

NIST SMART GRID ADVISORY COMMITTEE (SGAC)
MINUTES OF SEPTEMBER 9, 2014, VIRTUAL MEETING

ATTENDANCE

Smart Grid Advisory Committee Members

Ball, William
Gaddis, Evan
Jones, Lawrence
Miller, Susan
Mohn, Terry
Owens, David
Tobin, Thomas

NIST Staff

Boynton, Paul
FitzPatrick, Jerry
Greer, Christopher
Harary, Howard
Holmberg, David
Nguyen, Cuong
Pillitteri, Victoria
Prochaska, Dean
Wollman, David

Others

Finch, Mike, GE Appliances
Richmond, Randy, Zetron, Inc.
Wedin, Randy, Wedin Communications
Whitesell, Stephen, Whitesell Consulting, LLC

Call to Order and Establishing Quorum – Dr. Chris Greer, Senior Executive for Cyber-Physical Systems, NIST

Dr. Chris Greer called the meeting to order at 12:10 p.m. and established a quorum. Dr. Greer reminded the Committee that the meeting schedules have been set for the next two years and asked members to put holds on their calendars for those dates. He briefly went over the meeting [agenda](#) and turned to Mr. Owens and Mr. Gaddis to provide some opening remarks.

Opening Remarks – Mr. David Owens, Chair, Smart Grid Advisory Committee, and Mr. Evan Gaddis, Vice Chair, Smart Grid Advisory Committee

Mr. Owens started by thanking everyone for taking time out of their busy schedules to join the Committee meeting. He believed that this meeting was a good way to stay abreast of developments in the industry. Mr. Owens reviewed some examples of changes in the distribution

system including the installation of 45 million smart meters, and the discussion of the move toward a decentralized power supply system with the need for integration of more distributed energy resources into the grid. He noted that in order to create interoperability with the integration of new technologies with the traditional grid, the components need to be able to communicate with one another. Mr. Owens stressed the need for standards, for resilience, and for ways to give customers a broader array of options.

Mr. Gaddis agreed with Mr. Owens' comments. He added that he believed that the industry is working toward a common goal of modernizing the grid. An important priority is to put standards in place that will open the markets and harmonize them.

NIST Smart Grid and Cyber-Physical Systems Update – Dr. Chris Greer, Senior Executive for Cyber-Physical Systems, NIST

Presentation Summary – Dr. Greer provided an update on the NIST Smart Grid and Cyber-Physical Systems Programs. Dr. Greer discussed the Grid 3.0 planning activity and recent leadership changes at the Smart Grid Interoperability Panel (SGIP). He highlighted upcoming details of the SGIP meeting in September and international meetings with Korea, the European Union, and Brazil. For the Cyber-Physical Systems update, Dr. Greer discussed the Cyber-Physical Systems Public Working Group (CPS PWG), the CPS Testbed, and the Global City Teams Challenge.

For more details, see Dr. Greer's [presentation](#).

Discussion – The group discussed the following topics:

- A question was raised about the focus of CPS PWG subgroup on data interoperability, a group which had been added at the August 11-12 CPS PWG meeting. Dr. Greer replied that this subgroup will cover a full suite of topics, including data analytics, data visualization, the primary data model, data interfaces, , and hierarchies of data structure.
- A follow-on question asked whether the output of the CPS PWG would be a new operating system. The CPS PWG's output will provide the basis for new operating systems that are interoperable. It is not the group's role is to produce a single operating system, but rather to enable others to produce operating systems that can interoperate.
- The date for the upcoming Global Cities Team Challenge kick-off event is September 29-30, 2014.
- A question was raised about the relationship between NIST and SGIP as it relates to the Grid 3.0 planning activity. Dr. Greer replied that the NIST-SGIP relationship is not changing. The Grid 3.0 planning process is not specifically related to SGIP, but rather it is intended to involve a range of organizations to develop a consensus on the next level of challenges—this planning activity will include other federal government agencies and a variety of private sector organizations. Each of the organizations involved will take the outcome of the planning activity and apply it to their own respective interests.
- A member asked if NIST will be funding the Global Cities Team Challenge initiative. Dr. Greer replied that this is a volunteer initiative, not a funding opportunity. NIST is serving as the convener with a role to help cities identify themselves and their common goals and enable them to work together. There are other federal agencies partners that

could fund demonstrations and deployments as well as research. On the commercial side, companies that have smart city strategies and technologies are interested in testing their technologies at city scale.

- A member asked about the upcoming meeting with the European Union group and whether NIST will incorporate European (and other) perspectives into the architecture design. As part of the goal to coordinate internationally, European partners are very important for smart grid, and NIST has regular conversations with the European Smart Grid Coordination Group (SG-CG).

Transactive Energy Update – Dr. David Holmberg, Mechanical Engineer, Engineering Laboratory, NIST

Presentation Summary – Dr. Holmberg provided an update on transactive energy activities since the last Committee meeting. He noted that NIST, SGIP, and other partners continue to lay the foundation for transactive energy. Ongoing activities include the the SGIP’s Transactive Energy Coordination Group; work on key protocols in OpenADR, Facility Smart Grid Information Model (FSGIM), and Green Button; research at the NIST NetZero house and smart grid testbed; and exploration of an economic analysis for transactive energy. Dr. Holmberg discussed a transactive energy challenge concept that would bring together vendors and others for technology integration to advance transactive energy.

For more details, see Dr. Holmberg’s [presentation](#).

Discussion – The group discussed the following topic:

- A member noted that the discussion on transactive energy was focused on the distribution system, and it should also include the transmission system as well. Dr. Holmberg replied that the transactive energy activities will look at the grid as a holistic system and will not disconnect transmission and distribution.
- On the transactive energy work, NIST is focusing on technical challenges and not pushing public policy. NIST is trying to provide technologies that enable good decision-making by informed stakeholders on all sides of the issue.

Recap and Analysis of the June Committee Meeting – Dr. Chris Greer, Senior Executive for Cyber-Physical Systems, NIST

Dr. Greer provided a recap of the June 3-4, 2014, Committee meeting. The Committee considered drivers and challenges for three major areas—transactive energy, resilience, and distributed energy resources (DER). Drivers for transactive energy included renewable energy and its increasing availability, emergence of electric vehicles, microgrids, etc. These drivers create challenges and needs, including the need for better modeling, characterization, and measurements. On resilience, Dr. Greer noted that NIST has a resilience effort and the Engineering Lab is one of the leaders in that initiative. Resilience is an important and relevant area, and some of the challenges that were brought up include a need for standards and metrics for measuring resilience. The Committee discussed the interdependencies between various industries and sectors, such as between transportation and the energy grid. On DER, some of the challenges identified included awareness, analytics, and control capabilities needed in a DER environment to help facilities understand the performance of the system with a wide variety of

DER in a network model. The Committee discussed direct current (DC) as an emerging technology and its role in this environment.

A detail report of the June discussion is available [here](#).

Planning for March 17-18, 2015 Face to Face Meeting

The Committee discussed potential topics for the next face-to-face meeting. The four topics identified are: 1) Report out from the Grid 3.0 strategy planning process, 2) Transactive Energy, 3) DER/Microgrid and the lack of inertia, and 4) Smart Cities (including resilience).

Public Comments

Members of the public in attendance did not provide any comments.

Close

The meeting was adjourned at 1:30 p.m.