

Meeting Minutes

June 19, 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

Ron Bernstein, President, RBCG, LLC -

Joe Hagerman, Program Director for ICF

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

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

Joe Hagerman, Deputy Chief Scientist, NRECA

Doug Houseman, Grid Modernization Lead, Burns & McDonnell

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

GWAC Associates & Emeritus

Robert Burke, Robert Burke Consulting

Ward Camp, EBC

Chris Villarreal, President, Plugged In Strategies

Kenneth Wacks, Home, Building & Utility

GWAC Guests

Rahul Bahadur, VMware

Phil Davis Strategic Grid Services Group, LLC

Larisa Dobriansky, General Microgrids

David Katz, Energy Management Consultant

Jeff Katz, IBM

David Wollman, NIST

PNNL Support

Ron Melton, GWAC Administrator

Susan McGuire, GWAC Coordinator

Meeting Minutes

June 19, 2019

Administrative

A quorum was reached at 10:04am PST and David opened the meeting

Richard Schomberg sent greetings to GWAC via Ron Melton who saw him at a meeting in France.

David Forfia asked for a motion to approve the May GWAC online meeting minutes. They were approved with submitted edits made by (Ken Wacks, Leonard Tillman and Farrokh Rahimi)

Ron Ambrosio gave a motion to approve the minutes and Leonard Tillman seconded the motion.

- Action items from previous meetings
 - All: please let Ron know if you will be unable to attend a call ahead of time.
 - ✓ Action Ron Melton: Complete ISO/IEC form and send to Ken Wacks
 - ✓ Action Ron Melton to set a meeting with Ron Bernstein and Joe Hagerman on the smart buildings as transactive hubs white paper. (meeting time proposed)
 - ✓ Action Ron Melton: Review the GWAC activities summary document from Ron Bernstein for eventual publication on the GWAC website.
 - ✓ Action: Ron Melton and Rahul Bahadur to have a call later to discuss the Economic Reliability white paper further.
 - 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.
 - ✓ Rahul and Farrokh and Ron M need to discuss use cases matrix

Action items

Meeting with Bernstein and Hagerman has taken place

GWAC summary docs

Ron talked with Rahul and discussed use case matrix. The only thing left is to add detail on grid 3.0 future white papers that Ron Bernstein had put together.

Meeting Minutes

June 19, 2019

GWAC Activity Matrix

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 operators, energy managers	Building owners, energy managers, utilities, end 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. Undergoing update in 2019	Initial call held - Bernstein, Hageman, Melton	White paper drafted	Program finalized, web site up to date
Actions	Ron Melton, David Forke to discuss with Jeff Falt	Review and edit of integrated sections	Outline in progress, next discussion set. Who else would like to help?	Final for TESC 2019	Recruit sponsors, recruit attendees
Leadership	Ron Melton	Ron Melton	Ron Melton, Ron Bernstein, Joe Hageman	Rafael Baharar	Various - Ron Melton Lead

Upcoming events



Conferences and Events

(Bold indicates GWAC speakers)

- **ASHRAE Annual Conference, Kansas City, MO, June 22 – 26, 2019,**
- **IEEE TESC, Minneapolis, MN, July 8 – 10, 2019**
- **NARUC Summer Policy Summit, Indianapolis, IN, July 21 – 24, 2019**
- **SEPA Grid Evolution Summit, Washington, DC, July 29 – August 2, 2019**
- **IEEE PES General Meeting, Atlanta, GA, August 4 – 8, 2019**
- **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**

Meeting Minutes

June 19, 2019

TESC19 Status

Ron Bernstein noted that there are 43 registrants as of today.

Ron Melton urged all GWAC and friends to get the word out however they can. He is hoping to get 100 participants.

Last year's TESC attendance was about 125 per David Forfia.

Tanya Barham asked everyone to use the short paragraphs from GWAC members that was sent out by Susie McGuire as they use social media to promote the conference.

Farrokh proposed extending the TESC19 early bird registration. Ron Melton said that it would be hard to do that now since the discount ended on June 7.

Ron Melton asked Tanya Barham if there is an easy way to reference others promotions on social media. Tanya said with your Linked In post on your personal page if you do `_@` you will see names that you can "tag" and you can also do `_@` and an organization name. This sets up a hyperlink and it will come up in their feed and they can then share your post. This makes it easy to re-share items. Tanya also put the link to the TESC19 Tutorials in the side bar <https://ieeesc.org/tutorials/> and asked members to include that in their messages as well as the conference registration link <https://tesc.ieeepesreg.com/index1.asp>

Ron Melton noted that three sponsorships have come in and this will really help the conference budget. Three papers have come in and will be included in a plenary panel. Today we will look at the meeting structure and remind people of the foundational session and panel moderator assignments.

Ron Melton reviewed the TESC19 meeting agenda. He commented on the great job that Farrokh did on reviewing all abstracts and papers and communicating with authors. Papers will be presented in a plenary session rather than as posters as originally planned.

Ron Melton noted that Ellen Anderson with Univ. of Minnesota is working on student volunteers for the conference.

Ron Bernstein noted that tutorial signups are coming in slowly. Total for registrations paid is \$20,180 without sponsorships.

The decision has been made not to hire a conference facilitator which saved funds for the conference. This will save on administrative costs.

Ron Melton noted that there is a lot of information on the website about the highlights of the conference as well as logistical information.

Ron Bernstein asked Ron Melton about the length of time allotted for the Panel Tracks and the workshops.

Ron Melton said each workshop is 1 hour, each panel is 1.5 hours.

Meeting Minutes

June 19, 2019

Ken Wacks said that the people giving talks will want to know if they should keep talking at the end of the 90 minute track and just go right into the workshop.

Ron Melton said the discussion should move into the question and answer phase during the workshop. Some questions will be created in advance. Ron envisions that panelists will remain in place for the workshops – but it depends on the workshop facilitator and panel moderator (which may or may not be the same people). Ron suggested that each set of facilitators and moderators explain the process to the panelists so that they will know the expectations.

Farrokh Rahimi asked about the questions for the workshop. Ron Melton said the moderators and facilitators need to create the questions for the workshop.

• GWAC Foundational Session

- Build around TE Framework update
 - Presentation 1: general changes – Forfia
 - Presentation 2: 4.1 update – Tillman or Villarreal (tag team)
 - Presentation 3: 4.2 update – Kristov
 - Presentation 4: 4.3 update – Ambrosio
 - Presentation 5: 4.4 update – Houseman or who?
- Working meeting on this sometime over next two weeks?

Ron Melton noted that for the foundational session – David will do general, Lorenzo for 4.2, Farrokh has created a PPT 4.2 that he will share with Lorenzo. They are working together, and they will decide who presents and who asks the questions. Ron asked that the facilitators and moderators keep him informed so that the agenda can be updated as needed with the names of moderators and facilitators.

Ron Melton asked if facilitators want to have a meeting about the questions and there was good interest. Ron asked Susie McGuire to get a meeting set that aligns with schedules.

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.

Meeting Minutes

June 19, 2019

◉ Workshop Moderators

- Chris Villarreal & Leonard - for regulatory
 - Ambrosio - architecture
 - Tanya & Lorenzo - Vision for participation
 - Mark Knight - Resilience
 - Ron Bernstein - Cyber Security
-
- Moderators need to draft 3 to 4 questions for discussion during the workshop – get them to panelists in advance so they can speak to the questions during their presentations
 - Ellen Anderson is working on finding volunteer note takers

GWAC TE Framework

The TE Framework is being edited and will be sent to the GWAC council as soon as possible for review.

◉ TE Framework Update

- Integrated version with section updates created
- Editing of integrated version underway
- Available for review – by June 23rd – will need quick turn around (in parallel with PNNL internal review)
- Publish by late-June.

GWAC White Papers

◉ Smart Buildings as Transactive Hubs Update – Ron Bernstein

- Initial discussion between Joe Hagerman, Ron Bernstein and Ron Melton took place
- Ron Bernstein – drafting an outline leveraging material from AHR Expo
- Second coordination call scheduled
- Any others who would like to be involved?

Joe Hagerman, Ron Melton and Ron Bernstein met to discuss the development of a white paper on Buildings as a Transactive Hub.

The result of this meeting was a draft outline provided by Ron Bernstein.

The draft has been posted to gridarch.org – Transactive Energy; Smart Buildings as Transactive Hubs White Paper folder:

Meeting Minutes

June 19, 2019

<https://www.gridarch.org/Transactive%20Energy/Smart%20Buildings%20as%20Transactive%20Hubs%20White%20Paper/Buildings%20as%20Transactive%20Hub.docx?Web=1>

The paper should end up at 15 to 20 pages.

Here are the folks that have agreed to participate in the development:

Name	Email
Ron Melton	ron.melton@pnnl.gov
Susie McGuire	Susan.mcguire@pnnl.gov
Ron Bernstein	ron@rb-cg.com
Joe Hagerman	Joe.Hagerman@nreca.coop
Kay Aikin	kay.aikin@introspectivesystems.com
David Forfia	dforfia@ercot.com
Rahul Bahadur	rahul.bahadur@gmail.com ;
James Mater	jmater@qualitylogic.com
Doug Houseman	dahouseman@burnsmcd.com
Mark Knight	mrknight@burnsmcd.com
David Katz	dkatz@sustainable.on.ca
Leonard Tillman	ltillman@balch.com
Farrokh Rahimi	Farrokh.Rahimi@oati.net

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 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

Meeting Minutes

June 19, 2019

Announcement by DOE – sent from Chris Irwin during the call

Chris Irwin has just announced today a new FOA on Interoperability and Architecture that came out this morning from Bruce Walker, DOE. This will be sent out to the GWAC list and everyone is asked to help rebroadcast it. Joe Hagerman sent information to the GWAC on this.

Open ADR on TE – James Mater said there could be some synergy there that would relate to smart buildings as TE hubs. Ron Bernstein and James may talk offline a bit more.

Ron Melton asked Rahul Bahadur about the Economic Resilience white paper. Rahul said they are working on a draft of the entire paper to prepare for a panel presentation at TESC19. They are also developing meeting slides and are close to done. Farrokh noted that the paper would be covered at the paper panel session at TESC19.

Farrokh asked Ron Melton when he wants the draft of the papers for TESC19. Ron said that he would like to have them be due as soon as we can get it done. Farrokh suggested it be done by next Monday (June 24).

Farrokh said it would be good to have the GWAC review the white paper prior to it being presented at the conference. Then comments will be invited at the conference as well. Ron would like to get a copy of the paper before the conference so that it can be cleared through PNNL information release. It would be cleared as a draft and then again once all feedback is in and responded to.

Rahul Bahadur asked about the timeline; he said that they may have to prioritize the conference over processing the feedback comments. Ron Melton agreed saying the conference needs to come first.

Liaison reports

Ken Wacks - ISO/IEC - The international technical report on the GWAC TE Roadmap has been submitted to the administration in Europe and they will send the ballots to the nation participants. The IEC administration will distribute the Roadmap to the member nations for approval as an ISO/IEC Technical Report. Ron noted that Ken did a good job on the submission and thanked him for doing this.

Anyone interested in shaping world standards please contact Ken Wacks. In addition to Transactive Energy a key focus of the group is on cybersecurity of data, privacy, and safety for homes and buildings.

David Wollman, NIST –Posted in the chat a link to the federal advisory committee on smart grid - the continued evolution of the drafts on the NIST SmartGrid framework 4.0 – hoping to get it out for public comments by the end of the fiscal year; it won't be final by the end of the FY but materials should be available for public comment by then. One example is an update of the applied economics office – to understand AMI as a proxy for interoperability investments – looking at the response to Florida hurricanes. They can look at different deployments of AMI. It compares the different counties and their different percentage deployment of AMI and the number of outage hours after the hurricanes. There is some interesting stuff and they got good feedback. AMI is viewed broadly as interoperability investments to improve communication networks and capability. Data is publicly available. A paper

Meeting Minutes

June 19, 2019

should be out very soon. It is hard to find good proxies. This worked well and there were interesting results.

<https://www.nist.gov/engineering-laboratory/smart-grid/smart-grid-federal-advisory-committee>

David Forfia commented to David Wollman that NIST had done excellent work on framework drafts. He said the advisory committee notes were well done. He said he was impressed with what Abi presented in Tulsa.

David Forfia covered the meeting he was at yesterday. The Grid Evolution summit will be at the end of July. The last two days will be technically deep. Ken Wacks provided an update of his SEPA customer Grid Edge working group projects during the SEPA Technical Advisory committee teleconference yesterday. Ron Melton noted that there are some good workshops on Thursday, the last day including one that he is involved in, it will be on EV, TE and Grid Architecture and should be pretty interesting.

David provided the link to the IESO summit that he attended and said he would have the presentations and video to share in a few days: <http://www.ieso.ca/summit/>

EPRI – Gerald Gray was not on the call

ASHRAE - Ron Bernstein, the ASHRAE summer meeting starts Saturday of this week. Key topics are energy management and cyber security. He is giving a lecture on what it means to be a young engineer in this field of control and communications and opportunities in interoperability and efficiency.

Ron Melton asked Ron Bernstein about the next AHR expo. GWAC has endorsed the meeting in the past and contributed panels. Ron Bernstein said he may not be able to do the role again, but it could be available for another GWAC person to take on.

Open ADR - James Mater attended a good TE/DER meeting last week in San Francisco. It was an interesting meeting.

IEEE PES - Farrokh said that there will be a Transactive Energy (TE) session on TE Theory by Don Hammerstrom, PNNL, at Sunday August 4, from 10 am to 5 pm. The panel title is Transactive System Theory. It's a workshop as noted by Ron Melton. It will be a good session at a future IEEE meeting. Don Hammerstrom is the meeting leader. Ron Melton will be there for it as well.

Ward Camp - Energy Blockchain Consortium (EBC) – EBC had a successful smart cities conference working with Arizona. Ward stated that EBC would like to work with GWAC on smart cities and renewable energy credits and microgrids – all have serious transactive energy elements. He is hoping to find ways to work with GWAC on this and explore opportunities. Please feel free to contact him if you are interested.

Chris Villarreal – next month is the NARUC policy meeting in Indianapolis. Discussions will be on distributed DER planning, rate design for DER, energy metering, policy and business model changes in

Meeting Minutes

June 19, 2019

response to distributed energy resources growth. Secure distributed energy resources interconnections will be a panel. There will be a panel on IEEE 1547.

Ron Melton gave a brief overview of the CIM Users Group meeting that he is currently at in Saclay France.

David Katz also attended the recent IESO summit, there were some FERC presentations. He put a link in the chat window (listed below). He will have the presentations and video to share in a few days.

<http://www.ieso.ca/summit>

Ron Bernstein said there is an upcoming ASHRAE meeting in Kansas that he will attend. He and David Katz talked about that.

David Forfia asked for a motion to adjourn. Farrokh gave the motion to adjourn and Ron Ambrosio seconded the motion.