

	areas and support to on-going projects, including international collaboration.  (ii) Support for test labs/centres.	areas and support to on-going projects, including international collaboration.  (ii) Support for test labs/centres.	to on-going projects, including international collaboration.  (ii) Support for test labs/centres.	(ii) 10 Test labs/Centres.
2. Support for Start- ups	For prototype/ scale ups for entrepreneur development.	For prototype/ scale ups for entrepreneur development	For prototype/ scale ups for entrepreneur development	15 prototypes/ scale-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.	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 financial limits are not breached.

### C. Outcomes:

The scheme will lead to technology/process development in New & Renewable Energy which will be measured in terms of improvement of process/efficiency and 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, entrepreneur development, test labs for performance and reliability testing, policy reports, etc.

In addition, the scheme will lead to strengthening expertise of R&D/academic institutions in specific advance areas for technology development and demonstration. The base line will be the achievement made at the end of 12<sup>th</sup> Plan Period as brought out in the appraisal report.



## **D. Implementation.**

The MNRE has been funding R&D projects following a policy and guidelines dated 18.10.2010. It contains procedure for project development, evaluation, appraisal, sanctioning, monitoring, and terms and conditions of grant sanctioned/released for the projects, including IPR sharing and assets acquired under the projects. It has been decided to support R&D based on a policy and ecosystem that promotes technology development integrated with innovation and validation keeping in view applications and commercialization. A policy with a robust ecosystem for supporting innovation and research for promoting technology development and innovation in new and renewable energy sector with guidelines for implementation will be issued separately.

The implementation mechanism of the programme would be as follows:

### **D.1 R&D, Test Labs, Centres of Excellence and Start Ups:**

- (i) The scheme will be implemented by R&D /academic institutions/ industries, etc. across the country. Research Groups engaged in R&D/academic institutions, engineering colleges (both public and private approved by government accredited body), industries, other organizations, etc. engaged in R&D for promotion of new and renewable energy will be supported for taking up research, development and demonstration projects for technology development integrating innovation for continuous improvement of technologies/systems/process. However, technology demonstration will be taken up either at implementing institutions or in field at utility in the case of project taken up in partnership with institutions/industry/utility.
- (ii) The RETD Programme will be implemented as per policy and thrust areas identified by MNRE.
- (iii) The scheme will be implemented in form of projects with identified deliverables. The project proposals will be invited in thrust areas of MNRE in place of normal submission of project proposals by investigators, which will be done by the Ministry through its website/national dailies from time to time. The proposal will be submitted as per prescribed format. The proposals should be supported with proper appraisal by a Project Appraisal Committee taking into consideration the assessment for scalability with commercial potential.
- (iv) The project's cost will involve project manpower, equipment, instrumentation, fabrication and installation, performance evaluation, improvement in system, design, manpower, travel, contingency, overhead charges for the implementing institutions, etc. as per policy and guidelines of MNRE. Projects in partnership with industry will involve cost sharing with them, up to 50% of the total cost.



- (v) For implementation of the project, the temporary manpower i.e SRF, JRF and RA etc. shall be hired in the R&D project based on their expertise/professional qualification in RE field depending upon availability. The hiring of the 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 entrepreneur 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 concerned divisions to decide whether the same covers the thrust areas of MNRE. The 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) The 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 processed for approval by the Ministry. The projects approved by Ministry will be sanctioned to concerned organizations for implementation.

(xiv) The project review, submission of progress reports, completion, extension will be regulated as per policy and guidelines.

## **D2. Awards for Innovation/start-ups**

The objective of giving awards is to foster innovation by organizing competitions at national level wherein innovators will be given opportunity to present their innovative ideas/innovation/prototypes before a judging committee. Nominations will be invited through MNRE website /national/regional dailies, and also through relevant both state and central government departments/organizations/ institutions. The winners may be given awards in form of cash prize or in form of support mechanism for transforming their ideas/prototypes to commercial products or both. Innovative ideas/innovations awarded will be considered for support for start-ups. The scheme will be implemented following the guidelines for "Awards for Innovative Ideas in New and Renewable Energy-" "Abhinav Soch - Nayee Sambhwanayen" instituted by MNRE in July 2017.

## **D3. Study on Policy Research**

Study on policy research and analysis of implementation of various programmes of MNRE, including impact of technology development support and field implementation of projects/programmes will be supported for drawing conclusion for improvement in technology/systems/components/process/schemes. This may include study on impact of systems design, integration, resource assessment, optimum utilization of resources and systems, quality control, regulatory mechanism and socio economic impact of renewables. The proposals will be approved by the concerned RDPAC.