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C-WET
ISO 9001 : 2008

A News Bulletin from CENTRE FOR WIND ENERGY TECHNOLOGY, Chennai

www.cwet.tn.nic.in

ISSUE - 36
January - March 2013

EDITORIAL

In a fast developing economy like India , it is expected that investment flows in different sectors will have to balance each other which is more than evident in case of increased solar installed capacities to the tune of 1400 MW in this FY 2012-13, while there is over 40% reduction in the annual capacity addition in wind. But, the issues of evacuation and related road and grid infrastructure is ever increasing due to the higher penetration on renewable energy in the overall electricity generation mix. The silver lining in the cloud is the developments towards "Green energy corridor" proposed to be implemented by Power Grid Corporation of India Ltd. The report on the same is hosted in their web site and gives complete details of the expected growth of Renewable energy in India, in different states and suggests intra and inter-state transmission line net work, to facilitate green power to be used with seemless operation of the transmission and distribution network in India. It's an ambitious project and the "AD-deprived" Wind power sector will welcome this national thrust area initiatives. When the evacuation gets easier with the other policies in vogue, we will be optimistic that the current temporal slowdown will revive with greater interest in the newer areas with lower wind regimes. We all are aware that the contemporary wind energy technology is well proven and more so has gradual increase in capacity utilization factors in various wind farms. The Green Corridor project envisages a strong grid connection with flexible generation using hydro power plant with reservoir, pumped storage hydropower plant, combined cycle gas plants, and thermal plants, combining also Demand side Management and demand response, RE generation forecasting and energy storage systems. It is hoped the day and night wind power will also grow leaps and bounds along with the only day-light solar power with the Green Corridor in Place in India.

Review of documentation for several new small wind turbines which are due for testing during this wind season is under progress. Procurement of two new research wind turbines with different technologies namely variable speed gearless permanent magnet wind turbine and DFIG based wind turbines are under progress. Three R&D projects which are under final stage of completion are being monitored to get the final reports.

A new Wind Resource mast has been erected at two sites and over 36 sites, the wind resource data is being processed for verification. Micro survey projects in three sites are under way and a 50 MW wind farm project is under technical evaluation. A comprehensive study and measurement using Lidar and Sodar have been completed as part of the wind turbine wake modeling using CFD. The contract for 100 Meter mast at Dhanushkodi has been awarded for erection to gain offshore wind data. Several special training programmes have been organized for State Nodal Agency (SNA) representatives / executives including for the North East region of India.

Two Testing agreements have been signed and the preparatory works such as instrumentation and sensor installations are in progress for testing in this wind season.

A certificate has been renewed for a 225 kW machine. First working group meeting of ET-42 committee of BIS has been conducted and useful discussions for preparation of Indian Standards for wind turbines were completed and the draft is under circulation to Members. Review and verification of documents for the next RLMM committee is in progress.

10th International Training Programme has been in progress and will be completed exclusively for 21 African participants after 24 days during mid April. C-WET has also participated in the 100th Indian Science Congress at Kolkata. Foundation Day of C-WET was celebrated on 21st March, 2013 which marks 15 years of successful service as a Research Organization of the Ministry of New & Renewable Energy in wind energy technology, with a special lecture delivered by former Executive Director of C-WET Shri M. P. Ramesh. Several scientists were delivering invited lectures in various forums and conferences in India and Abroad.

I would honestly request you to give your valuable suggestions to swing back the growth ladder for wind power development in a fast track `industry interactive mode' with fruitful results of research.

S. Gomathinayagam
Executive Director

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Developments in R&D UNIT

Testing of Small Wind Turbine

Review of documentation for four models of Small Wind Turbine (SWT) was completed of which two were of vertical Axis Wind Turbine type. Safety & function test for a SWT model was completed at WTRS facility & the test reports were drafted during the period.

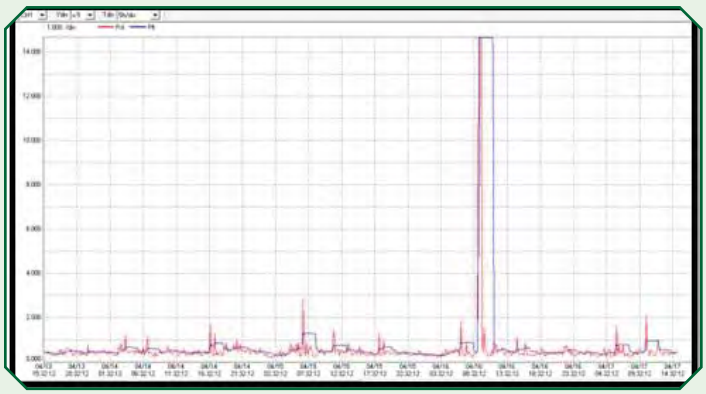
Small Wind Turbine Testing at WTRS, CWET

Procurement of variable speed Gearless and DFIG Wind turbines for research

The Research facility presently boasts of one number of 2 MW and 600 kW Wind Turbine which are of variable speed & constant speed type with gear box. As further augumentation of the research facility, it has been decided to procure two MW class turbine, one each with DFIG type & gearless type. With the addition of the two new turbines, the research facility will have turbines of all topologies and the research community of India would have ample scope to conduct various research related work.

Study on power quality issues in grid connected wind farms and identification of remedial measures

Data collection and analysis has been completed for Peedampalli and Pethappampatty Substations near Coimbatore with induction and DFIG based wind turbines respectively. Data analysis has classified the recorded events mainly as sag, swell, transients and interruptions. Flicker and harmonics have also been measured. Further power quality measurements are planned for a wind farm with synchronous generators.



Flicker recorded at 110 kV Group control breaker point

Move on in WRA UNIT

During the period from January to March 2013, 8 new wind monitoring stations have been established in 3 states (1 station in Arunachal Pradesh, 3 stations in Orissa, 3 stations in Uttarakhand and 1 station in Uttar Pradesh). Presently, 97 wind monitoring stations are in operation in 17 States and 1 Union Territory under various wind monitoring projects funded by the Ministry of New and Renewable Energy (MNRE) as well as for various entrepreneurs.

The following consultancy projects have been completed and the reports submitted during this period

- Wind Power Density (WPD) map for 5 sites.
- Technical Evaluation for the proposed 50 MW wind farm project.
- Wind Monitoring studies for 2 sites.
- Verification of procedure of wind monitoring for 36 sites
- Wind Characteristic study for 1 site.
- Micro Survey project for 3 sites.

R&D projects in progress

- Technical committee meeting was conducted for discussion & clarification received from vendors for Offshore 100 m met mast fabrication, installation and commissioning work at Dhanuskodi, Rameshwaram on 7th January, 2013 and work order has been issued to the technically suitable vendor.
- Wind Turbine wake modeling (CFD and Linear) and validation with in-situ measurements using Triton SODAR & LIDAR at Kaythar has been carried out.

- Micro level wind atlas for Uttarakhand is under progress by using existing 5 km X 5 km mesoscale model data and the same will be submitted to NREL for preparing 1 km X 1 km resolution data.

Special Training Programme

WRA unit had successfully conducted a Review Meeting of ongoing WRA Programme in North East (NE) Region and a Special Training course on Wind Resource Assessment Methodology & Techniques for officials from NE region, State Nodal Agencies (SNAs) at Guwahati, Assam during 9th - 10th January 2013. Twenty two officials from nine SNA's participated including Project Directors /officers, Engineers & Technicians.

Shri. Anirudha Rout I.A.S, Chief Executive Officer of Orissa Renewable Energy Development Agency (OREDA), Shri. Haresh Chandra Dutta, ACS, Director, Assam Science Technology & Environment Council and Shri. D.R. Das, Scientist 'F', Guwahati Regional Office, Ministry of New and Renewable Energy (MNRE) were also participated as Special Invitees.

Review Meeting in WRA Programme

Shri. K. Boopathi, Scientist & Unit Chief (i/c), WRA welcomed all the participants and presented a brief report on the C-WET activities and on various facets of a Wind Resource Assessment programme that are being carried out throughout India. State wise review/discussion was made and deliberations were also taken up simultaneously.

Participants from 9 SNAs and C-WET staff

Shri. A. Haribhaskaran, Scientist, WRA, C-WET gave a detailed presentation on the tools / sensors / instruments that are widely used for Wind resource assessment and the procedure involved in selecting the site for erecting a met mast. SNA officials were given detailed training on handling the Global Positioning System (GPS), Various Data loggers, Sensors (Anemometers, Wind Vanes, Temperature & pressure Sensor), Software's (Google Earth, Windographer etc.) used for wind resource assessment by C-WET engineers, B. Krishnan, T. Suresh Kumar and R. Vinod Kumar.

All the participants expressed interest to organize a tripartite meeting inviting all the private manufactures from the wind industry, officials from MNRE & C-WET and SNA officials from each state, especially from NE region, J&K and Kargil regions which will be very much useful in developing wind power projects.

Also, all the participants from the SNA's have requested C-WET to conduct a full fledged training programme for two weeks covering all the facets of wind turbine technology.

The Review Meeting/training was well appreciated by the participants.

Steps forward in TESTING UNIT

- Measurements for Type Testing of Elecon 600 kW wind turbine of M/s. Elecon Engineering Company Ltd. at Chettikurchi site, Kovilpatti Taluk, Tuticorin District has been completed and test reports issued to the customer.

- An agreement was signed between C-WET and M/s. Jyoti Ltd. for Type testing of WIND JYOTI – SE 850 – 56 / 70 kW wind turbine and measurements are expected to start during the windy season of 2013.

Visitors to the Unit

- Meeting held with Mr. Subhash from M/s. Garuda regarding discussion on finalization of Type testing reports of Garuda 700 kW wind turbine on 5th February 2013.
- Meeting held with Mr. Vir Singh and Mr. P. K. Mullick from M/s. Inox Wind regarding discussion of their new request on Prototype Testing of Inox WT2000DF Model as per GL 2010 on 25th February 2013.
- Meeting held with Mr. Jordi Ferrer, Managing Director, M/s. Vortex regarding discussion on forecasting project on 13th March 2013.

Achievements

- An indigenous data acquisition equipment development has been completed and same is currently being tested at the site.

Marching ahead in S&C UNIT

Agreement has been signed with M/s. Southern Wind farms Limited for renewal of Certificate of GWL 225 wind turbine model under Category-III as per TAPS-2000 (amended). Carried out review / verification of documentation in

Issuing renewed Certificate to M/s. Southern Wind Farms Limited

connection with renewal of Certificate of GWL 225 wind turbine model. Based on the review / verification, renewed Certificate has been issued to M/s. Southern Wind farms Limited.

Organized first Working group meeting on Standards to discuss the comments on two draft Indian Standards on

Discussion during C-WET's Working Group Meeting on Standards

"Wind Turbines Part I: Design requirements" and "Electro technical Vocabulary – Part 415: Wind Turbine Generator System".

Unit Chief, S&C along with ED, C-WET participated in 4th Wind Turbines Sectional Committee (ET42) meeting held at Bureau of Indian standards, New Delhi on 22nd February 2013.

Review / verification of documentation received from a wind turbine manufacturer for installation of two prototype wind turbine models in India as per MNRE guidelines has been completed. Organized the Second Committee meeting on prototype wind turbine models. Letter has been issued by C-WET for two prototype wind turbine models, as decided by the Committee, to the concerned State Nodal Agency in connection with grid synchronization.

Documentation / information have been obtained from various wind turbine manufacturers in connection with Revised List of Models and Manufacturers of wind turbines (RLMM) Addendum – II to Main List dated 31st July 2012. Review / verification of documentation is under progress.

The continual improvement and maintaining the Quality Management System are ongoing.

Highlights from ITCS UNIT

The Information, Training and Commercial Services (ITCS) unit was engaged in activities pertaining to planning and preparatory works towards successfully organizing training programmes, upgrading the infrastructure for good research environment in C-WET by providing Training / Meeting facilities, coordinating campus visits to various visitors and serving as information center for selective dissemination to promote wind energy in the country.

TRAINING PROGRAMMES

Tenth International Training course

The Unit has successfully organized 9 International training Courses and a special course for AOI engineers in the past. The Tenth International training course on "Wind Turbine Technology and Applications" is scheduled during 20th March – 12th April 2013. This is a special course for African Countries sponsored by Ministry of External Affairs (MEA), Government of India and supported by Ministry of New and Renewable Energy, Government of India.

The course was inaugurated by Shri. M. P. Ramesh, President, Wind World (India) Ltd. and former Executive Director, C-WET.

Shri M.P. Ramesh releasing the course material

The course content for the training was very comprehensive syllabus with experts in various fields giving lectures and specific case studies. Practical training with Wind Resource Assessment, instrumentation, Testing equipment, R&D equipment was made available and large Wind Turbine manufacturing factory visits and Small Wind Turbine manugfacturing training cum workship at M/s. MinVayu facilities, Auroville, and also wind farm visit to Wind Turbine Research Station, Kayathar & operating wind farms in and around Kanyakumari is also scheduled to provide complete knowledge transfer.

Participants in front of C-WET Campus

Participation in Exhibitions

The unit had established C-WET stall in the 100th Indian Science Congress "Pride of India " Exhibition held during 3rd to 7th January 2013 at Kolkata and demonstrated the activities and services of C-WET and created awareness about wind energy. Thousands of professionals, researchers, students and general public visited C-WET Stall.

C-WET Stall in 100th Indian Science Congress

Visitors to the Campus

To motivate the students towards research on wind energy, achieving the indigenization and also to create awareness about the C-WET's activities and services, C-WET encourages School and College students to visit the campus. During the period from January to March 2013, the following visits were coordinated by ITCS Unit. Shri P. Kanagavel, Scientist & Unit Chief (i/c) has made a presentation on wind energy and it's status along with C-WET's activities & services during the visits and the campus renewable energy facilities were also explained / showcased in detail.

- 3rd year students of Mechanical Engineering Department from SJS Paul Memorial College on 5th February 2013.
- Students of BE Computer Science and Engineering of Panimalar College of Engineering, Chennai on 6th February 2013.

Wind-Solar Hybrid system are being explained

- Students of BE Computer Science and Engineering of Panimalar College of Engineering, Chennai on 8th February 2013.
- PGD WPD & WRA students of Amrita School of Engineering, Coimbatore on 13th February 2013.
- Students of BE Electronics and Communication Engineering of SA Engineering College, Chennai on 15th February 2013.
- 3rd year students of Mechanical Engineering Department from Kamaraj College of Engineering on 18th February 2013.
- MBA Students of Jerusalem College of Engineering, Chennai on 19th February 2013.
- 4th to 7th Standard Students of Ponvidhyasramam, Chennai on 20th February 2013.

School children enthusiastically listening to the lecture

- Final year M. E Mechanical Students of Velammal Engineering college, Chennai on 25th February 2013.

Special Visits

- 22 International participants of the training course "Wind Power Development and Use" organized by LIFE Academy, Sweden as part of the Regional Phase on 1st March 2013.

- 12 international participants as part of the ITEC training programme on "Decentralized Distributed Generation and Rural Distribution Management" organized by Rural Electrification Corporation Ltd., (REC), Hyderabad on 14th March 2013.

Awareness Creation through Media

Shri P. Kanagavel, Scientist & Unit Chief (i/c) participated in the 15 minutes interview at All India Radio, Chennai on "Adaptation of Wind Energy in Land & Sea, promotional schemes & advent of micro turbines" in Tamil on 5th February 2013, which was broadcasted on 20th February 2013 in the "Anaivarukkum Ariviyal" Programme.

Windy Acts at WTRS UNIT

Operation & Maintenance works like maintenance of Transformers, Power Panels & Control Panels etc. of 9 nos 200 kW MICON wind Electric Generators is under progress for the windy season 2013.

Maintenance of Panels of 200 kW Micon Machine

Preparation of 200 kW Micon Machine Transformer

Technical Visits

- 22 SIDA , Swedan delegates from different countries visited the R&D facilities at WTRS, Kayathar and had inter-activity practical session on 4th March 2013.

Exposure of R&D Facilities at WTRS Kayathar for SIDA Delegates

- 60 students of final year EEE branch and 2 staff members from Dhanalakshmi Srinivasan Engineering College, Perambalur District, Tamil Nadu visited the R&D facilities at WTRS, Kayathar and had field interaction session on 8th March 2013.

Industrial visit by Engineering college students

Advances in SRRA

- Site selection and micro-siting was carried out in Chhattisgarh, Kerala and Assam for establishment of SRRA stations under SRRA Phase-II programme.
- SRRA stations at Women's Polytechnic College, Pondicherry and Vellore Institute of Technology, Vellore are relocated successfully.
- R&D proposal on "Multi-technology 100 kW R&D solar power plant as an intercrop" in C-WET research wind farm at WTRS, Kayathar submitted.
- MoU finalized with Prathyusha Institute of Technology Management, Chennai for taking up R&D projects.
- Selling of SRRA data on a commercial mode has been initiated and data has been provided to M/s. Garrad Hassan India Pvt. Ltd., M/S Tata Power Company Ltd., Mumbai and M/s. Godavari Green Energy Ltd., Jaisalmer.
- Review meeting on Maintenance issues of Phase-I SRRA stations was held at Solar Energy Corporation of India, New Delhi on 23rd January 2013.
- Tender opening for SRRA Phase-II project completed during January 2013.
- Technical Committee meeting for evaluation of global bids received for Phase-II, SRRA Project was held on 15th March 2013.

Visitors to the Unit

- GIZ/Suntrace experts visited SRRA unit for implementation and up gradation of quality control algorithm during the period 11th to 22nd February 2013.
- Representatives from I-Acharya and UL India Ltd.,, Bangalore visited SRRA for finalizing MoU in respect of knowledge sharing programme.

Invited lecture delivered / meeting attended by C-WET Scientists in external forums

Dr. S. Gomathinayagam, Executive Director

- Discussion of Draft Report on Offshore Wind Power Development at Ministry of New and Renewable Energy, New Delhi on 4th January 2013.
- Meeting with Secretary at Ministry of New and Renewable Energy, New Delhi on 10th January 2013.
- "Wind Energy-Way forward" at International Workshop on RE Climate Change & Energy Management 2013 organized by Federation of Indian Chambers of Commerce and Industry (FICCI) on 28th January 2013.
- Adhoc Task Force (RFD) Meeting at New Delhi on 1st February 2013.
- Standards Working Group Meet on 5th February 2013.
- Solar Pump Tender meeting at TEDA on 11th February 2013.
- Panelist for the "Wind Power-Key to future sustainability" – Green Energy Summit 2013 at New Delhi on 14th February 2013.
- Hindi meeting at Ministry of New and Renewable Energy, New Delhi.
- Chief Guest for the 4th National Level Symposium, Pradyotsava 12 at Prathyusha Engineering College, Thiruvallur on 21st February 2013.
- Wind Turbines Sectional Committee (E42) meeting at

BIS, New Delhi on 22nd February 2013.

- Round Table meeting at IIT Madras on Bureau of Energy Efficiency (BEE) on 23rd February 2013.
- "Pure Mobility Connect 2013" workshop on clean and sustainable transportation on 25th February 2013.
- "Wind Power Development in India- Way Forward" in the Regional Phase of the international training on "Wind Power Development and Use" organized by LIFE Academy, Sweden on 27th February 2013 held at Hotel Raj Park, Chennai.
- TEDA meeting on Scheme on Energizing street lights with solar power on 1st March 2013.
- Chief Guest for Intra Departmental "TECHFEST" held at Jerusalem College of Engineering on 11th March 2013.
- Committee meeting on Prototype wind turbine models on 12th February 2013.
- Secretary Meet at Ministry of New and Renewable Energy, New Delhi on "Findings on wind resource potential in India" on 14th March 2013.
- Doctoral Committee Meeting of Mr. Surendra Bogadi, Assistant Professor, Rajalakshmi Engineering College, Chennai.
- Governing Council meeting of C-WET, MNRE, New Delhi on 28th March 2013.

Rajesh Katyal

- "Wind Turbine Towers and Foundations" and Small Wind Turbine and Hybrid System at Amrita School of Engineering, Coimbatore on 26th February 2013.

K. Boopathi

- Techno Commercial discussion / meeting with NLC officials on 7th & 8th February 2013 at C-WET, Chennai.
- Techno Commercial discussion / meeting with M/s.THDC India Ltd., on 11th to 14th February 2013 at Rishikesh, Uttarakhand.
- Techno Commercial meeting / discussion with NLC officials for the proposed 50 MW wind farm project in India at Neyveli Lignite Corporation, Neyveli on 28th February and 1st to 2nd March 2013.
- Meeting with GM / officials of Karnataka Renewable Energy Development Agency, Karnataka on implementation of 100 m Anemometry project and other ongoing WRA programmes in Karnataka on 11th March 2013.
- "Wind Resource Assessment Techniques & Wind Resource Assessment using remote sensing Instruments at Amrita School of Engineering, Coimbatore on 15th March 2013.

WRA Unit

- Meeting to discuss the wind potential of Assam and establish WMS in Assam by Oil India Limited (OIL) in collaboration with Assam Energy Development Agency (AEDA) convened by Oil India Limited at Guwahati on 11th January 2013.

S. A. Mathew

- "Wind Energy Challenges and Prospects" to the officers of Southern Railway Headquarters, Southern Railway, Chennai on 5th February 2013.
- "Testing and Certification of Wind Electric Generator" in the PGD Wind Energy Program at Amrita School of Engineering, Coimbatore on 26th February 2013.

M. Anvar Ali

- "Wind Energy Technology" in Electrical & Electronics Department at Sathyabama University, Chennai on 26th February 2013.

A. Senthil Kumar, Scientist & Unit Chief

- 4th Wind Turbines Sectional Committee (ET42) meeting at Bureau of Indian standards, New Delhi on 22nd February 2013.

P. Kanagavel

- "Overview of Development of Renewable Energy in India" in the Regional Phase of the international training on "Wind Power Development and Use" organized by LIFE Academy, Sweden on 27th February 2013 at Hotel Raj Park, Chennai.
- "Role of C-WET on Wind Power Development in India" including C-WET's activities & services in the Regional Phase of the international training on "Wind Power Development and Use" organized by LIFE Academy, Sweden on 1st March 2013 at C-WET, Chennai.
- "Wind Energy at a Glance" along with C-WET's activities & services for ITEC training participants of the course on "Decentralized Distributed Generation and Rural Distribution Management" organized by Rural Electrification Corporation Ltd., Hyderabad, while visiting C-WET campus on 14th March 2013.
- Inaugurated the CSIR Sponsored Two day Workshop on "Intelligent Controllers for Renewable Energy Systems" as Chief Guest, which was organized during 22nd - 23rd March 2013 by the Department of Electrical & Electronics Engineering of Paavai Engineering College, Namakkal and delivered lecture on "Role of Renewable Energy Systems in Future Scenario & Building and Operation of Wind Energy Systems" on 22nd March 2013.

Dr. G. Giridhar

- Parliamentary Committee meeting on Energy during the period 2nd – 7th January 2013.
- Inaugurated and delivered the inaugural address on Solar Energy at Sai Ram Engineering College, Chennai on 1st March 2013.
- Visit to UL Lab, CPRI and ETDC Bangalore for test equipment familiarization during 23rd to 27th February 2013.

R. Sasikumar

- Parliamentary Committee meeting on Energy during the period 2nd – 7th January 2013.
- "National Convention on Challenges, Innovation and opportunities to enact Kyoto Protocol" at Sathyabama University on 28th February 2013.
- Presentation in the Hyderabad Solar Investment Summit at Hyderabad on 1st February 2013.

The following staff delivered lecture(s) in the 10th International Training course on "Wind Turbine Technology & Applications" Specially for African Countries scheduled during 20th March – 12th April 2013.

No	Title	Speakers
1	+ Wind Energy Conversion Technology and Power Generation + Wind Turbine Tower Concept	**Dr. S. Gomathinayagam** Executive Director
2	+ Role of C-WET in Wind Energy Development + Wind Energy Development in India	**P. Kanagavel** Scientist & Unit Chief (i/c), ITCS
3	+ Wind Resource Assessment Techniques + Wind Resource Assessment by using Remote Sensing Instruments + Wind Turbine Components	**K. Boopathi** Scientist & Unit Chief (i/c), WRA
4	+ Siting Guidelines for Wind Measurements + Monitoring Station Instrumentation and Installation	**A. Hari Bhaskaran** Scientist, WRA
5	+ Measurement Parameters and Data Analysis	**G. Arivukkodi,** Assistant Engineer, WRA
6	+ Drive Train Concepts	**David Solomon,** Scientist, R&D
7	+ Design aspects of Wind Turbine Gearbox	**N. Raj Kumar,** Scientist, S&C
8	+ Wind Electric Generators & Types	**A. G. Rangaraj,** Scientist, S&C
9	+ Wind Turbine Foundation + Small Wind Turbine Testing and Hybrid Systems	**Rajesh Katyal** Scientist & Unit Chief, R&D
10	+ Grid Integration of Wind Turbine	**Deepa Kurup,** Scientist, R&D
11	+ Wind Power Evacuation	**M. Anvar Ali,** Scientist, WTT

14th & 15th National Training Courses of C-WET in 2013 Lookout! (Pl. visit cwet.res.in)
29th to 31st May 2013 & 27th to 29th November 2013

Promotion

Name	Cadre From	Cadre To
J.C. David Solomon	Scientist 'C'	Scientist 'D'

Visits Abroad

S. Arulselvan, Assistant Engineer, S&C, attended workshop on "Wind Power Development and use" organized by Life Academy, Sweden at Shanghai, China during 30th & 31st January 2013.

Publications

Rajesh Katyal, "Wind Turbine Towers Using Parametric Approach" was prepared and hosted online in Journal of Wind Engineering and Industrial Aerodynamics.

Prasun Kumas Das, Sidhartha Kayashap, Sadhan Mahapatra and Dr. G. Giridhar; Solar Energy Resources estimation of Assam, India, ISES Solar World Congress 2013 (Accepted).

HR DEPARTMENT ROLE & ITS UNIQUE SUPPORT REQUIRED FOR WIND TURBINE INDUSTRY

A.S.Karanth, Wind Energy Advocate / Consultant, Bangalore E-mail : askaranth@gmail.com

The wind power development has been progressing even though there had been ups and downs in the rate of growth in India. New technologies are ushering in and at the same time, trends are towards megawatt class type of turbines and these are preferred by developers to get the best use of known locations and optimum available land utilization. While all efforts are put in the up-gradation of technology, in terms of turbine selection, operation and maintenance methods, power evacuation systems, the importance to be given to human resources in supporting this activity is generally considered last in the list.

Whatever may be the sophistication brought in, one should not ignore the fact that the manpower support, in using this technology is the key factor for the optimum results. By some compulsion under ISO, there is little effort put in training of the people. Generally, it is not adequate. One needs to see the various facets of this Human Relation approach subject, especially in operation & maintenance of wind farms.

There are two classes of personnel, one group belong to original turbine manufacturing companies and other work for O&M contracting agencies. It is true that these new Technology & MW class turbines have not reached the service providers domain in India. The turbine manufacturing companies do consider training as one of the foremost aspect for good O&M of the farms. Here the people are generally trained for this technology assimilation in India and also sometimes at suppliers manufacturing set ups & its licentiate parent company set ups. They are also trained for exposure with standard training programs like fine fighting, first aid, interpersonal skills etc.

However, there are additional features of these men working at remote wind farm sites. Generally they are young, away from home and families. They need to work at heights and other tough situation of locations and weather conditions. They need special stamina to keep going on top of turbines. In some set ups there may not be even good safety tools at their disposal. The decision-making and right analysis of the problem and fault finding totally depends on the mental agility of the person. Specific technology turbine experience may simplify the fault finding of repeated type breakdowns. The inadequacy of sharing the experience information amongst same group personnel, or not documenting for future reference adds to the inefficiency of the operation.

These people are working under these stringent conditions, with lesser opportunity for good life, entertainment and food, unlike other employees of the same company since working in factories or manufacturing units. They need special care and attention. The HR department needs to set up different evaluation criteria for keep tracking of the motivation factor amongst such people. In few places they do check, for likely vertigo problems, by monitoring their sustenance for climbing towers, on a continuous basis. Most important is that there should be better listening and acceptance criteria of these site men grievances, fulfilling of requirement of safety tools & equipment along with genuine demands for better living standards in such remote places. These can be the wind farm sites or in some cases, even nearby habitat towns. Except in Tamil Nadu and partly Karnataka wind farm sites, most of the other locations are not having the advantage of comfortable social living conditions; one would aspire apart from job satisfaction.

To give a change and avoid monotony in working in such sites conditions, the employer needs to plan some job rotation.

Over years, as the family grows the senior site staff would long for moving closer to towns equipped with schools and colleges. So there is a serious challenge in

the motivational aspects of these young technicians in the long run. At the same time the industry does not have such a growth, where there is enough opportunities for job rotation and also consider taking them for manufacturing / factory related jobs. It is more critical to address the seniority issue when they attain after few years of site experience. So HR department need to carefully plan its recruitment as there is business expansion and new locations are identified. It is also necessary for the service department to analyses the different skills involved in the total O&M of wind farm and segregate manpower skills into special and routine support operation. For the latter, one should encourage, the local educated labor and train them. At the same time, for odd jobs of seasonal maintenance, it is worth considering the services on contract basis, so that they would complete in the specified periods and leave the site. This would also help in planning the right combination skills of regular employees. These people can be taken care for not only lateral movement in hierarchy within the organization but also for motivational job rotation opportunities. The employer may need to continuously plan at macro level the future of these skilled people and modify the plans when the new locations are identified. Here attrition is an issue.

In other wards, there may be necessity of grading these locations from the HR angle, for creating some balance, amongst experienced staff in term of motivation and job satisfaction for optimum performance.

It is also happening with shortage of skilled or trained manpower, people change job, having acquired short experience for better emoluments and more to get change in comfort level for him or the family. How many HR personnel in Wind Industry closely monitor the individual necessities and keep changing the support to retain its turbine technology exposed people for reasonable time, before planned rotation was possible?

It is needless to say the troubleshooting and restoring quickly the machine under fault is very much dependant on these motivational factors and also their comfort level. This would certainly assist in having better performance of machines.

For items located in the Nacelle, on top of the tower, one needs to judge & manage with the least no of calls of 'replace fit and start' type of approach. This approach can be easily done in land based equipment maintenance. It is very difficult to pinpoint what could have been the best alternative to put back the machine in operation. So one's decision of the right method of trouble shooting goes long way. It helps even in reducing the cost of maintenance and hence attitude, comfort level of these employees, at every juncture of such challenges plays a major role.

With the above explanation of facts of the type of work in MW machines, the HR plays an important role. Hence, there need to be special attention and support for this area of management in the wind power industry. I even suggest there should be different HR personnel exclusively for Site HR management issues in each company, who spend more time observing, understanding, talking to personnel, making changes in its rigid policies which would have been framed suiting the requirements of manufacturing activity. Many employees working in sites may not even meet HR personnel for a long time in their career. It is quite obvious to use the subcontract agencies for mundane jobs or some specialized jobs. Even these people need special attention in not only to make sure they satisfy the statutory requirements of the company but to ensure basic human approach to them, as equivalent to what is given to its own permanent employees. However the site supervisors or managers are trained in these issues, the way India operations take place, they seldom use them for the right approach.

In overall review HR plays a major role in exercising the right foundation, good nurturing of the operation of all the wind turbines, to get the most for its life time.

Reaction, comments to this paper is welcome, by writing to below contact, to improve the awareness, amongst us to do better things when possible.

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Published by :
CENTRE FOR WIND ENERGY TECHNOLOGY (C-WET)
An autonomous R&D Institution established by the Ministry of New and Renewable Energy (MNRE), Government of India to serve as a technical focal point of excellence to foster the development of wind energy in the country.
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