

Meeting Minutes

Aug. 21, 2019

GWAC Members

David Forfia, Director, Enterprise Architecture & IT Transformation, Electric Reliability Council of Texas (ERCOT)

Ron Ambrosio, Chief Scientist, Utopus Insights, Inc.

Tanya Barham, Principal, Community Energy Labs

Lorenzo Kristov, Principal, Electric System Policy, Structure, Market Design

James Mater, Co-Founder and Director, QualityLogic, Inc.

Farrrokh Rahimi, Senior Vice President, Open Access Technology International, Inc.

Leonard Tillman, Partner, Balch & Bingham, LLP

GWAC Members not present

Ron Bernstein, President, RBCG, LLC

Gerald R. Gray, Sr. Program Manager, Electric Power Research Institute (EPRI)

Joe Hagerman, Deputy Chief Scientist, NREC

Doug Houseman, Grid Modernization Lead, Burns & McDonnell

Stephen Knapp, Vice President of Quality Assurance & Energy Markets, Power Analytics Corporation

GWAC Associates & Emeritus

Ron Cunningham, American Electric Power

Jeff Morris, Principal, Horizon Energy Corp.

Chris Villarreal, President, Plugged In Strategies

Kenneth Wacks, Home, Building & Utility Systems

GWAC Guests

Kay Aiken

Rahul Bahadur, VMware

Jamie Coffel, Honeywell Smart Energy

Dave LeVee, PwrCast

Larisa Dobriansky, General Microgrids

Jeff Katz, IBM

Mark Knight, Burns & McConnell

Aaron Snyder, EnerNex

David Wollman, NIST

PNNL Support

Ron Melton, GWAC Administrator

Susan McGuire, GWAC Coordinator

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Administrative

David Forfia opened the meeting at 10:04am Pacific Time.

Ron Melton reviewed the meeting agenda. He noted that Ron Bernstein is absent, Lorenzo will join late and Dave Wollman will leave early.

Ron discussed the Smart Buildings as a Transactive Hub white paper.

Review Meeting Minutes & Actions

- June 19, 2019 – meeting minutes approval
- Action items from previous meetings
 - **All:** please let Ron know if you will be unable to attend a call ahead of time.
 - ✓ Action: Susie to set up a meeting on June 27 at 8:00am to discuss the questions and other logistics. Invite all panel moderators and facilitators
 - ✓ Action: Ron Bernstein sent the outline draft of the white paper out to the support team
 - ✓ Action: Susie/Ron to coordinate a meeting in late July (after TESC) to the Smart Buildings white paper support team: Ron Bernstein, Ron Melton, Joe Hagerman, Kay Aiken, Doug Houseman, Farrokh Rahimi, David Forfia, Rahul Bahadur, James Mater, Mark Knight, Leonard Tillman, David Katz
 - Action: Ron Bernstein and Ron Cunningham to discuss the production of Grid 3.0 future white papers and Ron Bernstein to note them on the GWAC Activities Matrix. (On Hold for Now)

GWAC Associate nominations

Ron Melton asked for nominations for GWAC associates due by the end of August and sending to Ron and Susie McGuire.

Upcoming GWAC related conferences and events

Conferences and Events

(**Bold** indicates GWAC speakers)

- **NARUC Annual Meeting, San Antonio, TX, November 17 – 20, 2019**
- **AHR Expo, Orlando, FL, February 3 – 5, 2020**
- **NARUC Winter Policy Summit, Washington, DC, February 9 - 12, 2020**
- **IEEE ISGT 2020, Washington, DC, February 17 – 20, 2020**

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GWAC Fall Face to Face meeting

The GWAC F2F meeting could be held in late October or early November. Ideas for places suggested previously are; Ron Bernstein, San Diego at his home, David Forfia at ERCOT, Farrokh Rahimi at OATI, Ron Melton also opened up PNNL as a possibility.

Ron Melton commented on the building microgrid facility at OATI and how impressive the tour was during the TESC19 meeting. Leonard Tillman also expressed the same sentiments.

James Mater asked about other locations and Ron noted that Seattle would be a good city and that the Bullitt Center <http://www.bullittcenter.org/> would be a good place, it is a net zero building.

Ron Melton noted that the F2F would be a workshop and a GWAC meeting. He asked for suggested topics.

EV charger integration into the grid and tariff design was suggested by Tanya Barham. She is interested from systems architecture perspective.

Ron suggested Grid Architecture including Storage, DER and DA. Jeff Taft is the PNNL subject matter expert but to get him we might have to meet in Pittsburgh but for late fall meeting the weather might not be conducive.

Smart Buildings as TE Hubs was suggested, particularly if the meeting were held at OATI.

EV – Grid Impacts and Opportunities might be a good topic.

Tanya noted that use cases architecture as a virtual tour might be good if the location was OATI but that Minnesota would not be the best weather wise at that time of the year.

David Forfia noted that Ron Bernstein's home has a solar array that might be interesting for people to see.

The group looked at dates. Nov 4 might not be good for Ron Ambrosio or Farrokh Rahimi. Oct. 7 is Grid Forward. We will send a Doodle Poll to check dates. Farrokh noted the Demand Response World Forum in San Diego on Oct. 16 and 17. Oct 13 is bad for Ron Melton. The weeks of Oct 21 and 28 might work.

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● GWAC Projects

Project	GRID 3.0	Transactive Energy Framework Update	Smart Buildings as Transactive Hub White Paper	Economic Resilience White Paper	TESC Conference
Scope	Future Grid States Document with an industry consensus on future states of the electric power grid through a collaborative process	GWAC publication providing explanation of TE system elements, four primary perspectives, and examples of TE systems	Discuss use case for building integration with grid and how/what a TE model might look like	Overview of TE impact on resiliency issues. Possible interoperability, control, monitoring, real-time data sourcing and related solutions	Annual GWAC sponsored conference focused on Transactive Energy and related topics
Audience	Policy, Regulators, Legislators, ISOs	Utilities, regulators, system suppliers, energy managers	Building owners, energy managers, utilities, and users	Utilities, integrators, solution providers, policy makers	Decision makers, solution providers, labs, academics, policy, solution providers
Status	Work products proposed by working party	Published in 2015. Update published July 2019	Calls now underway	White paper drafted	Conference held
Actions	Ron Melton, David Forfia to discuss with Jeff Taft	None	Currently five "next steps" in progress	Finish for TESC 2019	Close out, posting of presentations, papers, recordings, discuss next TESC
Leadership	Ron Melton	Ron Melton	Ron Melton, Ron Bernstein, Joe Hagerman	Rahul Bahadur	Various – Ron Melton Lead

Ron Melton noted that Grid 3.0 has been on hold but a meeting is scheduled for Aug. 22.

GWAC Publications

The TE Framework has been published.

The Economic Resilience White paper is completed.

It was noted that the call for abstracts is still on the GWAC website.

Action: Susie to get the call for abstracts taken down (completed)

Tanya would like to have the GWAC projects matrix sent with the minutes.

TESC19 Review

TESC19 follow up – the website is still active. 80 people attended. The facility was very suited to our needs and it felt like the right size. Presentations are being posted to the IEEE Resource center, they are not there yet.

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Farrokh is trying to get the papers onto IEEE Explore. Ron Melton expressed appreciation for Farrokh's extensive efforts to make this happen.

☉ 2019 TESC Follow Up

- Website –<https://ieee-tesc.org>
- Attendance: 80
- Feedback: Very positive
- Presentations posted to IEEE Resource Center
- Papers being posted to IEEE Xplore

IEEE sent out a post TESC19 Conference survey and feedback was very positive although the response was only about 18%.

Tanya noted that it would be good to start the planning process earlier next year to get the word out to increase attendance. Farrokh also noted that he had been concerned about attendance.

Tanya suggested for the next meeting that we start with plenary speakers and set the conference dates set in line with their schedules. She believes that if the meeting announcement lists plenary speakers that it will be a draw for meeting attendance.

Ron suggested that the next meeting be in the November – December 2020 timeframe and put this out for discussion.

James Mater posed the question -should GWAC continue the meeting or just declare victory with the six meetings that have been held?

Ken Wacks said it depends on the Future of TE adoption rates – a lot is motivated by what industry does.

Ron Melton noted that TE is now a mainstream topic at SEPA and IEEE meetings.

Farrokh asked if the Framework is also a declared victory. He said a part of TESC was discussions of the Framework. He sees the meeting and the Framework as going hand in hand.

Tanya asked what does victory mean?

Farrokh Rahimi noted that IEEE could take the meeting in the future, so it would continue.

Ron Ambrosio asked about victory as it relates to interoperability and its progress towards adoption, deployment, and effective use. He asked if more guidance and oversight still needed?

Ron Cunningham said maybe a hiatus and re-evaluation would be appropriate.

Ron Ambrosio thought that resuming the role be difficult if you let it go for a couple years, it might be hard to step back in for various reasons.

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Ron Melton said if the GWAC Council puts its attention to other things but stays active during that time it might not be so difficult.

Jeff Morris noted that the term Transactive Energy has moved from the Lab community out more broadly to many technical groups and the community at large. He noted that a lot of energy is required to organize the meeting. A better strategy might be to co-op with existing groups and help them with their own transactive energy meetings rather than schedule a single topic meeting.

James Mater asked if the energy be put to better use to promote TE besides having a single topic conference.

Tanya said that she sees the conference as still needed and thought if the GWAC could be more efficient in organizing the conference that it might not take so much energy.

Ron Melton reminded everyone that there were interoperability conferences before GWAC – they were put on for about 10 years.

Larissa said she agreed with Farrokh on the progress on the TE Framework and its implementation, she said from the regulatory side TE is not yet self-sustaining. She said the great work of GWAC and its relevance in the regulatory community is a good structure for TE to be recognized.

Ron Melton said while that is true – are there other ways besides the Council?

Larissa replied that the GWAC work has not been made relevant, she sees a gap that still needs to be closed.

James Mater asked if a conference is the best way to do that? He suggested that at the Fall F2F meeting that we discuss what is the Council's mission going forward and how can the Conference fit into that mission. This should be a topic for the F2F meeting this fall.

Ron Melton asked Jeff Morris his thoughts. Ron said that when we go to the PUCs and talk to regulators, it's like telling a soccer referee how the game should be played. He said that soccer refs don't make the rules, FIFA does. Refs are applying the law as written in their jurisdiction. Thus, they aren't the most important people to talk to, instead we need to talk to people who write the laws or to those who push to change the laws.

Jeff agreed that PUCs will not work to change the laws unless they are directed to do so by government or others who they take direction from. He said that if you are trying to reach more people, the conference might not be the best way. There are many other meetings and groups to reach out to. Depending on what the GWAC is trying to do might dictate this path. He also noted that it is a changing landscape and in time new aspects of TE may come forward.

Ken Wacks asked how we reach Congressional staffers regarding changing the laws.

Ron Melton noted that some groups that are influential in this regard and GWAC is aware of them.

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Larissa said there are different openings in various legislation going on now. They have the staff that are trying to implement changes.

She noted that regulators see themselves as administrators and if they are faced with mandates that place them in a position to evaluate the regulatory system, they find themselves in need of technical assistance. Given the changing composition of the generation mix and looking to the future, the majority of US states have to confront if the current system is adequate. She said they say no because there are barriers and a lack of incentives.

Ron Melton reminded everyone that GWAC does not lobby nor describe potential policy per it's mission objective.

Jeff Morris said we need to look at California and Hawaii where they must react to their situations. He said that GWAC is a source of expertise through these transitions and can offer assistance to the electricity sector.

James Mater said he hears interesting discussions about what GWAC is trying to do and how best to do it. He thinks that more discussions should happen. He said maybe continuing the conference is good but maybe there are other options.

David Forfia noted that a quorum has been reached since Lorenzo joined the meeting. He noted that the July meeting minutes have been distributed to the Council.

It was noted that Farrokh's comments were incorporated based on his email, and Ken Wacks changes have been emailed and will be incorporated. A motion to accept the minutes with the noted changes was made by Farrokh Rahimi. The motion was seconded by Ron Ambrosio. David Forfia noted there were no objections and the meeting minutes for July were approved.

TE Framework

Ron Melton asked the group to get the word out about the updated Framework.

☉ TE Framework Update

- Framework published in July, just before TESC 2019
- Please refer people to it via LinkedIn, Twitter, etc.

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Smart Buildings as a Transactive Hub

- Smart Buildings as Transactive Hubs Update – Ron Melton
 - Second meeting took place on July 25th
 - Ron M, Ron B, Doug, Leonard, Joe, Farrokh, Kay Aiken
 - Reviewed, modified and annotated outline drafted by Ron Bernstein
 - Next meeting scheduled next week (though Ron Bernstein on vacation – do we wait for him to return?)
 - Lots of enthusiasm in working group!

Ron Melton said there is a need for definitions, and for use cases or scenarios and Farrokh has offered to organize those. He also noted that how the doc will be used should be described. There are high level diagrams about a transactive hub – they are trying to define the role of a building as a point of interface to the grid and how it relates to other elements on the behind the meter side. Ron said it is a work in progress. Tanya thought she might want to be involved. She asked about Don Hammerstrom’s PNNL campus work and if it is incorporated. She is interested in the behind the meter aspect.

The group will hold off meeting until Ron Bernstein returns from travel.

Acton: Ron Melton will add Tanya to the invitee list.

Resilience White Paper

The draft of the paper has been sent to Ron Melton.

Rahul Bahadur would like to get feedback from the GWAC on the Economic Resilience white paper. The team plans to present the material at the IEEE ISGT. Ron Melton thought if it was presented as a Transactive Energy panel rather than as a poster it might be better because the group could interact with the panel audience to get feedback in real time.

The white paper team would like feedback as soon as possible on the paper – GWAC members with feedback should send it directly to Rahul. It would need to be submitted back by Aug. 31.

Liaison reports

David Wollman – NIST report

NIST has released cyber security TN2051 - a profile for owner operators. This report evolves NIST IR 7628, maps to NERC CIP, etc. The NIST Smart Grid Framework V4 draft for public comments will be released near the end of this fiscal year. It is expected to be final by early 2020. This is an important document for power system owners and operators. David provided a link to the document:

<https://doi.org/10.6028/NIST.TN.2051>

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Also, the Draft NIST SG framework will be released for pub comments by end of FY19 although it may be delayed as it goes into the federal register, but it should be available by October for public review. Ron Melton will work to get a formal review by the GWAC.

Action: Ron Melton to get the NIST SG Framework from David Wollman out to the GWAC for review once it is released which should be end of September 2019.

Chris Villarreal noted that the NARUC National Council on Electricity Policy will hold a meeting in Austin on September 11-12. It will be focused on Transmission, Distribution, and Electricity Policy.

<http://electricitypolicy.org/2019/06/28/save-the-date-september-10-12-2019-for-ncep-annual-meeting-and-workshop/> The meeting is open to all.

NARUC will have a closed meeting in Columbus, Ohio in October. That meeting relates to better planning between regulators and State Energy offices.

David Katz attended a presentation on TE at Ryerson University yesterday and has asked for permission to send the slides out to the GWAC.

ISO/IEC - Ken Wacks noted that the next semiannual meeting of ISO/IEC JTC 1/SC 25 will be the week of Sept. 23 in Nagasaki, Japan. A two-month ballot started in July for the publication of the GWAC Transactive Energy Roadmap as an ISO/IEC Technical Report.

The US has voted to support the publication. Among topics for standards under development are energy management and cybersecurity. Ken is the convener (chair) of this committee that is developing standards for home and building systems. Rahul Bahadur is a member of the US delegation. If anyone else wants to join the US delegation, they should contact Ken (www.kenwacks.com). Ken urged the group to ask their international colleagues on the committees to support the GWAC Transactive Energy Roadmap by voting in favor of publication.

Grid Evolution Summit – David Forfia: Ron and Mark presented a good workshop on an actual use case. The content was great; unfortunately, time ran short since the conference was ending. SGIP's tech committee will be reconstituted in September – David is on the list to continue to participate. The Grid Evolution summit was well done, several on this call gave interesting presentations. Attendance was very good at some of these meetings and was standing room only. Attendance for the conference was a bit over 400. David thanked everyone for their presentations, he has enjoyed the experience, and he hopes to continue to work on the tech council in the future.

Ron Melton noted the IEEE meeting in Atlanta meeting went well. He is now chairing a committee on smart buildings and loads...they will cover behind the meter topics.

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Ward Camp is not available, David Forfia noted that the 2nd Annual Power and Energy Blockchain Conference and Training will be held in Atlanta from October 23 – 25: <http://energy-blockchain.org/conference/>

James – Open ADR – not available.

Adjourn

David asked for a motion to adjourn. Leonard Tillman gave the motion and Tanya Barham seconded the motion.

The next meeting is scheduled for September 18, 2019.