

SUMMARY OF CONFERENCE PROCEEDINGS

RE REGULATION INDIA 2010



Inaugural Session

Dr. Pramod Deo , Chairperson CERC	<p>Gave insight into CERC's recent RE promotional initiatives</p> <ul style="list-style-type: none">✓ CERC RE tariff regulation✓ Specific provisions for solar tariff under the CERC regulation✓ FOR – RPS framework and model regulation for SERCs✓ Amendments in the IEGC so as to address the scheduling and dispatch issues of RE (wind & solar)✓ Proposal for continuing generic tariff for solar thermal for 2 yrs.
Mr. G.M. Pillai , DG, WISE	<ul style="list-style-type: none">✓ Explained Importance of renewables in the background of climate change✓ Explained RE developmental role of Regulatory Commissions in India
Mr Tulsi Tanti , CMD , Suzlon Energy Ltd	<ul style="list-style-type: none">✓ Importance of RE in mitigating climate change and global warming✓ RE generation provides sustainable growth , energy security, green job✓ Example of China as model for growth

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Session 1 : Highlights (Global best practices and India)

<p>Dr. Benjamin Sovacool (Global best practices in RE Regulation)</p>	<ul style="list-style-type: none"> ✓ Explored the best RE promotional policy / regulatory mechanism amongst several available options (based on sample interviews and literature review) ✓ Most preferred policy options : Eliminating subsidies for conventional technologies, pricing electricity accurately , FIT, creating National System Benefit Fund (combination of policy mechanism for desired result) ✓ Most effective : Feed-in Tariff (if single policy is to be introduced) ✓ Advocated need for promoting RE and EE on equal ground to achieve the desired objectives
<p>Mr. Mahesh Vipradas (Renewable Energy and Regulation in India : History and Overview)</p>	<ul style="list-style-type: none"> ✓ Summarised the evolution of RE regulation over the period ✓ Formation of DNES , MNRE , Enabling provisions under EA 2003, NEP, NTP , FOR : Policies for Renewables ✓ Recent regulatory provisions under the NAPCC and National Solar Mission ✓ Introduction to REC framework etc..

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Session 1 : Highlights (continued)

<p>Mr. Prashant Joshi (National review of implementation of ERC orders)</p>	<ul style="list-style-type: none"> ✓ Reviewed of some important RE tariff orders / RPS orders issued by SERCs of MH, TN, AP, Rajasthan ✓ Shown Impact of above orders in terms of RE capacity addition ✓ Issues : Wheeling charges for RE , choice between penalty or incentive driven mechanism for promotion of RE
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Session 2 : Highlights (RE technology development – state of Art)

Mr. Pradip Vesvikar <small>Grid connected RE (SPV & CSP)</small>	<ul style="list-style-type: none"> ✓ Possible technological options and configuration under SPV (PV & CPV) and solar thermal grid connected technologies ✓ Project development status across the globe / India
Mr. Rajendra Kharul <small>Grid connected RE (Wind)</small>	<ul style="list-style-type: none"> ✓ Global and Indian scenario of Wind power development ✓ Market shift trend : Europe to Asia ,USA, Africa ✓ Re-powering potential in India (1000 MW) ✓ Challenges – disposal of old machines, regulatory and policy issues, financing issues ✓ Off-shore wind power potential
Mr. G.N. Kamath <small>Cost of generation and grid parity</small>	<ul style="list-style-type: none"> ✓ Explained grid parity with regard to residential , Utility scale , off-grid application of RE ✓ Wind Grid parity projections in Europe (Projects in high wind regime achieved grid parity wrt gas, nuclear, coal based projects). In India difficult to achieve grid parity due to low wind regime ✓ Solar cost projections and expected timeframe for achieving grid parity

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Session 3 : Highlights (Indian Regulators forum)

Mr. V.P.Raja <small>Chairman, MERC</small>	<ul style="list-style-type: none"> ✓ Reviewed National policy and regulatory framework for RE ✓ Reviewed MH Wind tariff order (Nov 2003) ✓ RPO/ RPS implementation experience in MH ✓ Impact of regulatory measures on RE capacity addition ✓ Proposed new Regulatory framework for MH ✓ Issues : Difficulties in meeting RPS obligation by utilities
Mr. Pravinbhai Patel <small>Member (T) , GERC</small>	<ul style="list-style-type: none"> ✓ GoG Policy for solar : GETCO to lay transmission lines for solar projects , concessional wheeling charges for captive transaction ✓ GERC : Solar tariff order (outside GBI) of Jan 2010 does not adhere to the CERC tariff norms. Still able to attract investors ✓ Issues : CPP filed case in High Court against RPS imposition
Mr. Anand Kumar <small>Member (T) , UERC</small>	<ul style="list-style-type: none"> ✓ UERC SHP tariff regulation subjected to revision so as to make it consistent with CERC tariff regulation ✓ Willing to internalize the subsidies / incentives
Mr Tejsingh Tewatia <small>Member HERC</small>	<p>Reviewed Biomass power project tariff order in detail</p> <p>Issue : Single part tariff – subject to risk of fuel price / quality change</p>

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Session 4A : Highlights (RE connectivity and transmission issues)

<p>C N Raghupathi, (RE and smart grid)</p>	<p>Benefits to RE :</p> <ul style="list-style-type: none"> ✓ Integration of distributed generation ✓ Solution to the intermittency of RE with help of distributed energy storage ✓ Issues : Initial investment , IT adoption level of utilities (5-15 years to reach the stage)
<p>Dr. R Nagaraja, Intra-state transmission of RE</p>	<ul style="list-style-type: none"> ✓ Intra-state transmission of RE: issues in RE potential states ✓ T N : PLF assumption for planning of evacuation system ✓ Karnataka : Low system demand during high wind season ✓ MH : Right of way hurdles ✓ Gujarat: Inadequate evacuation facility in high wind region ✓ Rajasthan : Windy region has very low load demand
<p>S.P. Kumar , (Grid codes)</p>	<ul style="list-style-type: none"> ✓ Elaborated proposed IWGC in detail ✓ Comparison with wind grid code in other countries

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Session 4A : Highlights

<p>B Jeyaraman (TN – case study in planning and management of grid)</p>	<ul style="list-style-type: none"> ✓ Integrated use of Wind and pumped storage capacity (400 MW) gives the required operational flexibility to deal with the intermittent generation from wind. ✓ Use of reliable weather forecast techniques to predict the next day wind generation and accordingly scheduling for conventional generation facilities. ✓ Imposition of penalty for reactive power consumption. .
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Session 4B : RE based micro-generation

- ✓ Potential : Approx. 80,000 MW
- ✓ Need strong regulatory support for capacity realization
- ✓ Grid connectivity standards to address the Micro-generation technology specific issues
- ✓ MNRE task force on grid connectivity issues for roof top solar system preferred feed-in tariff on gross basis as better option over net metering in Indian countries.
- ✓ Whether micro-generation is eligible for compliance of RPS obligation, and REC mechanism

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Session 5 : Special Session on Wind power Regulation

<p>D.V. Giri Chairman , IWTMA</p>	<p>Wind : Towards 5000 MW annual market by 2015</p> <ul style="list-style-type: none"> ✓ WIND: No more tax man game ✓ Regulators to do : REC Implementation, Grid Code, CDM Benefits and GBI - exclusive of Tariff ✓ Decision on continuing of Accelerated Depreciation on the basis of monitoring the actual PLF of GBI and AD projects ✓ Need for Resource Assessment, Re-powering and Forecasting ✓ 5000 MW annually is achievable road map
<p>Charudatta Palekar Principal consultant PWC</p>	<p>Wind power feed –in tariff : Global experience and lessons for India</p> <p>Issues in Indian wind FIT :</p> <ul style="list-style-type: none"> ✓ Substantial variation in normative parameters across the state, assumption of capital cost ✓ Need to assess economic impact of feed-in tariff across all stakeholders

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Session 5 : Special Session on Wind power Regulation

<p>Charudatta Palekar Principal consultant PWC</p>	<p>International experience (wind)</p> <ul style="list-style-type: none"> ✓ Germany : separate tariff for on-shore and off-shore wind projects, Degression of FIT over the time to promote efficiencies and reduce cost ✓ Spain : FIT linked with forecasting of wind (20% deviation is allowed) , premium over fixed price in case of market sale. ✓ China : Wind resource-wise feed-in tariff
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Session 6 : Role of Regulators in facilitating RE objectives in NAPCC

<p>V Subramanian Secretary General, INWEA</p>	<p>NAPCC and National Solar Mission Objectives and targets</p> <ul style="list-style-type: none"> ✓ Traced the journey of RE development in India ✓ Logic behind adopting GBI for wind and solar ✓ Should have been National Renewable Mission instead of National Solar Mission ✓ Geographical variations in solar radiation to be taken into account.
<p>Sunil Varma Marri Programme Leader, IMaCS, Noida</p>	<p>New Policy and Regulatory framework for achieving the NAPCC and Solar Mission objective</p> <ul style="list-style-type: none"> ✓ Quantum of RE generation (294 BU) / capacity (385 GW) addition required to meet NAPCC target. ✓ Reviewed the proposed regulatory framework for achieving the NAPCC target . ✓ Reviewed the technological, financial constraints in achieving the ambitious solar power capacity addition targets. ✓ Suggested new mechanism (showcased projects, technology park etc.) for achieving solar power generation objectives

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Session 6 : Role of Regulators in facilitating RE objectives in NAPCC

Omkareshwar Pande PWC, Hyderabad	Review of RPS implementation at state level / Revision so as to meet NAPCC targets <ul style="list-style-type: none">✓ Reviewed RPO implementation at state level✓ Few states are meeting the RPO (5 states)✓ Lack of enforcement mechanism in most of the states✓ Imposition of RPO on Open Access and Captive consumers✓ FOR's recommendations for RPS implementation
Alok Kumar Secretary, CERC	Introduction of REC mechanism in India – implementation issues <ul style="list-style-type: none">✓ Salient features of CERC REC Regulation✓ REC implementation issues from SERC's point of view✓ Operational issues such as Forecasting, Preparedness of power exchanges etc.

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Session 7 : CEO's Forum

Chintan Shah , VP Strategy and Business Development Suzlon Energy Ltd	Recent CERC initiatives and critical regulatory issues for RE from Industry perspective <ul style="list-style-type: none">✓ Wind generating more than Nuclear✓ Wind is most matured RET backed with organised industry✓ Market framework for wind (DISCOM, Captive, Third party)✓ Multiple revenue stream for IPP under REC mechanism (average procurement price + REC + CDM)✓ Gujarat has included REC as facilitative mechanism for RPS compliance in draft regulation✓ Separate Load Dispatch Centre for Renewables like in Spain
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Way Forward

- Clarification on GBI issue : Whether the GBI is over and above the SERC declared tariff OR applicable to central sector projects.
- Need to bring uniformity in RE tariff determination across the SERCs based on CERC norms
- Non – compliance of RPS in many states – Solutions
- Need for forecasting wind generation - is it too early
- Is an alternative solution like a RELDC a better solution
- Regulatory challenges for Wind Re-Powering

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Way Forward

- Segmented RPS for Solar power
- Evolution of solar specific RECs
- Regulatory Road Map for achieving the targets envisaged under National Solar Mission
- Regulatory support for development of RE based micro-generation systems
- Inclusion of small scale distributed RE and off grid RE technologies under the REC mechanism
- Appropriate grid connectivity standards for Utility scale RE / RE based Micro-generation systems

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