USD, Project Developers shall convert such currency into USD as per the exchange rates certified by their banker prevailing on the relevant date and used for such conversion.

NET WORTH = Paid up share capital

Add: Reserves

Subtract: Revaluation Reserves

Subtract: Intangible Assets

Subtract: Miscellaneous Expenditure to the extent not written off and carry forward losses.

For the purposes of meeting financial requirements only unconsolidated audited annual accounts shall be used. However, audited consolidated annual accounts of the project developer may be used for the purpose of financial requirements provided the Project developer has atleast Twenty Six percent (26%) equity in each company whose accounts are merged in the audited consolidated account and provided further that the financial capability of such company's (of which accounts are being merged in the consolidated accounts) shall not be considered.

In case of consortium the financial requirements to be met by each member of the consortium shall be computed in proportion to the equality commitment made by each of them in the Project Company. Supply of Power to; in corporate Project Company with equity participation by the Members before signing the PPA.

The Project developer may seek qualification on the basis of financial capability of its parent company and /or its Affiliate(s) for the purpose of meeting the Qualifications Requirements. In case of the Project Developer being a bidding consortium , any member may seek qualification on the basis of financial capability of its parent company and/or its Affiliate(s)

In case, any company desirous to develop both Solar PV project as well as solar thermal Project , the company will have to meet the total Net Worth requirements, for all the projects selected and submit the proof for the same within one month from the date of application

**B. Technical Qualification for Solar PV Projects and Solar Thermal Projects:**

- I. Solar Power Developer should have Firm Technology Tie-up/ collaborations / supply agreements with technology / equipment suppliers.
- II. Solar Power Developer should provide documentary documents for technical ability of the company / consortium to ensure and meet the schedule for project completion and commencement of Power supply.
- III. Solar Power Developer shall provide undertaking for PV modules/ inverters systems to be deployed shall be compliant with the applicable latest IEC standard and compliant with applicable standards as specified by Central Electricity Authority (CEA).
- IV. Solar Power Developer shall provide undertaking documents for meeting technical requirements specified by MNRE for Grid solar Power Plant.

**NOTE:** Tie-up would mean any of (i) MOU for technology transfer,(ii)Technology or document sale agreement, (iii)EPC contract , (iv)Project specific assurance to support with design and construction of plant

Dr. Pramod Pathak  
Member secretary (GEDA)