

Meeting Minutes

May 20, 2020

GWAC Members

David Forfia, GWAC Chair

Ron Ambrosio, Independent Energy Transformation Professional

Tanya Barham, Principal, Community Energy Labs

Ron Bernstein, President, RBCG, LLC

Andrew Bordine, VP Energy Mkts & Innovation, Anterix

Ron Cunningham, American Electric Power

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

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

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

Leonard Tillman, Partner, Balch & Bingham, LLP

Aaron Snyder, Director of Grid Technology Consulting, EnerNex

GWAC Members not present

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

Stuart McCafferty, President, GridIntellect

GWAC Associates & Emeritus

Kay Aikin, CEO, Introspective Systems

Rahul Bahadur, Mgr. of Engineering, VMWare

Mark Knight, Burns & McDonnell

James Mater, Quality Logic, Inc.

Jeff Morris, Principal, Energy Horizon Corp.

Chris Villarreal, President, Plugged In Strategies

Ken Wacks, Home, Building & Utility Systems

GWAC Guests

Robert Burke, Robert Burke Consulting

H. Ward Camp, Energy Blockchain Consortium

Toby Considine, the Energy Mashup Lab

Larisa Dobriansky, General Microgrids

Shuli Goodman, Linux Foundation Energy

Chris Irwin, US DOE

Dave LeVee, PwrCast

Jaime Kolln, PNNL

Tim Schoechle, Sr. Fellow, Nat'l Institute for Science, Law and Public

Elizabeth Sisley, Calm Sunrise Consulting

David Wollman, NIST

PNNL Support

Ron Melton, PNNL, Administrator

Karen Studarus, PNNL Administrator

Susan McGuire, GWAC Coordinator

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Action items from previous meetings

- **All:** please let Ron know if you will be unable to attend a call ahead of time.
- ✓ Action: Ron M to send the Resilience paper rewrite out to the white paper committee when complete. Ron Bernstein and Tanya Barham to meet on the SBATH paper finalization DONE
- Schedule Fall (Sept, Oct) F2F Planning meeting as virtual (Melton, Kristov, Cunningham, McCafferty, Bernstein, Barham, Aiken)
- Kay and Rahul to check on possible hosting of fall GWAC meeting and report back to Ron Melton
- GWAC members to provide ideas for a successful Virtual Fall “F2F” meeting

Administration

David Forfia noted that a quorum was been reached and asked the group to approve the meeting minutes from April. Susie McGuire noted that three edits had been sent in from the council and those edits have been made. Farrokh Rahimi made the motion to approve the minutes and Gerald Gray seconded the motion. The council unanimously approved the minutes.

Conferences and Events

(Bold indicates GWAC speakers)

- **SEPA Grid Evolution Summit, Washington, DC, July 27 – 29, 2020 (possibly virtual)**
- **IEEE PES General Meeting 2020, August 2 – 6, 2020 (now virtual)**
- **IEEE PES T&D Power Forward 2020, Chicago, October 12 – 15, 2020 (rescheduled)**
- **IEEE (GWAC) TESC 2020, Portland, OR, December 8 – 10, 2020**
- **AHR Expo 2021, Chicago, IL, January 25 – 27, 2021**
- **IEEE ISGT 2021, Washington, DC, February 15 – 18, 2021**

Ron Melton and David Forfia mentioned an inquiry from MSNBC regarding the chance to do an educational seminar that would get airtime. However, GWAC would be expected to assist with production costs which are thought to be steep although discussions are preliminary.

Regarding the IEEE ISGT in Feb. 2021 - Farrokh Rahimi and Ron Melton are working on a GWAC panel for this conference. The conference is scheduled as a face to face but is considering becoming a virtual meeting.

NARUC Summer Policy Conference Jul. 20 -22 is being planned as a virtual conference

Ward Camp told the group that the SEPA Grid Evolution Summit will be offered at least in part as virtual this year. He said some people will meet in DC, but the panels will for the most part be virtual.

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- ◉ **GWAC Website Refresh Status**
 - Renewed domain gridwiseac.org and submitted security plan
 - Developer and designer have begun conversion to WordPress, drawing on previous council input
 - IT is configuring new server
 - For next GWAC meeting
 - Show updated home page on new server for GWAC review
 - Refine ETA for finishing change over rest of the pages
 - Prioritize additional features or design with remaining budget
 - Swap over site

Karen Studarus gave an update of the Grid Website refresh. She expects to have a new site up in about two months. It will feature a good search tool and will highlight key products and upcoming events. Historical documents will remain so that links are not broken. She said the goal is to preserve what we like from the current site and then find some new aspects to feature on the site. She addressed a concern of Ken Wacks saying that the council wants to preserve good content, not just have pretty fonts and graphics. She also noted that the software will enable the site to work well on mobile phones.

GWAC Projects – April 2020 Update

Project	TE FAQ	Decision Makers Checklist Refresh	Smart Buildings as Transactive Hub White Paper	Economic Resilience White Paper	TESC Conference
Scope	Short document reiterating key features of TE systems as documented in TE Framework, etc.	GWAC publication will provide decision-makers with background information	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, TE Practitioners	Utilities, regulators, transactive platform providers, service providers, consumers	Building owners, energy managers, utilities, and users	Utilities, integrators, solution providers, policy makers	Decision makers, solution providers, labs, academics, policy, solution providers
Status	Draft completed	Council review complete and comments incorporated	Draft by team complete	New version complete, reviewed by Administrator and sent to Council for review	Program structure created for virtual or F2F
Actions	Review by Administrator and then Council	PNNL Release and publication	Administrator review in parallel with PNNL technical editor	Comments due to Rahimi and Melton on 5/22	Promote conference, work on identifying and recruiting keynote(s) and primary panels
Leadership	Tanya Barham	Jaime Kolin, David Forfia	Ron Melton, Ron Bernstein	Rahul Bahadur, Farookh Rahimi, Don Hammurston	Various – Ron Melton Lead

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 TESC 2020

- IEEE Advanced Technology -PSOPE Power Systems Operations, Planning & Economics and SBLC as partners, and AMPS – *send the conference description*
- GWAC Organizing Committee Members: *Stephen Knapp, Gerald Gray, Leonard Tillman, Ron Bernstein, Farrokh Rahimi, Mark Knight, Jeffrey Morris, David Forfia, Karen Studarus, Ron Melton*
- Location* – Portland General Electric agreed to host @ Portland World Trade Center,
- Confirmed dates are 8 – 10 December 2020
- Theme – “Architecting a Resilient Transactive Grid”
- Status:
 - Conference Application and budget submitted, IEEE finalized MOU
 - Description / Call for Participation – finalized and sent
 - TESC 2020 Website set up
 - Some edits completed to replace 2019 with 2020 info
 - Added Call For Participation
 - IEEE PES Section in Portland contacted, still need to contact Bob Bass at PSU
 - Program structure roughed out – final version will depend on whether we have enough papers submitted for a poster session at the reception. Includes lunch speaker(s)
 - Alternative all virtual program structure proposed
 - Keynote speakers brainstormed
 - Promotion needed

Karen Studarus noted that this year’s theme is Architecting a Resilient Transactive Grid. She also noted that the Conference home page banner has a Portland, Oregon theme but the conference may become virtual. The scheduled dates are Dec 8 - 10, 2020. The organizing committee has created a draft of the program structure for both a face to face format and a virtual format. The virtual format would be a four-day structure with a Monday tutorial and the conference taking place on Tuesday through Thursday for the online format. The committee felt this would be the best structure and timeframe for a virtual format.

Karen said the decision about virtual or face to face will be made by May 31.

Farrokh also noted that the deadline for abstract submission is June 1 and Karen noted that it may need to be extended.

The group discussed the benefits of a virtual meeting over a face to face meeting including potential increased participation, less travel costs for participants, and fewer barriers for keynote speakers to participate.

Karen noted that no fees have been incurred for facilities for the meeting so TESC 20 will not lose fees if they do switch to virtual.

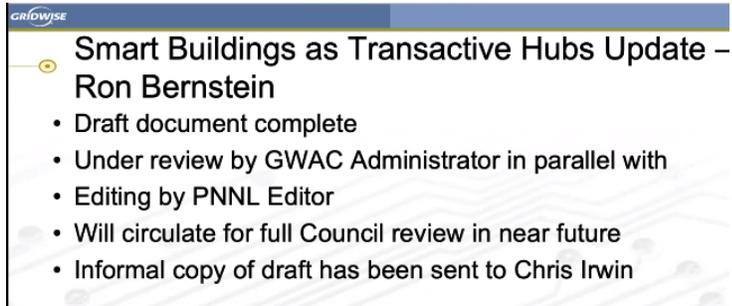
Shuli Goodman sent a link to the group of a study by the Linux foundation of various virtual meeting platforms. She noted that it has gone out as a press release. Many on the call were interested in this information.

<https://www.linuxfoundation.org/blog/2020/04/virtual-event-suggestions-for-open-source-communities/>

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White Paper Update



Smart Buildings as Transactive Hubs Update – Ron Bernstein

- Draft document complete
- Under review by GWAC Administrator in parallel with
- Editing by PNNL Editor
- Will circulate for full Council review in near future
- Informal copy of draft has been sent to Chris Irwin

Ron Bernstein told the group that the Smart Buildings as a Transactive Hub (SBATH) white paper is nearly done; currently it is being edited by himself and a PNNL editor. The draft final version is located on the GridArch.org site. Comments have been received and incorporated. Ron Melton is working in parallel with the PNNL editor. Once they are done it will go out to the council for final comments. Ron Bernstein thanked everyone who participated on the committee. He noted some material was cut to keep the paper brief and consistent with similar white papers.

• Economic Resilience White Paper

- Draft by working party is complete
- Reviewed by GWAC Administrator and comments provided to the working party
- Sent for review by full Council with comments due on 5/22
- For today – discussion of initial comments by Council members and associates
- Comments will be incorporated next week and PNNL release will be initiated

Ron Melton recently sent the Economic Resilience white paper out for comments by GWAC members. Comments are due back by Friday, May 22. Farrokh plans to incorporate comments received by the end of May and then it will be routed through information release at PNNL.

Action: Farrokh Rahimi and Rahul Bahadur to incorporate GWAC review comments received and submit to PNNL shortly after the May 22 deadline.

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Interoperability Decision Maker's Checklist – update

- Comments received – thanks to all who commented!
- Two categories of comments
 - Those that can be incorporated into current document
 - Those that go beyond scope of current update and can be used as a starting point for a more extensive update (should the Council undertake one)

Jaime Kolln addressed the council regarding any comments that were not included in the final version saying that he kept copies of all comments. This was just a minor update, not a full rewrite. If in the future the GWAC supports a full re-write of the checklist these comments will be incorporated in that effort. Jaime is making a few final edits and then it will be released.

David Forfia thanked Jaime for his efforts and Jaime then thanked the committee who worked on the refresh.

Ron M. asked the refresh team what the next steps should be and reminded everyone that this refresh came at the advisement of participants at a NARUC meeting who were using the Checklist as a resource but had noted that some terms and technologies referred to were out of date.

David Wollman appreciated the question and said he would get back to Ron with his recommendation.

David Forfia suggested that the updated be sent to Kerry Worthington, NARUC, as a first step.

Chris Villarreal agreed with David's and add there are some additional people that he would like to send it to.

Action: Ron Melton and David Forfia to send the Interoperability Decision Maker's Checklist v 1.6 to Kerry Worthington, NARUC and others as Chris Villarreal and David Wollman recommend.

TE FAQ

- Full version and "twitter" version drafted
- Next steps
 - Review within Council
 - GWAC Administrator review
- Timeline for review TBD

Tanya Barham gave an overview of the efforts of the committee on the TE FAQ primer and she noted that both the short and long version drafts are located on the GridArch Sharepoint in the Transactive Energy folder. She said that the FAQ Primer or Twitter version is ready to be sent out to the GWAC for feedback. Some answers are not nuanced but they are going for fundamentally correct.

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Tanya also said that two questions of ten on Transactive Energy have been answered after considerable debate on each of them. They are keeping the answers at a high level.

Gerald Gray liked the short version of the answers as a versions appropriate for Twitter and said that he can see each becoming a thread. He sees it as useful.

Action: Send the completed sections of the FAQ primer out to the GWAC

Fall F2F Meeting

☉ GWAC Fall F2F Planning

- Theme
- Format
- Dates
- Location
- Virtual workshop option?

Ron Melton reviewed the plan for a F2F meeting - it is proposed as a workshop with 2-hour sessions across a couple of days.

Ron Ambrosio commented that holding a GWAC virtual meeting ahead of the full conference in December would be a good way to get a feel for what works and what could be improved.

Ron Bernstein said the meeting would be live and the question and answer sessions could be interactive. He liked the idea.

Tanya said we could consider it as a dry run for the conference to help the GWAC to better understand the nuances of a virtual meeting.

Ron Melton thought we could do some prerecorded talks and a panel session with live Q and A afterwards. This would help us try these this format and gather feedback. There was general approval of this idea.

Karen Studarus suggested a Q & A session that is live and same time for both coasts would be good.

Action: Karen to ask IEEE about their support for the fall meeting - possibly we use one of their platforms for a dry run meeting. (Ron M. said for PES general they have picked ON24 for the platform).

Kay Aikin will be trying it in the first week of June for another meeting and will bring back feedback to the group.

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Ron Cunningham suggested for the fall meeting that GWAC try concurrent sessions on two topical areas as a trial.

Kay said for a microgrid meeting they filmed the slide presentations and they are now practicing how they transition from one to the next. This means that scheduling is not needed for individual presentations. Organizers just must assemble the talks. In this case they did not video the person because not everyone had HD cameras.

Ron M. commented that for bigger meetings the camera is not that helpful. It is nice for smaller meetings.

Ron A. said that having the cameras on adds a social aspect to the meeting.

Gerald said there is a chrome background app that is recognized by most virtual meeting platforms and noted that you can present a PowerPoint and appear virtually be in the presentation.

The group discussed possible dates for the GWAC Virtual Fall "F2F" meeting. The best options were the week of Oct. 5 or the week of Oct. 12.

Ron M. proposed the days of Wednesday - Thursday. The program would consist of four 2-hour blocks over two days. Thus, the dates could be Oct. 7 and 8 or Oct. 14, 15. Suggested times would be 8:00 am to 10:00am PST and 1:00pm to 3:00pm each day. The group decided on Oct. 7 and 8 .

We can set this up as a Team meeting for now to get it on calendars. We may switch platforms later.

Action: Susie to schedule the GWAC Virtual "F2F" fall meeting series

Liaison Reports

Ken Wacks - ISO/IEC JTC 1/SC 25: The next meeting of the international standards group will be held as a virtual meeting on the 14 and 21 of September.

The meetings will be scheduled for two hours and because the group is so international the start times will range from 10:00am EST to 11:00pm in Japan and Korea. Ken commented that for the May meeting the participants seemed to adapt well to this format. Some meetings lasted almost three hours. Good progress was made. Meeting attendance was very high.

This international committee is responsible for developing a family of standards called the "Home Electronic System" (HES) for interconnecting electrical and electronic equipment and products in homes and small buildings. Informally this is called "IoT" (Internet of Things), for home and building systems. The primary markets for HES standards are developers, manufacturers, and installers of these products and related services.

The HES comprises a family of standards that enable home and building occupants:

- to live more comfortably in the home,

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- to be more protected and feel safe in the home,
- to work productively in smart buildings, and
- to live and work more economically by reducing energy consumption and/or producing and storing or selling excess energy.

HES standards facilitate consumer electronic products, networks, and services to interoperate or to operate, where feasible, as a single coherent system. This system benefits all stakeholders including product developers, manufacturers, service providers, installers, utilities, and consumers. HES consists of a network of networks that enables interoperation among consumer products, sensors, control devices, and user interfaces in homes and buildings with the potential for access to external services.

Applications of products and services based on HES standards include entertainment, lighting, comfort control, life safety, health, and energy management. Energy efficiency and reliability are topics of global interest where WG 1 develops standards supporting energy management for devices and appliances within homes and small buildings.

HES has developed about 60 standards spanning communications architecture, protocols, device interface, gateway to public networks, and applications. The approval of international standards requires multiple votes of about 30 participating member nations with support from 2/3 and opposition from fewer than 1/4.

In addition, the ISO and IEC publish technical reports. GWAC has offered the following, all of which has been approved for publication:

- GWAC Interoperability Context-Setting Framework
- GridWise Transactive Energy systems research, development and deployment roadmap
- GridWise Transactive Energy Framework

Ron M. asked Ken about if there were any problems scheduling international virtual meetings. Ken had given two options for start times and they agreed on a 10 am Eastern time. He noted the various start times around the globe. They avoided people starting at 2am, 3am or 4am. He said they averaged 20 people on the calls which was an improvement from their face to face meetings. ISO/IEC already decided that the fall meeting will also be virtual over a two-week period.

Ken asked anyone who is interested in participating in the meetings to contact him.

Lorenzo Kristov asked if home energy management systems require something to be incorporated into appliances by the manufacturers in order to participate?

Ken replied that they don't necessarily, saying that the energy management agent is responsible for control of appliance. If the appliance can't be controlled other than cutting power is seen as not

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sophisticated control. It will interrupt the cycle. Ken said that there is a need for some degree of interface to the appliance. He noted SGIP/SEPA's efforts on the standard. He said also that EPRI helped to formulate the standard. An interface to the appliance is a very good thing to have for control but that power management allocation is up to the energy management agent.

Gerald Gray said that some standards are used by everyone and are defacto - everyone uses it, but they are not identified as a standard.

Tanya said that some vendors such as Amazon, Apple and Google that are pushing push standards such as connected voice over IP. She sees a relationship to the SBATH paper in this topic.

Ron M. said we need to table this topic at this time. Ken Wacks said that he would be happy to discuss more offline with anyone who would like to contact him. Tanya noted that this could be a topic for a future meeting and has a tie in to SBATH as a topic area.

David Forfia - SEPA - Aaron was not able to be on the call and he did not send notes in advance.

EPRI - Gerald Gray - no news currently.

ASHRAE - Ron Bernstein: In the building automation specification section on cyber security and interface development within the build environment with other applications such as the cloud or open ADR- they are writing a document to be published in July. It discusses SBATH works and how buildings systems need to integrate their APIs and the related security.

IEEE - Ron Melton for Farrokh Rahimi - many meetings are going virtual. There is a new PES proposal on energy internet that has gone out. It is like smart grid work done previously. The new coordinating committee got some push back. Ron Melton expects to encounter this topic in future meetings and said that GWAC can be a source of unbiased information about it from our past smart grid experience.

Energy Block Chain (EBC) - David Forifa said that Ward Camp has left the call today. They are working with some ISOs from Arizona. No progress on their 501c.

NARUC - Chris Villarreal- noted that on April 21 he sent a note out to GWAC to say that the NARUC Smart Grid Interoperability report is out. It is a tool for regulators to answer their questions on interoperability and help them to review utility investments for new technologies such as how to ensure that technology is backward and forward compatible. NARUC also released interoperability learning modules; these are short 15-minute videos to explain interoperability as it applies to day to day job of the regulator and there are some examples from states with interoperability standards and how it's helped to achieve their policy goals. The first video is by Lynn Kiesling, on how interoperability supports policy objectives and another one is done by Minnesota PUC staff on inter-connection standards in which some relate to 1547. And the third one is from Michigan staff and how they attempted to leverage ZigBee in interop development. The NARUC July meeting will be virtual. They will do more interoperability work this year. And as it applies to the checklist, Chris said there is a subgroup of regulators and staff who have worked on the interoperability project and we should send the refresh

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document to them. Ron Melton said the Checklist is ready to be published but we could welcome feedback comments from them if provided.

Action: Ron to work with Chris Villarreal to send out the Decision Maker's Interoperability checklist to his suggested set of people.

Ron M. asked Chris about possible keynote speakers from NARUC.

Chris noted that the new NARUC president will Paul Kjellander, with the Idaho Public Utilities Commission. His background is in telecommunications. Ron said if they don't have to travel to our meeting, we might have a better chance of getting them. Ron asked Chris to think of who in the regulatory world could be a keynote or plenary panel speaker, noting that ideally it would be someone who could speak to TE and/or Grid Architecture.

Chris will work with Kerry Worthington at NARUC about suggestions for keynote speakers. He also mentioned that NARUC has a meeting the same week as the Fall GWAC virtual "F2F." It will be a bit of a conflict for him, but he will try to attend both.

Action: Chris Villarreal to work on a list of possible keynote and panel speakers from NARUC for TESC20.

Andrew Bordine told the group that his company, Anterix, also has connections with NARUC, and he would be happy to help. He said his company will be speaking at the summer NARUC conference.

Ron M. mentioned the GWAC grid architecture project saying that it is a platform view of different infrastructures. Jeff Taft has started another round of bootcamp for a select audience.

The reference architecture on converged architecture is finishing up. The COVID impacts on urban convergence is a challenge.

Ken Wacks mentioned that he is working with Karen Studarus on ISO/IEC requested edits of the TE Roadmap. She will talk to him later today.

David Forfia noted from the chat box that both Tanya Barham and Elizabeth Sisley are interested in the Grid Architecture bootcamp.

David Forfia asked for a motion to adjourn the meeting and was surprised that the entire council gave the motion at the same time. He asked for a second and the full council gave the second motion as well. Hearing no further discussion, David adjourned the meeting and thanked everyone and advised them to stay safe and healthy.