

# **Greening the Grid: Best Practices in Conducting Grid Integration Studies**

6 October 2015

# Disclaimer

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# Agenda

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**Overview of the  
Clean Energy  
Solutions Center**

- **Tim Reber**, National Renewable Energy Laboratory

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**Presentations**

- **Dr. Jaquelin Cochran**, Senior Energy Analyst, NREL
- **Dr. Clayton Barrows**, Electric System Modeler, NREL
- **Jennifer Leisch**, Climate Change Mitigation Specialist, USAID Office of Global Climate Change

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# Solutions Center Background and Vision

CleanEnergySolutions.org

**The Clean Energy Ministerial (CEM) launched the Clean Energy Solutions Center in April 2011. The Solutions Center:**

- Is one of 13 CEM Initiatives, which include:
  - Global Superior Energy Performance Partnership
  - Super-Efficient Equipment and Appliance Deployment initiative
  - Global Lighting and Energy Access Partnership
- Helps governments design and adopt policies and programs that support the deployment of clean energy technologies
- Has more than 35 partners, including IRENA, IEA, IPEEC, Sustainable Energy for All, Bloomberg New Energy Finance and Leonardo Energy
- Is co-chaired by the U.S. Department of Energy and the Australian Department of Industry.



Australia



Denmark



India



Indonesia



Italy



Japan



Mexico



South Africa



France



United Arab Emirates



United States

# Clean Energy Solutions Center

CleanEnergySolutions.org

## Goals

- **Serve** as the primary resource for clean energy policy information, assistance and peer learning for governments and government-affiliated practitioners.
- **Share** policy best practices, data, and analysis tools across countries.
- **Deliver** dynamic services that enable expert assistance, learning, and peer-to-peer sharing of experiences.
- **Foster** dialogue on emerging policy issues and innovation across the globe.

## Primary

- Government Policy Makers
- Advisors

## Secondary

- Private Sector Companies
- Energy Entrepreneurs and Investors
- Non-Governmental Organizations
- Civil Society
- Others Engaged in Clean Energy

## Target Audiences

# Ask-an-Expert: Our Experts in Action

CleanEnergySolutions.org

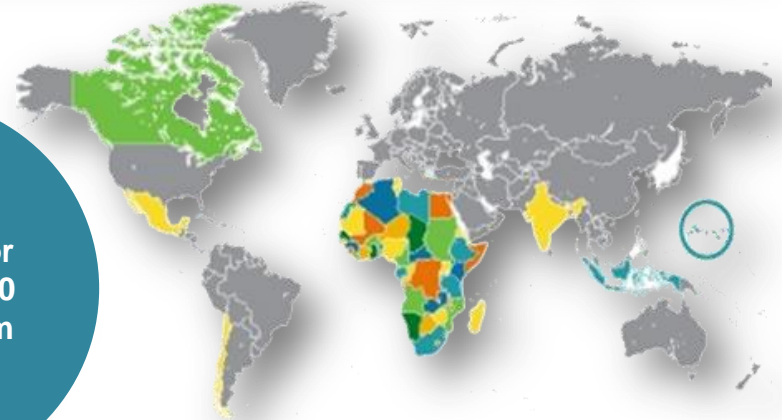


Connects policymakers to a global network of more than 30 energy experts for quick-response technical assistance on policies and programs relating to:

- Renewable Energy
- Energy Access
- Energy Efficiency
- Smart Grid
- Transportation
- Utilities



Delivered no-cost assistance for more than 160 requests from over 75 countries.



Please submit a question directly at  
[cleanenergysolutions.org/expert](https://cleanenergysolutions.org/expert)

Or contact me directly to find out how the Ask-an-Expert program can benefit your work:

[Sean.Esterly@nrel.gov](mailto:Sean.Esterly@nrel.gov) | 303-384-7436



# Dr. Jaquelin Cochran, Senior Energy Analyst, NREL



Dr. Jaquelin Cochran is a Senior Energy Analyst with the National Renewable Energy Laboratory, where she analyzes system operations, policies and market designs that create an enabling framework for emerging energy technologies (renewable energy, demand response, distributed generation). Dr. Cochran has published on many topics related to integration of renewable electricity, including policy best practices, coal cycling, RE curtailment, variability analysis, integration studies, system flexibility and market designs. She holds a Ph.D. and M.A. from the Energy & Resources Group at the University of California at Berkeley.

# Dr. Clayton Barrows, Electric System Modeler, NREL



Dr. Clayton Barrows is a member of the Energy Forecasting and Modeling Group at the National Renewable Energy Laboratory. His research focuses on improving the technical and economic efficiency of electrical systems through advanced computation and analysis. During Dr. Barrow's Ph.D. program, he interned at Los Alamos National Lab where he developed new algorithms to solve the optimal topology control problem. At NREL, Clayton focuses on electric system planning and operations models. He is a core developer of the RPM capacity expansion model, and he has designed and implemented a time domain partitioning method to parallelize production cost model simulations. Additionally, Clayton serves as a special detailee to the Federal Energy Regulatory Commission, where he leads analysis of electricity market data. He received his B.S. in Electrical Engineering from the University of Wyoming and his Ph.D. in Energy and Mineral Engineering from The Pennsylvania State University.

# Jennifer Leisch, Climate Change Mitigation Specialist, USAID



Jennifer Leisch is a Climate Change Mitigation Specialist in the USAID Office of Global Climate Change, where she supports the U.S. Enhancing Capacity for Low Emission Development Strategies program. Jennifer manages the USAID Greening the Grid partnership, and she directs agency work to account for greenhouse gas emissions reductions as a result of USAID Clean Energy programs. She holds a Ph.D. focused on renewable energy science, and has previously worked in the research and development of advanced solar energy and fuel cell technologies.

# Question and Answer Session

Please submit any questions through the “Question Pane” of the GoToWebinar panel

## Questions



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# Your Participation is Appreciated!

## THANK YOU!

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- For more information on the “Ask-an-Expert” program please email me directly:
  - [Sean.Esterly@nrel.gov](mailto:Sean.Esterly@nrel.gov) or 303-384-7436