Comments/Suggestions from Power Foundation of India (PFI) on the draft Guidelines for Implementation of the "Payment Security Mechanism" Component and "Central Financial Assistance" Component for RESCO Models/ Utility Led Aggregation Models of PM-Surya Ghar: Muft Bijli Yojana

1) PFI is a Policy Research and Advocacy entity, a registered society under the aegis of the Ministry of Power, Government of India, and supported by twelve leading Central Power Sector Organisations, to undertake evidence-based policy research and facilitate informed decision making by the Regulators, Ministry and stakeholders concerned with the Power Sector. It is led by Director General Shri Sanjiv Nandan Sahai (Former Secretary in Ministry of Power, Government of India).

2) Ministry of New and Renewable Energy (MNRE) vide its O.M. No. 318/17/2024-Grid Connected Rooftop-Part (15) dated 7th September 2024, has sought comments / suggestions from various stakeholders on ***Draft Guidelines*** *for Implementation of the "Payment Security Mechanism (PSM)" Component and "Central Financial Assistance (CFA)" Component for RESCO Models/ Utility Led Aggregation Models of PM-Surya Ghar: Muft Bijli Yojana*. PFI has reviewed and analysed the said draft Guidelines and as sought, our comments / suggestions on the said draft Guidelines are as follows:

3) It is noted that the Government of India approved the PM Surya Ghar: Muft Bijli Yojana on 29th February 2024. The administrative approval was granted to the scheme vide Order No. 318/17/2024-Grid Connected Rooftop dated 16th March 2024. The guidelines for release of CFA to residential consumers for installations undertaken by the consumers through registered vendors (**Capex mode**) were issued vide OM no. 318/17/2024-Grid Connected Rooftop dated 7th June 2024. However, these guidelines do not cover **RESCO** (Renewable Energy Service Company) models (where a third-party entity other than the consumer makes the initial investment, either wholly or partly) or Utility Led/State Led Aggregation Models (ULA) (where a state entity invests wholly or partly on behalf of consumers on an aggregate basis).

4) Now, in the proposed draft Guidelines for Implementation of the "Payment Security Mechanism" Component and "Central Financial Assistance" Component for RESCO Models/

Utility Led Aggregation Models of PM-Surya Ghar: Muft Bijli Yojana, MNRE has first time brought in RESCO Model. The said model has been analysed as stipulated in section 4 (b). It is submitted that functioning and eligibility of RESCO Model has not been clearly brought out in the said guidelines which is proposed to be modified as per suggestions mentioned in the subsequent paras.

5) In the draft guidelines, RESCO and ULA are cross-referenced interchangeably. It is proposed to have a clear segregation between the two in terms of eligible entities. RESCO may be defined as private entity and ULA may comprise state-led government entities.

6) **Hybrid RESCO Model, as stipulated in the Delhi Solar Policy 2023, which addresses the limitations of the conventional RESCO model may be adopted by MNRE**. **Hybrid RESCO model combines the net-metering arrangement with a tripartite agreement formed among the consumer, RESCO developer and DISCOM**.

7) This arrangement under Hybrid RESCO allows the consumer to benefit by renting their roof to the RESCO developer without any upfront capital expenditure for the solar panels, thereby reducing electricity bill under a net-metering arrangement. The rate at which the consumer will be billed by DISCOM for solar consumption, as agreed between the RESCO and the consumer, will be based on the PPA rate decided by the State Electricity Regulatory Commission (SERC). For the remaining balance energy, the consumer will be charged according to their relevant tariff category. Undoubtedly, the PPA rate will be lower than the higher slab rates of tariffs, providing financial benefits to the consumer. The tripartite agreement also offers security to RESCO developers through assured off-take and payment security.

   The computation for **"Hybrid RESCO Model"** with and without Roof Rental, is tabulated below. It has been prepared for a 10 kW capacity RTSPV, for a consumer based in Delhi, having tariff as per DERC tariff schedule and approximate roof rental as prevailing in Delhi:

SCENARIO-I: HYBRID RESCO MODEL (WITH ROOF RENT)

BACK TO BACK ARRANGEMENTS : CONSUMER -> RESCO -> DISCOM

Cost to RESCO

Particular	Unit	Total
Capacity	kW	10
Approx Cost of Solar setup (Rs. 50,000 / kW) with Civil Work	Rs.	5,00,000
Roof Top Space for 10 kW	sq. ft	1,000
Yearly Rent (approx roof rent in Delhi: 100 sqft Rs. 5000 / month)	Rs.	6,00,000
MNRE Subsidy	Rs.	78,000
CAPEX net of Subsidy		4,22,000
Effective Yearly Cost (Recurring)	Rs.	
A. Capacity Charges @ Useful Life 12 yrs, WACC 9.50%	Rs.	*71,298*
B. Rental to Consumer for Roof Space	Rs.	***6,00,000***
TOTAL YEARLY EXPENSES	Rs.	***6,71,298***
TOTAL MONTHLY EXPENSES	Rs.	***55,942***

Revenue to RESCO

Particular	Unit	Total
Capacity	kW	10
Monthly Generation	kWh	1,200
PPA Rate with DISCOM (approved by SERC)	Rs./kWh	5
Max. 50% Energy at PPA rate to consumer	kWh	600
Net Billable Energy (Gross - 50% Energy)	kWh	600
Monthly Revenue from DISCOM	**Rs.**	**3,000**
Monthly Revenue from Consumer	**Rs.**	**3,000**
Total Monthly Revenue	**Rs.**	**6,000**

Other Major Hurdles:

Availability of Roof Space
Consumer Willingness to Lease Roof Space to 3rd Party
Privacy issues
Load on Rooftop etc.

Benefit to Consumers in Hybrid RESCO

Particular	Unit	Total
Monthly Consumption	kWh	900
Earlier Energy Charges _ Electricity Bill before RESCO RTSPV	Rs.	4,800
Revised Energy Charges _ Electricity Bill POST RESCO RTSPV	Rs.	4,050
Monthly Savings to Consumer	Rs.	**750**
ASSUMPTIONS:		
ROOF RENTAL PAID TO CONSUMERS BY RESCO		
CONSUMER PAYS 50% of its Consumption @ Solar PPA Rate rather than costly higher tariff Slab, thus saving Rs. 750 in his Electricity Bill on Monthy Basis		
DISCOM PAYS PPA RATE TO RESCO for Balance Electricity after meeting 50% capped consumption by consumer. RESCO is paid full @ PPA Rate (partially by DISCOM and partially by consumer)		

SCENARIO-II: HYBRID RESCO MODEL (WITHOUT ROOF RENT)

BACK TO BACK ARRANGEMENTS : CONSUMER -> RESCO -> DISCOM

Cost to RESCO

Particular	Unit	Total
Capacity	kW	10
Approx Cost of Solar setup (Rs. 50,000 / kW) with Civil Work	Rs.	5,00,000
Roof Top Space for 10 kW	sq. ft	1,000
Yearly Rent (approx roof rent in Delhi: 100 sqft Rs. 5000 / month)	Rs.	-
MNRE Subsidy	Rs.	78,000
CAPEX net of Subsidy		4,22,000
Effective Yearly Cost (Recurring)	Rs.	
A. Capacity Charges @ Useful Life 12 yrs, WACC 9.50%	Rs.	*71,298*
B. Rental to Consumer for Roof Space	Rs.	-
TOTAL YEARLY EXPENSES	Rs.	***71,298***
TOTAL MONTHLY EXPENSES	Rs.	***5,942***

Revenue to RESCO

Particular	Unit	Total
Capacity	kW	10
Monthly Generation	kWh	1,200
PPA Rate with DISCOM (approved by SERC)	Rs./kWh	5
Max. 50% Energy at PPA rate to consumer	kWh	600
Net Billable Energy (Gross - 50% Energy)	kWh	600
Monthly Revenue from DISCOM	**Rs.**	**3,000**
Monthly Revenue from Consumer	**Rs.**	**3,000**
Total Monthly Revenue	**Rs.**	**6,000**

Other Major Hurdles:

Availability of Roof Space
Consumer Willingness to Lease Roof Space to 3rd Party
Privacy issues
Load on Rooftop etc.

Benefit to Consumers in Hybrid RESCO

Particular	Unit	Total
Monthly Consumption	kWh	900
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Revised Energy Charges _ Electricity Bill POST RESCO RTSPV	Rs.	4,050
Monthly Savings to Consumer	Rs.	**750**
ASSUMPTIONS:		
CONSUMER PAYS 50% of its Consumption @ Solar PPA Rate rather than costly higher tariff Slab, thus saving Rs. 750 in his Electricity Bill on Monthy Basis		
DISCOM PAYS PPA RATE TO RESCO for Balance Electricity after meeting 50% capped consumption by consumer. RESCO is paid full @ PPA Rate (partially by DISCOM and partially by consumer)		

Note: It may be noted that Scenario-I (with roof rent) is not a financially lucrative option for a RESCO developer. While prima facie, Scenario-II (without roof rent) appears to be a financially lucrative option for a RESCO developer, it may not be very beneficial for a consumer (here, saving Rs 750 per month) considering the cost of inconvenience and opportunity cost of roof.

8) Accordingly, modifications are proposed in the draft guidelines as follows:

Table-1: Comments of PFI

Sr. No.	Draft Guidelines	PFI's Comments	Modification proposed
1.	***Page 4, Clause 4., Point b.*** ***RESCO Mode:*** *"The RESCO Mode is considered to be one wherein the consumer herself does not fund the initial investment into the rooftop solar system and is not the owner of the asset for at least 5 years of operations. Instead, the system is procured, installed and maintained for a period not less than 5 years (project period) by a Renewable Energy Service Company (RESCO). The consumer only pays for the* ***electricity generated*** *on a tariff basis to the RESCO operator and/or may be compensated by the RESCO operator for roof utilization rights. The plant ownership may be transferred to the consumer after the project period as per the terms and conditions agreed to between the consumer and the RESCO entity.* ***Alternatively,*** *the RESCO may enter into an arrangement with the DISCOM for* ***sale of generated power*** *to the grid under a power purchase agreement."*	The draft stipulates that the consumer pays for the **electricity generated**. However, it is important to note that **consumers would typically only be willing to pay for the electricity they actually consume**, not the entire generation, especially if generation exceeds their consumption. Additionally, the definition of RESCO in the draft guidelines does not clarify the **handling of excess power, post-consumption by the consumer**. In such cases, the RESCO might prefer to sell this excess generation to the DISCOM. Considering these factors, the definition of the RESCO Model should be modified.	**RESCO Mode:** "The RESCO Mode is considered to be one wherein the consumer herself does not fund the initial investment into the rooftop solar system and is not the owner of the asset for at least 5 years of operations. Instead, the system is procured, installed and maintained for a period not less than 5 years (project period) by a Renewable Energy Service Company (RESCO). Under net-metering arrangement, a tripartite agreement be formed among the consumer, RESCO developer and DISCOM. The consumer only pays for the **electricity** ~~***generated***~~ **consumed** from rooftop solar system on a tariff basis to the RESCO operator and/or may be compensated by the RESCO operator for roof utilization rights. The plant ownership may be transferred to the consumer after the project period as per the terms and conditions agreed to between the consumer and the RESCO entity. ~~***Alternatively***~~ **Further**, the RESCO to enter into an arrangement with the DISCOM for **sale of** ~~***generated power***~~ **balance power, left-over post consumption by consumer,** to the grid under a power purchase agreement."

Sr. No.	Draft Guidelines	PFI's Comments	Modification proposed
2.	**Page 7, Clause 4., Point g.** **Domestic Content Requirement** as "Solar modules used in the installation must satisfy the Domestic Content Requirement condition i.e., domestically manufactured modules manufactured from domestically manufactured cells. This is an essential condition for the installation to be eligible for the CFA. Use of non DCR modules in any form in the installation shall render the installation ineligible for CFA."	It may be noted that MNRE in its O.M. dated 07.09.2024 on "Amendment to ALMM (Approved List of Models & Manufacturers) for Solar PV cells", highlighted that List-II of solar PV cells has not been issued due to installed manufacturing capacity of solar PV cells in the country being lower than demand. The O.M. proposes to issue List II, specifying models and manufacturers of Solar PV cells, effective from 1st April 2026. The Domestic Content Requirement under the current draft guidelines mandates the use of domestically manufactured modules manufactured from **domestically manufactured cells**. Such provisions should align with the present state of the industry and existing proposals or specify the date by which this requirement must be fulfilled. Without this clarity, the policy may place undue constraints on installations, given the current limitations in domestic cell manufacturing capacity. The mandate for domestically manufactured cells may be revisited because of aforementioned reasons in this guidelines as well as in earlier scheme guidelines, including Capex Mode.	**Domestic Content Requirement** as "Solar modules used in the installation must satisfy the Domestic Content Requirement condition i.e., domestically manufactured modules ~~manufactured from domestically manufactured cells~~. This is an essential condition for the installation to be eligible for the CFA. Use of non DCR modules in any form in the installation shall render the installation ineligible for CFA."

Sr. No.	Draft Guidelines	PFI's Comments	Modification proposed
3.	**Page 13 & 14, Clause 6., Point d.(ii), e. and i.** **Clause 6.d.(ii)** Commitment to pay dues to NPIA and payment of interest charges at 12% for delayed payments that have been paid out through the PSM-RTS **Clause 6.e.** states "The Utility shall settle the claims of the RESCO partner; however, in case of failure to make payments within 15 days of raising of claims, the NPIA shall make the necessary payments to the RESCO vendor as per the RESCO-Utility agreement. The NPIA shall simultaneously raise the request to the ULA for settlement of the dues along with interest. The Utility must strive to make the pending payments to the NPIA as quickly as possible, along with the **due interest** and the amount shall be recouped to the PSM-RTS in its entirety." **Clause 6.i.** states "In case the ULA is a distribution utility, the provisions of the **Late Payment Surcharge Rules 2022** and amendments thereof shall	It is important to note that under the Late Payment Surcharge (LPS) Rules 2022, the late payment surcharge rates are linked to the lending rates of banks. The rate is based on the Marginal Cost of Funds-based Lending Rate (MCLR) of the State Bank of India on 1st April, plus 5% for the first month, with a further increase of 0.5% for each additional month of delay. In light of this, the interest rate applicable to any utility—whether a distribution utility or otherwise—should also be linked to bank lending rates, i.e. the **MCLR of the State Bank of India**. This alignment will ensure consistency in the application of interest rates for late payments across different types of utilities.	**Clause 6.d.(ii)** Commitment to pay dues to NPIA and payment of interest charges ~~at 12%~~ for delayed payments (at marginal cost of funds based on lending rate for one year of the State Bank of India, as applicable on the 1st April of the financial year in which the period lies, plus 5% for the first month, with a further increase of 0.5% for each additional month of delay, but not more than 3% higher than the base rate at anytime) that have been paid out through the PSM-RTS **Clause 6.e.** states "The Utility shall settle the claims of the RESCO partner; however, in case of failure to make payments within 15 days of raising of claims, the NPIA shall make the necessary payments to the RESCO vendor as per the RESCO-Utility agreement. The NPIA shall simultaneously raise the request to the ULA for settlement of the dues along with interest. The Utility must strive to make the pending payments to the NPIA as quickly as possible, along with the **due interest** (based on the marginal cost of funds based on lending rate for one

	apply to the outstanding dues raised by the RESCO from time to time."		year of the State Bank of India, as applicable on the 1st April of the financial year in which the period lies, plus 5% for the first month, with a further increase of 0.5% for each additional month of delay, but not more than 3% higher than the base rate at anytime) and the amount shall be recouped to the PSM-RTS in its entirety."