Inviting Comments & Inputs on
Draft Tamilnadu Solar Energy Policy – 2018

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Draft Solar Energy Policy 2018
Tamil Nadu

Draft: 20th September 2018

1.0 Preamble

1.1. Government of Tamil Nadu has an unwavering commitment to Directive Principle 48A of the State Policy that stipulates that "the State shall endeavour to protect and improve the environment". It was out of this commitment that the Government, the Tamil Nadu Solar Policy 2012, which was the first comprehensive solar energy policy in the country.

1.2. Government's commitment to people's welfare is equally resolute. Tamil Nadu is internationally recognized as a model welfare State. Access to affordable, reliable, quality electricity supply for all is a welfare enabler.

1.3. With these twin policy objectives of protecting the environment and the welfare of its people Tamil Nadu is committed to a sustainable and equitable energy future.

1.4. Energy is one of the key driving forces of socio-economic development and change. Long term energy security is therefore an essential element of sustainable development. The rapid depletion of non-renewable energy sources and the adverse effects caused to the globe by the process of extracting energy from fossil fuels call for urgent solutions while demand for energy will keep increasing. The universally accepted view is that only energy from renewable sources offer a solution for a sustainable energy future. Renewable energy targets will have to be set to align with the countries commitment of its Greenhouse Gase emissions.

1.5. The Government of India has launched the Jawaharlal Nehru National Solar Mission (JNNSM) under the National Action Plan for Climate Change (NAPCC) to promote ecologically sustainable growth while addressing India's energy security challenges. The objective of the National Solar Mission is to establish India as a global leader in solar energy, by creating the policy conditions for its diffusion across the country as quickly as possible.

1.6. Vision Tamil Nadu 2023 has set a solar energy target for the State of 5,000 MW. More recent targets for Tamil Nadu set by the Ministry for New and Renewable Energy, Government of India are aiming at a total installed capacity of 8,884 MW of solar energy of which 40% (3,553MW) is expected to come from consumer scale (rooftop) solar systems.

1.7. Tamil Nadu is one of the most urbanized and industrial states of India. A continuous increase in energy demand from all sectors is expected in the years to come. To meet the increasing energy demand in a sustainable manner, it is essential that the Government of Tamil Nadu formulates and implements energy policies that are driven by a clear vision and implemented through the participation of all stakeholders.

1.8. The Tamil Nadu Solar Energy Policy 2018 intends to create a framework that enables an acceleratedevelopment of solar energy in the State.

2.0 Solar Energy Vision

2.1. Solar energy will be a major contributor to a sustainable energy future for Tamil Nadu.

2.2. Solar energy development will be part of an overall energy strategy that includes demand side management, energy conservation, energy efficiency initiatives, distributed renewable energy generation, electric mobility and smart grids.

2.3. Solar energy will be a mainstream energy source in Tamil Nadu by 2022.

2.4. Solar energy development will provide green jobs to a significant number of the State's workforce.

2.5. Solar energy will become available, accessible and affordable to all citizens of Tamil Nadu.

2.6. Solar energy generation will significantly contribute to reducing the CO^2 and water footprint of the State's energy sector.

2.7. Tamil Nadu will be an international climate leader for emerging economies by 2022.

3.0 Solar Energy Policy Objectives

3.1. Define clear and transparent policy governance.

3.2. Establish an eco-system that translates the solar energy vision into enabling policy systems and processes.

3.3. Use regulatory mechanisms to ensure that Tamil Nadu will achieve, or exceed, the solar energy portfolio obligations as may be determined by the Tamil Nadu Electricity Regulatory Commission from time to time.

3.4. Facilitate open access to the public electricity grid of Tamil Nadu and thereby create opportunities for grid-connected distributed generation of solar power in order to reduce the dependence on fossil fuels and associated carbon emissions.

3.5. Encourage electricity consumers to set up solar energy systems.

3.6. Establish a 'Single Window System' for technical support, funding support and project clearance.

3.7. Encourage public-private partnerships and joint ventures to mobilize investments in solar energy projects, manufacturing facilities, research, and technology development.

3.8. Facilitate 'Ease of Doing Business' in the solar energy sector.

3.9. Create an investment-friendly environment that provides opportunities for private individuals, companies, local bodies, government departments and others to contribute to and participate in the generation of solar energy, particularly for the electricity consumer to become a "prosumer" (a producer-consumer).

3.10. Create a win-win situation for all stakeholders.

4.0 Scope of Solar Energy Policy

4.1. The policy will be applicable to projects, programs and installations relating to both solar photovoltaic energy (solar PV) and solar thermal energy

5.0 Solar Energy Targets

5.1. Tamil Nadu will have an installed solar energy generation capacity of 8,884 MW by2022. Of this target 40%will be met by consumer scale solar energy generators.

6.0 Legislative Framework for Policy

6.1. The legislative framework for this solar energy policy includes the following provisions:

6.1.1. The Electricity Act, 2003 mandates that the Electricity Regulatory Commissions and the Governments take necessary steps to promote Renewable Energy. The preamble to the Electricity Act, 2003 recognizes the significance and importance of promotion of efficient and environmentally benign policies.

6.1.2. Section 61(h) of the Electricity Act, 2003 (the "Act") provides that while specifying the terms and conditions of determination of tariff, Regulatory Commissions shall be guided, inter alia, by the promotion of cogeneration and generation of electricity from renewable sources of energy.

6.1.3. The National Electricity Policy (NEP) and Tariff Policy notified by the Central Government under the provisions of section 3(1) of the Act has also addressed the issues of untapped potential of energy from non-conventional and renewable energy sources.

6.1.4. Section 86(1)(e) of the Act specifies that one of the functions of the State Electricity Regulatory Commissions is to promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with grid and to promote sale of such power to any person. The Regulatory Commission is also required to stipulate that a certain percentage of the total consumption of electricity in the area of a DISCOM

shall be obtained from renewable energy source (Renewable Energy Purchase Obligation, or RPO).

6.1.5. In case a DISCOM fails to comply with the above RPO mandates, penalties specified by TNERC for such non-compliance shall be strictly enforced.

6.1.6. Section 86(1)(e) of the Electricity Act 2003 has also notified "Net Metering Regulations and Guidelines, 2014" for enabling consumers to generate Solar Energy and to connect the system with DISCOM's Distribution Grid for exporting surplus energy from renewable sources.

7.0 Operative Period

7.1. The Policy shall come into effect on [date] and shall remain valid for the next five years ("Operative Period"), unless superseded or modified by another policy. The Government will monitor this policy every year to evaluate the actual results against policy objectives and capacity addition targets by the State of Tamil Nadu.

8.0 Solar Energy grid feed-in

8.1. Solar energy grid feed-in mechanisms will include, but may not be limited to the following.

8.1.1. *Solar energy gross feed-in (utility scale):* The solar energy is fed into the grid and sold to the distribution licensee or a third party under the open access facility. In the case of distribution licensees, the solar energy fed into the grid will be purchased by the distribution licensee at the prevailing solar energy tariff as determined by the TNERC or a tariff determined by a bidding process.

8.1.2. *Solar energy wheeling (utility scale):* The solar energy is fed into the grid and credited in one or more service connections of the solar energy producer. Solar energy wheeling will be applicable to all electricity consumer categories and tariffs and for electricity service connections at anyvoltage level

8.1.3. *Solar energy gross feed-in (consumer scale):* The solar energy is fed into the grid and sold to the distribution licensee. In addition to the existing service connection meter that records the consumption of energy at the premises, an energy meter will be installed by the distribution licensee to record the energy fed into the grid. The solar energy fed into the grid will be purchased by the distribution licensee at the prevailing consumer scale solar energy tariff as determined by the TNERC. Under the solar gross feed-in mechanism, solar energy may also be sold to another distribution licensee or to a third party under the open access mechanism. Solar energy gross feed-in will be available to all electricity consumer categories and tariffs and for electricity service connections at anyvoltage level.

8.1.4. *Solar energy net feed-in:* The solar energy is used for self-consumption with the surplus, if any, being exported to the grid. A bidirectional service connection energy meter will be installed by the distribution licensee to record the imported and exported energy. The imported energy is debited at the applicable consumer tariff while the exported energy is credited on the basis of a consumer solar energy tariff to be determined by TNERC. The consumer pays the difference between the debit and credit amounts. If the credit amount exceed debit amount the net credit is carried over to the next billing cycles. At the end of a 12-month settlement period the net credit, if any, will be paid to the consumer or carried-over to the next settlement period.Solar energy net feed-in will be available to all electricity consumer categories and tariffs and for electricity service connections at anyvoltage level.

8.1.5. *Solar energy group net-metering:* To encourage solar plants on rooftops of buildings that cannot consume all of the energy generated locally, there shall be Group Net Metering, whereby surplus energy exported to the grid from a solar plant in excess of 100 percent of imported energy at the location of the solar plant can be adjusted in any other (one or more) electricity service connection(s) of the consumer within the State of Tamil Nadu. The purpose of this provision is to help maximize the utilization of rooftop space for solar energy generation for

consumers with multiple buildings and service connections. Solar energy group net-metering will be available to all electricity consumer categories and tariffs and for service connections at any voltage level

8.1.6. *Solar energy virtual net feed-in:* To give access to the solar net feed-in facility for consumers who do not have a suitable roof for installing a solar system (e.g. residential consumers who live in apartments, consumers with shaded rooftops) there will be the facility of Virtual Net Feed-In. In Virtual Net Feed-In consumers can be beneficial owners of a part of a collectively owned solar system. All energy produced by a collectively owned solar system will be fed into the grid through an energy meter and the exported energy as recorded by that meter will be pro rata credited in the electricity bill of each participating consumer on the basis of beneficial ownership. The energy thus credited will be treated at par with the solar energy net feed-in as provided for elsewhere in this policy. Collective ownership of solar plants may be established through societies, trusts or companies or any other legal entity that safeguards the interests of participating consumers, including rights which are at par with the rights enjoyed by consumers who avail solar net feed-in with a solar system installed on their own roof. Solar energy virtual net feed-in will be available to all electricity consumer categories and tariffs and for service connections at any voltage level.

9.0 Solar Energy feed-in tariffs

9.1. Solar energy gross and net feed-in tariffs will be determined by TNERC taking into consideration different capital costsbased on the solar system capacity.

9.2. A dedicated solar energy storage feed-in tariff shall be determined by TNERC. This tariff shall be designed to incentivize solar energy export to the grid at peak demand hours.

10.0 Solar Energy implementation models

10.1. Solar energy systems may be implemented with the following models:

10.1.1. *Self-owned*: Solar PV system is owned and operated by the building owner/user:

10.1.2. *RESCO* (Renewable Energy Service Company) owned: The Solar PV system is owned and operated by a RESCO. The consumer pays the RESCO for the solar generation and makes use of the solar energy gross feed-in or net feed-in mechanism.

10.1.3. *Lease*: The consumer leases the solar PV system from a leasing company and makes use of the solar energy gross feed-in or net feed-in mechanism.

11.0 Solar energy mandates

11.1. *Building by-laws and ECBC (Energy Conservation Building Code) compliance:* Any building type that requires being ECBC-compliant will follow ECBC compliance guidelines for the installation of Solar PV and Solar Thermal energy systems. The Directorate of Town and Country Planning in collaboration with local bodies shall amend their building by-laws to mandate ECBC.

11.2. All public buildings will be mandated to meet 30% of their energy requirements from solar energy by 2022.

11.3. Streetlights and water supply installation of Corporations, Municipalities and Local Urban Bodies are mandated to meet 30% of their energy requirements from solar energy by 2022.

11.4. All State Government Departments shall replace 10% of their existing vehicle fleet with solar powered, electricvehicles by 2022.

12.0 Incentives

12.1. Solar energy will be exempted from electricity tax, grid connectivity, open access, wheeling, and banking and cross-subsidy charges.

12.2. Suitable incentive schemes will be designed to promote solar energy generation in the agricultural sector. This may include incentives to farmers foreported solar energy.

12.3. Solar energy imported by the distribution licencee from non-obligated solar energy producers (including electricity consumers with gross or net feed-in facilitites) can be claimed by the distribution licensee towards fulfilment of their renewable energy purchase obligations (RPO).

12.4. The Government of Tamil Nadu will promote the manufacture of solar energy components including solar cells,inverters, mounting structures and batteries etc. in the State. Lands will be identified for the development of solar manufacturing. A single window process for all departmental approvals, including a set time limit for each approval will be designed.

12.5. A suitable incentive scheme will be designed to promote the co-utilization of land for solar energy projects, crop cultivation and rain water harvesting.

12.6. Corporations, municipalities and local urban bodies will provide property tax abatement to domestic building owners that install consumer scale solar energy systems.

13.0 Grid Connectivity and Energy Evacuation

13.1. The solar energy capcity at the service connect point shall not exceed 100% of the sanctioned load of the service connection. If the consumer plans to install a solar PV system with a capacity that exceeds the santioned load, the consumer must apply for sanctioned load enhancement along with the application for the solar gross feed-in or solar net feed-in facility.

13.2. The cumulative solar PV capcity at distribution transformer level shall not exceed 120% of the distribution transformer capacity.

13.3. Solar energy can be wheeled and banked.

13.4. All grid-connected Solar PV systems shall be treated as "Must-Run" power plants and shall not be subjected to merit order despatch principles.

13.5. From April 2019 onwards all new service connection meters in Tamil Nadu shall be configured for bidirectional energy recording and display so that all new service connections and existing service connections for which the meters are replaced in the normal course of maintenance are ready for effecting solar energy net metering at any time in the future.

13.6. Distribution licensee will install the required meters for gross feed-in or net-feed within 3 weeks from the date of application.

13.7. Distribution licensee will enhance and update its billing system such that relevant details pertaining to solar gross feed-in and net feed-in are included in the electricity consumers' bills. Additional information about electricity consumption trends of the consumer, comparison with consumption of similar consumer categories and tips on energy conservation and efficiency shall be included in the electricity consumption bill. For each billing period, DISCOM shall show separately:

a) The quantum of units of electricity imported by the Consumer;
b) The quantum of units of electricity exported by the Consumer;
c) The Net units of electricity billed for payment to the Consumer and
d) The Net credit amount, if any, carried over to the next billing period in the case of net feed-in.

13.8. The DISCOM shall also make available online all of the billing data above for each consumer, along with a sample bill explaining the various billing components above.

13.9. Distribution licensees will promote online applications for gross feed-in and net feed-in metering. Distribution licensees will also display online the status of all solar energy metering applications received, whether online or offline. Distribution licensees will maintain a database of solar gross and net feed-in metering application requests, approval

status, installation and commissioning data, which will be submitted to the TEDA on a quarterly basis.

13.10. Distribution licensees shall update the status of the cumulative solar capacity connected at each distribution transformers on their website.

14.0 Awareness Creation, Education and Capacity Building

14.1. All public and private schools are mandated to introduce a curriculum on energy and environment into their syllabus for 9th standard students.

14.2. State Government Departments and State Public Sector Undertakings (PSUs) are mandated to participate in annual solar energy and energy conservation training programs organized by TEDA and other agencies.

14.3. All higher education institutions will be mandated to host an annual energy and enivronment day to create awareness about climate change and the benefits of renewable energy as a climate mitigation strategy.

15.0 Solar Energy Research

15.1. Tamil Nadu will facilitate and support research in the solar energy sector.

15.2. New and emerging solar energy technologies will be installed at locations that attract a substantional number of visitors in order to promote these.

15.3. Tamil Nadu will closely collaborate with mutli-lateral agencies to advance solar energy research and deployment in the State.

16.0 Monitoring and Evaluation

16.1. An inter-departmental monitoring and coordination committee for new and renewable energy sources, including solar energy (the "Renewable Energy Committee") shall be constituted by the Government for monitoring the implementation of this Policy and to ensure that Policy objectives and targets are achieved.

17.0 Role of the State Nodal Agency

17.1. TEDAshalltaketheleadinlaunchingthisSolarEnergyPolicywith theuseofmedia,PR,billboards,advertisements,websites,andmore.Itwillalsocommunicateamendments, if any,tothis policy tomajorvia itswebsiteand/orother means.

17.2. TEDA will lead a comprehensive information and awarness creation effort in order to promote solar energy in the State.

17.3. TEDA will network and coordinate with National and International Institutions that are leaders in the solar energy sector in order to promote and enhance collaboration and joint R&D projects.

17.4. TEDA will design and facilitate the development of innovative solar energy projects in various modes including public, private, public-private partnership, RESCO and build-own-operate-transfer (BOOT) modes.

17.5. Statutory clearances that may be required for the development and commissioning of solar energy projects will be facilitated by the TEDA with the concerned Government departments and agencies through a single window and time-bound process.

17.6. TEDA will facilitate and expedite access to various concessions and incentives provided by the Ministry of New And Renewable Energy, Government of India including capital cost subsidies, where applicable.

17.7. TEDA will provide project development and technical advice and assistance for the implementation of solar energy projects.

17.8. TEDA will provide advisory and consulting services to corporations, municipalities and local urban bodies on financing instruments for solar energy projects.

17.9. TEDA will undertake periodical review of progress of solar energy projects under development and facilitate speedy clearances and approvals if necessary.

17.10. TEDA shallnotifyandcoordinatewiththeDirectorate of Town and Country Planning to obtainnecessaryamendmentsinthebuildingbylaws,asoutlinedin clause11.0,tofacilitateextensive adoption ofsolar plants.

17.11. TEDA shall notify and coordinate with State Government Departments and Public Sector Undertakings to facilitated extensive adpotion os solar energy plants as outlined in clause11.2.