

PROCEEDINGS

Edited by Uta Betancourt / Thomas Ackermann

12th Wind Integration Workshop

International Workshop on Large-Scale Integration
of Wind Power into Power Systems as well as on
Transmission Networks for Offshore Wind Power Plants



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13:00 – 15:00 / 24 October 2013 / Room Minorities / Session chair: Kamran Sharifabadi
(Statoil, Norway)

Active Power Control Features in the Wind Turbine Controller

E. Bossanyi (GL Garrad Hassan, United Kingdom), A. Ghorashi (Garrad Hassan America, USA)

Assessment of the Impact of Primary Frequency Support on DFIG Wind Turbine Loads

B. Barahona Garzon, R. You (Tsinghua University, China), A. D. Hansen, N. A. Cutululis, P. Sørensen (DTU Wind Energy, Denmark)

Flexibility Screening Tool – Development and Deployment

E. Lannoye (EPRI International, Ireland), A. Tuohy (EPRI, USA)

Wind Powered Industrial Processes - Assessment of Additional Wind Power Integration by Flexible Processing

J. Käufler, R. Pohl, S. Deiringer (SYNLIFT Systems, Germany)

Real-Time Tariffs for Electric Vehicles in Wind Power based Power Systems

H. Morais (Technical University of Denmark, Denmark), T. Sousa, M. Silva, P. Faria, Z. Vale (GECAD/IPP, Portugal)

Session 10: Closing Session - Podiums Discussions

15:30 – 16:30 / 24 October 2013 / Room Trinity / Session chair: TBA

Podium discussions

The contributions and discussions of this session are not part of the proceedings & the USB memory stick.

Poster Session Papers

Benguela Community-UNAM Wind-Power Demonstration Project - Experiences in Implementation

I. Davidson, H. MuAshekele (University of Namibia, Namibia), N. Mukapuli (Benguela Community, Namibia)

Review on Hybrid HVDC Technology for Integration of Offshore Wind Plant

C. Yuan, X. Yang, D. Yao, C. Yue (ABB China, China)

Optimization of Off-Shore Wind Power Plants Collection Grids

J. Ehnberg (Chalmers University of Technology, Sweden), E. Malz (University of Stuttgart, Germany)

A Method of Identifying the Most Critical Wind Power Plant Communication Links in Terms of Power System Security

M. Bajor (Institute of Power Engineering Gdansk, Poland)

Mesoscale Simulations for Generating High Resolution Multi-Year Wind Speed Time Series over Canada to Improve Wind Energy Integration

S. Z. Husain, W. Yu, L. Separovic (Environment Canada, Canada)

Comparison of Modular Multilevel Converters for the Grid Connection of Large-Scale Wind Turbines

M. von Hofen (Leibniz University of Hannover, Germany), L. Baruschka (Protolar, Germany), D. Karwatzki, A. Mertens (Leibniz University of Hannover, Germany)

Advancements in Wind Integration Study Data Modeling: The Wind Integration National Dataset (WIND) Toolkit

C. Draxl, B.-M. Hodge (NREL, USA), K. Orwig (formerly NREL, USA), S. Harrold, J. McCaa (3Tier, USA), W. Jones, K. Searight, D. Getman (NREL, USA), J. Cline, C. Clark (US Department of Energy, USA)

From a Matlab Based Wind Power Forecast to an Integrated EMS Solution

S. Lakkis, W. Grubauer, H. Strasser, G. Lakits (Siemens, Austria)

The Impact of Controlling DFIG-based Wind Turbines with no Crowbar on the System Stability

M. B. C. Salles, R. R. Avila (University of São Paulo, Brazil), A. J. Sguarezi Filho, A. P. Grilo (Federal University of ABC, Brazil)

Wind Power Relationships Homer Methodology Calculation

F. Brihmat, S. Mekhtoub (National Superior Polytechnic School, Algeria)

Coupling of a Wind Power Plant with a Storage Battery to Reduce Unbalance Charges

S. Sperati, S. Alessandrini, M. Benini (RSE, Italy)

Prediction Errors and Balancing Costs in Finland Using Short Term Predictions for Different Geographical Areas

J. Miettinen, H. Holttinen (VTT, Finland)

Methods for Estimating Long-term Average Wind Speed

P. P. Revheim, H. G. Beyer (University of Agder, Norway)

Study of the Interaction Between Wind Power Plants and SMES Systems

F. Milano (University College Dublin, Ireland), R. Zárate-Miñano (University of Castilla-La Mancha, Spain)

Introduction of a New Regional Market Concept for Integration of Renewable Energies

O. Warweg, A. Arnoldt (Fraunhofer IOSB-AST, Germany)

Intelligent Data Mining based Local Wind Power Forecasting

A. Arnoldt (Fraunhofer IOSB-AST, Germany)

An Improved Design Methodology for Interconnecting Large Offshore Wind Power Plants

M. Ali, R. Bryans (TNEI Services, United Kingdom), S. Jafri (University of Manchester, United Kingdom)

Impact of Projected Wind Energy Yield Variation on Optimum Grid Connection for Large Offshore Wind Power Plants

A. Gunatilake, M. Luckett (London Power Associates, United Kingdom)

An Option to Assign Confidence Intervals to Day Ahead Wind Power Forecasts - Example Based on Meteorological Conditions in Norway

H. G. Beyer P. P. Revheim (University of Agder, Norway)

Market Value of Wind Power

J. de Haan, M. A. Shoeb, H. Lopes Ferreira, W. Kling (Eindhoven University of Technology, Netherlands)

Optimal Power Dispatch for Wind Power Plant Control Considering Wake Effects

Y. Zhang, C. Franke, J. Poland, S. Mastellone (ABB Switzerland, Switzerland), K. Kulkarni (ABB India, India) A. Timbus (ABB Switzerland, Switzerland)

The State-of-the-Art of Wind Energy Accommodation in the Rigid Power Grid of Inner Mongolia, China

X. Wang (Inner Mongolia Power Grid, China), Y. Qiao (Tsinghua University, China), Y. Hou, J. Qi (Inner Mongolia Power Grid, China)

High-Voltage-Ride-Through Test System based on Transformer Switching, Realization and Validation

R. Klosse (WindGuard Certification, Germany)

PLEXOS Study of the Italian Power System and Market in the Medium-term: Realities and Expectations of Renewables Integration

G. Bordignon, P. Panagiotakopoulou, C. Papadopoulos (Energy Exemplar, United Kingdom)

Balancing Power and Variable Renewables

L. Hirth (Vattenfall, Germany), I. Ziegenhagen (Prognos, Germany)

Constraints to the Profitable Integration of Wind-based Microgrids as a Function of the Resource Correlation

G. Díaz (University of Oviedo, Spain), C. Viescas (EdP Renewables, Spain), J. Coto, J. Gómez-Aleixandre, A. Diez (University of Oviedo, Spain)

Research on Size and Location of DG with Vulnerable Nodes Identification in the Active Distribution Network

Y. Zhao, Y. An, Q. Ai (Shanghai Jiao Tong University, China)

Methods for Representations of Wind Power Plants for Active Power Studies

A. D. Hansen, N. A. Cutululis, M. Altin (DTU Wind Energy, Denmark)

Power and Voltage Control of a Novel Integrated Wind-Turbine Generator and Tidal-Turbine Generator Inside an Offshore Wind Tower Using a Flywheel Energy-Storage System

L. Wang, C.-N. Li (National Cheng Kung University, Taiwan)

Losses Analysis of Different Grounding Schemes for Transformer-less Wind Turbine with Full-Scale Power Converter

M. Szykiel, R. Teodorescu, S. Munk-Nielsen, C. Busca (Aalborg University, Denmark)

Initializing Network Simulations for Case Studies of Offshore Wind Power and Offshore DC Grid Integration in the Power System of Northern Europe

N. Helistö, S. Uski-Joutsenvuo, (VTT, Finland)

Stability Analysis of a Microgrid System with Large-Scale Wind and Ocean Energy Farms Fed to a Power Grid through an HVDC Link

L. Wang, C.-Y. Lin (National Cheng Kung University, Taiwan)

Strategies for Wind Power Allocation in Europe

L. Reichenberg, A. Wojciechowski, F. Johnsson (Chalmers University of Technology, Sweden)

Availability Growth and State-of-knowledge Uncertainty Simulation for Offshore Wind Power Plants

A. Zitrou, T. Bedford, L. Walls, K. Wilson K. Bell (University of Strathclyde, United Kingdom)