

Meeting Minutes

June 17, 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

Stuart McCafferty, President, GridIntellect

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

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

Larisa Dobriansky, General Microgrids

Chris Irwin, US DOE

Karen Kalsi, PNNL

David Katz, Sustainable Resources

Jaime Kolln, PNNL

Rob Pratt, PNNL

Hayden Reeve, PNNL

Aaron Smallwood, SEPA

Abhishek Somani, PNNL

Steve Widergren, PNNL

Elizabeth Sisley, Calm Sunrise Consulting

David Wollman, NIST

PNNL Support

Ron Melton, PNNL, Administrator

Karen Studarus, PNNL Administrator

Susan McGuire, GWAC Coordinator

Meeting Minutes

June 17, 2020

Administrative

Ron Melton introduced Hayden Reeve, PNNL. Hayden will be taking over Transactive Energy Systems program that Steve Widergren managed since Steve will be retiring at the end of this month.

Ron noted that Hayden has been with PNNL for 18 months, primarily working on projects in the areas of buildings and grid integration

Hayden added that prior to his employment with United Technologies he had worked in several areas including smart buildings operations and renewable energy and prior to that in aerospace energy systems.

Hayden told the group that he is interested in learning more about GWAC

Chris Irwin, DOE, told the group that he is anxious to see the new GWAC website preview.

Ron M. invited the group to participate in Steve Widergren's online virtual retirement - an invite was sent to all GWAC and emeritus.

David Forfia opened the meeting.

Ron read the Proprietary Information.

Review Meeting Minutes & Actions

- Approve minutes from May GWAC Meeting

Action items from previous meetings

- **All:** please let Ron know if you will be unable to attend a call ahead of time.
- 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 (OBE with decision to have virtual fall meeting)
- GWAC members to provide ideas for a successful Virtual Fall "F2F" meeting
- ✓ Schedule fall virtual meeting - Susie

David F. asked for a motion to approve the minutes. Gerald Gray gave the motion and Farrokh Rahimi seconded the motion; with no objections the GWAC May minutes were approved.

Meeting Minutes

June 17, 2020

Ron M. noted that Susie has scheduled the GWAC Fall Virtual meeting series for Oct. 7 and 8. The agenda is still being developed.



Conferences and Events

(**Bold** indicates GWAC speakers)

- **CABA Smart Buildings Summit, Florida, May 3 – 5, 2020 *still scheduled on the web***
- **IEEE PES General Meeting 2020, Montreal, August 2 – 6, 2020**
- **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**

Ron Melton reviewed the upcoming conference list. He noted that Grid Evolution has announced that it will be a virtual conference.

Ron noted the 2020 PNNL TE Theory Workshop will be held virtually on Sept. 14, 16 and 17 as three 2-hour workshops each day. The invitation is posted

https://www.gridwiseac.org/pdfs/2020_tes_theory_workshops.pdf If you are interested in attending please contact Don Hammerstrom, PNNL or Susie McGuire.

IEEE PES T&D Power Forward meeting has been rescheduled to Oct. 12 -15.

IEEE TESC 2020 meeting is scheduled for Dec. 8 - 11, 2020 and is listed on the IEEE site.

<https://ieee-tesc.org/>

AHR - is still planned as an in-person meeting Jan. 25 - 27, 2021 in Chicago, IL.

IEEE ISGT is still planned as an in-person meeting in Washington DC in Feb. 15 - 18, however, the board has asked to switch to virtual and that is being considered.

Ken Wacks noted that the Consumer Electronics show is still planned for January 2021 in Las Vegas but will be more spread out with some booths located outdoors.

Meeting Minutes

June 17, 2020

—● GWAC Website Refresh Status

- Domain gridwiseac.org has been renewed for two years
- New virtual machine hosted by PNNL set up and configured
- WordPress preliminary design created
- Page migration in progress
- Today: Demo to GWAC
- Is the development headed in the right direction?
- What additional functionality do you miss seeing?
- Keep the long header block?
- Next:
 - Designer to review and refine
 - Finish migrating content
 - Update council photos and bios as requested
 - Swap over site (ETA July)

Website Refresh

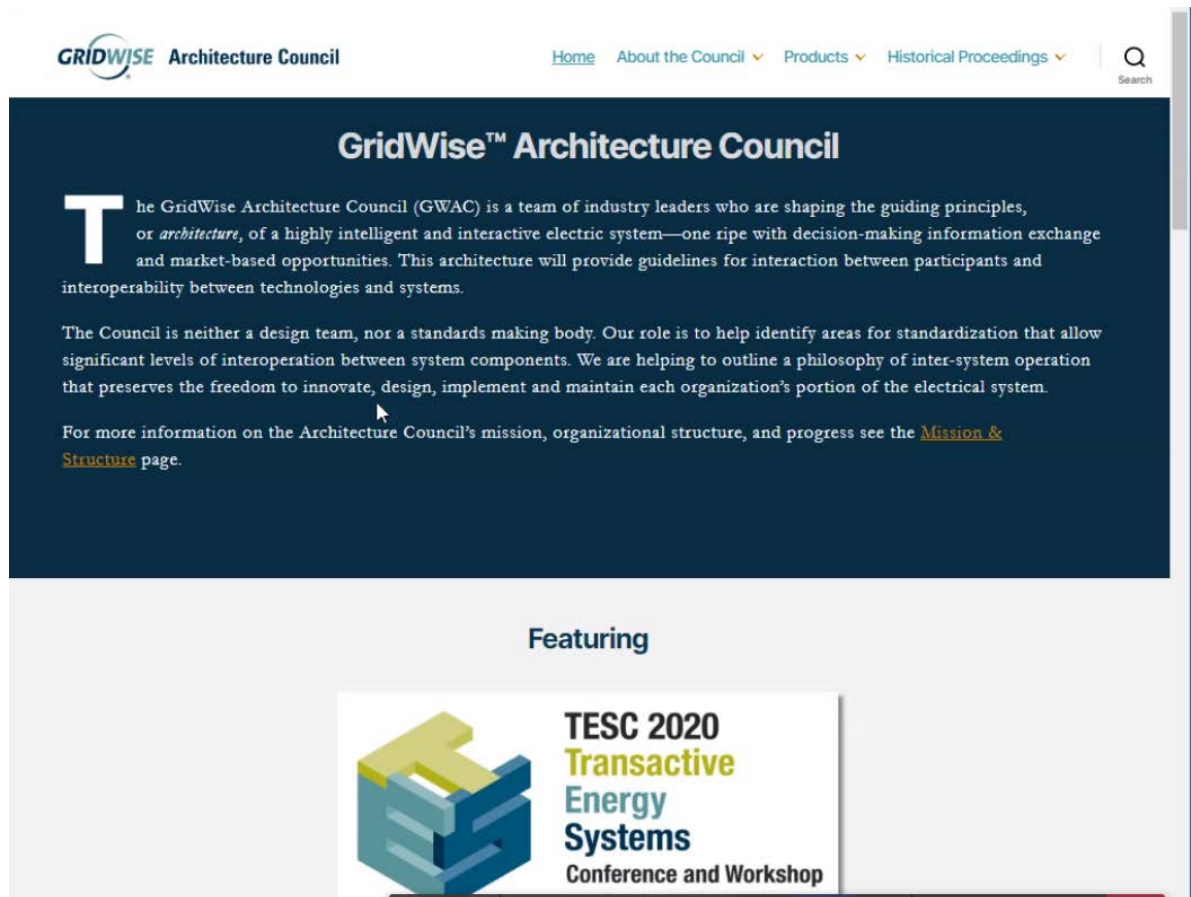
Karen Studarus noted that the three main goals of the website refresh are to modernize, update and make it easier to maintain.

Karen noted that the new server has been set up and the site reconfiguration is underway.

Karen displayed the first cut -

Meeting Minutes

June 17, 2020



Karen noted the clean, simple home page which displays featured products and events, a gallery of recent products. She noted that the links to older documents will be preserved.

Gerald Gray noted that he likes the featured products display. He would like to see them appear higher on the page. Tanya Barham agreed with that.

Kay Aikin commented that having products so prominent looks a bit too commercial. As a foundational council for grid transformation this is not how it should be. Ron Ambrosio agreed products should be easy to find but not the headline.

Ron suggested that we get quick general comments and schedule a separate session to review the website refresh for additional comments.

Karen noted that this is not final - this is still a draft version. The designer has not polished the page yet.

Karen invited the GWAC to update their own photo and bio at this time. Please send updates to Susie McGuire.

Meeting Minutes

June 17, 2020

Tanya Barham said that she is pleased to see the new webpage but has design concerns.

Karen noted that the invitation for further discussion of the webpage will be sent to the GWAC in about two weeks after the designer has further refined the site.

Chris Irwin commented that he likes something clean - he likes that theme and sees it as refreshing. He appreciates the modernization of "what's under the hood." He is happy with what's been done so far. He said he did not wish to participate in the review meeting.

Karen is hoping to have the new site rolled out in July. The refresh is still on budget and on schedule.

Ron Bernstein commented that the page is nicely done and looks great.

Action: Schedule a future separate session for review of the website refresh with the Council. Susie will coordinate with Karen.

Matrix

Ron M. has updated the GWAC matrix noting that the Economic Resilience paper and Decision Makers Checklists will come off since they are complete, and he noted that the plan is to add the matrix to the GWAC website. The TE FAQ and Grid Future States have been added.

Ron B. said completed items could be noted with a link to those completed items and then historical copies of the matrix be retained as a record. Ron M. agreed that this would be a good addition the website.

Meeting Minutes

June 17, 2020

GWAC Projects – June 2020 Update

| Project | TE FAQ | Decision Makers Checklist Refresh | Smart Buildings as Transactive Hub White Paper | Economic Resilience White Paper | TESC Conference | Grid Future States Update |
|------------|---|---|---|---|--|---|
| 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 | Update Grid 3.0 Future States |
| Audience | Policy, Regulators, Legislators, TE Practitioners | Utilities, regulators, transactive platform providers, service providers, consumers | Building owners, energy managers, utilities, end users | Utilities, integrators, solution providers, policy makers | Decision makers, solution providers, labs, academia, policy solution providers | Industry Stakeholders |
| Status | Draft completed | Complete | Edited - edits under review | Complete | Program structure created for virtual or F2F | Started in January. Now meeting regularly. Coordinating with GMLC Grid Architecture results |
| Actions | Review by Administrator and then Council | None | Address editor comments | Post to GWAC Website | Promote conference, work on identifying and recruiting keynote(s) and plenary panels | Working group is gathering inputs and organizing material and has a work plan |
| Leadership | Tanya Barham | Jaime Koln, David Forfia | Ron Melton, Ron Bernstein | Rahul Bahadur, Farrokh Rahimi, Don Hammerstrom | Various – Ron Melton Lead | Ron Cunningham, Karen Studarus |

TESC 2020



- Conference now VIRTUAL 8-11 December 2020
- Two two-hour sessions each day for four days + plus more pre-recorded content.
- IEEE Advanced Technology -PSOPE Power Systems Operations, Planning & Economics and SBLC as partners, and AMPS – *sent 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*
- Theme – “Architecting a Resilient Transactive Grid”
- Status:
 - Description / Call for Participation – finalized and sent
 - TESC 2020 Website ieee-tesc.org
 - Program structure roughed out
 - Balance of live/pre-recorded content to be finalized next week then schedule posted
 - Keynote speakers brainstormed
 - Working with IEEE to identify new budget structure
 - Lower registration fee
 - New Sponsorship Structure
 - Costs of software platform, publication, registration
- **Promotion needed**

Meeting Minutes

June 17, 2020

TESC 2020

The budget redo is still underway, but Karen noted that there are no funds to be forfeited due to the move to virtual.

The organizing committee is still discussing the format and what should be pre-recorded and what should be live.

Karen noted that messages about the switch to virtual and new abstract submission date and other date changes have gone out to the GWAC. Abstracts are still coming in through July 1.

Keynote speakers are still being identified. Without having to travel this should increase opportunities for people to participate. If you have ideas about keynote speakers, please let Karen Studarus and Ron Melton know if you are not on the organizing committee.

Ron M. noted that GWAC hopes to have a keynote from DOE or a panel, Alejandro Moreno, Chris Irwin, and Erika Gupta. Chris Irwin noted that this would relate to the joint FOA on Connected Communities so to include them would make a nice panel and platform for discussion. He thought adding Alejandro is a good idea.

Ron M. said the plan is to have topics about grid architecture and Transactive Energy. He thought that Chris and Erika could talk about Transactive Energy and Chris and Alejandro could speak to the Grid Architecture side. Chris agreed.

Chris Villarreal is working with Kerry Worthington on another meeting and they are also working with Mark Knight regarding the National Council on Electricity Policy meeting which is scheduled for Dec. 7 and 8. The sessions that have alignment with Transactive Energy would be held the morning of Dec. 8. NARUC is currently planning it as an in-person meeting. Locations are being discussed. They are trying to align their meeting with TESC 2020 so that both groups could combine. Mark Knight has talked with the TESC 2020 organizing committee about this. NARUC is still planning for their meeting to be in-person. On issue to be resolved are the charges. If GWAC joined the NARUC meeting, there would be no charge. Karen Studarus noted that Dec. 8 is the date of the TESC 20 tutorial which would work out well.

White Papers

Smart Buildings as a Transactive Hub

Ron B. noted that the SBATH has been extensively edited by the PNNL editor which he will review. He hasn't gotten to it before this meeting. He will try to get it reviewed this week. Ron M. said he thinks it is a bit long and Ron B. agreed. Ron M. proposed to divide it into two documents as an idea and with some consideration for grid architecture on Transactive hub subject matter. Ron B. said there is a lot of information from a lot of angles. He said he agrees with Ron M.'s idea as a possibility. Ron B. asked if anyone had feedback about this.

Meeting Minutes

June 17, 2020

Ron M. said that he and Ron B. could have a further discussion about the possibility of splitting the document into two and then come back to the group with a map of how it would look.

Farrokh said that he liked this idea.

David thanked Ron B. and Tanya B. for their work on finalizing this paper. Karen Studarus also thanked them.

Tanya said it was a passionate and smart group and it was a fun project.


Ron B. asked how we get it posted when it is final. Ron M. said they can look at how substantial the revision is as to if it should be published or further reviewed. If no further review, then will need to have an Information Review at PNNL and Hayden Reeve could be the peer reviewer. Ron B. said he would like to get it published soon.

Action: Ron Melton and Ron Bernstein to discuss splitting the SBATH paper into two papers and a path forward.

Economic Resilience White Paper

Economic Resilience White Paper

- Completed!
- Released through PNNL Information Release process.
- Will be posted to gridwiseac.org this week.
- Thanks to the team for the final push!

The image shows the cover of a white paper titled "Reliability and Resilience Considerations for Transactive Energy Systems". At the top, there is a colorful geometric logo. Below the title, it says "Presented by: GridWise Architecture Council". The cover also features a "Decision Makers Checklist" section with a list of questions and checkboxes. The GridWise Architecture Council logo is at the bottom.

Ron M. expressed thanks to the economic Resilience Team. He noted that Steve Widergren, PNNL did the peer review and gave it two thumbs up. Don Hammerstrom helped to shape the final version. Ron thanked the team with their efforts on this document.

Action: Ron M to send a copy to Chris Irwin of the Economic Resilience paper and the Decision Makers Checklist

Chris Irwin said he is looking forward to seeing these papers go public and he said he likes having these resources available. He will use the Decision Makers Checklist and other applicable documents as a resource for the FOA on interoperability.

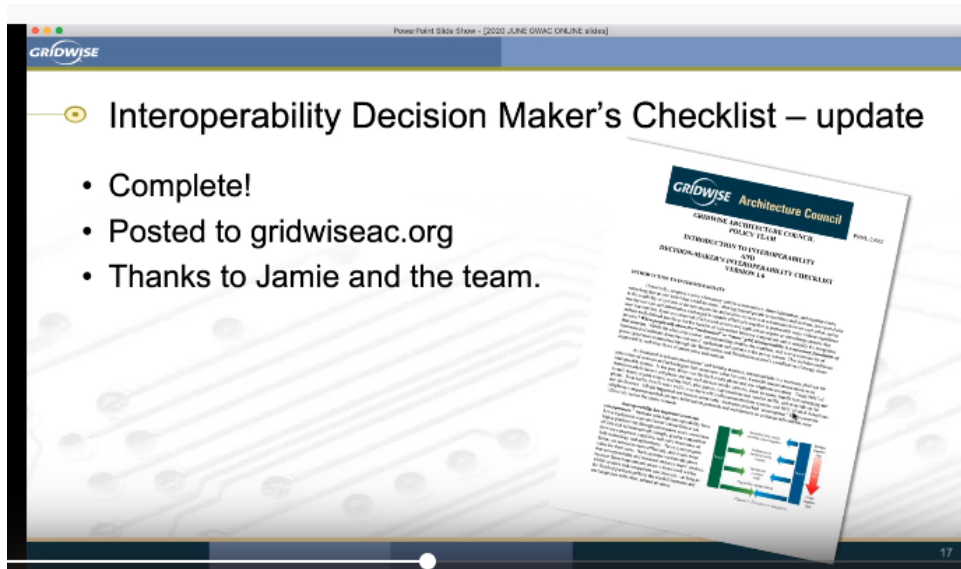
Meeting Minutes

June 17, 2020

Ron M. noted how the original idea for the checklist refresh came about and he thanked Jaime Kolln for leading the group.

Jaime noted that he appreciated everyone's input.

Decision Maker's Checklist



Ron Melton noted the Checklist is now posted on the GWAC website.

FAQ

TE FAQ

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

Meeting Minutes

June 17, 2020

The FAQ Twitter version has been reviewed by GWAC. Tanya said that Ken Wacks and others have sent her some feedback on the FAQs that has been incorporated. The shorter version will go out first and the longer version later. Tanya will send it to Ron Melton, Karen Studarus and Susie McGuire.

Gerald Gray has not provided edits yet but said that he plans to do so.

Tanya noted that the document is stored on the GridArch.org SharePoint site.

Electric Industry Visions – Statements of the Future White Paper

- Continues discussions carried over from Grid 3.0 group that took place during last GWAC F2F meeting
- Working Group: Cunningham, Studarus, Ambrosio, Forfia, Melton, Wollman
- Meeting monthly (or more often as needed)
- Status
 - Objectives Defined, Deliverables set in moldable clay
 - Putting out Formal Request to industry stakeholder groups for source material
 - Characterization / Assessment of material to start late summer
 - Initial findings at GWAC fall meeting (with invite for balance of GWAC review/comment)
 - Findings and Next Steps for TESC 2020 GWAC Foundational Session

Future White Paper - Electric Industry Visions

Ron Cunningham talked about the importance of getting divergent views and show relationships with each other to create the white paper on Electric Industry Visions. He noted that the Fall GWAC virtual meeting will be a place where they report their progress and to invite comments from the GWAC on the approach and the paper to date. He also plans to have a spot in the GWAC Foundational session at TESC 2020.

The materials will be assessed and analyzed to see if they are original and not being done elsewhere. Contributions will be formally requested from various organizations for source material and contributions will be cited.

Ron M. said that the Grid Architecture group is also trying to establish a linkage to this material as future state views.

Ron C. will post the working documents on the GridArch. He mentioned a Grid 3.0/Future states working document.

David Forfia said he sees this as very helpful.

Meeting Minutes

June 17, 2020

Andy Bordine, Stu McCafferty, and Lorenzo Kristov all said they would like to be a part of this, and Karen S. will add them to the working meetings.

Action: Karen Studarus to add Andy Bordine, Stuart McCafferty and Lorenzo Kristov to the Electric Industry Visions white paper group.

☉ GWAC Fall Virtual F2F

- Theme: Electric Industry Visions – Statements of the Future
- Format: 2 days, 2 sessions per day (dry run for TESC 2020)
- Dates: Oct. 7 – 8; 8AM – 10AM (PT) & 1PM – 3PM (PT)
- Planning group meeting being scheduled
 - What is pre-recorded
 - What is live, etc.
 - What interactions do we try out as a test for TESC 2020?

Ron M. said the proposed theme is a strawman. There is a planning group for this meeting and Susie will be scheduling the meeting. Ron M. asked if there were other issues that the group wants to discuss. If so, please let him or Karen know.

Ken asked if the meeting will have a way to encourage networking and socializing during breaks. Ron and Karen have some ideas including something like an IM channel or slack channel. Ron Cunningham mentioned something that is available in WebEx Teams with different spaces in one event. He said some monitoring is needed for group side meetings.

Jeff Morris said breakout rooms work well if you have a designated host to lead them so that things move along.

Karen said we are talking about something consistent and flexible and agreed that curation and ring leading is needed. She noted several potential platforms. She said the planners are also discussing sending out a tactile care package to participants in advance so that there is something they can see and touch that relates to the meeting.

Ron M. said that we will explore these ideas further in the Fall F2F Virtual meeting and in the planning meeting that Susie is scheduling.

Lorenzo suggested that we create our Avatar bodies with tactile sensors. Chris V. said the Midwest Solar Expo is doing this. Ron M. noted we may not all have the equipment to facilitate this.

Ron Ambrosio will ask his son, who works at Twitch about any possible options.

Meeting Minutes

June 17, 2020

Liaison Reports

David Wollman said the new NIST Smart Grid Framework 4.0 is still underway. It should be ready for an internal review in July.

He provided a link to a new document by people at the U of Vermont and NIST - it's a new approach to mitigating overshoots to DER by designing a dynamic constraint management system:

<https://ieeexplore.ieee.org/document/8957670>

NIST will host a virtual meeting July 7 and 8 on automated driving systems. <https://www.nist.gov/news-events/events/2020/07/ads-safety-measurement-and-operational-design-domain>

Karen noted that the GWAC TE Roadmap and Framework documents are being revised for publication by the ISO/IEC. Ken asked if Karen has talked with Richard Cook, the ISO/IEC editor; she has not but the PNNL editor has.

Ken asked if Karen could get Richard with ISO/IEC to approve the changes and then let Ken know so that he can let his ISO/IEC contact know. Karen said she would keep Ken in the loop.

Action: Karen Studarus to keep Ken Wacks apprised of the progress on the TE Roadmap and Framework edits for the ISO/IEC.

Ken noted that the next ISO/IEC meeting will be held September. He noted that the meetings will be three-hour blocks in the weeks of Sept. 14 and Sept. 21.

Ken asked that GWAC let him know if there are any other documents in progress from GWAC that could be also considered as an ISO/IEC document. Ken also asked if anyone is interested in joining the ISO/IEC meetings to contact him.

SEPA - Aaron Smallwood- noted that the SEPA Grid Evolution meeting will be held July 28 - 30 and is now all virtual. There will be three 45-minute sessions each day. All sessions will be recorded for replay upon demand. The cost to participate for non-members is \$149. There will be some pre-recorded sessions available in August. He noted some of the various topics and noted that they are all available for review on the conference website. Topics can be found on the Grid Evolution website and many should be of interest to the GWAC. There is one on smart grid ontology that GWAC is contributing to.

Regarding the working groups, they have been spilt off from the main meeting this year. These will be Sept. 22 - 24. This will be held using a mix of technologies such as break out rooms and curated sessions.

Solar Power International and North American Smart Energy Week are scheduled as an in-person event. The meeting will be held Oct. 21 and 22 in the Las Vegas Convention Center parking lot. The exhibitors and attendees will be able to socially distance in the parking lot of convention center. The educational, keynotes and panels will be virtual. If you are interested in the solar industry you should attend.

Meeting Minutes

June 17, 2020

Ron M. noted that IEEE PES is more expensive for those who are publishing papers. This helps to cover publication costs.

People on a panel session do not have to pay publishing costs.

Aaron Smallwood said they are considering adding a technical symposium that is largely educational to the Solar Power meeting. It's still being planned.

Aaron noted resources available from SEPA. There is a new investment they are doing with a challenge event and he said that utilities are joining the effort. They will develop a detailed data set that covers several areas. The key results and transformation challenge leader board will be announced this fall and they are still trying to figure out how to share it virtually.

Ron M. noted the SEPA catalog of standards that are being updated. There are three that are being reviewed and hopefully approved very soon. There should be one meeting left for them to be complete. They are B2030.5, 1547.2018 and 1815.1

Gerald Gray had no updates

Ron Bernstein- ASHRAE

On the topic of how buildings interact amongst themselves and other applications like smart grid applications. There is a new proposed draft of a cyber security overview and requirements document that will be part of the specified building automations system. It is out for review now. Will be adopted this summer.

Ron B. is also on a new cyber security committee and it has a new smart grid relationship. He may have some information for GWAC to do with interoperability and security topics.

Ron M. - IEEE PES (Farrokh has signed off) - Technical committees typically meet at the general meetings so these are now meeting separately from the virtual general meeting. If you are a part of a working group, technical committee or task force, please contact your committee chair or vice chair or secretary to figure out what is going on with those meetings.

Energy Blockchain Consortium, EBC - David Forfia - Tony Giroti is presenting today at the Pacific Rim conference. David will present at the Oil and Gas Blockchain Conference in September on Grid Architecture and the tie to Energy Blockchain.

Chris Villarreal - NARC is moving the summer meeting to be virtual from 12 to 5pm EST on July 20, 21 and 22. The annual meeting in mid-Nov. was to be held in Seattle but could go virtual.

NARUC is the organizer for the national council on electricity policy. This is a place to discuss energy policy for state regulators and governors. The annual meeting is scheduled for Dec. The session name is evolving compensation and market mechanisms. How do you identify the value from distributed energy resources and what the educational needs of these state offices on policy implications? They are

Meeting Minutes

June 17, 2020

planning a session on Transactive Energy and have been working with Mark Knight. They should know by labor day if the meeting will be virtual or in person. The meeting is currently still planned as in person.

Ron Melton asked about the cost for the NARUC summer meeting and Chris said it is \$550 to join and participate.

Andrew Bordine noted that his company has a summer summit that they are scheduling. It relates to the building environment. There is a buildings technologies funding opportunities announcement that BTO is doing. Ron B. is aware of it. Ken Wacks said he is also aware of it.

David Katz joined and noted that his company working on a building intelligence with the Chinese Academy of building research to make an international rating standard for smart buildings. He would like them to be TE hubs. He is looking forward to the SBATH paper to share with this group.

Action Reminder:

- Schedule a meeting to plan the Fall Virtual GWAC meeting
- Ron Melton to send publications to Chris Irwin
- Ron M. and Ron B. to discuss the SBATH paper
- Schedule a meeting to review the new GWAC website with GWAC

David Forfia asked for a motion to adjourn and Ron Bernstein gave the motion. Ron Ambrosio seconded the motion. David Forfia asked for a motion to adjourn. There were no objections, but Gerald Gray abstained from voting

The next meeting is scheduled for July 15.