Call for Proposal (CfP)

for

"Innovative Projects Component under PM Surya Ghar: Muft Bijli Yojana"

National Institute of Solar Energy (NISE) Gwal Pahari, Faridabad Highway Gurugram – 122003, Haryana

Ministry of New & Renewable Energy (MNRE)

Government of India

Call for Innovative Project Proposals Under the scheme "PM Surya Ghar (PMSG): Muft Bijli Yojana"

1. **Background**

   a. The Government of India has approved the PM Surya Ghar: Muft Bijli Yojana on 29th February 2024 to increase the share of solar rooftop capacity and empower residential households to generate and optimum utilization of green generation. The scheme has an outlay of Rs 75,021 crore and is to be implemented till FY 2026-27. The administrative approval was granted to the scheme vide Order No. 318/17/2024-Grid Connected Rooftop dated 16th March 2024. To that further scheme guidelines have been issued for implementation of component "innovative Projects" under PM Surya Ghar: Muft Bijli Yojana vide Order No. 318/17/2024-Grid Connected Rooftop dated 8th Oct 2024

   b. This component aims to showcase and demonstrate innovative solar technologies, applications, or integration techniques to drive industry advancement and adoption in the country.

   c. The guidelines outline the process for preparing and submitting project proposals, including the approval method, evaluation and monitoring mechanisms, and execution of proposals.

2. **Objectives**

   The participating organizations shall submit the proposals aligned with the following objectives:

   a. Innovations in business models and technical deployments of rooftop solar

   b. Conduct collaborative pilots, proofs-of-concept, and scaling up of new business models in order to generate new technologies, rooftop solar products, and associated innovations.

   c. New pathways for deployment of distributed renewable energy for households and companies, and to create technological and management tools for DISCOMs to better manage distributed energy resources within their grids.

   d. incorporation of cutting-edge technology in real-life rooftop solar/distributed RE deployments

3. **Prospective Applicants**

   The following entities are eligible to submit their proposals:

   a. R&D or Academic Institutions including Engineering Colleges (both Public and Private, duly accredited by Government Bodies)

   b. Public/Private Industries

   c. Societies registered under the Societies Registration Act 1860

   d. Trusts registered under the Indian Trusts Act 1882

   e. NGOs / Students

   f. Startups (Unregistred and duly recognized by the Department of Promotion and Internal Trade (DPIIT)

   g. Organizations engaged in Research and Development for the promotion of new and renewable energy.

4. **Thrust Areas**

Proposals are invited for the demonstration of scalability of the following technologies:

- **Blockchain-Based Peer-to-Peer RTS:**
  Utilizing blockchain technology for secure and transparent energy trading in rooftop solar systems.
- **Digital Solutions for RTS:**
  Advanced digital platforms, monitoring systems, and analytics tools to optimize RTS performance and adoption.
- **Smart Building Materials:**
  Integration of solar energy solutions into innovative building materials such as solar-integrated roofs and facades.
- **RTS with Electric Vehicles (EVs):**
  Enhancing renewable-powered mobility by integrating RTS with EV charging infrastructure.
- **Grid-Responsive RTS with Battery Storage Solutions:**
  Systems that combine rooftop solar with grid-interactive battery storage to enable better energy management.
- **DISCOM IT Systems for RTS Management:**
  IT-enabled solutions to help DISCOMs efficiently manage RTS integration and operations.
- **Special Financing Products Along with Financing Intermediaries:**
  Development of innovative financial models and intermediaries to facilitate large-scale RTS adoption.
- **Innovative Business Models for RTS Expansion:**
  Exploring models such as:
- Virtual Net Metering
- Group Net Metering
- Behind Meter Storage
- RTS with EV Integration
- Rent-A-Roof Models
- Peer-to-Peer Sale of RTS Electricity
- **Integration of RTS with Smart Grids:**
  Technologies to ensure seamless integration of rooftop solar systems with advanced grid infrastructure.
- **Hybrid Renewable Solutions:**
  Combining RTS with other renewable sources such as wind or biomass for hybrid systems.
- **Community Solar Models:**
  Enabling shared solar initiatives for communities and cooperative societies to benefit from collective RTS setups.
- **Energy Efficiency Enhancements for RTS:**
  Innovations that improve energy efficiency in buildings alongside RTS deployments.
- **Advanced Energy Management Systems (EMS):**
  IoT and AI-driven systems for optimizing the generation, storage, and usage of rooftop solar energy.

- **Decentralized Microgrids with RTS:**
  Promoting the use of RTS in creating decentralized microgrids, especially in rural or off-grid areas.
- **Low-Cost RTS Deployment Techniques:**
  Exploring cost-effective materials, processes, and installation methodologies for scaling RTS deployment.
- **Demand Response Mechanisms for RTS:**
  Innovations enabling dynamic load management based on RTS energy generation.
- **Urban Planning Integration:**
  Strategies for integrating rooftop solar requirements into urban planning and zoning regulations.
- **Solar Rooftop Solutions for Industrial and Commercial Applications:**
  Custom solutions targeting the specific needs of industrial and commercial establishments for RTS adoption.
- **Predictive Maintenance and Data Analytics for RTS:**
  Leveraging big data and AI for monitoring and predictive maintenance of rooftop solar systems.
- **RTS in Disaster-Resilient Infrastructure:**
  Deploying RTS in disaster-prone areas to provide reliable and resilient energy solutions.
- **Automation and Robotics in RTS Deployment:**
  Use of automated and robotic technologies to accelerate and improve the installation and maintenance of rooftop solar systems.
- **Enhanced Safety Features in RTS Installations:**
  Developing advanced safety mechanisms and protocols for the operation and maintenance of rooftop solar systems.
- **AI-Driven RTS Optimization Models:**
  Artificial intelligence-based approaches to maximize energy generation and minimize losses in rooftop solar systems.
- **Collaborative Models for RTS in Urban Housing:**
  Innovative ways to integrate RTS into shared spaces in urban housing complexes and residential societies.
- **RTS with Thermal Energy Storage Solutions:**
  Combining solar rooftops with thermal energy storage for enhanced energy use flexibility.
- **Advanced Metering Solutions for RTS Systems:**
  Smart metering technologies for better tracking and billing of rooftop solar energy production and consumption.
- **Innovative Policy Mechanisms and Regulatory Models:**
  Policy interventions and regulatory frameworks designed to accelerate rooftop solar adoption.
- **Other New and Innovative Technology Development and Demonstration Enabling the Development of RTS:**
  Proposals for breakthrough innovations that can support the scalability and adoption of rooftop solar systems.

5. **Project duration**

The project will have a maximum duration of 18 months. The effective date of implementation will be the issue of the letter of award. The duration may be extended or shortened, as determined by the Selection Committee for Innovative Projects.

6. **Evaluation criteria**

The proposals will be evaluated based on the following criteria:

a) Relevance, cost-effectiveness and completeness of the project proposal

b) Project Concept and Novelty: The project's core idea should be innovative, offering a significantly different or improved approach compared to existing methods, products, or technologies

c) Availability of a clear statement of quantified Objectives, Work Plan, Methodology, and Deliverables

d) Technical feasibility of the proposal: Beyond its innovative nature, the project must be achievable within the limitations of available resources, technology, and any other relevant constraints.

e) Societal Value: The successful innovation project will demonstrably benefit citizens and society as a whole

f) Availability of resources and technology with the organization and previous work experience and Expertise of the Organization

g) Support of DISCOM/Regulatory Commission

h) Technology Agnostic: Innovative projects can leverage any technology, but the specific technology employed should be clearly defined in the proposal.

i) Technology Readiness Level of the proposed technology.

7. **Funding**

7.1.The financial assistance for innovative projects would be capped at 60% of the total project cost or Rs 30 crore, whichever is lower. The Selection Committee may decide to provide a lower level of financial assistance as per the specific nature of the project. The Secretary, MNRE may specify the minimum project cost that shall be funded under this project component.

7.2.The release of the grant will be on a milestone basis. In order to facilitate procurement of equipment early, upto 50% of the total assistance minus the institutional overheads would be released initially along with the sanction depending on the requirement of equipment in the project. For projects where equipment cost exceeds 50% of the project cost, a higher initial release may be considered by the selection committee.

7.3.The balance assistance minus the institutional overheads would be sanctioned as per the annual allocation based on progress/milestones achieved in the project. The utilization of the grants released towards the purchase of equipment should be within 6 months of the date of release, subsequent grants will be released after full utilization of the previous release and submission of required documents.

7.4.The overhead charges will be restricted up to 8% of the project cost or 15 lakh, whichever is less. The institutional overheads would be released only after successful completion of the project and a review by the Monitoring Committee for Innovative Projects (MCIP-PMSG) MCIP-PMSG and on receipt of the following documents:

a) Two copies of the project completion report along with a soft copy

b) A consolidated Audited Utilization Certificate for the amount utilized towards the project duly signed and sealed by the Government Internal Auditor / Chartered Accountant, Registrar/Principal/ Director or CEO of the Institution as well as the Principal Investigator/Project Coordinator of the Institution

c) The unutilized grant along with interest, if any, shall be refunded, as per GFR guidelines.

8. **Monitoring**

8.1.The scheme component shall be monitored regularly by the Mission Directorate.

8.2.The National Institute for Solar Energy (NISE) shall be the Scheme Implementation Agency (SIA) of the scheme component Innovative Projects and will be responsible for ensuring periodic progress review of the projects, proper utilization of the allocated funds, execution within the time frame, verification of fund utilization reports, phase-wise release of fund after progress review and other implementation related issues.

9. **Proposal submission guidelines:**

9.1.The eligible organizations may submit the proposals online on the website of National Institute of Solar Energy (NISE), https://nise.res.in/ as per the prescribed format. No physical application will be accepted. The proposal submission link will be available on MNRE and PMSG websites.

9.2.The proposals should clearly define the objectives and list the deliverables. It should also indicate how the proposed process/ product/system stands at the national and international level in terms of technologies/ performance/ cost.

9.3.The CVs of the Project Investigators (Pl) should be brief and should highlight their competence and experience related to the proposed project area. A consortium may be formed wherever required by clearly explaining the need for forming the consortium and the roles and responsibilities of each partner. The industry partner should have proven standing and R&D capability in the relevant area and should exhibit the potential to commercialize the products/systems expected to be developed under the proposal.

9.4.The extent of participation and contribution of the industry partner should be clearly defined. Participating Industries would be required to invest within their system i.e. production/ test lines and/or develop required infrastructure to adopt research leads and is expected to bring design and engineering capability for the benefit of the project.

9.5.The proposal shall be submitted in the online form given link https://nise.res.in/innovatiove-PMSG/ and annexures should necessarily include, but should not be limited to, the following information.

- Objectives of the project
- The technology focus of the Proposal
- Details of Implementing Entity/Entities
- Company Profile/Project In-charge Profile
- Status of Work Done in India and Other Countries
- Project Particulars
- Research and Implementation Methodology
- Implementation Milestones
- Key Performance Indicators and Acceptance Criteria
- List of Deliverables
- Total Cost Estimate, with detailed breakup among various components with justification

10. **Intellectual property rights**

    Matters pertaining to IPR shall be dealt in accordance with the guidelines contained in the DST circular issued with the concurrence of the Ministry of Finance, Department of Expenditure vide their O.M. No.33(5) PF-1199, dated 22nd February 2000 or subsequent. Circulars which may be issued by DST/ MOF on the subject.

11. **Important dates**

    Proposal Submission Deadline: 29/07/2025

12. **Amendment of Scheme Component Guidelines**

    MNRE may make necessary amendments in the scheme guidelines for the Innovative Projects Component to ensure smooth implementation of the scheme, as and when required, with the approval of the Hon'ble Minister, New and Renewable Energy.

13. **Contact details**

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ANNEXURE - I

GENERAL TERMS & CONDITIONS OF THE GRANT FOR R&D/ TECHNOLOGY DEVELOPMENT PROJECT

1. Approval of the R&D/ technology development project and the grant being released is for the specific project sanctioned and should be exclusively spent on the project within the approved time duration. The grantee organization is not permitted to seek or utilize funds from any other organization (government, semi-government, autonomous, and private bodies) for this research project unless specifically approved for joint funding. Any unspent balance out of the amount sanctioned must be surrendered to the MNRE, Government of India.

2. The grantee organization/ PI will furnish a Progress Report of the work carried out under the project on six monthly basis during the project implementation period in a prescribed format given at (as per prescribed format by NISE).

3. Officer(s) of NISE and MNRE designated Scientist/ Specialist/ Expert Panel/Committee may visit the organization periodically to review the progress of the work being carried out and to suggest suitable measures to ensure realization of the objectives of the project. During implementation of the project, the grantee organization will provide facilities to such visitors in the form of accommodation, site visits, etc.

4. On completion of the project, final consolidated 'Project Completion Report' on the work done on the project will be prepared after incorporating suggestions, if any, from the reviewers of the project and the same will be submitted to the NISE in the prescribed format (as per prescribed format by NISE), in physical as well as electronic forms.

5. The 'Project Completion Report' must include all relevant technical details/specifications, working drawings for designing of the systems/equipment, and an inventory of materials required, etc.

6. At the time of seeking further installment of grant and closure/ termination of the project, the grantee organization / PI has to furnish the following documents:

   a). Utilization Certificate (U.C) for MNRE grant and 'Statement of Expenditure' (S.O.E.) for the total expenditure for the previous financial year (in original or copy if sent earlier) in enclosed formats (as per prescribed format by NISE).

   b). Latest authenticated 'Statement of Expenditure' including Committed Expenditure, for the expenditure on the project including cost shared by any other organization since 1st April of that financial year till the previous month; and
   c). Technical Progress Report, if not sent earlier.

7. The Comptroller & Auditor General of India, at his discretion, shall have the right of access to the books and accounts of the grantee organization maintained in respect of the grant received from the Government of India.

8. The grantee organization will maintain separate accounts for the project in a Bank. If it is found expedient to keep a part or whole of the grant in a bank account earning interest, the interest thus earned should be reported to the MNRE and should be reflected in the 'Statement of Expenditure'. The interest thus earned will be treated as a credit to the Institute to be adjusted towards further instalment of grant.

9. The Ministry reserves the right to terminate the project at any stage if it is convinced that the grant has not been properly utilized or sufficient progress has not been reported under the project or sufficient efforts have not been devoted.

10. The project becomes operative with immediate effect or within a maximum of one month from the date on which the ECS/ Draft/ Cheque is received by the implementing organisation. This date should be intimated by the grantee authorities/ Principal Investigator to this Ministry.

11. The grantee organization shall associate a co-PI with the project, if not already part of the project team. The co-PI shall function as PI in the absence of PI and should be totally in knowledge of the activities of the project to avoid loss to the project in case PI leaves the project / organization.

12. If the PI to whom a grant for a project has been sanctioned wishes to leave the grantee organization where the project is sanctioned, the grantee organization/ PI will inform the same to the NISE/ Ministry and in consultation with NISE, evolve steps to ensure successful completion of the project through co-PI, before relieving the PI or appoint another PI.

13. Investigator(s) wishing to publish technical/ scientific papers based on the research work done under the project should acknowledge the assistance received from MNRE, indicating the project sanction no. under which grant has been given to the grantee organization. The PI will submit a copy of the paper to the NISE as soon as it is published.

14. If the results of the work carried out under the grant require preparation of a technical booklet/ guides/ software etc. in such cases the grantee organization will publish/ prepare sufficient copies and keep a portion for their use/ dissemination and submit the remaining copies to the NISE for their use and distribution.

15. If the result is in the form of a survey report / product performance evaluation or other such activities which have commercial implications, the grantee organization will not publish the results without specific written approval of this Ministry.

16. The grantee organisation/ PI should provide a copy of the 'Full Text Document' of the Patent/ PI within one month of its publication.

17. The Applicant submitting a proposal in response to this Call for Proposal, shall defend, indemnify and hold harmless NISE & MNRE, its officers and employees against any liability, loss, damage, cost and expense suffered as a result of any claim, demand, action or suit made or raised against the Applicant by any third party in any action, suit or proceedings on a claim based upon an allegation that the product/project infringes any right of any third party. The Applicant shall further indemnify NISE for any judgments, settlements, reasonable costs and reasonable Counsel's fee resulting from such a claim. The Applicant shall submit a declaration to this effect along with the Proposal.

18. In case of any dispute the decision of the Secretary, Ministry of New and Renewable Energy shall be final.