

Meeting Minutes

Mar. 16, 2022

GWAC Members

David Forfia, GWAC Chair

Kay Aikin, Founder, CFO, Dynamic
Grid/Introspective Systems

Ron Ambrosio, Independent Energy
Transformation Professional

Ron Bernstein, President, RBCG, LLC

Andrew Bordine, VP Energy Mkts & Innovation,
Anterix

Ron Cunningham, American Electric Power

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

Stuart McCafferty, President, GridIntellect

Ahlmahz Negash, Sr. Engineer, Tacoma Power

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

Aaron Snyder, Dir. of Grid Tech. Consulting,
EnerNex

Leonard Tillman, Partner, Balch & Bingham, LLP

Chris Villarreal, President, Plugged In Strategies

GWAC Guests

Diane Baldwin, PNNL

Hyewon Chung

Larisa Dobriansky

David Katz

Jaime Kolln, PNNL

Alex Papalexopoulos

Jiri Skopek

David Wollman, NIST

PNNL Support

Susan McGuire, GWAC Coordinator

Ron Melton, Acting PNNL Administrator

GWAC Associates & Emeritus

Ken Wacks, Home, Building & Utility Systems

GWAC Members and Assoc. not present

Rahul Bahadur, VMWare, Inc.

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

Jeff Morris, Schneider Electric

Mark Paterson, CSO, Strategen

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David Forfia called to order at 10:03am PT

Ron Melton introduced Diane Baldwin, PNNL to the group.

David introduced a new guest, Hyewon Chung. Director of Customer Success at Camus Energy. She gave a brief of her company. She noted that their work is very relevant to the GWAC. She had worked with David Forfia at ERCOT previously, and she has worked for several utilities and has experience with Grid Modernization and Smart Grid related initiatives.

Ron Melton introduced Diane Baldwin, PNNL. She joined PNNL in fall 2021. She has worked in distribution system design, protection and controls, and she led some technology innovation programs for BPA. She has experience in energy policy analysis for the Oregon Dept. of Energy. She is currently working with renewable integration and energy storage.

Agenda March 16, 2022

Call to Order and roll call

GWAC Administrative Business

- Welcome
- Minutes
- Upcoming events
- Actions

Planning for Fall GWAC Workshop Meeting

Status Reports

- GWAC Projects Overview Chart review
- TESC 2022 update
- GWAC Website
- Working Party Status Updates
 - Grid Architecture White Paper
 - Grid Future State White Paper
- Liaison Reports

Stuart McCafferty told the group that he is now with Siemens in the CTO office for Siemens smart infrastructure. He leads energy as a service effort for the CTO office.

Stuart has been writing a book and now has interested publishers. It should come out in July.

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David Forfia asked for a motion to accept the February GWAC minutes with edits from Ken Wacks and Ron Bernstein that have been made. Ron Cunningham gave the motion and Ron Bernstein seconded the motion. There was no further discussion and the group approved the minutes.

🕒 GWAC 2022 Call for Candidates

2022 GWAC
Call for Candidates
Now Open

- Expiring Terms
 - Ron Ambrosio
 - Andrew Bordine
 - Ron Cunningham
 - Farrokh Rahimi
 - Stuart McCafferty (will transition to emeritus)
 - Aaron Snyder
 - Leonard Tillman
- Non-Expiring Terms
 - David Forfia
 - Kay Aikin
 - Ron Bernstein
 - Gerald Gray
 - Lorenzo Kristov
 - Ahlmahz Negash
- Call for Candidates at gridwiseac.org
- Application and information at the site
- Applications due by March 16, 2022
- Selection Committee meeting will be scheduled in late March or early April
- GWAC slate confirmation will take place on special call before the April GWAC Web Meeting

Ron Melton noted that today is the last day for nominations for new GWAC candidates. The Selection Committee meeting is scheduled; Hayden Reeve will check with Chris Irwin, DOE to be sure that he is available.

Ron noted that the GWAC slate call will be next week. He is checking with Chris Irwin on his availability.

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Conferences and Events (Bold = GWAC speakers)

- EPRI's Electrification 2022 Meeting (F2F), June 28 - 30, 2022, Charlotte, NC
- Grid FWD, April 19-20, 2021, Seattle, WA
- **IEEE ISGT 2022, New Orleans, LA; April 24 - 28, 2022 – face to face format**
 GWAC Speakers: Lorenzo Kristov, Farrokh Rahimi
- IEEE PES T&D, April 26 – 28, 2022, New Orleans, LA
- IEEE Rural Electric Power Conference REPC, Cleveland OH, May 17 – 20, 2022
- **TESC2022; May 3 – 5, Virtual**
- **DistribuTech 2022 – May 23 - 25, 2022, Dallas, TX (date change)**
- IEEE PES General Meeting, Denver, CO, July 17 – 21, 2022
- **IEEE ISGT 2023, Washington, DC, January 16 – 19, 2023**

 **NEW Dates and location**

Looking ahead, Ron Melton noted that the IEEE ISGT 2023 will be held in January 2023. Farrokh Rahimi will be the vice chair of the conference and the conference chair in 2024 and 2025.

Actions

Call

GWAC call for Candidates is open – GWAC asked to help recruit

- Call for Candidates at gridwiseac.org
- Application and information at the site
- Applications due by March 16, 2022

Ron M to start an effort with Jaime Kolln to review the Interoperability Constitution and consider it for a rework.

Start a GridArch whitepaper work group – Seemita Pal, lead, participants Ron Cunningham, Ron Ambrosio, Larisa Dobriansky, David Forfia, Aaron Snyder

- ✓ Ron Melton (was Karen Studarus) and Mark Knight to discuss DOE's ideas for GWAC future direction. - Done

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Ron Melton reviewed the action items noting that he and Jamie Kolln are planning to meet soon on the interoperability constitution.

He also noted that Seemita Pal has meetings scheduled with the Grid Architecture white paperwork group which is a subgroup of GWAC that will review the paper and provide feedback.

Ron M. noted that he did talk with Mark Knight recently about some GWAC future business suggestions that had been an action item. No actionable items came from that discussion.

🕒 2022 Fall GWAC Workshop Meeting

- Format – virtual vs. in person
- Location – San Diego has been discussed. Other proposals? (Recall that we'd like a host, ideally one who can support breakfast and lunch expenses.)
- Possible Topics
 - Future grid – perhaps west coast region (or other region if meeting is not in San Diego)
 - Review and feedback on current PNNL Grid Architecture work
 - Other ideas?
- Organizing committee volunteers?

Ron Melton brought up the possibility of a fall GWAC face to face meeting. So far San Diego has been put forward as a suggested location.

Ron M. explained that ideally, the host organization or company would host the face to face meetings with a conference room for the meetings and ideally would provide morning refreshments and lunch. He noted that typically the group will arrange a no-host dinner location during the conference.

Topics that have been forward are regional focused future of the grid. He said there is some current PNNL grid architecture work that would be reviewed as part of the workshop.

Ron B. said late Sept, early Oct is better for weather and he suggested a barbecue at his home. He said that he is looking forward to an in-person meeting if possible.

Ron M. noted the group is open to other locations if someone has a proposal.

The group discussed several fall dates. Some conflicts were noted.

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Ron M. then proposed the week of Oct. 3 which was met with general approval. Ron B. said that would work for him and Negash said it would work for her as well. The meeting would likely start on Tuesday at Noon and continue until after lunch on Thursday.

Ron M. said that the next order of business would be to form an Organizing committee who would review and finalize these details.

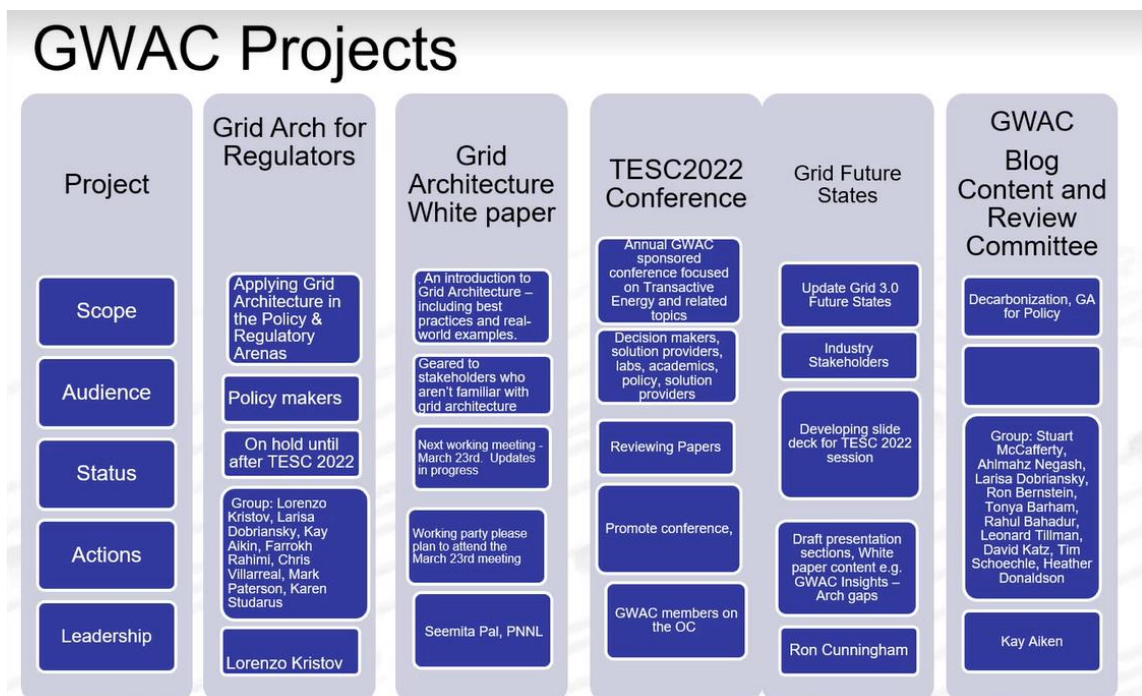
Ron B. said that for his proposal he would like to have an estimate of expected attendance for the meeting.

Ron M. said the high attendance number has been around 30. Typically 15 to 20 is the norm although the last San Diego meeting had strong attendance from local participants.

Ron M. asked for volunteers for the organizing committee: Ron Bernstein, David Forfia, Ron Cunningham, Farrokh Rahimi (he is in the bay area), and Jaime Kolln.

Action: note the F2F Organizing Committee on the agenda for the next GWAC meeting. The committee members are Ron Melton, Ron Bernstein, David Forfia, Ron Cunningham, Farrokh Rahimi and Jaime Kolln.

GWAC Matrix



Ron Melton noted that Lorenzo was not able to attend today but he noted that the Grid Architecture for Regulators white paper group is on hold until after the TESC 2022 conference.

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Seemita Pal said she has been working on the Grid Architecture White paper and is ready to meet with the team next week.

The GWAC blog has two articles posted now.

Kay said there are 6 finished blogs and a couple more in development. They are hoping to find some more people willing to write additional blog posts.

Action: send a message out when the second blog post is working.

Ken Wacks would like to submit a blog on International Standards. Kay encouraged him to send it in.

Kay said she would encourage others to submit their blog ideas, please submit ideas or abstracts to her.

Ron B. asked about using a photo from OATI for an article that he is writing. Farrokh said if the publication is referenced there is no problem. The publication where the photo was featured is what needs to be referenced.

Ron B. will publish an article in May and will create a blog post from it.



TESC 2022 - Grid Architecture to Decarbonize, Distribute, and Decentralize the Grid

May 3 – 5, 2022 and Tutorials on May 2

- 34 Abstracts received
- Abstract review is complete
- Acceptance notices for papers out
- Acceptance notices for panel spots pending
- Sponsorships still available
- Registration opened on Feb. 15th
- Tutorials – TE and Grid Architecture – details in progress
- Keynotes – in progress
- papers to be reviewed by Mar. 31st

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

Farrokh Rahimi noted that 12 papers are on the drive and 10 are on the spreadsheet. Ron B. took a look, they should not be different.

Reviewers please look at the spreadsheet. Let Farrokh know if you are unable to review the papers.

Farrokh needs to make the assignments to reviewers. He asked for some new columns at the end of the spreadsheet for paper reviewer comments.

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Kay asked if there could be a form for comments for paper reviews. She will have comments about needed changes and wants to have a way to write them down.

Farrokh asked Kay to make a link to the comment in the same row. Or they could be in Word and that document can be linked to the spreadsheet.

Ron A. suggested that comments be on the Google drive

Ron C. asked if we are peer reviewing or just reviewing for the purpose of the conference.

Farrokh said that these will go into IEEE Explore so we do want high quality papers but he is open to suggestions.

Ron M. said he sees it as a peer review and we may have to say that a paper is not accepted. We could discuss the rigor further but IEEE does expect some level of peer review because they will go to IEEE Explore.

Ron M. said that last year's process was difficult, Roseanne and Maria worked on it. He said that the resource center is not necessarily peer reviewed, it is for PES. But Explore is and has some level of peer review and are part of the IEEE digital library.

Kay checked and said that her paper is now on Explore.

Ron B. said he just adjusted the spreadsheet so that it's easier to use for paper reviewers.

Ron M. asked TESC session chairs to send out their conference cards to their contacts to increase conference registrations. He noted that a card will need to be created for Grid Future States and for the "Poster Session"

Kay didn't get a card yet. Susie will work with her to get the titles of all her panel participants sent to Lea Miller. Kay is still working with a new participant.

Action: Susie will work with Kay and Lea to be sure that Kay gets a conference card for social media distribution.

Susie noted that a message will be going out to session chairs with Kay's message to her panelists as an example of best practice and it will have the MP4 instructions and a consent and release form. Session chairs should remind panelists to get their MP4's in by April 22 and also send in their consent and release forms to Susie.

Action: Susie to work with Lea and Ron Cunningham to create a card for the Future Grid session and also for keynotes and for the networking session.

Ron B. confirmed earlier today a Southern California Edison Senior Portfolio manager, Mark Martinez has agreed to be part of his panel session. He is working with their demand response activities. His panel is now complete.

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Kay has another speaker lined up, Ian Burns, with Maine Efficiency Utility and works with SLAC on a connected community project on the Transactive Energy Market.

GWAC Website

Ron Melton noted that the new GWAC website went live on Feb. 15, 2022. He asked everyone to take a look and if they see anything that needs a fix to please let Ron and Susie know.

➤ Grid Architecture White Paper

- Added the Mission and functions of GWAC
- Made the connection between GWAC and the reason for discussing the topic of Grid Architecture
- Sections except the one detailing stakeholders' perspectives written up
- Working group meeting
 - Tentative date/time: March 23rd from 10am-11am
 - Document will be emailed in advance of the meeting
 - Need inputs on the stakeholder perspectives
 - How do you envision using grid architecture concepts/methodologies based on the introductory details on this topic?
 - Title recommendations (Current title is "A Practical Introduction to Grid Architecture: Stakeholders' Perspectives")

Seemita is getting a group together next week and they will review the paper so far and make recommendations particularly with regard to stakeholders.

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🕒 Grid FutureState White Paper – wip TOC

- Abstract
- Executive Summary
- Visions/FutureStates – when not well formed, executed upon
- Stakeholders' Visions/FutureStates Assessed
- Vision/FutureStates:
 - Similarities /Differences via web/radar chart, Harvey ball chart
 - /Divergence(?), Venn diagrams
- GWAC Insights:
 - Stakeholder challenges/barriers
 - Architectural Challenge-gaps (at least categorization of)
 - Industry Grid Drivers / Emerging Trends
- Potential /Recommended Next Steps
- Terms / Definitions
- Appendices e.g.:
 - Assessed Stakeholder Visions/FutureStates Source Matrix;
 - Architectural Challenge-gaps Matric(?)

Ron C. gave an update on Grid Future States white paper. Content has been assessed and the group will be writing the rest of the paper. Writing assignments are underway. There will be a couple of appendices. The target length is 22 pages.

The Future States presentation at TESC 22 will be shared with the working group for discussion. He will work with David Forfia on how to include the GWAC Foundational session with this session in the hour and a half timeframe at conference. The work group is meeting tomorrow morning.

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—● Liaison Reports —

- National Institute of Standards & Technology (NIST)– David Wollman
- Electric Power Research Institute (EPRI) – Gerald Gray
- Institute of Electrical & Electronics Engineers Power & Energy Society - Farrokh Rahimi
- American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE)– Ron Bernstein
- International Organization for Standardization, and International Electrotechnical Commission – (ISO/IEC JTC 1/SC 25) Home and Buildings Standards – Ken Wacks
- Interstate Renewable Energy Council (IREC)– Ken Wacks
- Smart Electric Power Alliance (SEPA) – Aaron Smallwood
- Energy Blockchain Consortium (EBC) – Tony Giroti
- Nat'l Assoc. of Regulatory Utility Commissioners (NARUC) – Chris Villarreal

Dave Wollman - NIST: - with the passage of the new federal budget he is now part of the Smart Connected Systems Division which had been pending.

They did a smart cities publication with performance indicators. A media article came out, “How Smart is your city” NIST provides a framework to measure: <https://www.smartcitiesdive.com/news/nist-smart-cities-ecosystem-kpis-framework/620287/>

NIST also has a new publication on Autonomous vehicles <https://www.nist.gov/news-events/events/2022/03/standards-and-performance-metrics-road-autonomous-vehicles>

Farrokh Rahimi - IEEE: There is the Blockchain enabled Initiative they are looking for other hosts for parts of this initiative. It does relate to transactive energy. It is in the IEEE PES group on Smart Buildings and Customer Systems.

Farrokh and Ron M. will talk more about this offline.

Ron M. mentioned a new PES conference coming online called Grid Edge. It will alternate years with T&D Expo. The first one will be 2023 in April in San Diego as proposed now. It will focus on IOT and grid edge in the context of electric power systems. It should grow up to be a large conference and Expo.

Gerald Gray- EPRI - The new Electrification conference is coming up this June in Charlottesville and it is planned as a face to face meeting; it is on the GWAC Conference slide. Also the EPRI meeting in Austin in September will be Face to Face.

EPRI has a new low-carbon initiative he will post the link. Gerald also noted a BMI relationship with EPRI and posted a link to the press release for that.

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EPRI and GTI Low-Carbon Resources Initiative Surpasses 50 Global Partners to Advance Net-Zero Solutions Low-Carbon Resources Initiative (LCRI) five-year initiative that brings together industry stakeholders to advance global economy-wide decarbonization by 2050.

Demonstration project with NYPA:

<https://www.nypa.gov/news/press-releases/2021/20211025-green-hydrogen>

More information and resources are available at www.LowCarbonLCRI.com

EPRI and Battelle Announce Unique Research and Development Partnership to Accelerate Clean Energy Transition:

<https://www.epri.com/about/media-resources/press-release/4N4JPf5auw4x8VeHXSCH5e>

Ken Wacks ISO/IEC - The meeting for developing the Home Electronic System (HES) family of international standards will be held the second week in May as a virtual meeting. It will be scheduled to accommodate experts attending from international time zones.

Currently there are six HES standards that are out for national body comments.

Ken Wacks IREC - The IREC (Interstate Renewable Energy Council) Customer Grid Edge (CGE) committee will meet this Friday to discuss regulatory issues that support Distributed Energy Resources (DER), especially solar panels. The VP of Regulatory Program at IREC will address the group at 1:30pm ET this Friday. The meeting is free to attend. Contact Ken if you would like to receive a Zoom link.

SEPA - David Forfia for Aaron Smallwood; Sharon Allen is planning to retire; it was announced yesterday.

David also noted a career opportunity with SEPA for a project manager for standards and interoperability. If you know of someone who might like this position, please refer them to the link posted below.

Smart Electric Power Alliance - Project Manager, Standards and Interoperability

The Smart Electric Power Alliance (SEPA) is dedicated to helping electric power stakeholders address the most pressing issues they encounter as they pursue the transition to a clean and modern electricity.

<https://recruiting.paylocity.com/Recruiting/Jobs/Details/560472>

EV Fleet Managed Charging Use Case | SEPA

SEPA EV Fleet Managed Charging Use Case. We facilitate the electric power industry's smart transition to a clean and modern energy future through education, research, standards and collaboration.

<https://sepapower.org/resource/ev-fleet-managed-charging-use-case/>

Making Transportation Electrification Real for All Utilities | SEPA

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Get insights on how utilities of all types and sizes can design, implement and scale effective electric vehicle programs.

<https://sepapower.org/media-item/making-transportation-electrification-real-for-all-utilities/>

RE+ Power - RE+ (formerly SPI, ESI & Smart Energy Week) is scheduled for Sept. 19 - 22 in Anaheim, CA. Join the premier gathering of hydrogen and fuel cells professionals in North America, co-located with Solar Power International and Energy Storage International during North America Smart Energy

<https://www.re-plus.com/power/>

Smart Grid Standards and the Importance of Interoperability | SEPA

Consumers are rapidly interconnecting smart devices that lack communications standardization, preventing seamless data flow between those devices.

<https://sepapower.org/knowledge/smart-grid-standards-and-the-importance-of-interoperability/>

Ron Cunningham said SEPA is starting their DER Interoperability profile requirements group and EPRI has a similar DER profile effort coming out of their P174 and will be developing some material for that. Ron asked the leads for both groups to be aware of each other's efforts to avoid duplication in the interest of Grid 3.0 - Coordination across stakeholder groups.

Ron M. asked if anyone would like to invite a guest speaker for next month, or in the future, please let him know.

David Forfia asked for a motion to adjourn and noted that the next meeting is Wed. April 20, 2022, at 10:00am Pacific time

Ron Ambrosio gave a motion to adjourn and Kay Aikin seconded it. The group had no objections and the meeting was adjourned at 11:11am Pacific time.