

Concept note on one solar city in each State/UT

Global warming and the challenge it poses to the world environment and habitat is now the most important concern engaging the international community. Countries have undertaken obligations to reduce their carbon footprint in accordance with Nationally Determined Contributions. India has pledged that by 2030, 40% of its total installed power generation capacity will be from renewables. India is well on its way to meeting its target.

In order to meet the obligations under taken by us Government of India have launched the Grid Connected Rooftop Solar Scheme Phase-II under which the Government of India gives 40 percent of the cost of rooftop solar plant upto 3 kW and 20 percent of the cost of capacity above 3 kW upto 10 kW. CFA of 20% is also provided to Resident Welfare Association/Group Housing Societies for installation of Rooftop upto 500 kW for common facilities services. Hon'ble Prime Minister has desired that each State should have at least one solar city where all houses have rooftop solar energy plants and all electricity needs of the city are fully met from Solar Energy or other renewable energy sources. Accordingly all States/Union Territories have been requested to select one city (either the capital city or a renowned tourist destination) which can be developed as a solar city. So far 12 states have identified their cities which can be developed as solar cities.

In order to meet the electricity needs of a city completely, various renewable energy resources may be used. Renewal energy generation in excess of the requirement of that city, at any time in a day, may be exported to the grid and whenever there is no or less generation of electricity from renewable resources, power may drawn from the grid. To be declared as a 'Solar City' the generation of electricity from various renewable resources in the city should be equal to or more than the power needs of the city.

The Ministry of New and Renewable Energy (MNRE) is implementing a number of schemes for promoting the adoption of renewable sources of energy for generation of electricity. These schemes include setting up of Solar Parks, Rooftop Solar; Solar Street Lights, use of urban / municipal waste for generating power etc. All these schemes are being implemented in different areas / parts of the country. The Hon'ble Prime Minister has desired that all these schemes be converged for this scheme – so that one city in each State is developed as a Green City. This city will meet all its energy requirements from renewable sources of energy. This is in line with international trend in Green Energy. Various countries have announced periods during which they will use only Green Energy. Many buildings and enterprises are declaring and moving towards net zero emissions. The city will continue to be connected with the grid and the renewable energy injected into the grid shall be equivalent to or more than the total consumption of electricity in the city. This will be done in the following manner:

- 1) **Rooftops** : Grid Connected Rooftop Solar Scheme, Phase-II has been launched by the Ministry of New and Renewable Energy. Central financial assistance of 40% of the project cost for rooftop solar plant of upto 3kW capacity and 20% of the cost for capacity above 3kW and upto 10 kW is available under the Scheme.

Assistance of 20% will also be provided to residence welfare associations / Group Housing Societies for installation of rooftop solar upto 500kW for common facilities such as common area, lighting, lifts, lobby etc. Guidelines for the scheme are given in Annexure-1. Some States have provided with additional subsidy for rooftop, for example, UP provides an additional subsidy of Rs.15000/- per kW for 2 kW in addition to the subsidy given by the Government of India.

The objective is to install rooftop solar on most, if not all rooftops in the Solar City. The procedure for installation of rooftop has been modified in the revised scheme. Under the revised scheme, Distribution Companies shall empanel multiple integrators after an open bid and publicize the list of empaneled integrators. A consumer may select any integrator from the

empaneled list for installation of rooftop over his house. The rooftop can be installed on a RESCO mode or Capex mode. In either case the Central Government subsidy will be available. In the RESCO mode no upfront investment will be required from the householder. The additional investment required over and above the subsidy will be made by the RESCO Operator and he will recover it through tariff, which can also be collected by the DISCOM through its monthly bill and paid to the RESCO Operator.

- 2) **Waste to Energy** : The Ministry of New and Renewable Energy have a scheme for providing financial assistance for generation of energy from urban and municipal solid waste under which financial assistance is provided upto Rs.5 Crores per MW. Waste to Energy plants shall be set up to utilize the municipal solid waste for generating electricity under the scheme. Electricity from waste to energy also comes under the category of renewable energy. This will meet the objective of Swachh Bharat as well.
- 3) **Street Lights**: All street lights may be switched to solar. MNRE has a scheme for providing financial assistance for solar street lights. The present scheme is available only for North Eastern States, but it is proposed to extend it all solar cities taken up under the scheme.
- 4) **Green Mobility**: The solar cities / Green City will move towards green mobility by using electric vehicle and electric buses. Government of India provides financial assistance for electric mobility under the FAME II Scheme. This will also be extended to solar cities.
- 5) **Solar Parks** : The additional energy requirement for the cities shall be met by setting up of solar power plants at one or more locations on the outskirts of the solar city. The land requirement is 3.5 acres per MW. The State Government may earmark the land and the Central Government will make assistance available under the Solar Park Scheme for providing essential requirements for setting up solar power plant there. The Solar Power Plant may be set up under the RESCO mode through an open bid. For this no capital

expenditure is necessary. The Plant will be run and maintained and power supplied at bid price by the RESCO Operator.

The power costs of a city shall come down drastically after it is converted into Green City. At the same time, the net emission will come down to zero and the carbon foot print shall also decline to very low levels. The environment can be further improved by taking up large scale tree plantation and development of parks in the cities. The city will be advertised as a green city.

No. 318/331/2017-Grid Connected Rooftop
Government of India
Ministry of New and Renewable Energy

Block no. 14, CGO Complex,
Lodi Road, New Delhi,
Dated 20th August 2019

Office Memorandum

Subject: Operational Guidelines for implementation of Phase - II of Grid Connected Rooftop Solar Programme for achieving cumulative capacity of 40,000 MW from Rooftop Solar (RTS) Projects by the year 2022

This refers Ministry's Order No 318/331/2017-GCRT Division dated 8th March 2019 vide which sanction was issued for launch of Phase - II of Grid Connected Rooftop Solar Programme for achieving cumulative capacity of 40,000 MW from Rooftop Solar (RTS) Projects by the year 2022 covering following components: -

- (i) Component- A: Setting up of 4000 MW of Grid Connected Rooftop plants in residential sector with Central Financial Assistance (CFA)
 - (ii) Component- B: Incentives to Discoms based on achievement for installing additional grid connected rooftop capacity in all sectors over and above the base level, with the incentive being limited to the first additional 18000 MW of rooftop capacity added in the country. Achievement above this level will not be eligible for any incentive.
2. The Operational Guidelines for implementation of Phase II of the Grid Connected Rooftop Solar Programme are enclosed.
 3. This issues with the approval of Competent Authority.



(Aujender Singh)

Deputy Secretary to the Govt. of India

To,

1. All central Ministries and Departments
2. ACS/Principal Secretaries/Secretaries (Renewable Energy/Energy/Power) of States/UTs
3. DISCOMs/ State Nodal Agencies of all States/UTs
4. Principal Director of Audit, Scientific Audit-II, DGACR Building, I.P. Estate, Delhi
5. Pay and Account Officer, MNRE, New Delhi

Copy to:

1. PS to Hon'ble Minister of State (I/C) for Power, NRE and Skill Development and Entrepreneurship
2. PPS to Secretary/AS/AS&FA, MNRE
3. All Advisers & Group Heads
4. Director(NIC) to upload this on the Ministry's website
5. Sanction folder



(Aujender Singh)

Deputy Secretary to the Govt. of India

Guidelines on implementation of Phase – II of Grid Connected Rooftop Solar Programme for achieving 40 GW capacity from Rooftop Solar by the year 2022

1.0 Background

1.1 As a part of Intended Nationally Determined Contributions (INDCs), India has committed to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030. Solar energy is one of the main source to accomplish the target of 40% of electric power from non-fossil-fuel. Government of India has set the target of achieving 100 GW of solar power capacity in the country by the year 2022 of which 40 GW to be achieved from rooftop solar (RTS).

1.2 The rooftop solar (RTS) plant is a system installed mainly on the roof of a building and includes installations on open contiguous land within the area of premises wherein valid and live electricity connection has been provided by the concern Distribution utilities/companies (DISCOMS). Typically, 1(one) kWp RTS plant requires about 10 sq. m area. The Solar power so generated can then be used either for captive consumption of the premises or can be fed into the grid and be adjusted in the electricity bill. Net-metering regulations notified by respective State Electricity Regulatory Commissions (SERCs) provide a legal framework for such adjustment. RTS plants help DISCOMs in reducing transmission and distribution losses as power consumption and generation are co-located. These Plants are also useful in tackling day time peak load as solar generation profile matches such peak loads during the day.

1.3 The Government, on 30th December 2015, approved a program ‘Grid Connected Rooftop and Small Solar Power Plants Programme’ for installation of 4,200 MW RTS plants in the country by year 2019-20, of which 2,100 MW was through CFA and balance 2,100 MW was without CFA. The RTS projects sanctioned under this Program are under implementation by State Nodal Agencies (SNA’s), Solar Energy Corporation of India (SECI), Public Sector Undertakings (PSUs) and other Government Agencies (GAs).

2.0 The Government, on 19th February 2019 approved Phase-II of ‘Grid Connected Rooftop and Small Solar Power Plants Programme’ for achieving cumulative capacity of 40 GW RTS plants by 2022. In Phase-II, it has been decided to implement the programme by making the DISCOMs and its local offices as the nodal points for implementation of the RTS programme. DISCOMs will play a key role in expansion of RTS as DISCOMs are having a direct contact with end user and they provide approval for installation, manage the distribution network and also have billing interface with rooftop owner.

3 Aim and Objectives of Phase-II of Grid Connected Rooftop Solar Programme

The key objectives of the programme are:

- a. To promote grid connected RTS in all consumer segments, viz., residential, institutional, social, Govt., commercial, industrial etc.
- b. To bring DISCOMs at forefront as key drivers for rapid deployment of RTS.
- c. To create awareness, capacity building, human resource development, etc.
- d. To promote sustainable business models.
- e. To create additional RTS capacity of 38000 MW in the country by 31.12.2022 out of which a capacity of 4000 MW in residential sector with Central Financial Assistance and 34000 MW in other sectors (i.e., Social, Government, educational, PSUs,

Statutory /Autonomous bodies, Private Commercial, Industrial Sectors etc.) by suitably incentivizing DISCOMs

- f. To promote domestic manufacturing of solar cells and module

4 Strategy

The programme will be implemented through DISCOMs. This will lead to ease of access for the consumers. The programme provides for Central Financial Assistance (CFA) for the household owner and Group Housing Societies to set up RTS on the rooftop of their residence/residential campus. DISCOMs should create customer friendly environment by making enabling provisions in their regulations and smooth approval process required for RTS. Since the requisite expertise on solar energy for implementation of this Programme may not be available with DISCOMs, they will be at liberty to use the services of State Nodal Agencies (SNAs) engaged in the promotion of Renewable Energy of the respective States/UTs.

5. Implementation arrangement

The following major issues have been identified during the Phase-I of RTS programme: -

- Multiple tenders by different agencies and subsequently considerable delay in tendering.
- Involvement of multiple stakeholder viz. SNAs, DISCOMs, PSUs, Developers etc.
- Lack of uniform regulation/mandatory notification for rooftop solar
- Lack of uniform regulations.
- Lack of awareness among the prospective beneficiaries.

To address the above issues, and especially the fact that the consumer had to approach multiple agencies for getting a RTS plant installed, it has been decided to implement the programme by making the DISCOMs and its local offices as the nodal points for implementation of the RTS programme. The major components of this phase II of the programme are: -

- Component A: Setting up of 4000 MW of grid connected rooftop solar projects in residential sector with Central Financial Assistance (CFA)
- Component B: Incentives to Electricity Distribution Companies (DISCOMs) based on achievement towards initial 18000 MW of grid connected rooftop solar plants

5.1.1 Component A: Setting up of 4000 MW of grid connected rooftop solar projects in residential sector with Central Financial Assistance (CFA): In most of the States/UTs the residential sector enjoys benefit of subsidized electricity; therefore, beneficiaries of this sector would not be inclined to adopt rooftop solar until some capital CFA mechanism is put in place to reduce the cost of rooftop solar. Further, considering the fact that lower consumption slab pays lower tariff and vice versa, the CFA for RTS is also required to be restructured.

5.1.2 The CFA has been restructured and higher CFA up to 40 % will be given for RTS systems up to 3 kW capacity. For RTS systems of capacity above 3 kW and up to 10 kW, the CFA of 40% would be applicable only for the first 3 kW capacity and for capacity above 3 kW the CFA would be limited to 20 %. The residential sectors users may install RTS plant of

even higher capacity as per their requirement and the respective SERC regulation; however, the CFA would be limited for first 10 kWp capacity RTS plant as mentioned above.

5.1.3 For Group Housing Societies/Residential Welfare Associations (GHS/RWA) CFA will be limited to 20% for installation of RTS plant for supply of power to common facilities. The capacity eligible for CFA for GHS/ RWA will be limited to 10 kWp per house and total not more than 500 kWp, inclusive of RTS already installed on individual houses in that GHS/ RWA at the time of installation of RTS for common activity.

5.1.4 For the purpose of this component of the programme, Residential RTS plant would be the solar power system installed mainly on the roof of a residential building having an active residential power connection from the local DISCOM, and would also include installations on open contiguous land within the premises of the Residential building. The CFA pattern for the residential sector will be as follows: -

Type of residential sector	CFA (as percentage of benchmark cost or cost discovered through competitive process whichever is lower)
Residential sector (maximum up to 3 kW capacity)	40 % of benchmark cost**
Residential sector (above 3 kW capacity and up to 10 kW capacity)*	40 % up to 3 KW Plus 20% for RTS system above 3 kW and up to 10 kW
Group Housing Societies/Residential Welfare Associations (GHS/RWA) etc. for common facilities up to 500 kWp (@ 10 kWp per house), with the upper limit being inclusive of individual rooftop plants already installed by individual residents in that GHS/RWA at the time of installation of RTS for common activity.	20 %

**The residential sector users may install RTS plant of even higher capacity as provisioned by respective State electricity regulations; however, the CFA will be limited up to 10 kWp capacity of RTS plant.*

*** Benchmark cost may be different in General Category States/UTs and Special Category States/UTs i.e., North Eastern States including Sikkim, Uttarakhand, Himachal Pradesh, Jammu & Kashmir, Lakshadweep, and Andaman & Nicobar Islands. CFA shall be on benchmark cost of MNRE for the state/ UT or lowest of the costs discovered in the tenders for that state/ UT, whichever is lower*

5.1.5 MNRE will allocate capacity for installation of RTS System in residential sector by DISCOMS in the ensuing year. One of the parameters for allocating the capacity will be the demand raised by the DISCOM and capacity required for fulfilment of solar RPO of the State as notified by Ministry of Power. For this, DISCOMs will be required to submit yearly online proposal, in MNRE's SPIN portal (www.solarrooftop.gov.in) by the month of March. However, for the Year 2019-20, the DISCOMs shall be permitted to submit proposals in MNRE's SPIN portal within one month from the date of publication of these operational guidelines. Further, MNRE may ask for demand from DISCOMs directly to the Ministry, instead of going through the SPIN portal. In addition, preference would be given to

States/UTs who provide an additional subsidy/benefit over and above the CFA being given by the Central Government.

5.1.6 The implementing agency i.e. Discoms or its authorised agency shall invite Expression of Interest for empanelment of agencies for supply, installation, testing & commissioning of RTS system in residential premises. To ensure quality and post installation services only manufacturers of solar panels and system integrators fulfilling pre-determined technical and financial criteria would be allowed to participate in the bidding process. The selected bidders shall follow the quality control orders and standards for all components of RTS system and its installation procedure, if any, issued by MNRE from time to time. All the bidders within the price bracket of $(L1 + X\% \text{ of } L1)$ shall be empanelled. The digit "X" may be decided by the agency and should be clearly indicated while inviting Expression of Interest. The digit "X" shall not be more than 25. Further, if total no. of empanelled agencies are found to be less than 5 in the acceptable band, then the DISCOM may also include those agencies who fall in $L1+(X+5)\%$ of $L1$, provided they agree to match $L1$.

5.1.7 The beneficiary will have option of installing RTS system through any of these empanelled vendors at net of CFA amount i.e. making payment to the vendors after deducting the eligible CFA amount. The vendor will claim the CFA from the implementing agency. The CFA for residential sector as stated above shall be permissible only if domestic manufactured Solar Panels (using domestic manufactured Solar cells) are used by the beneficiary. However, CFA will be limited up to 20% / 40% (as the case may be) of the benchmark cost of RTS system as defined by MNRE from time to time or the rate discovered through transparent bidding by the implementing agency, whichever is lower. In case of RESCO model the benefit of the CFA should be passed on to the customer in the form of reduced tariff by factoring in the CFA through competitive process. Provisions of GFR shall be applicable for projects where Ministry is providing financial support.

5.1.8 The Implementing agency or Ministry officials or designated agency may inspect the ongoing installation or installed plants. In case the systems are not as per standards, non-functional on account of poor quality of installation, or non-compliance of AMC, the implementing agency/Ministry reserves the right to blacklist the vendor. Blacklisting may inter-alia include the following: -

- a. The Vendor/Firm will not be eligible to participate in tenders for Government supported projects.
- b. In case, the concerned Director(s) of the firm/company joins another existing or starts/ joins a new firm/company, the company will automatically be blacklisted.

5.1.9 The participating Government owned DISCOMs will be eligible to avail advance CFA up to 30% of the total CFA amount for the project. For private DISCOMs, CFA will be disbursed on reimbursement basis. However, if required private DISCOMS will be eligible to avail advance CFA upon submission of bank guarantee of an equivalent amount. More details on release of CFA slabs is given in para 11 of these guidelines. For settlement of project account, the implementing agency will have to submit the UC, Audited SoE, project completion certificate and online Project Completion reports in SPIN portal of MNRE. Implementing Agency will get service charges @ 3% of eligible CFA for implementing the programme for the various tasks as detailed in para 10 of these Guidelines. The service charges will be given only after completion of the project. The fund allocated in the

programme under the capacity building head would be retained by MNRE and would be utilized for carrying out capacity building activities only.

5.1.10 The beneficiary interested to install RTS plants will submit their application online or to the local office of the concerned DISCOM wherever the Online Portal is not developed, DISCOM will assist the consumer in all the activities related to sanction of CFA and commissioning and connectivity of the RTS plants through transparently enlisted vendors/manufacture/system integrators.

5.1.11 The entire process of receiving proposals, processing them and giving approvals would be IT enabled except in those DISCOMs where the Online Portal is not developed. Such DISCOMs shall avail the services of multilateral agencies nominated for each State for development of Online Portal for them during 2019-20. The SPIN portal will be made available to the DISCOMs to aggregate/register the demand of consumers in their operational area.

5.1.12 The consumer will pay only the balance amount, after excluding CFA portion, to the empanelled vendor. The CFA will be released through DISCOMs to the empanelled vendor after commissioning and inspection of RTS plant. DISCOMs shall adhere to the suggestive timelines for all such processes as defined in Annexure and ensure strict compliance of the same.

5.1.13 **Other than residential sector:** CFA will not be available for other categories i.e. institutional, educational, social, government, commercial and industrial sectors as the beneficiaries in these sectors are high tariff paying consumers and adoption of solar would be economically beneficial for them even without CFA. The power generated through RTS plant would result in significant reduction of the electricity bill paid by them to the DISCOMs, hence making it an economically viable solution. Although CFA is not admissible for non-residential sectors, the DISCOMs will be incentivized for addition of RTS capacity in these sectors too as described under para 5.2 below.

5.1.14 The capacity eligible for incentive to DISCOMs would cover the entire RTS capacity installed including the capacity installed without CFA and with CFA. DISCOMs are required to create enabling ecosystem for all such customers. DISCOMs shall notify guidelines for providing time bound approvals/connectivity. The various forms/formats/procedures, required for project implementation, shall be standardised by MNRE in consultation with Stakeholders.

5.1.15 **Method of metering:** While almost all States have approved regulations of net metering, for the purpose of this programme, the States may follow the metering method prescribed in the Tariff policy or as approved by the respective Electricity Regulator.

5.2 Component B: Incentives to Electricity Distribution Companies (DISCOMs) based on achievement towards initial 18000 MW of grid connected rooftop solar plants

5.2.1 Since DISCOMs are required to incur additional expenditure for implementation of programme in terms of additional man-power, creating infrastructure, capacity building, awareness, etc., these will be compensated by providing performance linked incentives. The incentives may be provided for each MWp capacity of solar rooftop, added by them in their distribution area over and above 10% of **base capacity installed at the end of previous**

year. However, such incentives will not be applicable with retrospective effect. These incentives will be provided to enable DISCOMs to create an enabling ecosystem for expeditious implementation of RTS projects in their area.

5.2.2 The tasks taken by DISCOMs shall include but not be limited to providing dedicated manpower for RTS implementation, rooftop assessment, bid process management to empanel system integrators along with rates, technical studies, up gradation in ERP system/components, providing time bound services to RTS consumers, inspection and online monitoring of RTS plants, online database management of commissioned capacity, consumer awareness and publicity, ensuring availability of net-meters, providing grid connectivity, capacity building of its officers/staff etc.

5.2.3 The DISCOMs will submit the cumulative capacity of grid connected RTS plants (in MWp) installed in their distribution area as on 31st March 2019. **This will be taken as the installed base capacity** for the first year of participating DISCOMs.

5.2.4 The incentives will be given on incremental RTS capacity installed by the DISCOMs in their distribution area from the installed base capacity (at the end of previous financial year) within the time line of 12 months (financial year-wise, i.e. 01.04.2019 to 31.03.2020 and so on till the duration of the programme). The incentive pattern would be a progressive one with higher incentive rates for higher levels of achievement. This is elaborated in the following table: -

S. No.	Parameter	Incentive to be Provided
1.	For installed capacity achieved above 10 % and up to 15 % over and above of the installed base capacity* within a financial year	5% of the applicable cost** for capacity achieved above 10 % of the installed base capacity
2.	For installed capacity achieved beyond 15 % over and above of the installed base capacity* within one financial year	5% of the applicable cost** for capacity achieved above 10 % and up to 15 % of the installed base capacity PLUS 10 % of the applicable cost** for capacity achieved beyond 15 % of the installed base capacity

**Installed base capacity shall mean the cumulative RTS capacity installed within the jurisdiction of DISCOM at the end of previous financial year. This will include total RTS capacity installed under residential, Institutional, Social, Govt., PSU, Statutory/ Autonomous bodies, Private Commercial, Industrial Sectors etc.*

*** Applicable Cost is the applicable benchmark cost of MNRE for the state/ UT for mid-range RTS capacity of above 10 kW and upto 100 kW or lowest of the costs discovered in the tenders for that state/ UT in that year, whichever is lower*

5.2.5 The incentive mechanism has been illustrated in the following table

Discoms	Installed base capacity (MW)	Achievement under programme (MW)	Percentage Achievement of installed base capacity (%)	Capacity eligible for 5% incentives (MW)	Capacity eligible for 10% incentives (MW)
A	100 MW	10 MW	10%	Nil	Nil
B	100 MW	12 MW	12%	2 MW	Nil
C	100 MW	20 MW	20%	5 MW	5 MW
D	100 MW	30 MW	30%	5 MW	15 MW

Note: The capacity eligible for incentives by DISCOMs would cover the entire capacity installed including the capacity installed without CFA and with CFA

5.2.6 The Incentives to the DISCOMs would be available only for the addition of initial 18000 MW RTS capacity in the country after launch of this programme. In case, higher capacity is achieved by the DISCOMs leading to entitlement for higher incentive slab of 10%, the total incentives to the DISCOMs would be limited to the financial outlay available for incentive under the programme, irrespective of the total capacity achieved under the programme by any particular DISCOM.

5.2.7 As the incentives are proposed for various reasons mentioned in 5.2.1 and 5.2.2, the above incentives proposed may not be a part of Tariff Determination & Tariff Rationalisation process of SERC /JERC.

6.0 Technology

6.1 The solar photovoltaic technology (including all forms of photo voltaic) based RTS projects for generation of electricity will be deployed under the Programme. Project proponents to adhere to the national/ international standards specified by MNRE from time to time. For subsidized projects (i.e. for residential projects detailed in para 5.1 above) only indigenously manufactured PV panels (both cells and modules) should be used.

6.2 Grid interactive SPV power plants, inverters, meters, cables, mounting structures and other balance of systems etc. should have the minimal technical requirements and quality control standards as prescribed by MNRE from time to time. The mechanical structures, electrical works including power conditioners/inverters/charge controllers/maximum power point tracker units/distribution boards/digital meters/switch gear/net-meters/storage batteries, etc. and over all workmanship of the RTS plants/ systems must be warranted against any manufacturing/ design/ installation defects for a minimum period of 5 years. Fulfilment of the warranty obligations of the complete Solar system shall rest with System integrator who in turn may claim the same from the component manufacturers.

6.3 Online monitoring system shall be provided by DISCOMs to ensure satisfactory functioning of all the RTS plants.

7 Management

7.1 The primarily responsibility of monitoring and reporting will be with the implementing agencies i.e. DISCOMs and they may carryout 3rd party inspection through National Monitors/Consultants, for ground verification/performance evaluation on random basis.

7.2 MNRE will hold regular review meetings to assess the implementation of the programme. MNRE will also do the physical sample inspection of the installed RTS plants for which CFA or Incentive has been claimed by the DISCOMs. Sample Inspection may be done by the officials of MNRE or any other designed Central Government agency.

7.3 The Ministry has developed the SPIN portal for uploading all details of RTS projects. Key features of installed plants, including geographical location, latitude- longitude, installed capacity, name & contact details of developer, project cost, etc. shall be uploaded by DISCOMs on this Portal. Ministry has also initiated process for geo-tagging of these projects with assistance of ISRO. Implementation Agencies have to submit progress reports from time to time to MNRE through SPIN.

8 Roles and responsibilities of stakeholders

8.1 Ministry of New and Renewable Energy: -

- i. MNRE shall allocate capacity for the ensuing year to different DISCOMs on the basis of demand, capacity required for fulfilment of solar RPO, any additional subsidy/benefit being given by the State/UT over and above the CFA being given by the Central Government, performance of the State/UT/DISCOM in the past, etc.
- ii. MNRE will release funds to the DISCOMs for disbursement of CFA to the vendors installing RTS plant in the residential sector.
- iii. The participating Government owned DISCOMs may avail advance CFA of up to 30% of the total CFA amount for the project. For private DISCOMs, CFA will be disbursed on reimbursement basis. CFA would be released on reimbursement basis for the capacity installed from time to time without any need to wait for the entire sanctioned capacity. Funds may be released on receipt of Project Installation Reports in prescribed formats on SPIN portal.
- iv. MNRE will release eligible incentive to the DISCOMs based on their performance in the last financial year.
- v. MNRE will do the physical sample inspection of the installed RTS plants for which CFA or Incentive has been claimed by the DISCOMs. Sample inspection may be done by the officials of MNRE or any other designed Central Government agency.
- vi. To provide necessary assistance to DISCOMs in respect of Portal development and its integration with SPIN portal of MNRE, capacity building of DISCOM officials, updation of billing software, etc., if so, required by them.
- vii. Undertake capacity building and public awareness campaigns through print and electronic media.

8.2 DISCOMs:

- i. Create a RTS cell at each Division level headed by the Executive Engineer and the respective Sub-Divisional Officer shall act as nodal officer for implementation of RTS projects in his operational area.

- ii. Develop dedicated online portal for grid connected RTS projects. This portal shall be integrated with MNRE SPIN portal for which assistance may be provided by MNRE to respective DISCOMs.
- iii. Empanelment of agencies for design, supply, installation, testing & commissioning of RTS system in residential premises lying under their jurisdiction as described in Paragraph 5.1.6 above by floating of Expression of Interest either itself or through a designated agency
- iv. Notify time bound procedure for implementation of the programme.
- v. Notify cost of metering arrangements, related connectivity components and other charges and ensure availability of appropriate meters.
- vi. No CEIG inspection is required for RTS plants up to 500 kVA capacity.
- vii. Undertake capacity building programs for DISCOM officers for RTS projects on regular basis.
- viii. Undertake consumer awareness campaigns through print and electronic media, developed guidebook/handbook.
- ix. Inclusion of appropriate metering settlement in ERP system and billing software.
- x. Develop time bound grievance redressal mechanism.
- xi. Submit the cumulative capacity of grid connected RTS plants (in MWp) installed in their distribution area first time as on 31st March 2019 and thereafter on 31st March every year for calculating the applicable incentive payable to them by MNRE.
- xii. DISCOM will take utmost care so that there is minimum loss of solar power due to grid failure during daytime or from any other reasons within their jurisdiction.
- xiii. The project commissioning timeline for the residential sector shall be fifteen months from the date of sanction from MNRE. For this, the implementing agencies may specify a cut-off date after which no project would be allocated so as to allow sufficient time for completion of already allocated projects. Benchmark cost prevailing at the time of commissioning of the project shall be applicable for calculation of CFA. The implementing agencies shall inform MNRE regarding capacity commissioned within stipulated timeline and submit documents to the Ministry within 45 days of completion of project time line. After 45 days, deduction of service charges at the rate of Rs. 1000/- per day would be levied on the project. In case the submission of project documents is delayed by more than 90 days from the date of completion timeline/last day of financial year, no service charges would be provided for the said project.

8.3 Empaneled Vendors for supply and installation of RTS projects

- i. Install RTS plant within the timeframe decided by the DISCOMs.
- ii. For projects covered under CFA, only indigenously manufactured PV panels (both cells and modules) should be used.
- iii. Vendors for supply and installation of the RTS shall establish a service centre in each District. In case if it is not economically viable for an individual vendor then Group of vendors can establish service centre in each District. Their contact details will be made available on the website of the DISCOMs.
- iv. These service centres have to provide services to the RTS owners within the timelines decided by the DISCOMs, free of cost for first five years (Warranty period) of commissioning of the RTS. Non-performing/Under-performing PV Panels will be replaced free of cost in the warranty period. Non-compliance of the service standards by the vendor will make it ineligible for future work orders by the Government.

9. Business models

Various business models in accordance with the prevailing legal framework are covered under the programme such as CAPEX, RESCO, rent a roof/lease model, community model, utility model, through a SPV having share of Utility, plug-in RTS model and any other model as specified by respective State Govt. Policy/Regulations. RTS systems with or without battery storage are covered under the programme.

In addition, hybrid systems, e.g., solar rooftop PV- wind hybrid, solar rooftop PV- solar thermal hybrid, solar rooftop PV- biomass hybrid etc. are also covered for which the capacity of the PV modules installed on rooftop of buildings within the campus will be considered for CFA/incentive calculations. However, this won't be applicable for cases wherein the developer/implementing agency has availed the CFA for solar module from the other components viz. wind, biomass etc.

10. Capacity building/awareness activities:

An amount of Rs. 66 Crore (i.e. 1 % of the amount allocated for CFA sector) has been allocated under the programme for capacity building /awareness activities. This fund will be retained by MNRE for promoting capacity building activities. These activities can be implemented directly by MNRE and/or in coordination with implementing agencies. The implementing agency (DISCOM) will submit detailed proposal /communication plans towards various activities for conducting such capacity building/awareness activities for consumers. Funds will be released in three phases, i.e., up to 40 % in advance and balance up to 60 % after completion of the activities, submission of activity reports, utilization certificates and audited statement of expenditure. DISCOM may be at liberty to use the existing infrastructure of State Nodal Agencies of Renewable Energy of the respective States/UTs (SNAs) for the same. The admissible CFA for conducting the capacity building programme e.g. National, International or State level by the implementing agency may be restricted as per the norms set by the I&PA/HRD Division. Any advance to private DISCOM will be released after submission of bank guarantee of requisite amount.

11. Service charges:

An amount of Rs. 198 Crore (i.e. 3 % of the amount allocated for CFA sector) has been allocated under the programme towards the service charges of the programme. The service charges will essentially cover but not be limited to the following: -

- demand aggregation activities,
- creation of working RTS cell in DISCOM
- bid process management
- implementation
- availability and streamlining the process of net-metering /billing
- inspection, monitoring, development of online portal
- training of DISCOM officials
- awareness programs for proliferation of rooftop solar PV projects
- creation and operating project management cell in MNRE etc.

DISCOMs may also utilize existing infrastructure of SNAs or may also implement the program through SNAs. In such cases, service charges may be appropriately divided between

the two agencies. However, projects would be sanctioned to DISCOMs only and SNA would be acting as the supporting agencies for DISCOMs. This service charge may also be used for 3rd party verification of the projects by MNRE or its designated agency (say State Nodal Agencies/ Govt. departments/PSUs/DISCOMs etc.) wherever required.

12. Pattern of release of CFA/incentives: -

	Advance	2nd instalment	3rd Instalment
Release of CFA in residential sector	30 % of CFA* After issuance of work order /empanelment of system integrators	30 % of CFA* after completion of 30% of the sanctioned capacity, submission of online project completion report and utilisation certificates etc.	Balance 40 % after completion of sanctioned capacity in the sanctioned timeline, submission of online PCR, UC, Audited SoE, Project Completion Certificates etc.
Incentives	Eligible incentives after submission of achievement details, i.e. Cumulative achievement (in MW) in the preceding FY ending Capacity of the RTS system installed the FY 2019-20,2020-21, 2021-2022 along with list of projects in SPIN portal along with Undertaking on project completion and sample inspection by 3 rd party		

* CFA will be calculated @ 20% of benchmark cost or cost discovered through tender whichever is lower for the purpose of advance to DISCOMs

13. Suggestive expectation from State Governments

- RTS capacity be permitted up to 100% of connected load
- Distribution Transfer (DT) capacity be increased to avoid denial of permission for setting up RTS on this ground
- Mandating installation of rooftop solar projects on Government buildings and new residential buildings
- Banking of solar power may be permitted for 12 months without any banking charges
- Monitoring of sanctioned RTS capacity and expedite commissioning of the allotted capacity
- Timely and correctly submission of project proposals and project commissioning reports for timely release of funds

14. Interpretation of the Guidelines

14.1 In case of any ambiguity in interpretation of any of the provisions of these Guidelines, the decision of MNRE shall be final.

14.2 The Guidelines may be reviewed from time to time based on the experience gained from the implementation of the programme and necessary modifications would be incorporated after getting approval of Minister, NRE.

**Suggestive Operating Procedures for Installation and Metering Connection of Grid
Connected Solar Rooftop PV Systems by DISCOMs**

ACTIVITY	RESPONSIBILITY	TIMELINE (Max Working Days)
Submission of Application	CONSUMER	Zero Date
Acknowledgment of Application by DISCOM	DISCOM	02
Site Verification / Technical Feasibility & issuance of Letter of Approval (LOA) / Termination ^[1]	DISCOM	15
In-Principle Approval for CFA	DISCOM	10
Execution of Metering Agreement	DISCOM & CONSUMER	15 – 20
Installation of Rooftop Solar System	DISCOM, Empaneled Vendor & CONSUMER	90 - 180
Meter Procurement Intimation	CONSUMER	15 (prior intimating DISCOM on system readiness)
Submit Work Completion Report / Certificate	CONSUMER & Empaneled Vendor	90 – 180 (from LOA) (depending upon capacity)
Inspection by CEIG (if applicable)	CEIG	15 -20
Issuance of Safety Certificate	CEIG (if applicable)	5 – 10
Intimation to Install Meter	CONSUMER	7 - 10
Inspection by DISCOM, Installation of Meter ^[2] and Commissioning of the System	DISCOM ^[3]	15 – 20 (after CEIG approval)
Inspection for Release of CFA ^[4]	DISCOM	7 -10
Release of CFA	DISCOM	5 -10
Billing Process	DISCOM	30 After synchronization with Grid

^[1] DISCOM to communicate to deficiencies to Consumer and provide an opportunity to resolve them

^[2] DISCOM may provide a window of 15 days for Consumer to resolve deficiencies found during inspection

^[3] Joint Inspection by CEIG (if applicable) and DISCOM can reduce the timelines substantially. If DISCOM has no stock of meters, Consumer will purchase the same upon intimation by DISCOM. Inspection dates to be provided within 7 days by CEIG (if applicable) and DISCOM from the date of receipt of request for inspection sent by Consumer

^[4] Joint Inspection by CEIG (if applicable) and DISCOM can reduce the timelines substantially