

**F. No. 32/18/2020-SPV Division
Government of India
Ministry of New & Renewable Energy**

**Block No. 14, CGO Complex
Lodhi Road, New Delhi**

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Office Memorandum

Subject: Draft Policy Framework for developing and promoting Decentralized Renewable Energy (DRE) Livelihood Applications in Rural Areas – for comments of stakeholders.

To promote DRE livelihood applications in rural areas of the country a policy framework is proposed to be brought by the Ministry to provide a conducive environment for development and large-scale adoption of these applications.

2. Draft policy framework prepared by Ministry is hereby circulated for comments of all the stakeholders concerned. Comments/ suggestions may kindly be provided by **02.11.2020** positively.



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To

All Concerned Stakeholders

Policy Framework for developing and promoting Decentralized Renewable Energy Livelihood Applications in Rural Areas

I. Background

In recent years, a wave of innovators and entrepreneurs has come up with a variety of decentralised renewable energy (DRE) livelihood applications, which are not only energy-efficient but also economically viable in rural settings. Modular design of such DRE livelihood applications ensures scalability without large investments.

DRE livelihood applications can be defined as applications powered by renewable energy, which are used for earning livelihoods directly such as solar dryer, solar powered cold storage/chillier, solar charkha, etc., or which help in earning livelihoods such as solar lighting systems.

II. Need for Renewable Energy Based Rural Livelihoods

There are successful pilots and business models of DRE livelihood applications in agriculture, agro-processing, dairy, poultry, fisheries, tailoring, etc., which have been tested at the field level by various agencies and have the potential to be replicated in large quantities. However, this is still only a small fraction of the overall spectrum of livelihood activities across the 600,000 villages in India. Against this background, there is a need to:

- a. Scale-up the currently available DRE livelihood applications in rural areas
- b. Explore development of new DRE livelihood applications in rural areas

Ministries like, Ministry of Rural Development, Ministry of Women and Child Development, Ministry of Tribal Affairs, Ministry of Small and Micro Enterprise, Ministry of Textile, Ministry of Agriculture and Farmer Welfare, Ministry of Food Processing, Ministry of Health, etc., are implementing various schemes in rural areas that support livelihoods directly or indirectly. Integration of DRE livelihood applications with these schemes will promote the use of such applications.

Promotion of DRE livelihoods applications in rural areas becomes even more relevant because of their potential to create jobs.

III. Scope and Objectives of the Framework

To promote DRE livelihood applications in rural areas, following interventions are proposed under this framework:

- Enable a market-oriented framework to attract private sector for development and deployment of DRE livelihood applications
- Easy access to end user finance for DRE livelihood applications
- Introduction of standards, stringent monitoring and evaluation frameworks
- Skill development for strengthening the service infrastructure at the local level

- Encourage innovation and R&D to develop efficient and cost-effective DRE livelihood applications.

IV. Interventions to promote DRE livelihood applications in rural areas

The following steps are to be taken up under this framework for promotion of DRE livelihood applications:

- A. **Assessment of Demand:** Assessing the possibilities or potential of deployment of DRE livelihood applications across sectors of the rural economy and across regions. This demand assessment activity will help in mapping needs of beneficiaries with appropriate fit to DRE livelihood applications. MNRE will develop a list of DRE livelihood applications in consultation with stakeholders, which will be updated regularly. An indicative list of DRE livelihood applications with potential for scale-up are placed at **Annexure-I**.
- B. **Research & Development and Standardization:** Innovation, research and development of DRE technologies to offer tailor made solutions is important for wide-spread adoption. Collective efforts by key actors are required to identify, develop and promote appropriate DRE livelihood applications through multi-disciplinary research and innovation. Therefore, institutions of MNRE as well as other Ministries and State level institutions will help in development of new devices and applications for rural economy. In addition, private sector, technology incubation centres, bilateral and multilateral agencies and NGOs will participate in the research and development activities. In order to test innovative solutions on ground, grassroot organisations (NGOs, CSOs, FPOs, SHG federations, KVKs etc.) that lead up to prototyping and demonstration projects will also be involved. Post development of innovative technologies, standards and testing protocol will be defined.
- C. **Pilot and Up-scaling of DRE livelihood applications:** Piloting and field demonstration of new DRE livelihood applications is vital to ascertain the success of any technology innovation on ground. Pilots can be taken up across textile, animal husbandry, agriculture, carpentry, pottery, cottage industry, black-smithy, food industry and other sectors. In line with the Guidelines issued by MNRE for innovative solar pumps, other programmes may also announce opportunities to run pilot projects under the existing schemes. A list of such programmes and guidelines will be available on MNRE website.
- D. **Access to Finance:** MNRE will pursue with financial institutions for credit facilitation.
- E. **Skill Development & Capacity Building:** DRE livelihood applications have the potential of creating new local job opportunities in operations & maintenance and installation/fabrication. Trained manpower will be required across the country for these activities. The availability of trained workforce will further help in increasing the credibility of products for consumers and financiers.

Skill India, SuryaMitra, Biogas Mitra and Varun Mitra initiatives have not only created technology and allied service specific training modules but also trained a pool of youth

across geography. MNRE will facilitate in developing and implementing skills and training programs for DRE livelihood applications with Skill Council for Green Jobs, IITs promoting rural development and technology, National Institute for Rural Development and other organizations of stakeholder Ministries/ Departments.

In addition to this, existing community level institutional platforms, such as SHG federation, FPOs, KVKs etc will be mobilized to build capacity of potential users/buyers to boost adoption of DRE technologies.

- F. **Public Information and Awareness:** Awareness about the appropriate DRE technologies and related services amongst the relevant stakeholders is required for taking necessary decisions. Further, given that these are new forms of technologies for many consumers, awareness campaigns will help in increasing credibility and adoption of these products by end-users and financiers. Central and State Government Ministries/Departments under their existing programmes may take up public awareness campaign to push adoption of DRE livelihood applications.
- G. **Programmes of Various Ministries/ Departments:** It is pertinent to identify and exploit opportunities for DRE livelihood applications under schemes of various Ministries and Department of Central/State Government. This will result in augmented benefits to the rural entrepreneurs and beneficiaries. An indicative list of programmes of various Ministries/ Departments is given at **Annexure-II**.

V. **Implementation Agencies and Implementation Cell**

Schemes of different Ministries/Departments are being implemented by various central / state agencies. The State Nodal Agencies (SNAs) for Renewable Energy having expertise for RE sector will coordinate with these implementing agencies to provide technical support for DRE livelihood applications in rural areas. Alternatively, SNAs may be appointed as implementing agencies for DRE livelihood applications.

Annexure-I

Indicative List of DRE Livelihood Applications

	S. No	Machinery	Product Type	Motor	Capacity	Price Range (INR)
Cold Storage, rooms and Refrigeration	1	Solar Cold storages	Energy Efficient / Solar-powered	AC compressor	4MT - 15 MT	3,00,000-15,00,000
	2	Bulk milk Chillers	Energy Efficient / Solar-powered	AC compressor	500 litres - 1000 litres	8,00,000 - 10,00,000
	3	Cold rooms	Biomass-powered (DRE)	Very small (mainly thermal adsorption)	10MT - 15 MT	12,00,000 - 15,00,000
	4	Solar Refrigerator/ Deep Freezer	Energy Efficient / Solar-powered	DC - 0.5 HP	100 litre - 20000 litre	55,000 - 95,00,000
Dryers	1	Conduction Dryer	Solar	NA	10 -100 (Kg/batch)	38,000 - 2,80,000
	2	Phase Change Material based Dryer	Energy Efficient / Solar-powered	PMDC	20-25 (Kg/batch)	1,80,000 - 2,20,000
	3	Solar Tunnel Dryer	Solar	NA	20-2000 (Kg/batch)	20,000 - 3,50,000
	4	Solar Cabinet Dryers	Solar	NA	10 - 35 (Kg/batch)	16,000 - 45,000
	5	Biomass based Dryer	Biomass	NA	120-200 (kg/batch)	2,50,000
Rice milling and processing	1	Mini rice mills	Energy Efficient / Solar-powered	DC 2 HP	100 - 150 kg/hour	4,50,000 - 6,50,000
	2	Rice huller	Energy Efficient /	DC 0.5 HP	50-100 kg/hour	1,20,000 – 1,50,000

			Solar-powered			
	3	Rice polisher	Energy Efficient / Solar-powered	1.5 HP	50 -100 kg/hour	1,20,000 - 1,50,000
Horticulture produce processing	1	Multi-purpose food processor	Energy Efficient / Can be DRE-powered	AC/DC 0.5 HP - 2 HP	100-200 (kg/hour)	55,000 - 1,80,000
	2	Three roller mini sugarcane crusher	Energy Efficient / Can be DRE-powered	AC/DC 0.5HP - 1 HP	100-200 (kg/hour)	40,000 - 1,00,000
Irrigation	1	Solar submersible pump	Energy Efficient / Solar-powered	AC/DC 1 HP - 10 HP	40,000 - 2,00,000 (Litre/Day)	75,000 - 7,00,000
	2	Solar Surface pump	Energy Efficient / Solar-powered	AC/DC 0.3HP - 5 HP	20,000 - 3,00,000 (Litre/Day)	40,000- 3,50,000
Textile (Silk)	1	Silk Reeling	Energy Efficient / Solar-powered	BLDC 20 W - 30 W	150 - 350 gms/day	28,000- 32,000
	2	Silk Reeling Charkha	Energy Efficient / Solar-powered	AC - ¼ HP DC - 90 W	1000 gms/day	32,000
	3	Silk spinning & twisting	Energy Efficient / Solar-powered	BLDC 20-30 W	250- 350 gms	20,000 - 28,000
	4	Silk weaving looms	Energy Efficient /	BLDC 150 W	2 m/hour	1,00,000

			Solar-powered			
Textile (Cotton)	1	Solar Charkha	Energy Efficient / Solar-powered	BLDC 60 W	1.25 kg / 5 hours	40,000 - 50,000
	2	Solar looms	Energy Efficient / Solar-powered	BLDC 150 W - 250 W	2metre/ hour	1,00,000 - 1,60,000
	3	Solar Sewing Machines	Energy Efficient / Solar-powered	PMDC 60W - 80 W	Up to 2500 stitches per minute	20,000 - 70,000
Bioenergy based solutions	1	Fully Automatic Sawdust Pellet Making Machine	Electricity-powered	10 HP	40-250 kg/hour	2,60,000
	2	Modular Biogas Plant	Dung Manure, Food Waste with Dung, Pig Dung	NA	starting from 1.7 cubic meters per day + 135 litres per day of manure	starting at 63,000
	3	Biomass-powered refrigeration system	Biomass powered	NA	5-10 Mt of fruit, vegetables, fish	5,00,000-6,00,000
	4	Institutional improved biomass clean cookstove	Wood Chips and pellets	NA	Can cook for up to 300 people at once	47,500

Note: This is an indicative list of applications. It may be noted that a large number of applications can be developed through DRE solutions.

Annexure-II

Indicative List of Schemes of Various Ministries and Departments

Name of the scheme	Implementation Agency	Target beneficiaries	Nature of Support
Ministry of New and Renewable Energy			
Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyaan (PM-KUSUM)	MNRE/SNAs/Discoms	Farmers	Subsidy support on upfront cost and increased access to bank loans
Off-grid and Decentralised Solar PV Applications Programme –Phase III	MNRE/SNAs	Rural areas	Upfront cost subsidy and after sale services
New National Biogas and Organic Manure Programme	MNRE SRDD/SNA/KVIC	Households in remote, rural and semi-urban areas	Upfront cost subsidy for setting up small biogas plants
Scheme to Support Promotion Of Biomass Based Cogeneration In Sugar Mills And Other Industries In The Country	MNRE	Biomass based cogeneration projects	Capital subsidy
Ministry of Micro, Small and Medium Enterprises			
Credit Guarantee Fund Trust for Micro and Small Enterprises (CGFTMSE)	SIDBI & MSME	Micro and small enterprises	Partial collateral risk coverage for loans
Prime Minister Employment Generation Scheme (PMEGP)	Khadi and Village Industries Commission	Micro-enterprises in the non-farm sector, including Cottage, Khadi and Village Industry units	Margin money assistance to individual borrowers and groups for new self-employment ventures
Solar Charkha Mission	Khadi and Village Industries Commission	Women and self-help groups	Subsidy on upfront cost, interest subvention
Pradhan Mantri MUDRA Yojana	SIDBI	Income generating small businesses and micro-enterprises	Collateral free small size loans for first-time entrepreneurs
Credit Linked Capital Subsidy Scheme for Technology	NABARD, SIDBI	MSEs - Sole Proprietorship, Partnership, Co-operative societies, Private and Public	Direct capital subsidy on high upfront cost

Upgradation (CLCSS)		Limited companies in the small-scale industries sector. Priority shall be given to women entrepreneurs.	
Special Credit Linked Capital Subsidy Scheme (SCLCSS)	MSME	For MSEs owned Scheduled Castes and Scheduled Tribes	Direct capital subsidy on high upfront cost, especially to marginalised communities
Ministry of Textiles			
Pradhan Mantri credit scheme for power loom weavers	Ministry of Textiles	Under PMMY- existing individual power loom units (or) new individual / group enterprises involved in weaving activity. <i>Stand-Up India</i> - Only new power loom units established by SC/ST or Woman Entrepreneur	Margin money assistance and interest subvention
National Handloom Development Programme	NABARD	Handloom weavers, both within and outside the cooperative fold including SHGs, NGOs, etc.	Addressing existing loan NPAs, interest subsidy, credit guarantee, margin money assistance.
Solar Energy Scheme for power looms	Ministry of Textiles	Power loom units having up to 8 looms. Units should have shade free rooftop/ areas.	Capital subsidy on upfront cost
Ministry of Food Processing Industries			
Scheme for Agro-Marine Processing and Development of Agro Processing Cluster (SAMPADA)	MoFPI	Farmers and food processing industries	Multiple schemes under the package focus on creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet.
Ministry of Agriculture			
Sub-mission on Agricultural mechanisation	Ministry of agriculture, FMTTIs, ICAR, State Agricultural Universities	Small and marginal farmers, SHGs, FPOs and entrepreneurs	Testing and training on agricultural and post-harvest management implements; financial support for farm mechanisation; establish

			custom farm machinery hiring hubs
Entrepreneurship Development and Employment Generation Scheme	NABARD, Dept. of Animal Husbandry and Dairying	All eligible entrepreneurs i.e. Farmers, Individual entrepreneurs, NGOs, Companies, Cooperatives, Groups of the organised and unorganised sector which includes SHGs and Joint Liability Groups (JLGs).	Capital subsidy on upfront cost
Dairy Entrepreneurship Development Scheme	NABARD, Dept. of Animal Husbandry and Dairying	Farmers, individual entrepreneurs, NGOs, companies of organised and unorganised sectors, SHGs	Capital subsidy on upfront cost
Ministry of Tribal Affairs			
Institutional support for the development of marketing for forest produces	TRIFED, State Tribal Development Cooperatives Corporation, MFP Federations etc.	MFP Collectors	Processing and value addition of minor forest produces
Mechanism for development of Value Chain for Minor Forest Produce (MFP)	Agencies designated by state governments	MFP gatherers and entrepreneurs	Establishing value chains in MFP with capital subsidy support
Tribal Sub-Scheme	Department of Tribal Affairs	Tribal communities in Scheduled Tribe area	Community assets for supporting tribal livelihood activities