



The Climate Resilient Grid

A Forum on Energy, Climate and the Grid

June 14 - 15, 2017 | The Collider | Asheville, NC | [Website](#)

The U.S. Energy Information Administration forecasts that non-hydro renewables will rise, from 2% in 2005, to a total of 10% of electricity generated in 2018. Not only essential for meeting energy demand, wind, solar and hydro are cost competitive with conventional generation.¹ Central to this discussion is the ability to transform the nation’s long distance transmission lines to move energy from decarbonized-production areas to centers of energy consumption. Industries are gearing up for business in the new era and balancing and optimizing intermittency resources. Climate and environmental intelligence can provide important information in this decision-making process, with the grid on the frontlines.

Raising the level and investment in renewables requires efficient transmission lines and new systems of microgrids, both of which require innovation in design and engineering, and advanced analytics that address risks like climate change and extreme events. Environmental and climate data and information on extremes can aid in the design, planning and implementation of the modernized integrated grid that can support economics for the company and economic growth overall, aid in minimizing our impact to the environment, and help address climate change risks.

[The Climate Resilient Grid](#) is sponsored by [NOAA’s National Centers for Environmental Information \(NCEI\)](#) and brings together thought leaders from industry, government, and academia to demonstrate the value of environmental intelligence and climate data for bringing renewables into homes and businesses around the country. NCEI provides access to the world’s most comprehensive archive of atmospheric, coastal, oceanic, and geophysical data. NCEI engages with users to improve their understanding of its products and services and seek feedback to make its environmental information more useful not only to the energy industry, but to other industries and the Nation.

- Utilities executives share perspectives on the current state of their grid, their climate risks and vulnerabilities and the future of renewables in their portfolio.
- Solution providers demonstrate how environmental information has been used in asset planning and strategy, resilience planning and strategy, and load planning.
- Thought leaders discuss the critical role of renewables and the right mix of energy to build an adaptive infrastructure while reducing carbon dioxide.
- Scientific experts from NCEI and its partners interact with the energy industry leaders and solution providers to provide insights into and receive feedback on its environmental information.

Advisory Committee:

Mr. John Curry, JD., Member National Board of Environmental Defense Fund (former)
Phil Hanser, The Brattle Group, Lecturer at Boston & Harvard University
Dr. Otis Brown, NOAA Cooperative Institute for Climate and Satellites - North Carolina (CICS-NC) / NC State University
Dr. Michael Brewer, NOAA NCEI, Customer Engagement Section Chief

Organizing Committee:

Dr. Stephanie Herring, NOAA Climate Scientist & Senior Advisor; American Meteorological Society Climate Services Committee Chair
Jenny Disson, NOAA Cooperative Institute for Climate and Satellites - NC (CICS-NC) / NC State University
Ellen Mecray, NOAA NCEI Regional Climate Services Director
Marjorie McGuirk & Doug Copenhaver, CASE Consultants International
James McMahon, CEO, The Collider

¹Source: *Lazard Levelized Cost of Energy Analysis 10.0*; [Weblink](#)



Wednesday, June 14, 2017

- 12:00 - 3:00 pm **Registration / Check-in**
- 1:30 - 1:40 pm **Welcome Remarks**
Dr. Stephanie Herring, NOAA NCEI Climate Scientist, AMS Climate Services Chair

SESSION 1: INDUSTRY LEADERS IN RENEWABLES

Moderator: Dr. Otis Brown, NOAA CICS-NC / NC State University

- 1:40 - 2:10 pm **Duke Energy's Future in Renewables**
Speaker: John Gajda, Manager, Operations Support, Distributed Energy Technologies Department at Duke Energy

- 2:10 – 2:40 pm **Our Grid and the Role of Renewables**
Speaker: Daniel Kassis, Vice President, SCANA

Remarks on how SCANA is preparing for the future with renewables, and the role environmental intelligence plays in those decisions.

- 2:40 - 3:10 pm **Confronting the Reality: A Virginia Case Study and Opportunity**
Speaker: Dr. Anthony Smith, Ph.D, President and CEO, Secure Futures, LLC

Hear a unique and innovative perspective on the role of nanogrids to reduce vulnerability to the major transmission grid, as well as a case study of leadership in the renewables market in Virginia. Dr. Smith will also discuss innovative customer and community solutions to mitigating risk for grid-tied solar arrays.

- 3:10 - 3:30 pm **DISCUSSION**
Moderator: Dr. Otis Brown, NOAA CICS-NC / NC State University

- 3:30 - 4:00 pm **NETWORKING BREAK** (Sponsored by The Collider)

KEYNOTE

Moderator: Marjorie McGuirk, CASE Consultants International, LLC

- 4:00 - 5:00 pm **KEYNOTE: An Energetic Evening - Energy's Future in this Climate**
[Research](#) suggests that water, wind, and solar sources could supply the bulk of U.S. energy needs by 2050. Using weather and climate data, a new grid design and strategy for energy delivery has been proposed that meets energy demand, but this calls for investment in new infrastructure. Can this proposed design move us towards achieving America's goals of reducing carbon dioxide emissions by 32% by 2030 without increasing costs?

[Alexander MacDonald](#), Spire Global Inc.; Former Deputy Assistant Administrator, NOAA Office of Oceanic and Atmospheric Research & Director NOAA Earth System Research Laboratory; An "[Interstate Highway](#)" for US Wind, Solar, Hydro, & Nuclear Power

- 5:00 - 6:00 pm **Reception and Discussion** (Sponsored by Strada Italiano)



Thursday, June 15, 2017

8:15 am **Coffee and Networking** (Sponsored by The Collider)

SESSION 2: DATA ANALYTICS FOR ENERGY RESILIENCE

Moderator: *Dr. Michael Brewer, NOAA NCEI, Customer Engagement Section Chief*

8:30 - 8:45 am **Welcome Remarks**

Speaker: Mary Wohlgenuth, Director of NOAA's National Centers for Environmental Information

8:45 - 9:00 am

NOAA NCEI's Environmental Information for the Grid and Renewables

Speaker: Dr. Margarita Gregg, Deputy Director of NOAA's National Centers for Environmental Information

9:00 - 9:45 am

What's Normal Anyway? Philadelphia Gas Works (PGW) - Science and Solutions Using Supplemental Normals

Speaker:

- *Dr. Russ Vose, NOAA NCEI, Climate Science Branch Chief*
- *Gregory Stunder, J.D., Vice President Regulatory Affairs, Philadelphia Gas Works*
- *Dr. Pearl Donohoo-Vallett, Associate, The Brattle Group*

9:45 - 10:15 am

Managing Weather and Climate Risk for Grid Resilience and Reliability

Speaker: [Dr. Ria Persad](#), CEO, Statweather

Discuss how weather and climate prediction help in evaluating long-term risk and overload to the grid, thereby informing timing points and load estimation for the engagement of renewables in ensuring greater grid resilience and reliability. Also discuss how energy managers and risk principals are minimizing brown-outs, black-outs, and extreme conditions on their infrastructure and employing renewables grid resilience and reliability.

10:15 - 10:30 am

BREAK (Sponsored by the ResilientGrid)

10:30 - 11:45 am

PANEL and DISCUSSION: Insights from Utilities Engaged in Climate Resilience

Speakers:

- *Michael McPeck, Lead Engineer, National Grid, and the [Liaison to the Department of Energy Partnership for Energy Sector Climate Resilience](#)*
- *[Dr. Judsen Bruzgul](#), Manager, ICF International*
- *[Dr. Delavane Diaz](#), Sr. Technical Leader, Energy & Environmental Analysis, Electric Power Research Institute (EPRI)*

Moderator and Opening Remarks: Dr. Michael Brewer, NOAA NCEI Customer Engagement, Section Chief

11:45 - 1:00 pm

LUNCH ON YOUR OWN (Dining suggestions will be provided)



SESSION 3: ADVANCING CLIMATE RESEARCH AND SERVICES FOR RENEWABLES

Session Moderator: Jenny Dissen, NOAA CICS-NC / NC State University

1:00 - 1:30 pm **Moving Towards a More Reliable, Robust and Resilient Clean Energy Grid**
Speaker: [Dr. Michael Legatt](#), CEO and Founder, [The ResilientGrid](#)

1:30 - 2:00 pm **Next-Generation Environmental Intelligence for the Solar Industry**
Leveraging latest GOES satellite cloud cover data to optimize solar energy site selection
Speaker: [Dr. Jessica Matthews](#), NOAA CICS-NC / NC State University

Data from geostationary meteorological satellites can inform decision makers about the suitability of solar sites including which sites would produce the highest output and which regions would support sites that produce output with small variability. Hear from leading scientists and experts on unlocking this data for solar energy analytics.

2:00 - 2:15 pm **BREAK** (*Sponsored by the Collider*)

2:15 - 2:45 pm **Innovative Solutions in Renewables**
Speakers:
- *Corey Call, Chairman and CEO, GenCom Solar*
- *Tom Flaherty, CEO and Founder, MES International*

2:45 - 3:45 pm **BREAKOUT COLLABORATE AND CATALYZE - An Information Exchange in Climate Services**
Industry leaders and service providers discuss needs and opportunities for incorporating environmental intelligence and data in their portfolio, while scientists share new ideas on data and solution providers engage in best practices and their experiences in how climate risks and data are being utilized.

Breakout Group Discussion Leaders:

- *Dr. Stephanie Herring, NOAA NCEI Climate Scientist, AMS Climate Services Chair*
- *Jenny Dissen, NOAA CICS-NC / NC State University*

3:45 - 4:00 pm **Breakout Summary**
Moderators: Dr. Stephanie Herring, NOAA NCEI Climate Scientist, AMS Climate Services Chair & Jenny Dissen, NOAA CICS-NC / NC State University

4:00 - 4:15 pm **Closing Remarks and Next Steps**
Dr. Michael Brewer, NOAA NCEI Customer Engagement, Section Chief

4:15 pm **Adjourn**