

## **Meeting Minutes**

**March 20, 2019**

### **GWAC Members**

David Forfia, Director, Enterprise Architecture & IT Transformation, Electric Reliability Council, TX

Ron Ambrosio, Chief Scientist, Utopus Insights, Inc.

Tanya Barham, Director of Operations, PECI

Ron Bernstein, President, RBCG, LLC

Joe Hagerman, Deputy Chief Scientist, NRECA

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

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

Leonard Tillman, Partner, Balch & Bingham, LLP

### **GWAC Members not present**

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

Doug Houseman, Grid Modernization Lead, Burns & McDonnell

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

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

### **GWAC Associates & Emeritus**

Robert Burke, Robert Burke Consulting

Ron Cunningham, AEP

Jeff Morris, Principal, Horizon Energy Corp.

Ken Wacks, Home, Building and Utility Systems

### **GWAC Guests**

Rahul Bahadur, VMware

Rolf Bienert, Open ADR

Ward Camp, EBC

Phil Davis, Schneider Electric

Larissa Dobriansky, Dobriansky Consultancy/General Microgrids

Mark Knight, Burns and McDonnell

Dave LeVee, PwrCast

David Wollman, NIST

### **PNNL Support**

Ron Melton, GWAC Administrator

Susan McGuire, GWAC Coordinator

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Ron Melton opened the meeting and checked attendee names until a quorum was reached.

### Administrative business

Chair David Forfia noted that the February GWAC meeting minutes had been distributed for review. He asked if there was a motion to approve the minutes.

Stephen Knapp gave a motion to approve the minutes and Ron Bernstein seconded the motion.

Hearing no objections David Forfia noted that the GWAC February meetings minutes were approved.

### Review Action Items

Ron Melton presented a slide about GWAC related deliverables in progress on PNNL's Transactive Energy Project, headed by Steve Widergren and directed by Chris Irwin, DOE Office of Electricity.

GWAC

**Deliverables**

- Review comments on the draft GWAC TE Roadmap and publish final version - Nov. 2018 - Completed
- Complete update for GWAC Transactive Energy Framework - Dec. 2018 - Delayed
- White Papers
  - Smart Buildings as Transactive Hubs – Dec. 2018 – Delayed
  - Considerations for Valuating TE Systems – Feb 2019 – Delayed
- GWAC website updates - Plan due Nov. 2018 - Delayed (getting cost estimate)

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### Actions recap from previous meeting

Ron Melton noted that a letter had been to Ken Wacks regarding the TE Roadmap. Ken will take the Roadmap to the upcoming IEC/ISO international meeting to be held near Stockholm, Sweden for international publication. The date of the meeting is April 19.

Ron Melton reminded the GWAC members to let him know in advance if they will not be able to attend the meeting.

Grid 3.0 Ron Cunningham will give a presentation today on what the GWAC might be able to contribute.

Ron Melton will present today on the GWAC contributions to the AOP for PNNL's DOE TE project

Ron noted that Open ADR is now on the liaison list in response to a request from James Mater.

Ron Bernstein asked about another action item regarding GWAC projects and programs in progress. He had sent a draft list around after the last meeting.

Ron Melton apologized that this was not on the list and agreed that it needed to be addressed. He then gave an overview of the TSP project underway at PNNL and its relationship to GWAC. He would like to see some of the tasks from the project represented at TESC19 perhaps as a panel. TSP is a program under the portfolio of Chris Irwin, DOE, and Steve Widergren, PNNL is the project manager. Ron reviewed the scope of the AOP for the project and deliverables that pertain directly to the GWAC.

Ron Melton also noted that Grid Architecture, Interoperability, SEPA, and EPRI are other current DOE efforts.

The Grid Architecture Workshop last fall was cross talk between Grid Architecture and Grid 3.0.

### TESC19 Update

David Forfia, Ron Bernstein, Farrokh Rahimi and Ron Melton have discussed what is expected related to TESC19 sponsorships. Registration fees are set and Maureen Dalton has created a sponsorship flier that will be a good reference when contacted potential sponsors. IEEE helped create the sponsorship levels by providing information from similar meetings.

Ron Bernstein said that IEEE has many levels of individual membership now and the options of registering for the whole conference or part of the conference make the registration calculation potential very complex.

Ron discussed possible industry recruitment efforts and insights. He encouraged all of the GWAC members to assist in making contacts to gain sponsorship.

Ron Bernstein noted the optimum goal of sponsorship at \$32K~.

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### 2019 TESC Update

- Organizing Committee Calls every other Monday at 1PM Pacific Time
- Facility: Contract signed. Updating for poster session / reception
- Budget: Reviewed last week, updated relative to sponsorships. Registration fees now set.
- Registration: Will open in very near future.
- Sponsorships: "Packages" defined. Goals set. Prospectus being prepared by IEEE. Recruit, recruit, recruit!
- Program: Program structure set
- CFP: Updated, papers vs. abstracts clarified, extended to 31 March
- Website – Initial problems fixed. Being updated with banner, etc. - <https://ieee-tesc.org>

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Ron Melton reviewed an outline of the possible eight sessions at TESC19 and the abstract selection process. He also reviewed the draft of the conference agenda:

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### Program Structure

Monday, July 8		
0800 - 1200	Tutorial 1	Tutorial 2
1300 - 1700	Tutorial 3	Tutorial 4
0700 - 1700	Registration Open	

Tuesday, July 9		Wednesday, July 10	
0730 - 1700	Registration Open		Registration Open
	Opening Plenary Welcome		Day 2 Plenary Opening comments Plenary Speaker and Plenary Panel
0800 - 1000	Plenary Speaker or Panel GWAC Foundational Session		
1000 - 1030	Networking Break		Networking Break
1030 - 1200	Panel 1	Panel 2	Panel 5   Panel 6
1200 - 1300	Lunch Break		Lunch Break
1300 - 1400	Workshop 1	Workshop 2	Workshop 5   Workshop 6
1400 - 1430	Networking Break		Networking Break
1430 - 1600	Panel 3	Panel 4	Panel 7   Panel 8
1600 - 1700	Workshop 3	Workshop 4	Workshop 7   Workshop 8
1700 - 1830	Reception / Posters		

He commented that the agenda structure is similar to past TESC meetings held in Portland.

Ron Bernstein has created descriptions of the tutorials and sent the document to Ron Melton and Susie McGuire along with a proposed updated conference logo.

Ron Melton shared that Mark Paterson is putting some information together about the conference and is hoping to encourage about a dozen people to attend from Australia. In light of this Ron Melton suggested an international panel.

Tanya Barham would like some guidance and feedback on the international panel. She has some ideas for it as well.

Ron Melton said he is aware of some international contacts that have worked with GWAC in the past. He would like to see a minimum of three non-US countries represented to round out the panels.

Stephan Knapp said that he would like to have some international synergy in the area of DER - for example, what is revenue and what is a cost? How different are our [US] models and what the reason for the differences is. Are their social differences that affect things?

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Tanya Barham noted hearing from some international participants at the Portland meeting and the discussions were interesting.

Ron Melton noted that Ellen Anderson at the University of Minnesota had indicated recently that she could be a plenary speaker. She is a former state regulator and her background would be very relevant.

Tanya Barham agreed that Ellen would be a good plenary speaker.

Ron Melton noted that recent IEEE ISGT meetings feature a Blog on the meeting website. The blog features 500 word abstracts on relevant topics that create interest in the meeting. He suggested this an interest builder for TESC19.

Ron Bernstein noted that GWAC is not well represented in the conference materials presented by IEEE. He has created a TESC19 GWAC logo for the tutorial flier to help solve this problem.

Tanya Barham commented that she liked the new logo for this year's conference. She would like to start circulating the tutorial document to some of her colleagues.

Ron Melton noted that his title needs to be changed and he will review the document. He also suggested putting a link to registration in the document.

Ron Bernstein suggested sending the tutorial document to the IEEE person who is building the conference website.

David Forfia said they could talk about this at the Monday meeting.

**Action Susie: send the tutorial description out to the leaders noted in the document. Complete - Ron B sent this out on 4/4/19.**

Ron Melton said that Ron Bernstein's summary of activities in progress by GWAC is a good summary document. It can be maintained on the Sharepoint site. There will be some changes that need to be made but it is a good starting point.

Tanya Barham agreed that it is a good place to start and she appreciated Ron Bernstein's efforts.

Ron Melton agreed with Ron Bernstein's idea to do a quick review and update of the document at each GWAC meeting.

**Action Ron Melton: Review the GWAC activities summary document from Ron Bernstein for eventual publication on the GWAC website.**

### GWAC White Papers

Economic reliability paper

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Rahul Bahadur noted that he will submit an abstract for TESC19 and a full paper for the ISGT next winter. The team consists of Rahul Bahadur, Farrokh Rahimi, Mark Knight, and Stephen Knapp.

Ron Melton asked them to submit it as a GWAC white paper ...

**Action: Ron Melton and Rahul Bahadur to have a call later to discuss the white paper further.**

Ken Wacks asked if the paper was a GWAC paper or a TESC19 submission. Rahul said it is both.

### **Ron Cunningham Grid 3.0 Presentation**

Ron Cunningham presented efforts of the study group which is comprised of himself, Trevor Gionet, Lorenzo Kristov, and Leonard Tillman. Stephen Knapp is also a member but had not been able to attend the meetings. The five slides presented talk about what the group went through in their working of the Grid 3.0.

Step one was to set the baseline of the intent and the future state.

Organizational capability and future states are some of the deliverables

Ron Cunningham noted that many organizations have their own visions for the electric grid.

The group recommended three things – a vision paper, a business model with archetype mapping, and a workbook to list future states and capabilities. He noted that architecture is a core competency of the GWAC.

Ron Cunningham then turned the discussion over to the study group and he apologized that this is the first time the group has seen this summary.

Lorenzo Kristov discussed an information center which would be a directory of the multiple activities in one place. That had been part of the discussions, although he was not sure who would be able to put it together.

Ron Cunningham apologized that this wasn't included and noted that the creation of this may not be a GWAC task but a task for another group or organization.

Ron Ambrosio commented that he appreciated the summary.

Ron Cunningham said that he presented this to the group for their further action.

Ron Melton noted that two white papers are proposed in this summary.

David Forfia said that he sees three papers or deliverables that can come from the findings of this study group.

Ron Melton thought we should wrap up the current white papers and then host the TESC conference and then take on these new papers after that.

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David Forfia asked Ron Bernstein to note these next papers on his matrix as part of the back log of GWAC activities. Ron Bernstein and Ron Cunningham will discuss this.

**Action: Ron Bernstein and Ron Cunningham to discuss the production of these future white papers and Ron Bernstein to note them on the GWAC Activities Matrix.**

Ron Cunningham said that the third paper is actually just to identify the GWAC's role. It is not a white paper. He also noted that Farrokh Rahimi will not have email connectivity until April 1.

David Forfia congratulated Ron Cunningham on his summary and presentation. Several others joined in with gratitude for the efforts of the study group.

Ron Melton asked Rolf Bienert if he would cover Open ADR today.

### Liaison Reports

David Wollman – the NIST newsletter went out this morning. Anyone who wants to get this newsletter by email please contact David and he will add you to the mailing list.

David Forfia noted three upcoming meetings on Smart Grid Test beds and how they can collaborate. They are looking for input from the community. There are several new publications noted in the newsletter. There is a paper on automated demand response that maybe of interest to the GWAC.

Ken Wacks ISO/IEC – the international group will be meeting April 19 near Stockholm Sweden. Cyber Security efforts will be one of the topics. The TE Roadmap to be proposed as an international technical report will be discussed. Anyone interested in attending this meeting should contact Ken.

David Forfia SEPA – the TAG meeting is the day before the GWAC meeting. The ESI – Energy Services update – went very well.

David asked Ken about Grid Edge. David replied that economic modeling with Dave LeVee, Microgrids introspective, and Demand Response by broadcast communications, reporting requirements for Cyber Security and solar storage are being discussed.

Ron Melton noted that for GMLC, the high resilience arch is published on the PNNL.gov website. A Logical Energy network is noted.

David Forfia – for the Grid Evolution summit – it's a mashup – TE, Arch, microgrids, EV and mashing them into one group for discussion at the conference.

Jeff Katz added: IEEE PES is organizing a second Utility Cyber Security Workshop, to be co-located with the NERC CIPC quarterly meeting, it will be December 12 - 13 in Atlanta. See the 2017 one at <http://sites.ieee.org/ucw/> - if you can recommend potential speakers, please let Jeff Katz know.

Jeff Morris sent a link related to the SEPA effort regarding policy and regulations. He said there are on-going discussions at NARUC. He mentioned that he had been seated by Chris Irwin at the kick-off.



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<https://sepapower.org/knowledge/industry-leaders-collaborate-to-launch-new-regulatory-innovation-initiative/>

Ron Bernstein, ASHRAE – Cyber Security as it goes to grid arch inclusive. CABA is working on a white paper and it is out for review. It is high level on challenges and directions such as how to develop IOT models for connected things.

Lonmark is working on power lines and RF – things that can be connected using these two technologies.

IEEE PES – Farrokh is out. There is an advisory committee forming, Barbara Tyran, Executive Director, Government & External Relations at Electric Power Research Institute will chair it again this year.

Ward Camp, EBF — noted the May Orlando Smart Cities Conference. Key topics will be EV charging and blockchain.

Wolf Bienert, Open ADR - They are working on two extension documents for the open ADR spec. Open ADR 2.0 will not change. He would like anyone interested who wants to participate please contact him at [rolf@openadr.org](mailto:rolf@openadr.org)

The general functionality has not changed but report types will clarify how DERs can be controlled. They want to stay true to Open ADR. It is open and those interested in participating should contact Wolf. Also there will be a meeting June 11-13 in San Francisco.

David Forfia noted two upcoming meetings:

Energy Blockchain Regional Summit, Arizona, Mar 27, 2019 , Beus Center for Law & Society, Arizona State University, Phoenix, AZ, <http://energy-blockchain.org/>

Global Smart Cities Blockchain Conference, May 9-10, 2019  
Amway Center, Orlando, FL

David also noted a recent publication by Lorenzo Kristov in IEEE PES <http://magazine.ieee-pes.org/> (currently available on IEEE Xplore).

Chair David Forfia asked for a motion to adjourn.

Leonard Tillman gave a motion to adjourn. Steven Knapp seconded the motion.

There were no objections and David Forfia ended the meeting.