



**RFD**

**Results-Framework Document**

**For**

**Sardar Swaran Singh National Institute of Renewable Energy,  
Kapurthala-144601 (Punjab)**

**(An Autonomous Institution of Ministry of New & Renewable Energy, Govt. of India, New Delhi)**

**(2013-2014)**

## **SECTION 1:**

### **Vision, Mission, Objectives and Functions**

#### **VISION:**

- To become an apex Institution for carrying out **state-of-the-art** research and developmental activities in the area of bio-energy.

#### **MISSION:**

- To be a knowledge based R&D Institution of high quality and dedication.
- To impart the training to professionals of bio-energy sector
- To provide the services and optimum solutions for the major stakeholders across the entire spectrum of the bio-energy sector.
- To support Bio-energy sector in developing the knowledge for promoting new technologies.
- To develop Human Resources for the Bio-energy sector at all levels.

#### **OBJECTIVES:**

- To carry out and facilitate research, design, development, testing, standardization and technology demonstration eventually leading to commercialization of RD&D output with a focus on:
  - a. Bioenergy, biofuels and synthetic fuels in solid, liquid and gaseous forms for transportation, portable and stationary applications;
  - b. Development of hybrid/integrated energy systems; and
  - c. Development of new technologies for effective utilization of different type of wastes and production of value added products
- To undertake and facilitate human resource development and training including doctoral and post-doctoral research in the area of bio-energy.
- To create facilities for operationalization of the Institute.

## **FUNCTIONS:**

- Conduct resource surveys and Assessment of potential across the country in the bioenergy sector.
- In-house R&D programmes in all emerging fields of bioenergy.
- Joint technical programmes with other national institutions and testing centres.
- Testing and certification of devices and systems.
- Techno-economic evaluation of bioenergy equipments and systems.
- Creating data base for bioenergy including information on patents.
- Compilation and dissemination of information on resources, technologies, products and applications.
- Providing technical support to industry on new product design and development and upgradation of products and manufacturing processes.
- Providing technical support to the biomass energy project in achieving and sustaining quality such that systems of highest quality and reliability are installed.
- Organization of training programmes, seminars and workshops.
- Cooperation with scientific and technical Institutions abroad under bilateral and multilateral agreements and MoU.
- Assistance in curriculum development in renewable energy and undertaking concrete programmes for human resource development.
- Consultancy and advisory services in the bioenergy sector.
- Providing technical support to MNRE in policy planning and implementation.
- Cookstove dissemination projects through Carbon Financing (CDM).
- Information, Communication and Education (ICE).

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

S. No.	Objective	Weight	Actions	Success indicator	Unit	Weight	Target/Criteria Value				
							Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
1	To carry out and facilitate research, design, development, testing, standardization and technology demonstration eventually leading to commercialization of RD&D output with a focus on: a. Bioenergy, biofuels and synthetic fuels in solid, liquid and gaseous forms for transportation, portable and stationary applications; b. Development of hybrid/integrated energy systems; and c. Development of new technologies for effective utilization of different type of wastes and production of value added products	33	Implementation of R&D projects for carrying out research in solid, liquid & gaseous biofuels	3	No. of projects	10	3	2	1	-	-
			Implementation of R&D projects for development of hybrid/integrated energy systems	1	No. of projects	3	1	-	-	-	-
			Implementation of R&D projects for development of technology for effective utilization of different type of wastes	1	No. of projects	3	1	-	-	-	-
			Setting up R&D-cum-Technology Demonstration plants	2	Nos.	5	2	1	-	-	-
			Research paper/ Book chapter/ Book Publications	6	Nos.	7	6	5	4	3	2
			Plantation of Bio-energy trees/plants/crops	500	No. of plants	5	500	450	400	350	300
						<b>33%</b>					

S. No.	Objective	Weight	Actions	Success indicator	Unit	Weight	Target/Criteria Value				
							Excellent	Very Good	Good	Fair	Poor
							100%	90%	80%	70%	60%
2	To undertake and facilitate human resource development and training including doctoral and post-doctoral research in the area of bio-energy.	28	JRF/SRF/PDF/PA under Institutional Fellowship and R&D Projects	8	Nos.	8	8	7	6	5	4
			Project Training to Masters & Ph.D. students from other Institutions/ Universities	6	Nos.	6	6	5	4	3	2
			Outsourced manpower for carrying out R&D and Administrative activities	10	Nos.	6	10	9	8	7	6
			Organization of Conference/ Workshop/ Training programmes	4	Nos.	8	4	3	2	1	-
						<b>28%</b>					
3	To create facilities for operationalization of the Institute.	24	Furnishing of building blocks	4	No. of blocks	6	4	3	2	1	-
			Setting-up of Laboratories facility	10	No. of equipment	8	10	9	8	7	6
			Setting-up of Library facility	100	No. of books & journals	7	100	90	80	70	60
			Setting-up of computer and internet facility	20	No. of computers	7	20	18	16	14	12
						<b>28%</b>					

## Mandatory Success Indicators

Each RFD must contain the following indicators to promote enhanced and sustainable organisational performance levels.

S. No.	Objective	Actions	Success indicator	Unit	Weight	Target/Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
						100%	90%	80%	70%	60%
4	Efficient functioning of the RFD System	Timely submission of Draft RFD (2013-14) for approval	On-time submission	Date	2	May 15, 2013	May 16, 2013	May 17, 2013	May 20, 2013	May 21, 2013
		Timely submission of Results for RFD (2013-14)	On-time submission	Date	1	May 1, 2014	May 2, 2014	May 3, 2014	May 6, 2014	May 7, 2014
5	Administrative Reforms	Implement ISO 9001 as per the approved action plan	% of implementation	%	2	100	95	90	85	80
		Prepare an action plan for Innovation	On-time submission	Date	2	Jul 30, 2013	Aug 10, 2013	Aug 20, 2013	Aug 30, 2013	Sept 10, 2013
6	Improving Internal Efficiency/ Responsiveness/ Transparency/ Service delivery of Ministry/ Department	Implementation of Sevottam	Independent Audit of Implementation of Citizen's Charter	%	2	100	95	90	85	80
			Independent Audit of implementation of public grievance redressal system	%	2	100	95	90	85	80
<b>TOTAL WEIGHT</b>					<b>11%</b>					

**SECTION 3:**  
**Trend Values of the Success Indicators**

S. No.	Objective	Actions	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target value FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
1	To carry out and facilitate research, design, development, testing, standardization and technology demonstration eventually leading to commercialization of RD&D output with a focus on:  a. Bioenergy, biofuels and synthetic fuels in solid, liquid and gaseous forms for transportation, portable and stationary applications; b. Development of hybrid/integrated energy systems; and c. Development of new technologies for effective utilization of different type of wastes and production of value added products	Implementation of R&D projects for carrying out research in solid, liquid & gaseous biofuels	3	No. of projects	2	3	2	3	3
		Implementation of R&D projects for development of hybrid/integrated energy systems	1	No. of projects	-	-	1	1	1
		Implementation of R&D projects for development of technology for effective utilization of different type of wastes	1	No. of projects	-	-	1	1	1
		Setting up R&D-cum-Technology Demonstration plants	2	Nos.	1	1	1	2	2
		Research paper/ Book chapter/ Book Publications	6	Nos.	4	5	5	8	10
		Plantation of Bio-energy trees/plants/crops	500	No. of plants	5,600	1,000	450	500	500

S. No.	Objective	Actions	Success Indicator	Unit	Actual Value for FY 11/12	Actual Value for FY 12/13	Target value FY 13/14	Projected Value for FY 14/15	Projected Value for FY 15/16
2	To undertake and facilitate human resource development and training including doctoral and post-doctoral research in the area of bio-energy.	JRF/SRF/PDF/PA under Institutional Fellowship and R&D Projects	8	Nos.	5	7	7	8	8
		Project Training to Masters & Ph.D. students from other Institutions/ Universities	6	Nos.	-	6	5	6	6
		Outsourced manpower for carrying out R&D and Administrative activities	10	Nos.	23	20	9	10	10
		Organization of Conference/ Workshop/ Training programmes	4	Nos.	2	5	3	4	4
3	To create facilities for operationalization of the Institute.	Furnishing of building blocks	4	No. of blocks	2	3	3	-	-
		Setting-up of Laboratories facility	10	No. of equipment	52	20	9	10	10
		Setting-up of Library facility	100	No. of books & journals	240	100	90	100	100
		Setting-up of computer and internet facility	20	No. of computers	10	20	18	-	-



#### SECTION 4:

#### Description and Definition of Success Indicators and Proposed Measurement Methodology

S.No.	Success Indicator	Definition	Proposed Measurement Methodology
1	Implementation of R&D projects for carrying out research in solid, liquid & gaseous biofuels	Formulation and submission of projects for funding and its execution after funding to the funding agencies such as MNRE, DST, DBT, CSIR, etc. for carrying out research activities for development of process for biofuels in solid, liquid and gaseous forms for transportation, portable and stationary applications	Literature survey & identification of problem and preparation of R&D projects
2	Implementation of R&D projects for development of hybrid/integrated energy systems	Formulation and submission of projects for funding to the funding agencies such as MNRE, DST, DBT, CSIR, etc. and its execution after funding for carrying out research activities for development of process for hybrid/integrated energy systems including biomass, solar and/or wind	Literature survey & identification of problem and preparation of R&D projects
3	Implementation of R&D projects for development of technology for effective utilization of different type of wastes	Formulation and submission of projects for funding to the funding agencies such as MNRE, DST, DBT, CSIR, etc. and its execution after funding for carrying out research activities for development of technology for processing of different type of wastes including kitchen, industrial, agricultural, municipal, etc. to convert into biofuels	Literature survey & identification of problem and preparation of R&D projects
4	Setting up R&D-cum-Technology Demonstration plants	Installation of R&D based demonstration plant such as biogas production from kitchen waste, manure, crop residue, etc.; Biomass based gasifiers, briquetting, cookstoves, etc.	Installation/Design/Fabrication of Plants and its demonstration to end users
5	Research paper/ Book chapter/ Book Publications	Publication of research articles in Journals with impact factor 2.0 or above, book chapters and books published with reputed publishers	Publication of research work carried out at the Institute
6	Plantation of Bio-energy trees/plants/crops	Plantation of various energy plants inside the campus	Plantation of energy plants to get raw materials for energy production and R&D purpose

7	JRF/SRF/PDF/PA under Institutional Fellowship and R&D Projects	Appointment of Junior Research Fellow (JRF), Senior Research Fellow (SRF), Postdoctoral Fellow (PDF) and Project Assistant (PA) for carrying out research activities	Registration of Research Fellows under project and SSS-NIRE Bioenergy Promotion Fellowship leading to Ph.D. in Academic Institutions/Universities and Postdoctoral studies under R&D project and SSS-NIRE Bioenergy Promotion Fellowship
8	Project Training to Masters & Ph.D. students from other Institutions/ Universities	Research projects to Masters Dissertation and Doctoral Thesis	M.Tech./M.Sc. Dissertation and Ph.D. thesis projects for students from other Institutions/Universities
9	Outsourced manpower for carrying out R&D and Administrative activities	Supporting technical and administrative staff such as Lab, Library and Computer Facilitators, Office attendant, Assistant to Admin, Purchase, Hindi section, Horticulture, RTI, Legal matters & Accounts	Numbers of supporting staff according to requirement
10	Organization of Conference/ Workshop/ Training programmes	National/International Conference, Training/Workshop to officers, NGOs and Scientific persons, students in Bioenergy Technologies	Sharing of knowledge through nos. of conferences/workshops/training
11	Furnishing of building blocks	Furnishing of R&Ds, Library, Computer Centre, Conference Room, Workshop, Guest House, Hostel	Procurement and installation of furniture and fixtures
12	Setting-up of Laboratories facility	Procurement of laboratory equipments	Preparation of specifications, market survey and procurement of equipments as per GFR
13	Setting-up of Library facility	Procurement of scientific/technical/administrative/informative Books and subscription of Journals	Procurement of books and subscription of journals
14	Setting-up of computer and internet facility	Procurement of computers and other accessories	Procurement of computers and installation of networking

**SECTION 5:**  
**Specific Performance Requirements from other Departments**

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

- Funding of R&D projects from various funding agencies such as DST, DBT and CSIR, etc.
- MNRE, Ministry of Finance, CPWD
- Academic Institutions/University such as NIT, Jalandhar, PTU, Jalandhar and Punjab University, Chandigarh for Ph.D. registration of Research Fellows
- Masters and Research Scholars from Academic Institutions/University for carrying out research work for fulfilment of dissertation/thesis
- Testing and validation to stakeholders/end users from various fields such as biomass gasifiers, cookstoves, biogas, etc.

**SECTION 6:**  
**Outcome/ Impact of activities of Organization**

S. No.	Outcome/ Impact of Organization/ RCs	Jointly responsible for influencing this outcome/ impact with the following Organization(s)/ Departments/ Ministry(ies)	Success Indicator(s)	2011-12	2012-13	2013-14	2014-15	2015-16
1	R&D projects	MNRE	3 nos. of projects	2	0	2	2	2
2	Setting up R&D-cum-Technology Demonstration plants	SSS-NIRE	2 nos. of demonstration plants	1	0	2	2	2
3	Research paper/ Book chapter/ Book Publications	SSS-NIRE	6 nos. of Publications	5	5	6	8	10
4	Oil seed and biomass for biofuel production	NBRI, Luchnow/ Growmore, Bangalore	2	1	2	2	2	2
5	M.Tech./Ph.D/JRF/SRF/PDF	NIT, Jalandhar; Thapar Univesity, Patiala; Ferozepur, Pondicherry; MNRE	10	5	10	10	10	10
6	Organization of seminar & workshops and training programmes	SSS-NIRE	5	2	5	4	4	4
7	Setting-up of Laboratories facility	SSS-NIRE	3 nos. of R&D laboratories	1	2	1	-	-
8	Setting-up of Library facility	SSS-NIRE	100 nos. of books/journals	240	100	100	100	100

**Place: New Delhi**  
**Date: Apr 29, 2013**

**Dr. Praveen Saxena**  
**Director, SSS-NIRE**