

C-WET

R F D
Results Framework Document
for

CENTRE FOR WIND ENERGY TECHNOLOGY

(An Autonomous R&D Institution under the Ministry of New and Renewable Energy, Government of India)

(2013 – 2014)
(01.04.2013 to 31.03.2014)



Section 1: Vision, Mission, Objectives and Functions

VISION:

- To act as a technical focal point and provide total solutions in the area of wind energy technologies to all stake-holders in the wind sector.

MISSION:

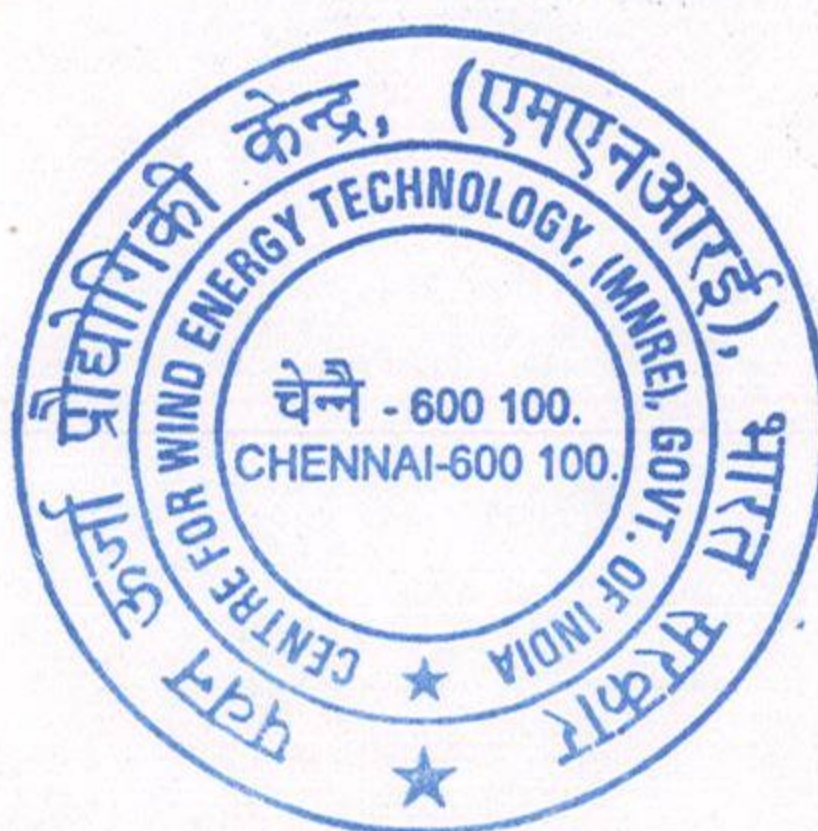
- To be a knowledge based institution of high quality and dedication.
- Offers services and seek to find total solutions for the major stakeholders across the entire spectrum of the wind energy sector.
- Support the wind turbine industry in achieving and sustaining quality such that products of the highest quality and reliability are installed.
- Strongly support the wind turbine industry in developing the know-how and know-why and promoting export of products and services.

OBJECTIVES:

- To promote and carry-out research and development programmes in coordination with other institutions.
- To undertake and offer various value added services to customers/ stake holders in the area of wind resource, testing and certification.
- To undertake/ facilitate human resource development programmes for the personnel needed in the wind energy sector.
- ✓ To carry out any other activity in the field of Renewable Energy under R&D as may be assigned by Ministry of New and Renewable Energy.

FUNCTIONS:

- ✓ Conduct wind / solar resource assessment studies across the country for the healthy and orderly growth of wind / solar energy sector in the country
- To promote/ carryout research relevant programs in the field of wind energy in coordination with other institutions.
- Provide testing and certification/ empanelment services both for large and small wind turbines
- Human resource development in the field of wind energy



Section 2

Inter se Priorities among Key Objectives, Success indicators and Targets (2013 – 2014)

Objectives	Weight	Action	Success indicator	Unit	Weight	Target Criteria Value				
						Exce-llent	Very Good	Good	Fair	Poor
			Committed			100%	90%	80%	70%	60%
1. To promote and carry-out research and development programmes in coordination with other institutions	40	A. NO. OF ONGOING PROJECTS (R&D)								
		(1) "Study and control of weak grid connected matrix converter based DFIG system" – SSN college of Engineering.								
		<ul style="list-style-type: none"> Simulation of VHDL & DSP coding, hardware implementation of space vector coding. Simulation studies of unbalance, improved ride through techniques. 	1							
		(2) "A Novel hybrid system for supplying isolated loads with FPGA based energy management scheme" – NIT, Tiruchirappalli.								
		<ul style="list-style-type: none"> Algorithm for FPGA based inverter control; Experimental results of WRIG using laboratory set-up; Design values and documents; and Status of the procurement of the components / equipments as per the proposal. 	1	Nos.	15	10	9	8	7	6



Section 2

Results Framework Document of C-WET (2013-2014)

Inter se Priorities among Key Objectives, Success indicators and Targets (2013 – 2014)

Objectives	Weight	Action	Success indicator	Unit	Weight	Target Criteria Value				
			Exce-llent			Very Good	Good	Fair	Poor	
			100%			90%	80%	70%	60%	
		(3) Health/ Condition Monitoring at Experimental/ R&D Wind Farm at Kayathar – phase-I on 2MW WT. <ul style="list-style-type: none">Hardware & software configuration, Instrumentation, fine tuning. Measurement storage at CWET. Signal processing, analysis & fault prediction algorithm development.Early failure determination, balance life estimation of components in the sub-system.Consolidating the interim reports into a final report & conduct workshop for the benefit of the stakeholders. (4) Everybody's Battery Charger <ul style="list-style-type: none">Performance evaluation of the savonius rotorField trial, necessary modification & standardisation of the rotor. (5)Experimental characteristics of wind turbine blading over full 0-360 deg angle of attack. <ul style="list-style-type: none">Intensive experimental programme. Deduction & analysis of 360deg data & comparison with CFD results. Preparation of final report. (6)Supply, installation and commissioning of grid connected type gearless wind turbine (1 no.) and / or grid connected DFIG type wind turbine (1 no.) with capacity above >= 700kW inclusive of transportation, civil, electrical and other associated works	1 <							



Section 2

Inter se Priorities among Key Objectives, Success indicators and Targets (2013 – 2014)

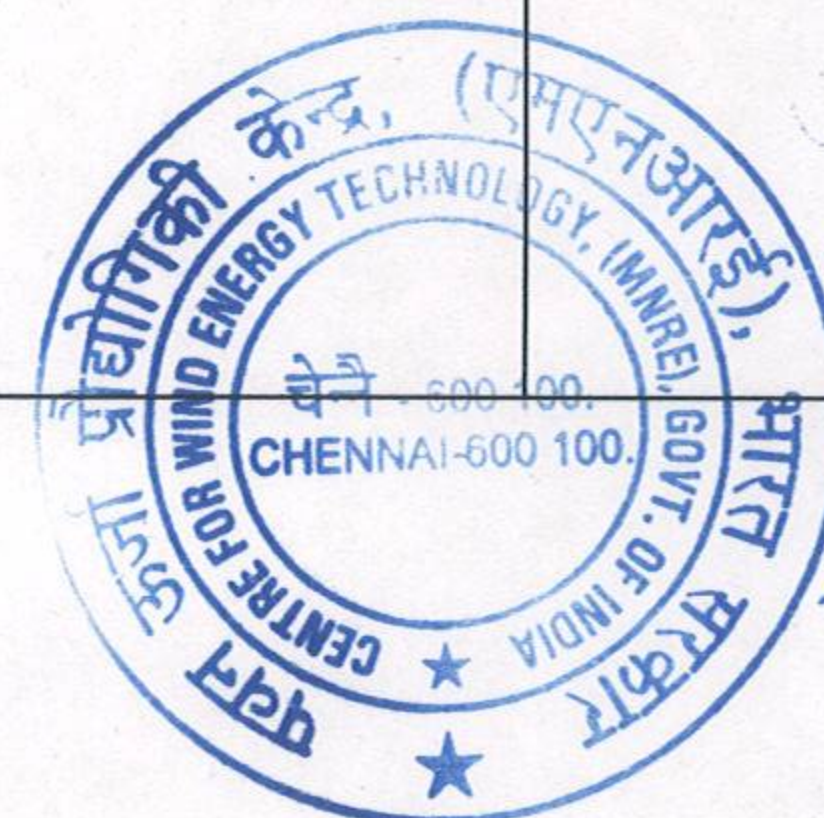
Objectives	Weight	Action	Success indicator	Unit	Weight	Target Criteria Value				
			Exce-llent			Very Good	Good	Fair	Poor	
			Committed			100%	90%	80%	70%	60%
		A. NO. OF PROJECTS COMPLETED (R&D)		Nos.						
		(1) Study on power quality issues in grid connected wind farms and identification of remedial measures – Tamilnadu Energy Development Agency (TEDA)	1		2	2	-	-	1	-
		(2) "Power Evacuation Studies For Grid Integrated Wind Energy Conversion System" - Anna University, Chennai	1							
		B. NO. OF PROJECTS COMPLETED (Wind Resource) (capacity)	50	MW	8	50	45	40	35	30
		A. NO. OF NEW PROJECTS INITIATED (R&D)	1	Nos.	1	1	-	-	-	-
		B. NO. OF NEW PROJECTS INITIATED (Wind Resource) (capacity)	500	MW	4	500	450	400	350	300
		NO. OF RESEARCH PAPERS PUBLISHED	2	Nos.						
					40					
2. To undertake and offer various value added services to customers / stake holders in the area of Wind Resource, Testing and Certification.	35	A. NO. OF ONGOING CONSULTANCY "PAID PROJECTS" (Testing & Certification)								
		(i) Large Wind Turbine (capacity >225 kW)	3							
		(ii) Small Wind Energy Systems (capacity 1 to 10kW)		Nos.	15	10	9	8	7	6
		(1) Testing of 1kW turbine	1							
		(2) Testing of 3.5 kW turbine	1							
		(3) Testing of 5.4 kW turbine	1							
		(4) Testing 3.2kW turbine	2							
		(5) Testing of 4.2 kW turbine	1							
		(6) Testing of 5.1 kW turbine	1							



Section 2

Inter se Priorities among Key Objectives, Success indicators and Targets (2013 – 2014)

Objectives	Weight	Action	Success indicator	Unit	Weight	Target Criteria Value				
						Exce-llent	Very Good	Good	Fair	Poor
			Committed			100 %	90%	80%	70%	60%
		B. NO. OF ONGOING CONSULTANCY "PAID PROJECTS" (Wind Resource) (capacity)	237	MW	15	237	213	190	166	142
		A. NO. OF COMPLETED CONSULTANCY "PAID PROJECTS" (Testing & Certification) (i) Large Wind Turbine * (capacity >225 kW) (ii) Small Wind Energy Systems (capacity 1 to 10kW) (1) Testing of 5.4 kW turbine (2) Testing 3.2 kW turbine (3) Testing of 4.2 kW turbine (4) Testing of 5.1 kW turbine	3 1 2 1 1	Nos.	2	8	7	6	5	4
		B. NO. OF COMPLETED CONSULTANCY "PAID PROJECTS" (Wind Resource)	152	MW	3	152	137	122	106	91
					35					
3. To undertake/ facilitate Human Resource development programmes for the personnel needed in the Wind Energy Sector	20	Conducting International Training Courses in a year	2	Nos	8	2	-	-	1	-
		Conducting National Training Courses in a year	2		8	2	-	-	1	-
		Issues of quarterly C-WET Newsletter 'PAVAN'	4		4	4	-	3	2	-
					20					



Section 2

Inter se Priorities among Key Objectives, Success indicators and Targets (2013 – 2014)

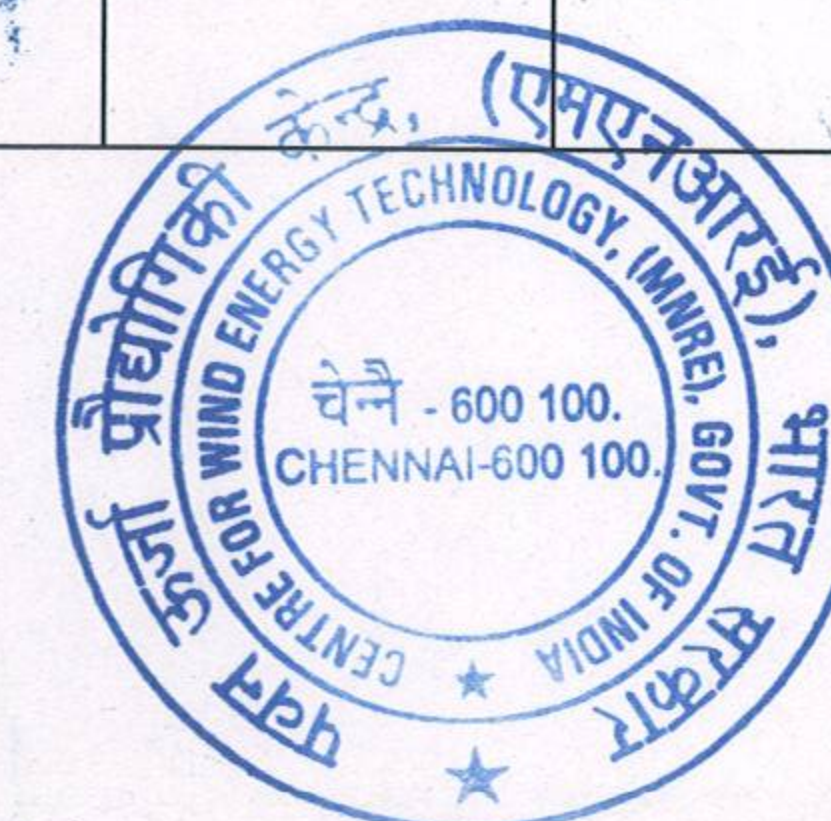
Objectives	Weight	Action	Success indicator	Unit	Weight	Target Criteria Value				
						Excellent	Very Good	Good	Fair	Poor
			Committed			100%	90%	80%	70%	60%
4. Efficient functioning of RFD systems	5	Timely submission of Draft for Approval	On-time submission	Date	02	05.03.2013	08.03.2013	09.03.2013	10.03.2013	11.03.2013
		Timely submission of Results	On-time submission	Date	01	02.05.2014	03.05.2014	04.05.2014	05.05.2014	06.05.2014
		Finalize a Strategic Plan	Finalize the strategic plan for next 5 years	Date	02	10.12.2013	15.12.2013	20.12.2013	24.12.2013	31.12.2013



Section 3

Trend Value of the Success Indicators

Objectives	Action	Success indicator	Unit	Actual Value for FY 10/11	Actual Value for FY 11/12	Target value FY 12/13	Projected Value for FY 13/14	Projected Value for FY 14/15
1. To promote and carry-out coordinate carryout research and development programmes in coordination with other institutions.	Interim report for on-going projects	10	Nos.	-	8	9	10	8
		600	MW				600	600
	Completion report for completed projects	2	Nos.	-	3	5	2	2
		50	MW				50	60
	No. of New Projects Initiated	1	Nos.	-	2	2	1	1
		500	MW				500	500
	No. of Research Papers published	2	Nos.	-	-	-	2	2
2. To undertake and offer various value added services to customers / stake holders in the area of Wind Resource, Testing and Certification.	No. of ongoing Consultancy "Paid Projects"	10	Nos.	-	92	96	10	8
		237	MW				237	230
	No. of completed Consultancy "Paid Projects"	8	Nos.	-	84	93	8	6
		152	MW				152	175
3. To undertake/ facilitate Human Resource development programmes for the personnel needed in the Wind Energy Sector	Conducting International Training Courses in a year	2	Nos.	-	1	2	2	2
	Conducting National Training Courses in a year	2		-	1	2	2	2
	Issues of quarterly C-WET Newsletter 'PAVAN'	4		-	4	4	4	4
4. Efficient functioning of RFD systems	Timely submission of Draft for Approval	On-time submission	Date	-	-	15.04.2013	-	-
	Timely submission of Results	On-time submission	Date	-	-	03.05.2014	-	-
	Finalize a Strategic Plan	Finalize the strategic plan for next 5 years	Date	-	-	15.12.2013	-	-



Section 4

Description and Definition of Success Indicators and Proposed Measurement Methodology

Sl. No.	Success Indicator	Unit	Definition	Proposed Measurement Methodology
1.	Interim reports of ongoing projects	Nos.	Preparation of technical progress/ completion of report	Presentation and approval of performance by GC,C-WET
	Final reports of Completed Projects			
	Agreement/ MOU signing for new projects initiated			
2	Interim reports of ongoing Consultancy "Paid Projects"	Nos.	Completion of test measurement	Preparation of report for clients. ISO/ NABL compliance
	Final reports of Completed Consultancy "Paid Projects"		Final reports submitted to customer/ clients	Report to client
	Agreement/ MOU signing for new projects initiated		Agreement/ MOU to be signed with Customer/ client	Agreement to client
3	Conducting International Training Courses in a year	Nos.	Conduction of International Training Courses	Successful completion of programmes and award of certificate to the participants
	Conducting National Training Courses in a year		Conduction of International Training Courses	Successful completion of programmes and award of certificate to the participants
	Special purpose HRD courses in wind energy through academic institutions		Joint formulation of programmes with external academic institutions and conducting courses	Successful completion of courses and award of course certificate to the participants by the institutions.
	Issues of quarterly C-WET Newsletter 'PAVAN'		Preparation of quarterly newsletter 'PAVAN'	Circulation of 'PAVAN' in public domain and in hardcopy.



Section 5

Specific Performance Requirements from other Departments

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

State Nodal Agencies:	Assisting technically WRA activities in various Indian States/ UT
Ministry of External Affairs	Funding under ITEC program to train International Participants in the field of Wind Energy
Ministry of New and Renewable Energy	(i) Funding for R&D/WRA/Solar projects (ii) CFA for office expenditure / capital expenditure etc.

