

Meeting Minutes

June 15, 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

Ron Cunningham, IT Enterprise Architect,
American Electric Power

Paul DeMartini, Managing Partner, Newport
Consulting

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

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

Ahlmahz Negash, Sr. Power Analyst, 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

GWAC Associates & Emeritus

Ken Wacks, Home, Building & Utility Systems

James Mater, Quality Logic

GWAC Members and Assoc. not present

Rahul Bahadur, VMWare, Inc.

Andrew Bordine, VP Energy Mkts & Innovation,
Anterix

Mark Paterson, CSO, Strategen

Chris Villarreal, President, Plugged In Strategies

GWAC Guests

Frances Cleveland

Toby Considine

Marc Costa, the Energy Coalition

Sean Crimmins, EPRI

Larisa Dobriansky

Gerad Freeman, PNNL

Jordan Henderson, PNNL

Mike Hoffman

David Katz

Dave LeVee

James Orenstein

Seemita Pal

Elizabeth Sisley

David Wollman, NIST

PNNL Support

Susan McGuire, GWAC Coordinator

Ron Melton, Acting PNNL Administration

Meeting Minutes

June 15, 2022

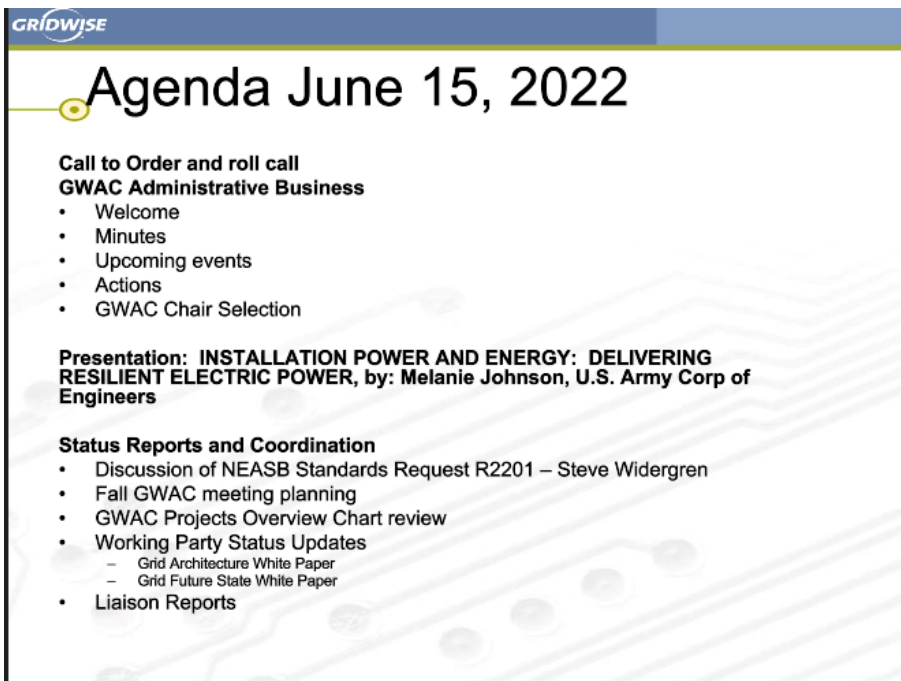
Chair David Forfia opened the meeting at 12:02 Central time with a quorum.

He noted that Melanie Johnson, USACE and Steve Widergren, PNNL, will be the Guest Speakers for today

Ron Melton read the Proprietary Information and reviewed the agenda.

David asked if there had been any edits sent in for the GWAC meeting minutes. Susie commented that there were some corrections sent in by Ken Wacks regarding his liaison report and the changes were made.

David asked if there was a motion to approve the minutes and Ron Bernstein gave the motion. It was seconded by Ron Ambrosio. The minutes were unanimously approved by the group.



Agenda June 15, 2022

- Call to Order and roll call**
- GWAC Administrative Business**
 - Welcome
 - Minutes
 - Upcoming events
 - Actions
 - GWAC Chair Selection
- Presentation: INSTALLATION POWER AND ENERGY: DELIVERING RESILIENT ELECTRIC POWER, by: Melanie Johnson, U.S. Army Corp of Engineers**
- Status Reports and Coordination**
 - Discussion of NEASB Standards Request R2201 – Steve Widergren
 - Fall GWAC meeting planning
 - GWAC Projects Overview Chart review
 - Working Party Status Updates
 - Grid Architecture White Paper
 - Grid Future State White Paper
 - Liaison Reports

Meeting Minutes

June 15, 2022

GWAC Conferences and Events

GridWise® Architecture Council					
Conferences and Events					
Date	Event	Location	Attend	Speak	Topic
June 8 - 22, 2022	SEPA Carbon Reduction War Games 3-Part Virtual Workshop Series	Virtual			
June 20-22, 2022	Edison Electric Institute, EEI 2022, Annual Convention	Orlando, FL	Andy Bordine		
June 25-29, 2022	ASHRAE Annual Conference	Toronto, CAN	Ron Bernstein, David Forfia	Yes	Smart Buildings as a Transactive Energy Hub
June 28-30, 2022	EPRI's Electrification 2022 Meeting	Charlotte, NC			
July 17-21, 2022	IEEE PES General Meeting	Denver, CO	Ron Melton, Farrokh Rahimi ?		
Sept 19-22, 2022	SEPA RE+	Anaheim, CA	Ron Melton, Ron Cunningham Farrokh Rahimi ?	Yes	
Jan 16-19, 2023	IEEE ISGT	Washington, DC	Ron Melton, Farrokh Rahimi ?	Yes	

Ron Melton reviewed the updated GWAC conference and event list. He noted that Andy Bordine will attend the Edison Electric Institute June 20 - 22.

Ron Bernstein and David Forfia will attend the ASHRAE Annual Conference in Toronto June 25 - 29. They will present a talk based on the recent GWAC white paper, "Smart Buildings as a Transactive Energy Hub." The talk is part of a GWAC hosted panel at the meeting that Ron had submitted.

The EPRI Electrification meeting will be June 28 - 30. Gerald Gray said he would not be attending because it's not in his organization.

Ron Melton noted the IEEE PES General meeting July 17 will be held face to face in Denver. Ron Melton, Farrokh Rahimi and Ron Cunningham will be there.

Ron Melton, Farrokh Rahimi and Ron Cunningham will be at the SEPA RE+ meeting, Sept. 19 - 22 in Anaheim, CA.

For IEEE ISGT in Washington DC, January 16 - 19, Farrokh Rahimi might be there, and Ron Melton is also planning to attend. Seemita Pal, PNNL is planning to be there.

Meeting Minutes

June 15, 2022



Actions

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

The F2F Organizing Committee: The committee members are Ron Melton, Ron Bernstein, David Forfia, Ron Cunningham, Farrokh Rahimi, Jaime Kolln and Marc Costa

May Actions:

Action: add EEI June meeting to the conference list for May. (done)

Action: Susie to schedule a meeting of the fall GWAC meeting planning committee

Action: Kay and Susie to collaborate on the next blog post for the website. (in progress)

Action: Susie to let Lorenzo Kristov know that Jeff Morris would like to be included in the Regulatory work group meetings. (Done).

Action: Susie contacted Roseanne and she is working with Farrokh on actions needed for Xplore.

Action: Ron will get the time of the SEPA Grid Friday or the month at 8am PT)

Action: add Marc Costa to the GWAC F2F planning meeting. (Done)

Action: Possible speaker from SEPA on future blockchain and TE related initiatives (Aug, Sept)

Post Meeting: Lorenzo to speak in Aug. or Sept. on CPUC Task 2 Concepts and Terminology

Susie will schedule a planning meeting for the GWAC F2F Fall meeting with those who have volunteered to serve on that committee. Marc Costa recently joined that group.

Action: Susie to schedule a GWAC Fall F2F meeting

Ron asked Ahlmahz if she had seen the final version of her blog post before it was posted, and she noted that she had seen it and had approved it for posting.

Ron asked Farrokh about IEEE Xplore. Farrokh noted that he had submitted forms a month ago. There are some steps left to do and Roseanne is working with the IEEE Xplore group on the copyright forms needed. She has copies of all the papers, they are on the IEEE BOX site. Roseanne may not be able to give much attention to this until after the IEEE PES meeting in Denver. Ron Melton said we could schedule a meeting about it if needed.

Action: TESC 22 papers for Xplore – check with Roseanne after IEEE PES GM in July.

SEPA Grid Architecture work group meets on the 2nd Friday of the month at 8:00 am Pacific time. Seemita Pal leads this group.

August speakers - Lorenzo is on deck. He said the CAPUC has had a proceeding on High DER future grid. Track 2 is to consider potential DSO models. GridWorks is a consultant to the California PUC. They did

Meeting Minutes

June 15, 2022

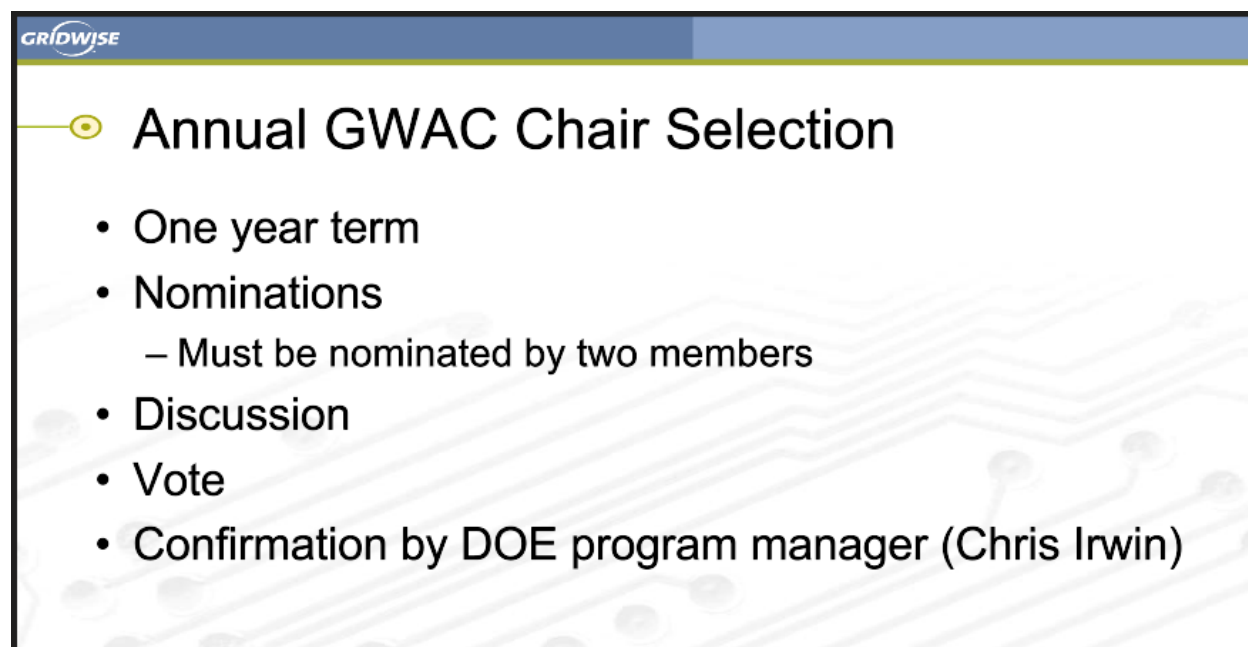
create a framework but there is no common vocabulary for various groups that are interested. Lorenzo has some material on a framework of a common vocabulary and concepts that he would like to present to the GWAC to get their feedback on before presenting to the CAPUC.

Action: Schedule Lorenzo Kristov to speak at the August GWAC meeting.

Frances Cleveland noted that she is very active in this process. She offered to have a meeting with Lorenzo on Task 2. She could work with him, but he said he's not quite ready to meet at this time. The June workshop was cancelled, community engagement is still in progress, not sure if the August meeting will proceed. He would appreciate Frances's feedback.

Lorenzo noted that no other PUC is doing this sort of thing at this time. He thinks the vocabulary will be useful everywhere.

GWAC Chair Selection



Annual GWAC Chair Selection

- One year term
- Nominations
 - Must be nominated by two members
- Discussion
- Vote
- Confirmation by DOE program manager (Chris Irwin)

Ron Melton discussed the GWAC process for the next GWAC Chair.

David Forfia nominated Ron Bernstein for the role.

Farrokh Rahimi seconded the nomination of Ron Bernstein.

Leonard Tillman gave a motion that nominations be closed. Farrokh gave a second and Ron Ambrosio also approved the motion.

Ron Bernstein expressed his sincere interest in taking the position and he noted his appreciation to David Forfia for acting as the GWAC chair and providing leadership for many years.

Meeting Minutes

June 15, 2022

Ron Ambrosio and Kay Aikin noted their support for Ron Bernstein.

The group unanimously approved the nomination of Ron Bernstein as the next GWAC Chair.

Ron Melton will take the nomination to Chris Irwin, DOE for approval.

David Forfia said he has enjoyed the experience as GWAC chair and he is now looking forward to moving to Emeritus Chair status.

Ron Bernstein introduced the guest speaker, Melanie Johnson with USACE. He said he had heard her speak recently on buildings and microgrids and thought it would be an interesting topic for the GWAC



Presentation by: Ms. Melanie Johnson, U.S. Army Corps of Engineers

INSTALLATION POWER AND ENERGY: DELIVERING RESILIENT ELECTRIC POWER

U.S. ARMY

**INSTALLATION POWER AND ENERGY:
DELIVERING RESILIENT ELECTRIC POWER**

Melanie Johnson
Electrical Engineering Researcher
Construction Engineering Research Laboratory (CERL)
Engineer Research and Development Center (ERDC)

15 June 2022
DOE GridWise Architecture Council Meeting

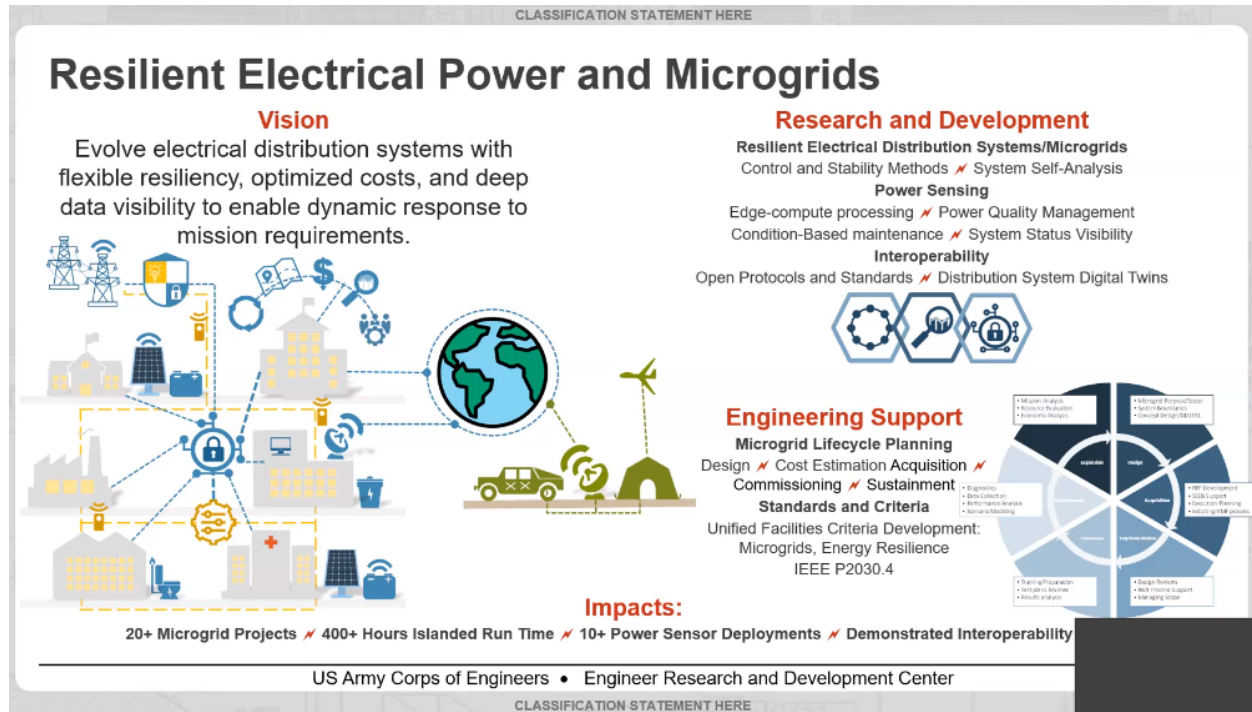
DISTRIBUTION A: Approved for Public Release, Distribution Unlimited

US Army Corps of Engineers

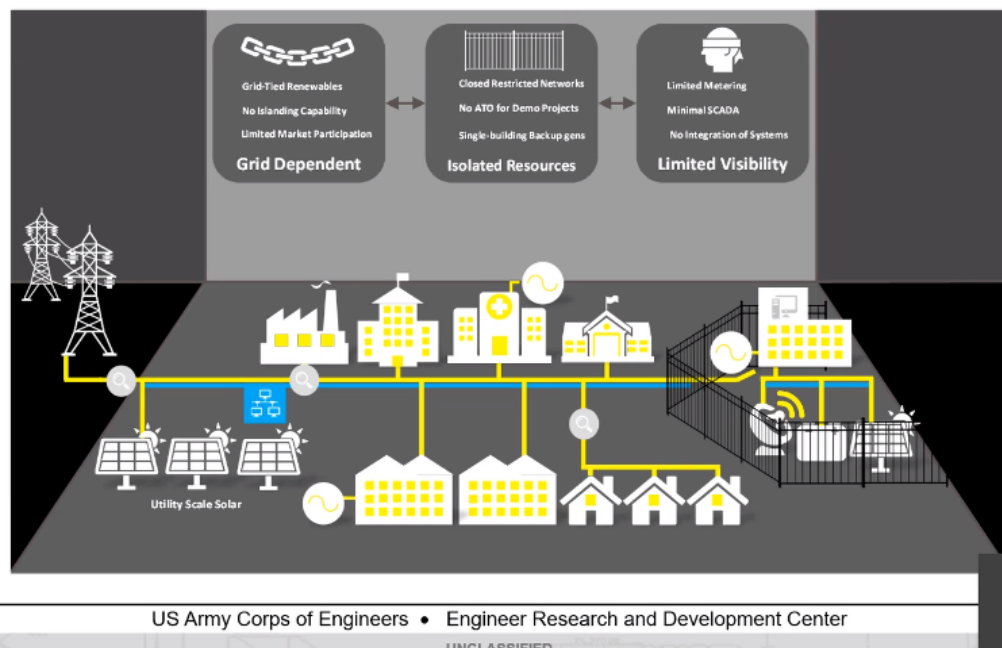
File Name

Meeting Minutes

June 15, 2022



Electrical Distribution: Current State




Meeting Minutes

June 15, 2022

They do have building level metering now - things are improving.

Key enabling technologies, techniques, and policy

- **Goals and Validation**
 - Project portfolio management
 - **Project requirements, design, and results tracking**
 - New technology identification
- **Resilient Electrical Distribution Systems**
 - Microgrids
 - Automatic reconfiguration and sectionalization
- **Advanced Power Sensors**
 - Power quality measurement
 - Cybersecurity telemetry validation
- **Data Analysis Techniques and Methods**
 - Prognostics and Diagnostics
 - Condition-based maintenance
 - Power quality metrics
 - Event detection, identification, mitigation
- **Secure Communications Solutions that Enable Connectivity**
 - Clear Policy
 - Open Protocols for interoperability
 - Distribution Control Reference Architecture
 - Secure gateways for third parties (smart grid, vendors, aggregators)
- **Project Lifecycle Tools**
 - Capital cost estimating
 - **Design methodologies for consistent results**
 - Energy project performance metrics
 - Sustainment cost estimating
- **Power generation**
 - Smart Grid Integration and Participation
 - Waste to Energy
 - Energy Storage
 - Electric Vehicles
 - Renewables



US Army Corps of Engineers • Engineer Research and Development Center

UNCLASSIFIED

They have sensors to detect power quality problems.

They are working for better communications and better standards.

Frances Cleveland asked about the work - many similar things are going on in other venues. How much can she use existing work, including with Cyber Security, from outside of USACE?

Melanie replied: We do our best to leverage what commercial grid operators are using. This information has been considered with creating their standards. It is one layer deeper than noted standards.

They look at what must be communicated. They leverage what's out there while trying to fill gaps that they are experiencing.

Ken Wacks noted his work with ISO/IEC and energy management. He understands the need for a microgrid. He asked if the TMS is orthogonal to standards that he and Frances work on? Did she look at published standards? TMS was developed between 2013 and 2017. They had advisors working with them from outside the USACE. There was interaction with Industry and the major standards were cited frequently in their Tactical Microgrid Standard.

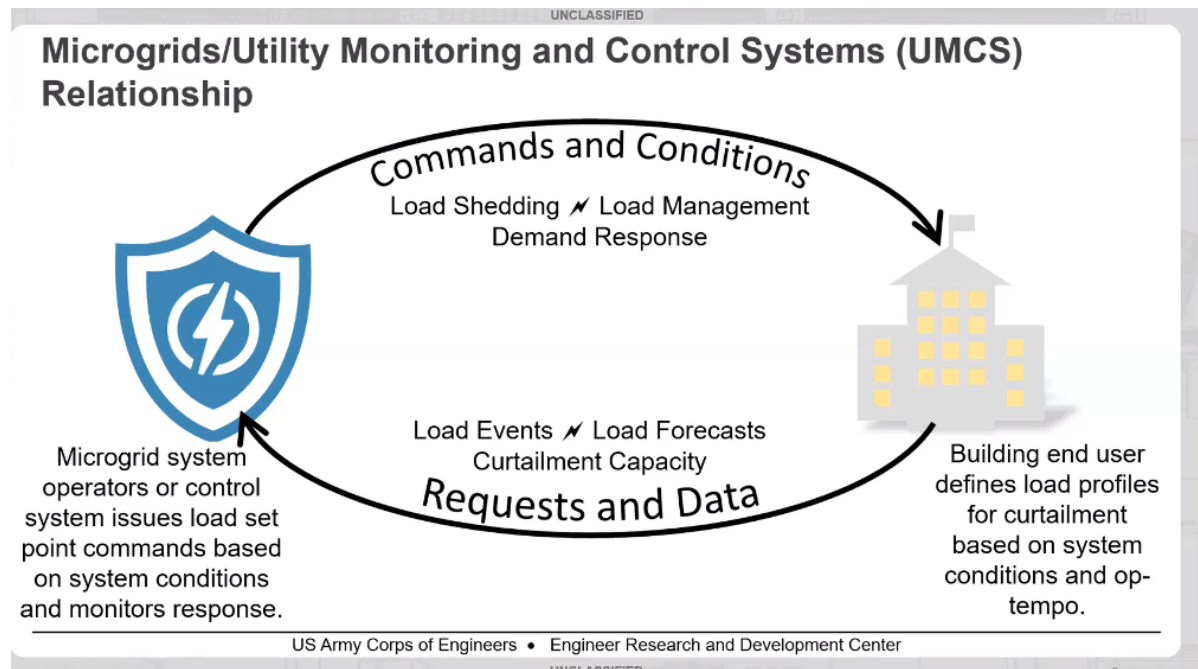
Kay Aikin has worked in the defense industry and commented that the Tactical Microgrid Standard is in the public domain.

Meeting Minutes

June 15, 2022

Melanie said she would refer Ken to her TMS team for a more detailed answer to what standards were used and how.

Ron Ambrosio said GWAC can give feedback on this topic that Melanie can take back to her colleagues.



Melanie noted that current load shedding is not refined. It is manual and not very sophisticated. She currently when they build microgrid systems they say they can load shed but what that really means is that said is that at the medium voltage distribution level they can flip breakers and then can shed a feeder. It is not fine-grained, and it is not gentle. They hope to improve this in time.

Ron M. asked a question about how much is in the Microgrid? In various installations - what is the mix of local utility and the installations in terms of energy service provisioning? How much is within the microgrid?

Melanie reply: Almost all Army installations use commercial utility power for their requirements. You may find one here or there with a central utility plant that provides some portion of the load but not likely to be 100%.

Most microgrids are back up power system. There are some large new generation facilities being built on site but that is not the norm but is what they are moving toward. It may be PV or geothermal or other but right now everything is grid tied and commercial utility.

Ron A. thanked Melanie and asked if she could share some pointers to the microgrid standard or interop work with GWAC and he suggested that the subject might be good for the GWAC F2F meeting in the fall.

Meeting Minutes

June 15, 2022

Melanie appreciated the request and will send some information back to Ron Bernstein to be shared with the GWAC.

Lorenzo said that for California, it is accepted policy for utilities that a microgrid operates when there is a grid outage. But they don't have a sense of the value of a microgrid in blue sky conditions when acting as a single-control entity. Are there locations where microgrids are adding value to markets in exporting energy at a reasonable price? Also, is there an incentive to not be dependent on fossil fuels?

Melanie referred to a microgrid at a Schofield Barracks in Hawaii. It is a public/private partnership with a utility, the Hawaiian Electric Company, HECO. It is a large generation plant within the fence line. It is dispatchable by HECO and they can use the power in Oahu. If there is problem the system can be islanded. The barracks are up the hill from Pearl Harbor.

She noted that microgrids came to the front of discussions in DOD when there was an emphasis on Net zero installations, after Superstorm Sandy.

Melanie noted that Fort Hunter Liggett in California is under construction. It is small but it will be 100% PV and energy storage.

Dave LeVee commented on the use of prices to devices, a theoretical perspective about pricing based upon volatility and opportunity value. If the pricing was capable from a valuation perspective, is that consistent with microgrids to come up with a valuation of turning power on and off?

Melanie replied that her team is not looking at it that deeply. Some of the more detailed analysis has been with the Army as a real estate owner. They might match that with end use energy data with EIA. She commented that they don't have metering and monitoring down, there is a lot of gray area, and the data is still spotty. It's hard to put a pin on the cost of a power outage. Their concern is more to keep the power flowing for the unit.

Ron Melton thanked Melanie Johnson, USACE for her talk.

Melanie said that she will be happy to answer any questions by email and she will send some information back to the GWAC for reference.

Ron M. then next introduced Steve Widergren, PNNL.

Meeting Minutes

June 15, 2022

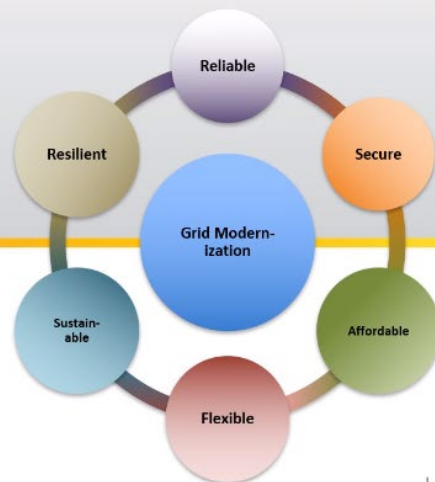
Common Grid Service Terms

Motivation for NAESB Standards Request R22001

NAESB WEQ-BPS Meeting Presentation
14 June 2022

DOE Grid Modernization Laboratory Consortium (GMLC)

Rich Brown, Principal Investigator
Lawrence Berkeley National Laboratory
Steve Widergren, co-PI
Pacific Northwest National Laboratory



14 Jun 2022 | 1

Steve Widergren noted that he developed this talk in response to some online discussion by GWAC members related to a recent press release by the NAESB.

The topic is on flexible resource integration.

Steve gave some background Integration and interoperation.

GMLC Grid Service and ESI Project



Overview & Problem Statement

- To cost-effectively coordinate the operation flexible grid-edge resources at scale of millions need simplified ways to integrate and interoperate these resources
 - Common grid services
 - Types of performance-based agreements between grid operations and customer-owner-operations
 - Must be adjustable for different regional jurisdictions
 - Industry consensus to encourage reference and adoption
 - Standard Energy Services Interface (ESI)
 - Facilitate development of communication interface standards agnostic to flexibility equipment type
 - The ESI is applicable to all types of equipment that can perform the agreed upon service
 - Boundaries of responsibility on either side of the interface are clear and protected
 - Embraces distributed decision-making coordination
 - Results in modularity and loose coupling of the interacting system components.
- Multi-lab participation: LBNL (lead lab), PNNL, NREL, ORNL, ANL

Meeting Minutes

June 15, 2022

Steve noted that every program with distributed energy resources (DER) seems to have a different name. He began with common grid services, noting that PNNL is looking at how existing standards that are appropriate in this area could be modified. This is service and performance oriented so that various equipment can use the same interface.

Steve said that they decided to engage NAESB because wholesale markets are already mature. They know they need to integrate with existing technology.

Why Engage at NAESB



- ▶ Wholesale electricity markets already designed to work with changing resource mix
 - Wholesale grid services embrace a variety of resource mixes
 - Independent system operation and markets service all participants
 - Strive for level playing field
- ▶ Room for improvement
 - Jurisdictions use somewhat different names for similar grid-services
 - Ensure that operational objectives (purpose/use) separate from service definition
 - Commonality breeds consistency and clarity to ease integration and interoperation of all participants

Standards Request R22001

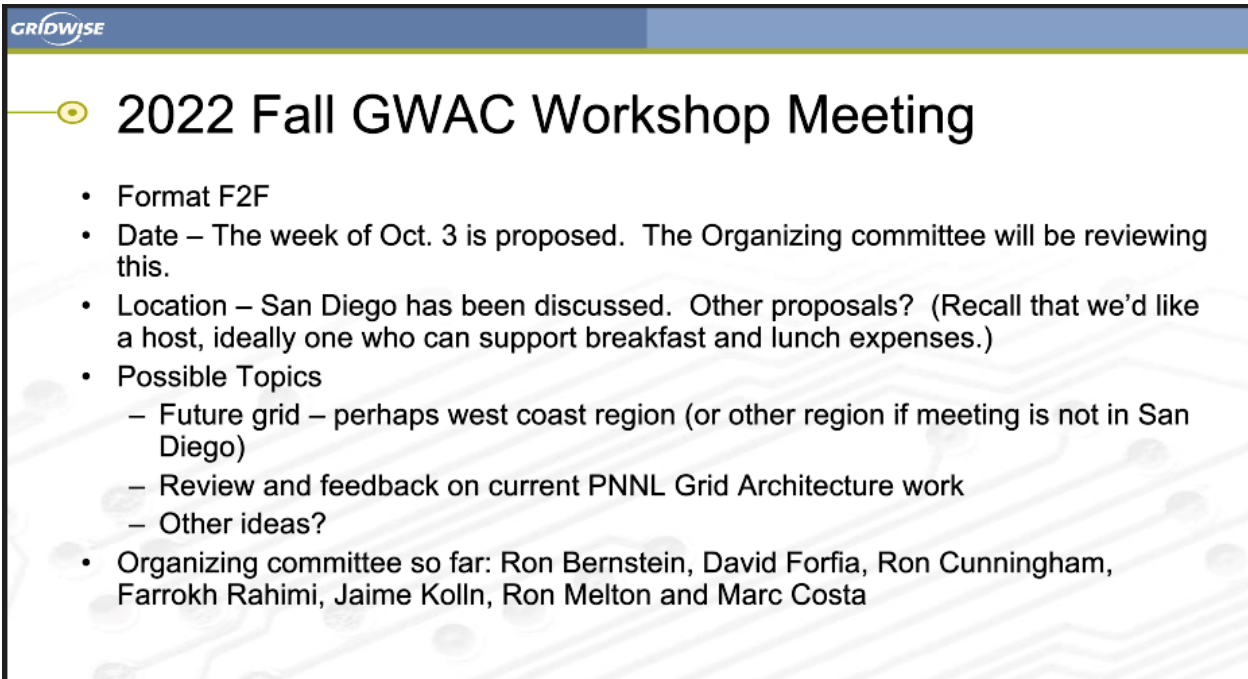


- ▶ Objective:
 - Classify common grid services that accommodate the diverse grid needs in different regions
 - Define common grid service types for wholesale power system interactions
 - Derive commonalities and important variations found in existing grid services
 - Meet near to mid-future needs gathered from major US ISO/RTOs and utilities
 - Accommodate specialization: performance characteristics and expectations
 - Qualification, performance expectations, monitoring, reconciliation, and settlement vary by operational policy of each region
 - But defining common policy is beyond the scope of this proposal
- ▶ Benefit:
 - Provides consistent service-type names, definitions, and performance characteristics
 - Encourages adoption of consistent terminology in wholesale markets
 - Provides starting place for retail-level grid service interactions with flexible, grid-edge resources

Meeting Minutes

June 15, 2022

Steve will send out the slides to the group. He is hoping this will be on a six-month timeframe. He met with the chair, Joshua Phillips and they will discuss the schedule. The deliverable should be tables and definitions. It will not be an information model.



The screenshot shows a presentation slide with the GridWise logo in the top left corner. The slide title is "2022 Fall GWAC Workshop Meeting". Below the title is a bulleted list of information regarding the workshop.

- Format F2F
- Date – The week of Oct. 3 is proposed. The Organizing committee will be reviewing this.
- 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 so far: Ron Bernstein, David Forfia, Ron Cunningham, Farrokh Rahimi, Jaime Kolln, Ron Melton and Marc Costa

2022 Fall GWAC Workshop

The proposed timeframe is the week of October 3 although it was noted that COVID impact the choice. The proposed location is San Diego, California. If COVID does change things the meeting will move to virtual.

Ken Wacks asked if the meeting can be both live and virtual. Ron Bernstein said that given the venue that may not be possible.

Lorenzo asked about the topic and length of the meeting.

Ron M. said it would be a half day starting the afternoon, then the next day would be a full day, and the last day would be a morning session so that people can catch their plane in the afternoon. Typically, it is held on a Tuesday, Wednesday, and Thursday.

The meeting focus could be on more than one topic.

Meeting Minutes

June 15, 2022



GWAC Projects

Project	Grid Arch for Regulators	Grid Architecture White paper	TESC2022 Conference	Grid Future States	GWAC Blog Content and Review Committee
Scope	Applying Grid Architecture in the Policy & Regulatory Arenas	An introduction to Grid Architecture – including best practices and real-world examples.	Annual GWAC sponsored conference focused on Transactive Energy and related topics	Update Grid 3.0 Future States	Decarbonization, GA for Policy
Audience	Policy makers	Geared to stakeholders who aren't familiar with grid architecture	Decision makers, solution providers, labs, academics, policy, solution providers	Industry Stakeholders	
Status	On hold until after TESC 2022	Setting up another working party meeting – look for Doodle poll	Complete	Material prepared and presented at TESC 2022	Group: Kay Aikin, Ahlmahz Negash, Larisa Dobriansky, Ron Bernstein, Tonya Barham, Rahul Bahadur, Leonard Tillman, David Katz, Tim Schoeche, Heather Donaldson
Actions	Group: Lorenzo Kristov, Larisa Dobriansky, Kay Aikin, Farokh Rahimi, Chris Villarreal, Mark Paterson, Karen Studarus	Waiting for working party comments Finalize draft	Conference Closout	Convert TESC 2022 presentation material into report sections	
Leadership	Lorenzo Kristov	Seemita Pal, PNNL	GWAC members on the OC	Ron Cunningham	Kay Aikin

GWAC Activity Matrix

Ron Melton noted that Ahlmahz Negash has authored a blog and it is in preparation for release on the GWAC website, hopefully to come out next week.


Kay Aikin added that there are additional blogs ready to go. Kay also recognized the need to start thinking about more topics and offered to have a meeting to kick off additional discussions if needed. Kay is heading this group now and is happy to schedule another meeting when appropriate.

Meeting Minutes

June 15, 2022

Progress & Accomplishments

- 2015-2022 – Annual Transactive Energy Systems Conference (since 2019, IEEE PES partnership event)
- 2015 – [Valuation of Transactive Energy Systems Proceedings](#)
- 2018 – [TE Systems Research, Development and Deployment Roadmap](#)
- 2020 – [Reliability and Resilience Considerations for TE Systems](#)
- 2016 – [TE Decision Makers Checklist](#)
- 2020 – [Decision Maker's Interoperability Checklist v.1.6](#)
- 2020 – [Smart Buildings as a Transactive Energy Hub](#)
- 2020 – [Transactive Energy FAQ](#)
- 2022 – [Gridwise AC New Website Released](#)
- 2022 – [Transactive Energy Conference 2022](#)
- 2022 – [GWAC Blog Post #1 Grid Infrastructure Challenges In A Decarbonized World](#) (Kay)
- 2022 – [GWAC Blog Post #2 Decarbonization – The Pattern That Has Emerged](#) (Stuart)
- 2022 – GWAC Blog Post #3 Energy Equity in Decarbonization (Ahlmaz - pending)
- 2022 – GWAC Blog Post #4 Decarbonization of the Electric Grid (B-Ron - pending)



21

Ron Bernstein has updated the Progress and Accomplishments slide to highlight 2022 work products. He has added the blog posts including a couple of pending posts.

Grid Architecture white paper

Seemita Pal noted that participants in the June 10 meeting gave her good comments and feedback. After discussions about the depth and scope of the paper and the intended audience the members graciously volunteered to work on subsections. David Wollman will be working on the stakeholder categories and regroup them as needed based on NIST'S stakeholder list.

The next meeting will be held on June 22. She is hopeful that after this meeting they can wrap up the white paper.

David Forfia asked if there is anything he can do to help. Seemita said that she would like to get his input on the stakeholder section, particularly regarding grid operators and executors. David will schedule a meeting to discuss it.

Action: David to schedule a meeting with Seemita to discuss the stakeholder section of the white paper.

Meeting Minutes

June 15, 2022



—○ Grid Architecture White Paper

- Working group meeting held on 10th June
 - Received initial comments and waiting for feedback from remaining working party members
 - White paper sections have been assigned
 - David Wollman will review and possibly regroup the stakeholder categories based on NIST's list of stakeholder categories
 - Inputs on stakeholder perspectives will be provided by
 - Ron Cunningham (grid engineers)
 - Ahlmahz Negash, Farrokh Rahimi (grid operators)
 - David Wollman (Standard development organizations)
 - Larisa Dobriansky (Policy makers and regulators; community energy activists)
 - Ron Bernstein (Consumers)
- Next working group meeting has been scheduled for June 22nd in order to discuss updates and next steps for completing the draft



—○ Grid FutureState White Paper – key next steps

- Stakeholders' Visions/FutureStates Assessed – address or at least mention recent vision/futurestates
- Vision/FutureStates:
 - Similarities /Differences via web/radar chart, Harvey ball chart prepare content for Stakeholder impacts
 - Divergence abstract further from the detailed statements to identify other topic clusters
- GWAC Insights:
 - Architectural Challenge-gaps prepare trackable content that supports the generalization presented at TESC 2022
 - Industry Grid Drivers / Systemic Issues – Create prose of what was overviewed in TESC 2022
- Complete rest of TOC sections content

Meeting Minutes

June 15, 2022

Future States White Paper

Ron Cunningham said the group is finalizing the white paper. They have made a few clarifications from the prior meeting. The group will meet tomorrow.

Liaison reports

NIST - David Wollman noted that Avi Gopstein spoke on a podcast today about grid interoperability and he listed the link to it. He noted a recently published NIST Technical paper on IEEE 1547. Also, there is a link to the SEPA Interoperability Profiles Task Force which NIST has helped to lead:

Avi Gopstein on grid interoperability from the Smart Grid Today podcast (posted 12May) – <https://www.smartgridtoday.com/public/Avi-Gopstein-of-NIST.cfm> Avi Gopstein is the Smart Grid Program Manager and Group Leader at NIST. NIST has an ongoing key role in the development of interoperability standards.

NIST recently published Technical Note 2217 “IEC 61850 Profile for Distributed Energy Resources Supporting IEEE 1547” <https://doi.org/10.6028/NIST.TN.2217> which provides an IEC 61850 profile for a Distributed Energy Resource. The profile utilizes the IEC 61850 data object model and maps the requirements of IEEE 1547 to the data object model for the integration of DERs in the electric power system. By establishing a required subset of data objects and data attributes from the IEC 61850 model, the profile reduces model complexity and aims to improve the interoperability, and the engineering, testing and maintenance of IEC 61850 based protection, automation and control systems.

SEPA's Interoperability Profiles Task Force, led by NIST's Cuong Nguyen, published its Interoperability Profile for Electric Vehicle Fleet Managed Charging; <https://sepapower.org/resource/interoperability-profile-for-electric-vehicle-fleet-managed-charging/> This is intended to facilitate the integration of electric vehicle (EV) charging stations with the grid.

EPRI - Gerald Gray introduced his colleague Sean Crimmins, EPRI

Sean noted the GMDM Grid Model Data Management meeting that is currently going on at the Charlotte campus.

Producers and consumers of distribution grid models are participating in an interop. Pat Brown is leading the work. There are plenty of extensions, new types of data models are making their way through the IUC process. Several vendors are getting together for testing with recognition from industry. They are testing things as we speak.

IEEE - Farrokh Rahimi: the IEEE PES General meeting will be July 17 -21 in Denver and the IEEE ISGT will be held next January in Washington DC. The 2022 IEEE ISGT meeting in New Orleans, co-located with the T&D meeting was a success with more than 10,000 attendees.

Meeting Minutes

June 15, 2022

The IEEE blockchain and energy initiative was separate and now is wanting to collaborate particularly the area of Transactive Energy and PES is very interested. They are looking for various societies to collaborate and host this activity. PES is involved in one of them and Ron Melton and Farrokh Rahimi are part of that effort. Ron added that the Blockchain initiative has been under the Future Directions Committee, but it will move at the end of this calendar year. For their future direction they have proposed a multi-society ownership going forward although discussions are still underway. Ron and Farrokh will keep the GWAC apprised.

ASHRAE - Ron Bernstein: Ron shared information about the panel session he hosted in Toronto and about another session -

Title: Smart Buildings as a Transactive Energy Hub: Decarbonizing by Enhancing Building-to-Grid Interactions

Track: Connected Buildings, Connected Communities

Contact Presenter	Presentation	Speakers	Presentation Review Status
dforia@outlook.com	31467 - Building to Grid Integration: Affects of Grid Load Balancing with Smart Building Integrations	David Forfia , DOE - Gridwise Architecture Council - GWAC, Washington, DC	Final Approved
izhou@slipstreaminc.org	31468 - Automating Demand Management in Buildings	Joe Zhou, Ph.D., P.E., Member , Slipstream, Madison, WI	Final Approved
ron@rb-cg.com	31472 - Specifying Building to Grid Interactions, Interoperability and Integration: A Path to Decarbonization	Ron Bernstein, Member , RBCG Consulting, San Diego, CA	Final Approved
akazdan@epri.com	31661 - Smart Buildings As a Transactive Energy Hub: Decarbonizing By Enhancing Building to Grid Interactions	Agatha Kazdan , Electric Power Research Institute (EPRI), Palo Alto, CA	Final Approved

Meeting Minutes

June 15, 2022

Title: LIVESTREAM: Cybersecurity, Securing Building Control Systems: Are We Meeting Industry's Needs?

Track: HVAC&R Systems and Equipment

Contact Presenter	Presentation	Speakers	Presentation Review Status
tschroeder@wrallp.com	31587 - Specifying Cybersecurity for HVAC Controls	Terry Schroeder, P.E., HBDP, Member, Whitman, Requardt & Associates, LLP, Baltimore, MD	Final Approved
daniel.a.shepard@usace.army.mil	31588 - Enabling Reliability in the Built Environment by Promoting Cybersecurity of Building Control Systems: An Overview of What the Department of Defense Has Done to Strengthen Its Cybersecurity Posture within the Facility Environment	Daniel Shephard, Member, US Army Corps of Engineers, Champaign, IL	Final Approved
MBergman@cta.tech	31589 - Cybersecurity Baselines: From NIST to Industry Standards to Conformity Assessment	Mike Bergman, Consumer Technology Association, Arlington, VA	Final Approved

Anyone interested in these two sessions contact Ron B. He can share the slides from the Connected Buildings panel if you are interested and may be able to for the other session. He said ASHRAE does not share downloads of the presentations or videos with non-members.

ISO/IEC – Ken Wacks is the committee chair for the family of standards – Home Electronic System, HES. The Home Electronic System is an integrated, related, uniform set of standards covering networks in homes and buildings and device interfaces, covering the gateway between home and outside world including cyber security protection for customer safety and privacy.

They deal with applications including energy mgt which they are focused on now. This family of standards will manage energy in individual houses and in interrelated communities of houses and apartments in an apartment complex.

They just finished a series of virtual meetings and will reconvene on Sept. 13 for a couple weeks in virtual meetings.

Ken explained how people who are interested can participate.

IREC – Ken Wacks chairs the customer grid edge committee. They meet every other week and usually host a speaker. Subjects are typically on relevant technologies regarding issues behind the meter.

Meeting Minutes

June 15, 2022

Last week's speaker was Stephen McDonald, the managing director of business development at TeMix who spoke on a 100% clean energy future.

Larisa Dobriansky has participated also, she works with regulators. She may be a featured speaker soon and Mark Paterson, GWAC Associate may speak in July. IREC is not a membership organization, anyone may attend and there is no cost to participate. Contact KenWacks.com for more information about participating.

SEPA - Aaron Smallwood is not on the call today. Ron Melton noted that the Grid Architecture Primer is under review, and it should be about four weeks until it is released.

The ontology effort that Ron Cunningham leads is actively underway in the Grid Architecture Working Group.

The TE working group has been very active, Ron Cunningham is working with them on the Knowledge Graph for TE and on the Conceptual Model.

Adjourn

Ron Bernstein thanked the group for his nomination as the next GWAC Chair. He heard no objectives and adjourned the meeting.

Ron Ambrosio thanked David Forfia for his service as GWAC Chair.