

8:30 Welcoming Address

Welcoming remarks, conference goals and objectives, and a bridge to previous/future conferences.

Welcoming Remarks: Tom Key, EPRI; Marjorie Tatro, Sandia National Laboratories; Gary Stone, PNM.

9:00 Policies and Programs (Session 1)

Discuss the new and innovative policies and significant regional programs that are leading the way to enable high penetration and large scale integration of renewable and distributed energy resources. With an increasing electricity mix, what are some of the successful programs linking technology deployment with innovative policy framework?

Session Chairs: Kevin Lynn, U.S. DOE; Laurie Ten-Hope, California Energy Commission; Patrick Van Hove, European Commission

9:00 US Smart Grid Implementation Program – *Patricia Hoffman, U.S. DOE (US Keynote)*

9:30 Innovative EU Electricity Grid Research Programme Addressing DER Integration – *Wiktor Raldow, European Commission (EU Keynote)*

10:00 Canada Renewable Energy Science and Policy Program – *Geoff Munro, Natural Resources Canada (Canadian Keynote)*

10:30 Morning Break

10:45 Integrating Renewables and Distributed Energy Resources in the Australian Market – *Grahame Foulger, SmartGrid Partners*

11:15 How the Electricity Sector Can Respond to a Carbon Constrained World – *Bryan Hannegan, EPRI*

11:45 Korea Technology Roadmap and International Collaboration – *Jong Bae Park, Konkuk University*

12:15 Lunch

Includes welcoming address from Albuquerque Mayor Richard J. Berry

1:30 Reporting on Results of Large Project Portfolios (Session 2)

Review world-leading examples enabling the high-penetration integration of various renewable and distributed energy resources into the electric system.

Session Chairs: Tom Key, EPRI; Dana Levy, NYSERDA

1:30 PV Integration in Japan – *Keiichi Watanabe, The New Energy and Industrial Technology Development Organization (NEDO)*

2:00 Large-Scale Renewable Energy Integration in Spain – *Miguel de la Torre Rodriguez, CECRE*

2:30 E-Energy: Smart Grid made in Germany – *Matthias Kuom, Federal Ministry of Economics and Technology (BMWi)*

3:00 Afternoon Break

3:30 US CHP Project Portfolios – *Bruce Hedman, ICF International*

4:00 FIT Program Progress: Lessons on Renewable Integration from Canada – *Travis Lusney, Ontario Power Authority*

4:30 Integration of DG in MV-grids in The Netherlands: Challenges Encountered by the Grid Operator – *Dirk van Houwelingen, Stedin - the Netherlands*

5:00 Round Table:

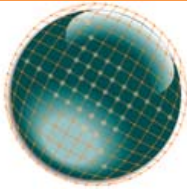
Learn about the distinguishing features of successful Programs/Policies and Project Portfolios.

6:30 Poster Session

Learn about seminal contributions in the conference's main thematic areas: Vision; Public Policy; Planning; Engineering and Implementation; Standards; Operation; Equipment-New Concepts, and Reliability.

Session Chairs: Satish Ranade, New Mexico State University; Philipp Strauss, Fraunhofer-IWES

8:00 Adjourn



8:30 First of a Kind Achievements in Technology, Systems Integration, Modeling & Simulation (Session 3)

Learn about innovative approaches to facilitating the integration of renewable and distributed energy resources on the grid

Session Chairs: Mark McGranaghan, EPRI; John Eli Nielsen, Technical University of Denmark

8:30 Simulation of Micro-grids and V2G – *A.P. (Sakis) Meliopoulos, Georgia Institute of Technology*

8:50 Modeling PV Penetration Effects with Different Inverter Operating Modes – *Jeff Smith, EPRI*

9:10 Active Distribution Network (ADINE) Project Results – *Sami Repo, Tampere University of Technology*

9:30 Running the Cell Controller Pilot Project as a Virtual Power Plant: 2010 Test Results – *Per Lund, Energinet.dk*

9:50 Morning Break

10:20 University of California San Diego Campus Micro-Grid – *Byron Washom, UCSD*

10:40 Distribution Impacts of High Penetrations of Grid-Integrated “SolarSmart” Homes in the Anatolia III Residential Community – *Mike Keese, SMUD*

11:00 High Penetration Wind in the Republic of Ireland – *Mark O’Malley, University College Dublin*

11:20 Wind Turbines as Power Plants – *Bo Hesselbaek, Vestas*

11:40 DER Integration into the Austrian MV and LV Grid – *Andreas Lugmaier, Siemens*

12:00 Lunch

1:30 Regulatory Implementation (Session 4A)

Review best examples of effective regulatory practices that encourage and integrate renewable and distributed generation, including both mandates and market-based approaches.

Session Chairs: Jason Marks, New Mexico Public Regulation Commission; René Kamphuis, Energy research Centre of the Netherlands

1:30 Successful U.S. State Policies for Supporting

Renewable and Distributed Generation – *Jason Keyes, Interstate Renewable Energy Council*

1:55 Assessment of Feed-In Tariffs and Other Market Support Mechanisms in the EU – *Karina Veum, Energy research Centre of the Netherlands (ECN)*

2:20 The EU funded IMPROGRES Project: Quantifying and Addressing Cost Impacts of High Penetration DG – *Frans Nieuwenhout, Energy research Centre of the Netherlands (ECN)*

2:40 Successful Regulatory and Incentive Policy for Renewable Energy / Smart Community in Japan – *Osamu Onodera, The New Energy and Industrial Technology Development Organization (NEDO)*

3:00 Afternoon Break

3:20 Markets and Operations (Session 4B)

Learn about successful market structure operation strategies being adapted to manage high penetration of renewable and distributed energy resources.

Session Chairs: Lisa Dignard-Bailey, Natural Resources Canada; Grahame Foulger, SmartGrid Partners

3:20 Distribution Control Center – Control and Management to Mitigate the Impact of Variable Distributed Resources Connected at Distribution Substations – *Rolf Apel, Siemens*

3:45 Renewables and Markets: A Promising Joint Venture? – *Ken Kozlik, Ontario Independent Electricity System Operator (IESO)*

4:10 Control Room Operational Visualization and Operational Data Management for Integration of Renewables – *Zeb Tate, University of Toronto*

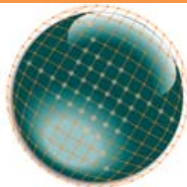
4:35 Distribution System Management Approaches for Integrating Distributed Energy Resources – *Mark McGranaghan, EPRI*

5:00 Round Table

Promising Technical, Regulatory and Market/Operations Advances

5:30 Adjourn

6:30 Gala Dinner



8:00 Advanced Research and Novel Concepts, Future Scenarios (Session 5)

Learn about advanced and novel research concepts and approaches—including modeling and simulation, architecture concepts, future technologies and performance standards—that will enable future high penetration scenarios of renewable and distributed energy resources.

Session Chairs: Reza Iravani, University of Toronto; Andrea Mammoli, University of New Mexico

- 8:00 Technology Development for Large Scale Grid Integration – *Kevin Lynn, U.S. DOE*
- 8:30 OGEMA - Open Source Application Platform Connecting Building Automation and Smart Grids – *Philipp Strauss, Fraunhofer-IWES*
- 9:00 The Open ADR Communication System – *Mary Ann Piette, Lawrence Berkeley National Laboratory (LBNL)*
- 9:20 Microgrid Architectures – *Chris Marnay, Lawrence Berkeley National Laboratory (LBNL)*

9:40 Morning Break

- 10:00 PV Output Variability, Characterization and Modeling – *Joshua Stein, Sandia National Laboratories*
- 10:30 How Can Demand Response Mitigate Intermittent Renewable Resources? – *David Chassin, Pacific Northwest National Laboratory (PNNL)*
- 11:00 Overview of DER/RE Grid Integration Research in Australia – *Glenn Platt, CSIRO*
- 11:30 Masdar City and Distributed Energy Generation – *Jack Whittier, CH2M HILL*

12:00 Lunch

Includes a Poster Session awards ceremony

1:30 Key Technical, Regulatory and Market Gaps (Session 6)

This session seeks to discuss, from a broad and higher level perspective, the most critical Technical, Regulatory and Market elements that must be addressed to achieve high penetration of RE and DER on the grid. Speakers will present new, forward-looking, provocative approaches behind

national or regional RDT&D programs, which have been based on gap analyses.

Session Chairs: Goran Strbac, Imperial College; Mark Rawson, Sacramento Municipal Utility District (SMUD)

- 1:30 DOE Smart Grid R&D Program: Vision and Objectives – *Dan Ton, U.S. DOE*
- 2:00 Clean Energy Ministerial and the International Smart Grid Action Network – *Russell Conklin, U.S. DOE*
- 2:30 The European Electricity Grid Initiative – *Anh Vu, Électricité Réseau Distribution France (ERDF)*
- 3:00 Japan's Smart Community Initiatives – *Tatsuya Shinkawa, The New Energy and Industrial Technology Development Organization (NEDO)*

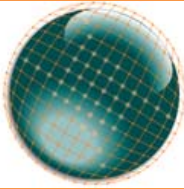
3:30 Closing Session

Closing Remarks and announcement of the host of the 5th International Conference

Conference Technical Summary: *Marjorie Tatro, Sandia National Laboratories; David Sandalow, DOE Office of Policy and International Affairs [invited]*

4:00 Adjourn

Free Evening



4th International Conference on
**Integration of
Renewable and Distributed
Energy Resources**
December 6–10, 2010
Albuquerque, NM USA

Pre- and Post Conference Activities

Preliminary Pre-Conference Activities (Monday, December 6)

Morning Sessions

- 8 am – 12 pm Workshop: R&D Collaboration for DG-Ready Grid Architecture
- 8 am – 12 pm Tutorial: Technology-specific Overviews: PV, Wind
- 8 am – 12 pm Tutorial: Grid Codes for High Penetration DER

Afternoon Sessions

- 1 pm – 5 pm Workshop: Inverter Communications Coordination Meeting
- 1 pm – 5:15 pm Workshop: Solar Variability; Resource Prediction & Monitoring
- 1 pm – 5 pm Tutorial: The OpenDSS Application – A Tool for Better Understanding DER and Storage Interactions on the Distribution System
- 1 pm – 4 pm Tutorial: Technology-specific Overviews: CHP, Energy Storage
- 4 pm – 7 pm Technical Tour: Hotel Andaluz

Preliminary Post-Conference Activities (Friday, December 10)

Morning Sessions

- 8 am – 12 pm Workshop: EPRI, DOE, and International Smart Grid Project Reviews
- 7:30 am – 2 pm Technical Tour: Sandia National Laboratories
- 9 am – 2:30 pm Technical Tour: PNM Control Room and Intel Labs' Energy Systems Research Center

Afternoon Sessions

- 1 pm – 4:20 pm Workshop: EPRI, DOE, and International Smart Grid Project Reviews (cont'd)