



R F D

(Results-Framework Document)

for

Ministry of New and Renewable Energy

(2012-2013)

Section 1: Vision, Mission, Objectives and Functions

Vision

To upscale and mainstream the use of New and Renewable Energy sources in furtherance of the national aim of energy security and energy independence

Mission

Develop, demonstrate and commercialize technologies for harnessing new and renewable energy sources in close concert with corporate, scientific and technical institutions.

Replace use of different fossil fuels wherever possible, and increase access to electricity/ lighting in remote and rural areas, through Renewable Energy Systems

Increase the contribution of Renewable Energy in the total energy mix of the country to 6 per cent by 2022, with about 10 per cent contribution to total electricity mix, in line with IEPR projections.

Objective

- 1 To promote deployment of grid-interactive renewable power generation projects to augment contribution of renewables in total electricity mix;
- 2 To promote renewable energy initiatives for meeting energy needs in rural areas
- 3 To promote renewable energy initiatives to supplement energy needs in urban areas
- 4 To promote renewable energy initiatives to supplement energy needs in industry and commercial establishments
- 5 To promote research, design and development activities at premier national institutions and industries on different aspects of new and renewable energy (NRE) technologies.
- 6 New initiatives and management actions
- 7 Development of resource base
- 8 Clean Energy projects
- 9 Increasing indigenization
- 10 Monitoring Systems for installed projects

Functions

- 1 Putting in place suitable policy and regulatory framework at the national and State levels for growth of new and renewable energy sector.
- 2 Supporting related Research & Development (R&D;) activities / projects taken up by institutions and industry.
- 3 Undertaking resource assessment and potential estimation studies for all new and renewable sources of energy.

Section 1: Vision, Mission, Objectives and Functions

- 4 Human Resource Development in the new and renewable energy sector.
- 5 Making available necessary fiscal and financial incentives to domestic industry, developers/ investors and users for development/ deployment of: -Grid interactive / Off-grid renewable power systems to supplement fossil fuels based electricity generation -Standalone RE systems/ devices and services to supplement energy needs of cooking, lighting & motive power in rural areas -RE systems and services for urban, industrial & commercial applications
- 6 Fostering international cooperation in new and renewable energy sector
- 7 Information, Publicity, Public Awareness creation in the Renewable Energy (RE) sector.

Section 2: Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
[1] To promote deployment of grid-interactive renewable power generation projects to augment contribution of renewables in total electricity mix;	27.00	[1.1] Solar power plants commissioned (including JNNISM)	[1.1.1] 800	MW	4.00	800	720	640	560	480
		[1.2] Projects sanctioned / auctioned under JNNISM	[1.2.1] 100	MW	2.00	100	90	80	70	60
		[1.3] Projects commissioned under JNNISM	[1.3.1] 400	MW	2.00	400	360	320	280	240
		[1.4] Bio power (Biomass power and Cogeneration)	[1.4.1] 465	MW	4.00	465	418.50	372	325.50	279
		[1.5] Small Hydro Power (SHP)	[1.5.1] 350	MW	6.00	350	315	280	245	210
		[1.6] Wind power	[1.6.1] 2500	MW	7.00	2500	2250	2000	1750	1500
		[1.7] Urban Waste to Energy	[1.7.1] 40	MW	2.00	40	36	32	28	24
[2] To promote renewable energy initiatives for meeting energy needs in rural areas	21.00	[2.1] Installation of Family type Biogas Plants - No. of plants installed* (subject to additional budget allocation, otherwise 1.25 lakh)	[2.1.1] 1.50	No. in lakh	4.00	1.50	1.35	1.20	1.05	0.90
		[2.2] Installation of Biomass Gasifiers for Village energy supply (subject to additional budget allocation, otherwise 25 villages)	[2.2.1] 50	No. of villages	4.00	50	45	40	35	30
		[2.3] Decentralised SPV systems / Devices	[2.3.1] 30	MW	4.00	30	27	24	21	18
		[2.4] Watermills	[2.4.1] 500	Nos.	1.50	500	450	400	350	300
		[2.5] Micro Hydel	[2.5.1] 2000	kW	1.50	2000	1800	1600	1400	1200

Section 2: Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
		[2.6] Aero generators	[2.6.1] 350	kW	1.00	350	315	280	245	210
		[2.7] Wind + SPV hybrid systems	[2.7.1] 15	No.	2.00	15	13	12	11	9
		[2.8] Improved cookstoves	[2.8.1] 150000	No.	1.00	150000	135000	120000	105000	90000
		[2.9] Capacity added through off grid wind / hybrid power micro hydel / bio power / SPV in rural areas	[2.9.1] 32.50	MW	2.01	32.50	29.25	26	22.75	19.50
[3] To promote renewable energy initiatives to supplement energy needs in urban areas	4.00	[3.1] Installation of Solar Thermal systems in urban households/ buildings -total Collectors Area installed	[3.1.1] 6.50	Lakh square meter	4.00	6.50	5.85	5.20	4.55	3.90
[4] To promote renewable energy initiatives to supplement energy needs in industry and commercial establishments	7.00	[4.1] Industrial Waste-to energy	[4.1.1] 20	MWeq	1.75	20	18	16	14	12
		[4.2] Rice husk based power generation in Rice Mills and other Industries	[4.2.1] 50	Nos	2.33	50	45	40	35	30
		[4.3] Biomass based cogeneration in other industries excluding Bagasse	[4.3.1] 60	MWeq	2.92	60	54	48	42	36
[5] To promote research, design and development activities at premier national institutions and industries on different aspects of new and renewable energy (NRE) technologies.	11.00	[5.1] New R&D projects in : solar photovoltaic, solar thermal, Bio energy, New Technologies	[5.1.1] 20	No	4.00	20	18	16	14	12
		[5.2] Percentage of ongoing / new R&D projects meeting the pre agreed milestones	[5.2.1] 40	%	2.00	40	35	30	25	20
		[5.3] Number of new / ongoing collaborations	[5.3.1] 2	No.	1.00	2	2	1	1	1

Section 2: Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value					
						Excellent	Very Good	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
		with leading international institutions									
		[5.4] Number of new / ongoing collaborations with private sector	[5.4.1] 4	No.	1.00	4	3	2	1	1	
		[5.5] Number of new technologies / products deployed	[5.5.1] 4	No.	1.00	4	3	2	2	1	
		[5.6] 3 promising Research projects on which the Ministry is working (i) 1 MW solar thermal power projects at SEC (ii) 250 kW gasification based power generation (iii) New design of community cookstove	[5.6.1] 3	No.	2.00	3	3	2	2	1	
[6] New initiatives and management actions	6.00	[6.1] Number of SPV lighting systems financed by banks in rural areas	[6.1.1] 1	No. of system in lakh	2.00	1	0.9	0.8	0.7	0.6	
		[6.2] Implementation of Ladakh Plan - SPV power plants in 60 villages - 1000 Solar thermal water heating systems - 1000 solar green houses	[6.2.1] 100	% progress	1.00	100	90	80	70	60	
		[6.3] Promoting concept of Green Campus / Neighbourhoods	[6.3.1] 10	No. of campuses	3.00	10	9	8	7	6	
[7] Development of resource base	4.00	[7.1] Reassessment of wind potential and follow-up on the Laurence Berkley report	[7.1.1] 40% completion	%	1.00	40	36	32	28	24	
		[7.2] Reassess the renewable power potential and undertake the reassessment on	[7.2.1] Start of activity in 4 areas	No	1.00	4	4	3	2	2	

Section 2: Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
		continuous basis								
		[7.3] Reassessment of efficiency of power generation	[7.3.1] Terchnologywise status in 4 areas	No	1.00	4	4	3	2	2
		[7.4] Prepare a draft policy on Offshore wind power and take it to COS	[7.4.1] 1	year	1.00	100	90	80	70	60
[8] Clean Energy projects	2.00	[8.1] Amount of clean energy projects posed to MoF	[8.1.1] 500	Rs.in crores	2.00	500	450	400	350	300
[9] Increasing indigenization	1.00	[9.1] Percentage of solar PV installed capacity with indian module	[9.1.1] 30%	%	1.00	30	25	20	15	10
[10] Monitoring Systems for installed projects	2.00	[10.1] System for monitoring and evaluation of project on a sample basis on a continuous basis for off-grid systems	[10.1.1] To put system in place	--	1.50	100	80	60	50	50
		[10.2] Development of web/SMS based feedback system for capturing the performance of off-grid systems from various stake holder (NGOs / Public)	[10.2.1] To develop and operationalise the system	--	0.50	100	80	60	50	50
* Efficient Functioning of the RFD System	3.00	Timely submission of Draft for Approval	On-time submission	Date	2.0	05/03/2012	06/03/2012	07/03/2012	08/03/2012	09/03/2012
		Timely submission of Results	On- time submission	Date	1.0	01/05/2012	03/05/2012	04/05/2012	05/05/2012	06/05/2012
* Administrative Reforms	6.00	Implement mitigating strategies for reducing potential risk of corruption	% of implementation	%	2.0	100	95	90	85	80
		Implement ISO 9001 as per the approved action plan	Area of operations covered	%	2.0	100	95	90	85	80

* Mandatory Objective(s)

Section 2: Inter se Priorities among Key Objectives, Success indicators and Targets

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
		Identify, design and implement major innovations	Implementation of identified innovations	Date	2.0	05/03/2013	06/03/2013	07/03/2013	08/03/2013	09/03/2013
* Improving Internal Efficiency / responsiveness / service delivery of Ministry / Department	4.00	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2.0	100	95	90	85	80
			Independent Audit of implementation of public grievance redressal system	%	2.0	100	95	90	85	80
* Ensuring compliance to the Financial Accountability Framework	2.00	Timely submission of ATNs on Audit paras of C&AG	Percentage of ATNs submitted within due date (4 months) from date of presentation of Report to Parliament by CAG during the year.	%	0.5	100	90	80	70	60
		Timely submission of ATRs to the PAC Sectt. on PAC Reports.	Percentage of ATRS submitted within due date (6 months) from date of presentation of Report to Parliament by PAC during the year.	%	0.5	100	90	80	70	60
		Early disposal of pending ATNs on Audit Paras of C&AG Reports presented to Parliament before 31.3.2012.	Percentage of outstanding ATNs disposed off during the year.	%	0.5	100	90	80	70	60
		Early disposal of pending ATRs on PAC Reports presented to Parliament before 31.3.2012	Percentage of outstanding ATRS disposed off during the year.	%	0.5	100	90	80	70	60

* Mandatory Objective(s)

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value	Actual Value	Target Value	Projected Value for	Projected Value for
				FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
[1] To promote deployment of grid-interactive renewable power generation projects to augment contribution of renewables in total electricity mix;	[1.1] Solar power plants commissioned (including JNNSM)	[1.1.1] 800	MW	0	4	800	1200	1500
	[1.2] Projects sanctioned / auctioned under JNNSM	[1.2.1] 100	MW	--	--	90	--	--
	[1.3] Projects commissioned under JNNSM	[1.3.1] 400	MW	--	--	360	--	--
	[1.4] Bio power (Biomass power and Cogeneration)	[1.4.1] 465	MW	444.23	483	475	500	525
	[1.5] Small Hydro Power (SHP)	[1.5.1] 350	MW	248.93	300	350	375	400
	[1.6] Wind power	[1.6.1] 2500	MW	1485	2500	2500	2750	3000
	[1.7] Urban Waste to Energy	[1.7.1] 40	MW	--	--	36	--	--
[2] To promote renewable energy initiatives for meeting energy needs in rural areas	[2.1] Installation of Family type Biogas Plants - No. of plants installed* (subject to additional budget allocation, otherwise 1.25 lakh)	[2.1.1] 1.50	No. in lakh	1.51	--	1.25	1.25	1.50
	[2.2] Installation of Biomass Gasifiers for Village energy supply (subject to additional budget allocation, otherwise 25 villages)	[2.2.1] 50	No. of villages	30	--	25	35	50
	[2.3] Decentralised SPV systems / Devices	[2.3.1] 30	MW	--	--	30	35	40

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value	Actual Value	Target Value	Projected Value for	Projected Value for
				FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
	[2.4] Watermills	[2.4.1] 500	Nos.	500	--	500	550	600
	[2.5] Micro Hydel	[2.5.1] 2000	kW	--	--	2000	2200	2500
	[2.6] Aero generators	[2.6.1] 350	kW	75	--	350	400	400
	[2.7] Wind + SPV hybrid systems	[2.7.1] 15	No.	--	--	13	15	15
	[2.8] Improved cookstoves	[2.8.1] 150000	No.	1500	--	150000	175000	200000
	[2.9] Capacity added through off grid wind / hybrid power micro hydel / bio power / SPV in rural areas	[2.9.1] 32.50	MW	--	--	32.50	35	40
[3] To promote renewable energy initiatives to supplement energy needs in urban areas	[3.1] Installation of Solar Thermal systems in urban households/ buildings -total Collectors Area installed	[3.1.1] 6.50	Lakh square meter	--	--	6	6.25	6.50
[4] To promote renewable energy initiatives to supplement energy needs in industry and commercial establishments	[4.1] Industrial Waste-to-energy	[4.1.1] 20	MWeq	--	--	20	25	30
	[4.2] Rice husk based power generation in Rice Mills and other Industries	[4.2.1] 50	Nos	--	--	50	50	55
	[4.3] Biomass based cogeneration in other industries excluding Bagasse	[4.3.1] 60	MWeq	--	--	60	65	75
[5] To promote research, design and development activities at premier national institutions and industries on different aspects of new and renewable	[5.1] New R&D projects in : solar photovoltaic, solar thermal, Bio energy, New Technologies	[5.1.1] 20	No	--	--	20	20	20

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value FY 10/11	Actual Value FY 11/12	Target Value FY 12/13	Projected Value for FY 13/14	Projected Value for FY 14/15
energy (NRE) technologies.								
	[5.2] Percentage of ongoing / new R&D projects meeting the pre agreed milestones	[5.2.1] 40	%	--	--	40	50	55
	[5.3] Number of new / ongoing collaborations with leading international institutions	[5.3.1] 2	No.	--	--	2	--	--
	[5.4] Number of new / ongoing collaborations with private sector	[5.4.1] 4	No.	--	--	4	4	4
	[5.5] Number of new technologies / products deployed	[5.5.1] 4	No.	--	--	4	5	5
	[5.6] 3 promising Research projects on which the Ministry is working (i) 1 MW solar thermal power projects at SEC (ii) 250 kW gasification based power generation (iii) New design of community cookstove	[5.6.1] 3	No.	--	--	3	3	3
[6] New initiatives and management actions	[6.1] Number of SPV lighting systems financed by banks in rural areas	[6.1.1] 1	No. of system in lakh	--	--	1	2	2
	[6.2] Implementation of Ladakh Plan - SPV power plants in 60 villages - 1000 Solar thermal water heating	[6.2.1] 100	% progress	--	--	100	--	--

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value FY 10/11	Actual Value FY 11/12	Target Value FY 12/13	Projected Value for FY 13/14	Projected Value for FY 14/15
	systems - 1000 solar green houses							
	[6.3] Promoting concept of Green Campus / Neighbourhoods	[6.3.1] 10	No. of campuses	--	--	10	10	10
[7] Development of resource base	[7.1] Reassessment of wind potential and follow-up on the Laurence Berkley report	[7.1.1] 40% completion	%	--	--	40	60	80
	[7.2] Reassess the renewable power potential and undertake the reassessment on continuous basis	[7.2.1] Start of activity in 4 areas	No	--	--	4	--	--
	[7.3] Reassessment of efficiency of power generation	[7.3.1] Terchnologywise status in 4 areas	No	--	--	4	--	--
	[7.4] Prepare a draft policy on Offshore wind power and take it to COS	[7.4.1] 1	year	--	--	1	--	--
[8] Clean Energy projects	[8.1] Amount of clean energy projects posed to MoF	[8.1.1] 500	Rs.in crores	--	--	450	500	500
[9] Increasing indigenization	[9.1] Percentage of solar PV installed capacity with indian module	[9.1.1] 30%	%	--	--	30	40	50
[10] Monitoring Systems for installed projects	[10.1]System for monitoring and evaluation of project on a sample basis on a continuous basis for off- grid systems	[10.1.1] To put system in place	--	--	--	80	--	--
	[10.2]Development of web/SMS based feedback system for	[10.2.1] To develop and operationalise the system	--	--	--	80	--	--

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value FY 10/11	Actual Value FY 11/12	Target Value FY 12/13	Projected Value for FY 13/14	Projected Value for FY 14/15
	capturing the performance of off-grid systems from various stake holder (NGOs / Public)							
* Efficient Functioning of the RFD System	Timely submission of Draft for Approval	On-time submission	Date	--	--	06/03/2012	--	--
	Timely submission of Results	On- time submission	Date	--	--	03/05/2012	--	--
* Administrative Reforms	Implement mitigating strategies for reducing potential risk of corruption	% of implementation	%	--	--	95	--	--
	Implement ISO 9001 as per the approved action plan	Area of operations covered	%	--	--	95	--	--
	Identify, design and implement major innovations	Implementation of identified innovations	Date	--	--	06/03/2013	--	--
* Improving Internal Efficiency / responsiveness / service delivery of Ministry / Department	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	--	--	95	--	--
		Independent Audit of implementation of public grievance redressal system	%	--	--	95	--	--
* Ensuring compliance to the Financial Accountability Framework	Timely submission of ATNs on Audit paras of C&AG	Percentage of ATNs submitted within due date (4 months) from date of presentation of Report to Parliament by CAG during the year.	%	--	--	90	--	--
	Timely submission of ATRs to the PAC Sectt. on PAC Reports.	Percentage of ATRS submitted within due date (6 months) from date of presentation of Report to Parliament by	%	--	--	90	--	--

* Mandatory Objective(s)

Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value	Actual Value	Target Value	Projected Value for	Projected Value for
				FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
		PAC during the year.						
	Early disposal of pending ATNs on Audit Paras of C&AG Reports presented to Parliament before 31.3.2012.	Percentage of outstanding ATNs disposed off during the year.	%	--	--	90	--	--
	Early disposal of pending ATRs on PAC Reports presented to Parliament before 31.3.2012	Percentage of outstanding ATRS disposed off during the year.	%	--	--	90	--	--

* Mandatory Objective(s)

**Section 4:
Description and Definition of Success Indicators
and Proposed Measurement Methodology**

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**SECTION 4:
Description and Definition of
Success Indicators and Proposed Measurement Methodology**

S. No.	Success Indicator	Unit	Definition	Proposed Measurement methodology
1.	Grid-interactive Renewable Power	MW	Total installed capacity of Grid-connected Renewable Power projects in Megawatt.	••••• Reports of State Utilities/ Central Electricity Authority/ NVVN/IREDA
2.	Off-Grid Renewable power	MWeq	Total installed capacity of non-grid connected Renewable power projects –generating electrical and/or thermal energy.	••••• Reports of State Implementing Agencies/ Banks/ NABARD/ IREDA
4	Installation of Biogas Plants	No. in lakh	Number of Biogas plants installed - Mostly Family type biogas plants of 2-5 cum. Capacity (digester size).	-do-
5	Installation of Solar Thermal Systems	Lakh square meter	Total Area of Solar thermal Collectors installed under various types of solar thermal such as solar water heaters and solar cookers.	••••• Report of Indian Renewable Energy Development Agency (IREDA) ••••• Reports of State Implementing Agencies
6	Support new R&D projects	No.	Total number of new R&D project proposals approved for Central Financial Support.	••••• Own records of the Ministry.

7.	Electricity Mix	%	Contribution of Renewable energy in terms of actual electricity generated from all renewable power projects to the total electricity generation in the country	•••••• To be computed from the above deployment data and reports of Central Electricity Authority (CEA)/Ministry of Power.
8.	Energy Mix	%	Contribution of Renewable energy (in electrical & thermal forms) to the total energy consumption in the country	•••••• Do + reports of other Energy Ministries / Planning Commission
10.	New Initiatives and Administrative Actions	As specified against each initiative/ action		•••••• Own records of the Ministry.

ABBREVIATIONS

IEPR - Integrated Energy Policy Report ; RE- Renewable Energy;
 SPV- Solar Photovoltaic HRD - Human Resource Development

Section 5: Specific Performance Requirements from other Departments

The performance under various programmes is critically dependent on other Departments/ Organizations as mentioned below:

State Govt. Departments/ Implementing Agencies	:	Policy formulation; submission / clearance of projects; monitoring of implementation, etc.
Ministry of Environment & Forests	:	Giving clearance for land transfer for grid power projects in forest areas
Ministry of Power	:	Allocation of unallocated power quota to NVVN
NVVN	:	Entering into firm PPAs with developers of Solar power projects and ensuring timely approvals
CERC/ SERCs	:	Fixation of tariffs for Renewable power.

Section 6: Outcome/Impact of Department/Ministry

Outcome/Impact of Department/Ministry	Jointly responsible for influencing this outcome / impact with the following department (s) / ministry(ies)	Success Indicator	Unit	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
1 Creating Additional Generation Capacity (RE initiative) to supplement the conventional Energy initiatives of the country	CERC/SERC/Ministry of Power /Ministry of Environment and Forests / State Governments and implementing agencies	Capacity added (MW)	MW	21800	24914	29000	34000	40000
		Percentage of total power installed in the country	%	20.43	17.83			
2 To conduct a sample survey for off-grid system (on utilisation of off grid system)	State Nodal Agencies, State Governments, Implementing Agencies	No. of surveys	No			4	6	6
3 IPR filed	Ministry of Industry and Commerce,	Number of Research Papers by R & D institutions and filing of patents	No.			10	15	15
4 Commercialization of IPRs filed as a result of MNRE Intervention	Ministry of Science and Technology, Research Institutions	No.	No.			2	3	4
5 The total capacity of all RE systems installed and its proportion in the energy mix and electricity mix	Ministry of Power	capacity addition	MW		4000	4150	4500	5000
6 The %age of off grid systems that are operating or the capacity utilization of all the off grid systems installed so far (based on the sample survey)		Percentage of systems in operation	Percentage			80%		
7 Likely annual savings of conventional fuel/electricity through renewable energy requirement based on		electrical unit saved	billion units			60	61	62

Section 6: Outcome/Impact of Department/Ministry

Outcome/Impact of Department/Ministry	Jointly responsible for influencing this outcome / impact with the following department (s) / ministry(ies)	Success Indicator	Unit	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
the norms indicated in Table8 of Stategy Paper								