No. 223/90/2017 - R&D

भारत सरकार/ Government of India

नवीन और नवीकरणीय ऊर्जामंत्रालय / Ministry of New & Renewable Energy

(अनुसंधान और विकास प्रभाग / (R&D Division)

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Block No.14, CGO Complex,
Lodhi Road, New Delhi-110003
Dated: 9th December, 2021

ORDER

Subject: Administrative Approval for continuation of the Renewable Energy Research and Technology Development (RE-RTD) Programme for the period from FY 2021-22 to FY 2025-26.

Sanction of the President of India is hereby accorded for continuation of the **Renewable Energy Research and Technology Development (RE-RTD)** Programme of the Ministry of New and Renewable Energy (MNRE) for implementation during the period 2021-22 to 2025-26 at a total cost of Rs. 228.00 crore. The scheme aims at scaling up R&D effort for "**Renewable Energy Research and Technology Development** "during the said period for promoting indigenous technology development and manufacture for wide spread applications of new and renewable energy in efficient and cost effective manner across the country. The programme will strengthen research and innovation capacity of the country and will be implemented in accordance with the policy and guidelines issued from time to time and thrust areas identified by MNRE.

2. The details of the scheme are as follows;

A. Objectives

The objective of the scheme is to support the R&D projects for technology development and demonstration in various areas of new and renewable energy such as solar photovoltaic systems, biogas systems, waste to energy systems, wind energy systems, hybrid systems, storage systems, hydrogen and fuels cells, geothermal, etc. with the ultimate aim of increasing share of renewables in the energy mix in the country. The R&D efforts are expected to make industry competitive and renewable energy generation supply self-sustainable/ profitable. Technology development and demonstration will be supported for manufacture of new and renewable energy systems/devices/components for different applications including transportation, portable and stationary applications for rural, urban, industrial and commercial sectors through:-

i. Technology Mapping and Benchmarking;

ii. Aligning costs of new and renewable energy products and services with international levels;

iii. Carrying out Renewable Energy Resource Survey, Assessment and Mapping.

iv. Providing sustained feed-back to manufacturers on performance parameters of new and renewable energy products and services with the aim of effecting continuous up-gradation;

v. Providing cost-competitive new and renewable energy supply options;

vi. International collaboration for joint technology development and demonstration, testing and standardization.

B. Components

The Programme has been structured to support research, design, technology development and demonstration for renewable energy sector including solar thermal systems, solar photovoltaic systems, biogas systems, waste to energy systems, wind energy systems, hybrid systems, storage systems, control and integration systems, hydrogen and fuel cell systems, geothermal, etc. The details of the components of the scheme are given in table below:

Components	Year 1 (2021-22)	Year 2 (2022-23)	Year 3 (2023-2024)	Year 4 (2024-2025)	Year 5 (2025-2026)	Total
	Physical	Physical	Physical	Physical	Physical	Physical
1. Support for R&D for Research / Design / Technology / Development / Demonstration	(i) 10 Nos. of new projects in the identified thrust areas and support to on-going projects, including international collaboration. (ii) Support for new test labs / centres.	i) 10 Nos. of new projects in the identified thrust areas and support to on-going projects, including international collaboration. (ii) Support for new test labs / centres.	i) 10 Nos. of new projects in the identified thrust areas and support to on-going projects, including international collaboration. ii) Support for new test labs / centres.	i) 10 Nos. of new projects in the identified thrust areas and support to on-going projects, including international collaboration. (ii) Support for new test labs / centres.	i) 10 Nos. of new projects in the identified thrust areas and support to on-going projects, including international collaboration. (ii) Support for new test labs / centres.	(i) 50 Nos. of New projects and support to Completion of on-going projects including international collaboration (ii) Support for ten new Test labs / centres.
2. Support for Start- ups	Three nos. for prototype development / Scaling up of business opportunity for One Start up	Three nos. for prototype development / Scaling up of business opportunity for One Start up	Three nos. for prototype development / Scaling up of business opportunity for One Start up	Three nos. for prototype development / Scaling up of business opportunity for One Start up	Three nos. for prototype development / Scaling up of business opportunity for One Start up	Fifteen nos. for prototype development / Scaling up of business opportunity for Five Start ups

3. Innovation competition / studies / meetings / conclaves / monitoring	Awards for innovation, studies on policy research and field evaluation, sharing technology development achievements and monitoring.	Awards for innovation, studies on policy and field evaluation, sharing technology development achievements and monitoring.	Awards for innovation, studies on policy and field evaluation, sharing technology development achievements and monitoring.	Awards for innovation, studies on policy and field evaluation, sharing technology development achievements and monitoring.	Awards for innovation, studies on policy and field evaluation, sharing technology development achievements and monitoring.	Prizes for innovation. Reports on policy research and analysis on new and renewable energy.

The annual physical target mentioned above is indicative, and can be rolled over or exceeded in any given year, as long as the overall financial limits are not breached.

C. Funding Pattern:-

The Ministry encourages research and technology development proposals in collaboration with the industry and provides upto 100% financial support to Government/non-profit research organizations/academic institutions/research institutions and upto 50% to Industry/Start-ups/Private Institutes/Entrepreneurs. Ministry may also provide financial support up to 70% of the project cost to Industry/ Private Institutes/ Research Organization/Start-ups for upgrading the technology from Low Technology Readiness Level (TRL) to High TRL with the endorsement of R&D Project Appraisal Committee (RDPAC).

D. Outcomes:

The scheme will lead to research, design, technology development & demonstration in New & Renewable Energy which will be measured in terms of improvement of process/efficiency, cost reduction and technology validation for scaling up for demonstration and commercialization. The outcome for R&D Projects will be measured in terms of product/ process/technology development, patents, publications, test labs for performance and reliability testing, policy research reports, scaling up for demonstration projects etc.

In addition, the scheme will lead to strengthening expertise of R&D/academic institutions in specific advance areas for technology development and demonstration.

E. Implementation:

The MNRE has been funding R&D projects following policy *vide OM. No. 223/90/2017 - R&D dated 21.02.2019* respectively. It contains procedure for R&D project appraisal, evaluation, sanctioning, monitoring, and terms and conditions of grant sanctioned/released for the projects, including IPR sharing and assets acquired under the projects.

The implementation mechanism of the programme would be as follows:-

E.1 Research, Design, Technology Development & Demonstration, Test Set Ups, Centres of Excellence and Start Ups :-

(i) The scheme will be implemented by the following:-

a. R & D / Academic Institutions including Engineering Colleges (both Public & 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,
f. Start Ups duly recognized by Department for Promotion and Internal Trade (DPIIT) and
g. Organizations engaged in Research & Development for promotion of new & renewable energy.

The above will be supported for taking up research, design, technology development & demonstration.

(ii) The RE-RTD Programme will be implemented as per policy and thrust areas identified by MNRE and its implementations guidelines.

(iii) The scheme will be implemented in form of projects with identified deliverables. The project proposals will be invited in thrust areas of the Ministry via MNRE's website/ National Dailies from time to time. The Proposals will be submitted as per the prescribed format. The proposals would be supported with proper appraisal by R&D Project Appraisal Committee (RDPAC) taking into consideration the assessment for scalability with commercial potential.

(iv) The project's cost will include project manpower, equipment, instrumentation, fabrication and installation, performance evaluation, manpower, travel, contingency, overhead charges for the implementing institutions, etc. as per policy and guidelines of MNRE.

(v) For implementation of the project, temporary manpower i.e SRF, JRF and RA etc. shall be hired in the R&D project based on their qualification in RE field depending upon availability. The hiring of manpower will be purely on temporary basis with a condition that there will be no liability of such staff for confirmation by government. The staff services shall discontinue immediately after the project duration expires.

(vi) The projects as such do not involve hiring of consultants as the projects are implemented by experts in the respective areas, hence hiring of consultants under the project will not be allowed.

(vii) The project administrative structure comprises of Principal Investigator and Co-Principal Investigators from the Implementing Institutions. In the case of collaborative projects, a Co-PI will be designated by such institutions.

(viii) Centre of Excellence will be supported/ created in project form for pursuing research in advanced areas with clear-cut goals and deliverables. Centers of Excellence will also be supported in consortia of institutions and industry for advanced research with clear cut long terms goals.

(ix) Testing and standardization is a key component for the growth of RE sector, and therefore test labs would be strengthened and expanded at par with international practice for quality assurance of renewable energy supply in the country. Test labs will be strengthened with adequate trained manpower including staff for delivering efficient and quality testing services to industry/project developers. New test labs will be set up to meet the demand of deployment. Necessary support will be provided for setting-up Labs. These labs will be supported in partnership and on self-sustaining basis.

(x) Start-up is a major intervention for promoting setting up small scale industries for indigenous development and manufacture of new and renewable energy systems/components/devices. The start-ups would be supported in transparent manner with proper assessment for their potential for entrepreneurship development. The Innovation Award Scheme would be utilized for supporting start-ups. An ecosystem with proper appraisal and financing mechanism will be evolved for supporting start-ups/scale-ups raised out of innovation for scaling up business development.

(xi) In addition, the MNRE will also support projects under MHRD led initiatives, IMPRINT and UAY matching MNRE thrust areas and approved by the Apex Committees of these initiatives.

(xi) The international cooperation for taking up joint research, design and development activities in advanced areas of new and renewable energy will be supported. Collaboration with institutions of ISA Member countries will also be supported in mutually identified areas. A suitable MoU for implementation will be signed between the participating organizations/agencies as per requirements of collaboration.

(xii) The projects will be examined by the R&D divisions to decide whether the same covers the thrust areas of MNRE. The R&D division then will seek comments of experts on the projects. The projects qualified will be taken up in the meetings of the R&D Project Appraisal Committee (RDPAC) of the MNRE for appraisal and recommendation. The projects recommended by the committee will be sanctioned as per MNRE Policy & Guidelines.

(xiii) Proposals for test labs will also be evaluated by experts as per policy and guidelines. The proposal shall be submitted in prescribed format. The proposals qualified will be appraised by the Standard, Testing and Quality Control Committee (STQCC) as per Lab Policy. The proposals recommended by the committee will be