



# R F D

Results Framework Document  
for  
Ministry of New and Renewable Energy

(2011-2012)

## 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.

### Objectives

- 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/ lighting needs in rural areas
- 3 To promote renewable energy initiatives to supplement energy needs in urban areas
- 4 To promote research, design and development activities at premier national institutions and industries on different aspects of new and renewable energy technologies.
- 5 To promote renewable energy initiatives to supplement energy needs in industry and commercial establishments
- 6 To take other special initiatives for growth of Renewable Energy sector

### 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 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
- 3 Human Resource Development in the new and renewable energy sector.
- 4 Fostering international cooperation in new and renewable energy sector
- 5 Information, Publicity, Public Awareness creation in the Renewable Energy (RE) sector.

## Section 1: Vision, Mission, Objectives and Functions

- 6 Supporting related Research & Development (R&D) activities / projects taken up by institutions and industry.
- 7 Undertaking resource assessment and potential estimation studies for all new and renewable sources of energy.

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

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	VeryGood	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.	25.00	[1.1] Solar power plants (completion)	[1.1.1] 200	MW	4.00	200	180	160	140	120
		[1.2] Solar power plants (sanction)	[1.2.1] 300	MW	4.00	300	270	240	210	180
		[1.3] Biopower (Biomass power/Cogeneration/Waste to Energy)	[1.3.1] 485	MW	5.00	485	435	385	340	290
		[1.4] Small Hydro Power	[1.4.1] 350	MW	5.00	350	315	240	210	180
		[1.5] Wind power	[1.5.1] 2400	MW	7.00	2400	2160	1920	1680	1440
[2] To promote renewable energy initiatives for meeting energy/ lighting needs in rural areas	20.00	[2.1] Coverage of Remote Villages - No. of villages/hamlets provided with RE systems	[2.1.1] 500	Nos.	3.00	500	450	400	350	300
		[2.2] Installation of Family type Biogas Plants - No. of plants installed* [* Mostly Family type plants of 2 cum. digester capacity. Max. Deployment so far during last 8 years has been ~1.5 lakh plants in 2002-03]	[2.2.1] 1.50	No. in lakh	4.00	1.50	1.35	1.20	1.05	0.90
		[2.3] Installation of Biomass Gasifiers for Village energy supply (in non-RVE areas)	[2.3.1] 50	No. of villages	5.00	50	45	40	35	30
		[2.4] Decentralised SPV systems / Devices -Completion	[2.4.1] 20	MW	2.00	20	18	16	14	12
		[2.5] Decentralised SPV systems/Devices (sanction) (subject to additional budgetary	[2.5.1] 60	MW	3.00	60	54	48	42	36

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

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	VeryGood	Good	Fair	Poor
						100%	90%	80%	70%	60%
		allocation as sought for Solar mission activities, otherwise 32MW (sanction)								
		[2.6] Watermills/ Micro-hydel plants	[2.6.1] 400	Nos.	1.00	400	360	320	280	240
			[2.6.2] 1500	kW	1.00	1500	1350	1200	1050	900
		[2.7] Aero generators/Wind + SPV hybrid systems	[2.7.1] 35	Nos	0.50	35	31	28	25	21
			[2.7.2] 500	kW	0.50	500	450	400	350	300
[3] To promote renewable energy initiatives to supplement energy needs in urban areas	7.00	[3.1] Installation of Solar Thermal systems in urban households/ buildings -total Collectors Area installed [Includes deployment in Industry also. Subject to additional budgetary allocation as sought for Solar Mission activities; otherwise 6 lakh sq.m].	[3.1.1] 11	Lakh square meter	5.00	11	9.9	8.8	7.7	6.6
		[3.2] Installation of Urban Waste to energy plants [Includes projects utilizing mix of urban and agricultural wastes]	[3.2.1] 15	MWeq	2.00	15	13	12	10	9
[4] To promote research, design and development activities at premier national institutions and industries on different aspects of new and renewable energy technologies.	10.00	[4.1] Pilot projects for pine needles	[4.1.1] 1	No. of projects	0.40	1	1	1	1	0
		[4.2] R&D project for Rice straw boilers	[4.2.1] 1	No. of projects	0.40	1	1	1	1	0
		[4.3] R&D projects in solar PV	[4.3.1] 6	No. of projects	2.00	6	5	4	3	3

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

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	VeryGood	Good	Fair	Poor
						100%	90%	80%	70%	60%
		[4.4] R&D projects in solar thermal	[4.4.1] 6	No. of projects	2.00	6	5	4	3	3
		[4.5] R&D projects in Hydrogen energy/fuel cells	[4.5.1] 6	No. of projects	2.00	6	5	4	3	3
		[4.6] Pilot project for Battery operated vehicles (BOV)	[4.6.1] 1	No. of projects	0.40	1	1	1	1	0
		[4.7] R & D projects in Biofuels	[4.7.1] 5	No. of projects	1.60	5	5	4	3	3
		[4.8] R & D projects in Biogas	[4.8.1] 4	No. of projects	1.20	4	4	3	3	2
[5] To promote renewable energy initiatives to supplement energy needs in industry and commercial establishments	9.00	[5.1] Industrial Waste-to energy (Subject to additional budget allocation as requested; otherwise 25MW)	[5.1.1] 30	MWeq	2.00	30	27	24	21	18
		[5.2] Rice husk based power generation in Rice Mills (Reduced from 200 nos for last year keeping in view delays/difficulties faced by the mills in obtaining bank finance)	[5.2.1] 100	Nos	1.50	100	90	80	70	60
			[5.2.2] 10	MW	1.50	10	9	8	7	6
		[5.3] Biomass based cogeneration in other industries	[5.3.1] 80	MWeq	4.00	80	70	65	55	50
[6] To take other special initiatives for growth of Renewable Energy sector	14.00	[6.1] Supporting Centers of Excellence under Solar Mission	[6.1.1] 2	No. of centers	2.00	2	2	2	1	1
		[6.2] Coverage of Heritage sites with RE systems	[6.2.1] 20	No. of sites	1.00	20	18	16	14	12
		[6.3] Registration of applications for rating of buildings under GRIHA	[6.3.1] 50	No. of buildings	2.00	50	45	40	35	30

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

Objective	Weight	Action	Success Indicator	Unit	Weight	Target / Criteria Value				
						Excellent	VeryGood	Good	Fair	Poor
						100%	90%	80%	70%	60%
		[6.4] No. of SPV lighting systems financed by Banks in RUr al areas.	[6.4.1] 100000	No. of systems	2.00	100000	90000	80000	70000	60000
		[6.5] Implementation of SPV systems under Ladakh plan	[6.5.1] 75	% progress	3.00	75	68	60	53	45
		[6.6] Supporting Training programmes/Workshops for HRD in RE sector	[6.6.1] 50	No. of programme	2.00	50	45	40	35	30
		[6.7] Stakeholders consultations	[6.7.1] 10	No. of meetings	2.00	10	8	6	4	2
* Efficient Functioning of the RFD System	3.00	Timely submission of Draft for Approval	On-time submission	Date	2.00	07/03/2011	08/03/2011	09/03/2011	10/03/2011	11/03/2011
		Timely submission of Results	On-time submission	Date	1.00	01/05/2012	03/05/2012	04/05/2012	05/05/2012	06/05/2012
* Improving Internal Efficiency / responsiveness / service delivery of Ministry / Department	10.00	Identify and Implement 3 major recommendations of ARC II relevant to the department	Finalize 3 major recommendations of ARC II relevant to the department	Date	2.00	10/12/2012	15/12/2012	20/12/2012	24/12/2012	31/12/2012
		Identify potential areas of corruption related to departmental activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption.	Date	2.00	10/12/2012	15/12/2012	20/12/2012	24/12/2012	31/12/2012
		Develop an action plan for e-office Implementation in the department / ministry	Finalize an action plan for e-office	Date	2.00	10/12/2012	15/12/2012	20/12/2012	24/12/2012	31/12/2012
		Develop an action plan to implement ISO 9001 certification	Finalize an action plan to implement ISO 9001 certification	Date	2.00	10/12/2012	15/12/2012	20/12/2012	24/12/2012	31/12/2012
		Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	1.00	100	95	90	85	80
			Independent Audit of Implementation of	%	1.00	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	VeryGood	Good	Fair	Poor
						100%	90%	80%	70%	60%
			Grievance Redress Mechanism							
* 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.	%	0.50	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.	%	0.50	100	90	80	70	60
		Early disposal of pending ATNs on Audit Paras of C&AG Reports presented to Parliament before 31.3.2011.	Percentage of outstanding ATNS disposed off during the year.	%	0.50	100	90	80	70	60
		Early disposal of pending ATRs on PAC Reports presented to Parliament before 31.3.2011	Percentage of outstanding ATRS disposed off during the year.	%	0.50	100	90	80	70	60

\* Mandatory Objective(s)



### Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13	Projected Value for FY 13/14
1 To promote deployment of grid-interactive renewable power generation projects to augment contribution of renewables in total electricity mix.	Solar power plants (completion)	200	MW	8	250	200	500	400
	Solar power plants (sanction)	300	MW	2	--	300	0	750
	Biopower (Biomass power/Cogeneration/Waste to Energy)	485	MW	447	455	485	550	550
	Small Hydro Power	350	MW	305	300	350	350	400
	Wind power	2400	MW	1565	2000	2350	2500	2500
2 To promote renewable energy initiatives for meeting energy/ lighting needs in rural areas	Coverage of Remote Villages - No. of villages/hamlets provided with RE systems	500	Nos.	1013	1500	500	--	--
	Installation of Family type Biogas Plants - No. of plants installed* [* Mostly Family type plants of 2 cum. digester capacity. Max. Deployment so far during last 8 years has been ~1.5 lakh plants in 2002-03]	1.50	No. in lakh	1.08	1.50	1.50	1.50	1.50
	Installation of Biomass Gasifiers for Village energy supply (in non-RVE areas)	50	No. of villages	23	30	50	75	100
	Decentralised SPV systems / Devices -Completion	20	MW	3.06	--	20	25	60
	Decentralised SPV systems/Devices (sanction) (subject to additional budgetary allocation as sought for Solar mission)	60	MW	8.30	--	60	100	150

### Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13	Projected Value for FY 13/14
	activites, otherwise 32MW (sanction)							
	Watermills/ Micro-hydel plants	400	Nos.	344	500	400	500	500
		1500	kW	1100	--	1500	2000	2000
	Aero generators/Wind + SPV hybrid systems	35	Nos	30	--	30	40	50
		500	kW	220	75	500	600	700
3 To promote renewable energy initiatives to supplement energy needs in urban areas	Installation of Solar Thermal systems in urban households/ buildings -total Collectors Area installed [Includes deployment in Industry also. Subject to additional budgetary allocation as sought for Solar Mission activities; otherwise 6 lakh sq.m].	11	Lakh square meter	6.2	11	11	11	11
	Installation of Urban Waste to energy plants [Includes projects utilizing mix of urban and agricultural wastes]	15	MWeq	0	8	15	15	15
4 To promote research, design and development activities at premier national institutions and industries on different aspects of new and renewable energy technologies.	Pilot projects for pine needles	1	No. of projects	--	--	1	1	0
	R&D project for Rice straw boilers	1	No. of projects	--	--	1	1	0
	R&D projects in solar PV	6	No. of projects	--	--	5	5	10

### Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13	Projected Value for FY 13/14
	R&D projects in solar thermal	6	No. of projects	--	--	5	5	10
	R&D projects in Hydrogen energy/fuel cells	6	No. of projects	--	--	5	5	10
	Pilot project for Battery operated vehicles (BOV)	1	No. of projects	--	--	1	1	1
	R& D projects in Biofuels	5	No. of projects	--	--	5	5	5
	R & D projects in Biogas	4	No. of projects	--	--	4	4	4
5 To promote renewable energy initiatives to supplement energy needs in industry and commercial establishments	Industrial Waste-to energy (Subject to additional budget allocation as requested; otherwise 25MW)	30	MWeq	20.6	--	30	40	50
	Rice husk based power generation in Rice Mills (Reduced from 200 nos for last year keeping in view delays/difficulties faced by the mills in obtaining bank finance)	100	Nos	15	--	100	400	500
		10	MW	5.17	--	15	30	40
	Biomass based cogeneration in other industries	80	MWeq	50	--	80	80	80
6 To take other special initiatives for growth of Renewable Energy sector	Supporting Centers of Excellence under Solar Mission	2	No. of centers	--	--	2	2	4
	Coverage of Heritage sites with RE systems	20	No. of sites	--	--	25	25	25
	Registration of applications for rating of buildings under GRIHA	50	No. of buildings	--	--	50	100	200
	No. of SPV lighting systems financed by Banks in RUrural areas.	100000	No. of systems	--	--	100000	150000	200000

### Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13	Projected Value for FY 13/14
	Implementation of SPV systems under Ladakh plan	75	% progress	--	--	50	70	90
	Supporting Training programmes/Workshops for HRD in RE sector	50	No. of programe	--	--	50	50	50
	Stakeholders consultations	10	No. of meetings	--	--	30	30	30
* Efficient Functioning of the RFD System	Timely submission of Draft for Approval	On-time submission	Date	--	06/08/2010	08/03/2011	--	--
	Timely submission of Results	On-time submission	Date	--	--	03/05/2011	--	--
* Improving Internal Efficiency / responsiveness / service delivery of Ministry / Department	Identify and Implement 3 major recommendations of ARC II relevant to the department	Finalize 3 major recommendations of ARC II relevant to the department	Date	--	--	15/12/2011	--	--
	Identify potential areas of corruption related to departmental activities and develop an action plan to mitigate them	Finalize an action plan to mitigate potential areas of corruption.	Date	--	--	15/12/2011	--	--
	Develop an action plan for e-office Implementation in the department / ministry	Finalize an action plan for e-office	Date	--	--	15/12/2011	--	--
	Develop an action plan to implement ISO 9001 certification	Finalize an action plan to implement ISO 9001 certification	Date	--	--	15/12/2011	--	--
	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	--	--	95	--	--
		Independent Audit of Implementation of Grievance Redress	%	--	--	95	--	--

\* Mandatory Objective(s)

### Section 3: Trend Values of the Success Indicators

Objective	Action	Success Indicator	Unit	Actual Value for FY 09/10	Actual Value for FY 10/11	Target Value for FY 11/12	Projected Value for FY 12/13	Projected Value for FY 13/14
		Mechanism						
* 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 PAC during the year.	%	--	--	90	--	--
	Early disposal of pending ATNs on Audit Paras of C&AG Reports presented to Parliament before 31.3.2011.	Percentage of outstanding ATNS disposed off during the year.	%	--	--	90	--	--
	Early disposal of pending ATRs on PAC Reports presented to Parliament before 31.3.2011	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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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/ NRVN/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
3.	Coverage of Remote Villages	No.	No. of completed villages - All household provided with Solar Photovoltaic Home lighting Systems <u>OR</u> a common Renewable Power plant installed in the village.	-do-
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.	<ul style="list-style-type: none"> <li>Report of Indian Renewable Energy Development Agency (IREDA)</li> <li>Reports of State Implementing Agencies</li> </ul>
6	Support new R&D projects	No.	Total number of new R&D project proposals approved for Central Financial Support.	<ul style="list-style-type: none"> <li>Own records of the Ministry.</li> </ul>
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	<ul style="list-style-type: none"> <li>To be computed from the above deployment data and reports of Central Electricity Authority (CEA)/Ministry of Power.</li> </ul>
8.	Energy Mix	%	Contribution of Renewable energy (in electrical & thermal forms) to the total energy consumption in the country	<ul style="list-style-type: none"> <li>Do + reports of other Energy Ministries / Planning Commission</li> </ul>
9.	New Initiatives and Administrative Actions	As specified against each initiative/ action		<ul style="list-style-type: none"> <li>Own records of the Ministry.</li> </ul>

### **ABBREVIATIONS**

IEPR	-	Integrated Energy Policy Report
RE	-	Renewable Energy
RVE	-	Remote Village Electrification
SPV	-	Solar Photovoltaic

- GRIHA - Green Rating for Integrated Habitat Assessment
- 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.

Date: 15 April 2011  
New Delhi

## 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	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14
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