

Meeting Minutes

July 10, 2024

GWAC Members

Ron Bernstein, GWAC Chair and President, RBCG, LLC

Ron Ambrosio, Independent Energy Transformation Professional, Acting Chair

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

Andrew Bordine, Sr. Practice Manager, Grid Automation, Actalent

Shawn Chandler, Director, Guidehouse

Marc Costa, Dir. Policy Planning, the Energy Coalition

David Forfia, Principal Consultant, Utilicast

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

Ahlmahz Negash, Sr. Power Analyst, Tacoma Power

Mark Ortiz, Lead Architect, Dist. Energy Sys., Schneider Electric

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

Aaron Snyder, Dir. of Grid Technology Consulting, EnerNex

Leonard Tillman, Partner, Balch & Bingham, LLP

Mark Knight, Emeritus

Ron Melton, Emeritus Administrator

Ken Wacks, Emeritus

GWAC Guest Speaker

Jeremy Harrison, LCP Delta

GWAC Friends

Larissa Affolabi

Toby Considine

Jeff Katz

Prabhu Kumar Pothraju

Steffi Muhanji

Mark Siira

Tim Schoechle

PNNL Support

Jaime Kolln, PNNL GWAC Administrator

Susie McGuire, GWAC Coordinator

GWAC Associates & Emeritus

Rahul Bahadur, Assoc. GWAC

Ron Cunningham, Emeritus

Meeting Minutes

July 10, 2024

GWAC Quorum reached at 10:04 PT

Ron Ambrosio is acting for a portion of the meeting as Chair Emeritus in Ron Bernstein's absence.



Agenda

Call to Order and Roll Call

- Welcome

GWAC Administrative Business

- Minutes
- Upcoming events
- GWAC Accomplishments
- Action Items

Guest Speaker – Jeremy Harrison, LCP Delta

Future Activities

- GWAC Strategic Outreach Plan
- Planning 2024 GWAC Conference

Work Product Status Reports

- Working Party Status Update
 - Next Big Thing Slide Deck
 - Grid Future State White Paper
 - Grid Arch for Regulators White Paper
 - Applying Grid Architecture Concepts to Bridge Back from the Future Grid
 - Grid Architecture Concept Model for Transportation Electrification

- Liaison Reports

New Business

Jaime Kolln, GWAC Administrator reviewed the agenda and introduced today's guest speaker, Jeremy Harrison with LCP Delta.

He noted that the date for the GWAC Symposium is getting close; we will review the program planning later today.

Ron Ambrosio, acting Chair, asked for a motion to approve the minutes for May. Kay Aikin gave the motion with changes as noted and Lorenzo Kristov seconded the motion with unanimous approval.

Ron Ambrosio then asked for a motion to approve the June minutes with noted amendments. Kay gave the motion and Lorenzo seconded the motion. The motion carried unanimously.

Meeting Minutes

July 10, 2024



Conferences and Events

Date	Event	Location	Attend	Speaker	Topic
June 22-26, 2024	ASHRAE Annual Conference	Indianapolis	Ron Bernstein		
July 21 – 25, 2024	IEEE PES General Meeting	Seattle, WA	Jaime Kolln, Farrokh Rahimi, Ron Melton, Ahlmahz Negash		
August 4 - 9, 2024	ACEEE 2024 Summer Study	Pacific Grove, CA		Marc Costa	Energy Efficiency in Buildings
Sept 9 - 12, 2024	RE+ Anaheim, CA & GWAC Symposium	Anaheim, CA	GWAC		
Oct. 1 – 2, 2024	Grid FWD 2024	Banff, Canada	Jaime Kolln, Ahlmahz Negash		
Oct 15-16, 2024	Design Lights Consortium Summit	Milwaukee, WI	Ron Bernstein		
Oct. 16, 2024	Smart Energy Consumer Collaborative	Reston, VA	Ken Wacks, Jeremy Roberts		
Jan. 21 – 23, 2025	IEEE PES Grid Edge Technologies Conf	San Diego, CA	Kay Aikin, Jaime Kolln, Farrokh Rahimi		
Feb. 10 – 12, 2025	AHR Expo and ASHRAE Winter Conf	Orlando FL	Ron Bernstein	Ron Bernstein	Grid Arch/Future States GWAC F2F proposed
March 24-27, 2025	DistribuTECH	Dallas, TX	Forfia, Rahimi		

Jaime suggested a dinner for GWAC participants who will attend the IEEE PES GM in Seattle this month.

He also noted that he has submitted a panel for the Grid FWD meeting and asked who else might be attending.

Ron Melton noted that IEEE PES Energy Policy Forum formerly known as ISGT will be held in April 2025; this is the new name for the IEEE ISGT meetings. The IEEE Grid Edge will be held in January. Next year this meeting may move to January or February or possibly to the Fall for 2026.

Action: Add the IEEE PES Energy Policy forum, April 2025 to the list.

Mark Siira SEIA codes and standards symposium on Sept. 9 – 12, 2024 at the Anaheim Convention Center as part of RE+. It is hosted by SEIA – Solar Energy Industries Association.
<https://www.seia.org/events/re-2024>

Ken Wacks mentioned that the Smart Energy Summit 2025 will be co-located with DistribuTech at the Kay Bailey Hutchinson Convention Center, Dallas Texas, March 25 – 26.

Meeting Minutes

July 10, 2024



GWAC Accomplishments

- 2024 – [A Practical Introduction to Common Grid Architecture Techniques](#) (NEW)
- 2023 – [Current GWAC Speaker Video Presentations](#)
- 2015-2022 – [Annual Transactive Energy Systems Conference](#) (since 2019, IEEE PES partnership event)
- 2022 – [Blog Post #5 – Decarbonization efforts of three Northern California CCA's](#) - Bahadur
- 2022 – [Blog Post #4 - Decarbonization of the Electric Grid](#) – Bernstein
- 2022 – [Blog Post #3 - Energy Equity in Decarbonization](#) - Negash
- 2022 – [Blog Post #2 - Grid Infrastructure Challenges In A Decarbonized World](#) – Aikin
- 2021 – [Blog Post #1 - Decarbonization – The Pattern that Has Emerged](#) - McCafferty, McCormick, Forfia
- 2020 – [Transactive Energy FAQ](#)
- 2020 – [Smart Buildings as a Transactive Energy Hub](#)
- 2020 – [Decision Maker's Interoperability Checklist v.1.6](#)
- 2020 – [Reliability and Resilience Considerations for TE Systems](#)
- 2019 – [GridWise® Transactive Energy Framework V1.1](#)
- 2018 – [TE Systems Research, Development and Deployment Roadmap](#)
- 2016 – [TE Decision Makers Checklist](#)



GWAC YouTube Channel



Jaime noted some of the outstanding GWAC publications and encouraged people to review them on the website including some of the older documents.

Jaime also mentioned the GWAC Constitutional Proceedings from the 2005 GWAC Constitutional Convention. https://gridwiseac.org/pdfs/Constitutional_Convention_Proceedings.pdf

Meeting Minutes

July 10, 2024



GWAC Accomplishments

2015 – [Valuation of Transactive Energy Systems Proceedings](#)

2007-2012 Grid-Interop Forum

2011 – [GWAC Interoperability Constitution Whitepaper](#) PNNL-20728

2011 – [Smart Grid Interoperability Maturity Model](#) Beta Version
Electrical Power Engineering Academic Landscape

2010 – [Interoperability Decision Maker's Checklist](#) update

2009 – Interoperability Benefits Papers

- [Environmental Benefits](#)
- [Financial Benefits](#)
- [Reliability Benefits](#)

2008 – [Interoperability Context-Setting Framework](#) PNNL-17399

2007 – Interoperability Decision Maker's Checklist

2006 – [Interoperability Constitution](#):
- [GWAC Constitution: Summary of Constitution Interview Process and Feedback January 2006](#)

Documents available internationally through the ISO/IEC:

ISO/IEC TR 15067-3-2:2016 -- Information technology -- Home Electronic System (HES) application model -- Part 3-2: GridWise interoperability context-setting framework

ISO/IEC TR 15067-3-7:2020 -- Information technology -- Home Electronic System (HES) application model -- Part 3-7: GridWise transactive energy systems research, development and deployment roadmap

ISO/IEC TR 15067-3-8:2020 -- Information technology -- Home Electronic System (HES) application model -- Part 3-8: GridWise transactive energy framework



12

nine Mtg slides - PowerPoint



Action Items

- Send speaker ideas to Jaime Kolln and Ron Bernstein and copy Susie McGuire.
- **Update Mission/Vision and About the Council Page**
 - **LinkedIn post highlighting Mission/Vision Update**
 - Add an "About the Council" slide to template
 - Make slide deck templates available to GWAC members.
- Website updates
 - Continue to add video presentations including speakers to GWAC database bureau post on the website.
 - Feedback requested on format and errors

Jaime mentioned the need for speakers in the fall and suggested that GWAC members, associates and emeritus are invited to give presentations. If you have an idea for a talk, please reach out to Jaime and Ron B.

Meeting Minutes

July 10, 2024

For the refresh of the GWAC Mission and vision statements Jaime will send out a message to the council once it's posted so get feedback.

Action Jaime: send the updated Mission and Vision statement out to the Council for feedback

Kay Aikin is planning to do a Linked In post of the Grid Architecture white paper that Seemita led, that was recently published titled, "A Practical Introduction to Common Grid Architecture Techniques." The paper is now available at OSTI.gov

Jaime told the group that updated GWAC Council PowerPoint templates and meeting content are available for presenters who want to mention GWAC in talks that they give.

He also noted that some improvements to the GWAC home page are planned including updated graphics and videos from the PNNL COMMS team are coming including an "About the Council" video which will have an "evergreen" approach, not locked to certain times and events. He noted that the communications team noted that there is not a lot of stock footage of the future grid.

Guest Speaker - Jeremy Harrison, LCD Delta



LCP Delta is a Consultancy working toward the Energy Transition to Democratized, Decentralized, Digitized and Decarbonized Energy systems.

Jeremy Harrison has worked in decentralized energy in various forms for his entire career including working on energy efficiency for buildings. In the last 20 years he has worked with ION, a European

Meeting Minutes

July 10, 2024

Energy Company, they are both a generator, a distributor, and a retail energy supplier. They built a 100% renewable microgrid in Sweden.

He more recently moved LCP Delta where he set up the local energy systems research service as a subscription service. They provide service to energy suppliers and distributors. They are working with companies supporting energy and gas supply and distribution. They are partnering with northern power grids in the northeast of England.



Community DSO

Addressing the challenge for network operators in the energy transition

The rapid deployment of low carbon technologies presents a significant challenge for electricity network companies.

Accommodating all these generation and demand assets using centralised top-down approaches is becoming too complex.

Community DSO seeks to balance generation and demand locally within low voltage cells, reducing complexity for the DNO.

Connecting new DER generation



- As we move to a low carbon generation system, there is an increasing need to accommodate renewable generation
- Renewable energy resources are often in rural areas with weak networks
- Inadequate distribution network capacity can block the development of e.g. wind farms
- Inadequate network capacity at both distribution and transmission levels can result in curtailed generation (last year GB lost almost £1 billion in curtailment compensation payments)

Connecting new electrical loads



- Increasing dependence on electricity for decarbonising heat and mobility
- Additional demand from home working imposes significant challenges for distribution networks
- Some of these applications are critical, increasing the need for resilient electricity supply
- Although local balancing is not inherently more resilient, it does open opportunities for participants to implement resilient technologies such as BESS

Getting low carbon energy to power grids is a challenge.

Meeting Minutes

July 10, 2024

Introduction to Community DSO

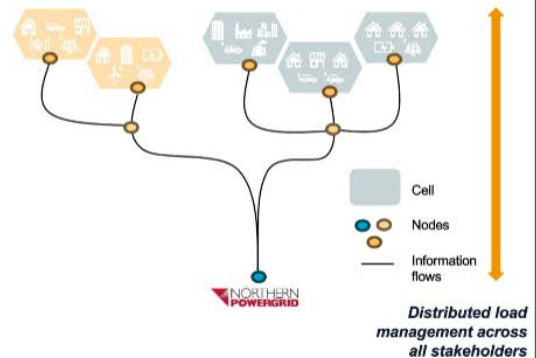
Reducing complexity

An inclusive, replicable, and simplified framework, redefining approach of managing networks built around energy communities

- Community DSO simplifies the integration of local electricity generation and demand by establishing 'cells'—a group of customers with low carbon technologies (LCT) and distributed energy resources (DER) connected at the LV level
- The customers within the cell take ownership of their collective energy demand and generation, effectively becoming a DSO.
- Each cell interacts with the DNO only through a single node. The cell can develop a commercial arrangement with the DNO, such as capacity limit commitments.
- The loads from these cells could then be optimised in a nested fashion. For example, 10 LV substations that are connected to the same HV substation can be managed as a supercell, and then a group of 10 supercells can further be managed together, simplifying the problem from thousands of houses into 10 nodes

Schematic of Community DSO concept

DNO now only interfaces and controls the nodes instead of individual loads and generation



Jeremy Harrison (LCP Delta)
COMMUNITY DSO

Obstacles facing energy communities

Complexity and economics are perceived as main obstacles to scaling energy communities

Energy communities are intended to:

- Increase consumer acceptance of renewable energy
- Increase system flexibility
- Provide a new funding stream for renewables

Facilitating energy communities



- Many energy community projects impose socialised costs on existing infrastructure
- EU focus on accommodating energy communities rather than mutual value creation for the overall energy system
- Local or district balancing can be more efficient and responsive than centralised approaches
- Balancing at local level overcomes many of the structural challenges of system-wide interventions

Obstacles to scaling

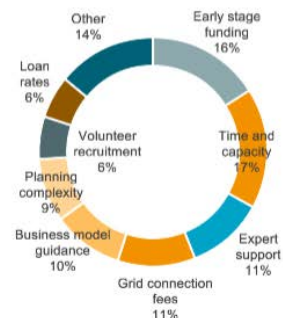


Chart showing perceived barriers to establishing energy communities from Community Energy England survey 2024

Toolkit to facilitate initial development

- Historically energy communities have depended on professional volunteers
- These are not always available, and their absence makes it difficult to establish a community
- Need for a simple introductory guide and implementation manual

Scalable business models require genuine value creation

- Communities have depended on grants or subsidies to finance their schemes
- Identification of viable economic models
- Understanding of value creation
- Replicable archetypes

Jeremy Harrison (LCP Delta)
COMMUNITY DSO

Meeting Minutes

July 10, 2024

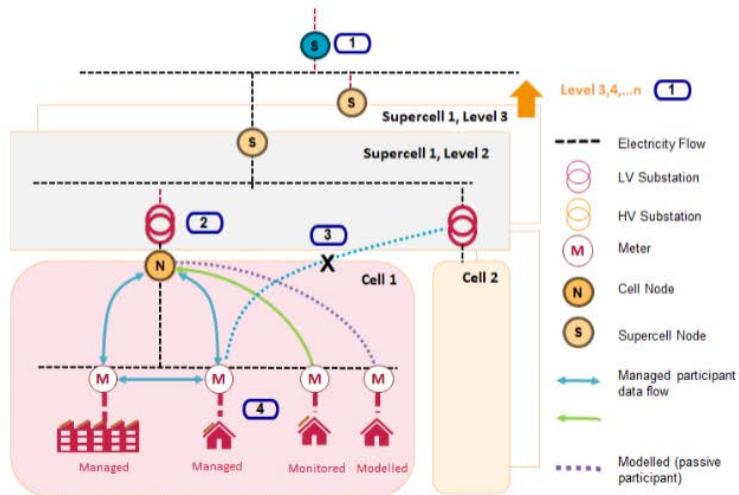


How is it physically done?

Scalable concept where communities form in cells within the existing low voltage network

Key features

- 1 **Nested optimisation** - Each supercell can be connected to another level of integration
- 2 **Each cell is physically connected to a substation** - reflecting real energy flow and constraint
- 3 **Energy transactions** are only allowed within the cell or between nodes at same level
- 4 **Three levels of engagement** allowing for an inclusive participation:
 - **Managed** – Customers with manageable assets (e.g. heat pump and battery) and allows for remote access
 - **Monitored** – Customer with no assets however provides data visibility from smart meter
 - **Modelled** - Demand of remainder customers will be modelled using range of assumptions



COMMUNITY DSO

© LCP Delta 2024

Community DSO

Proposed project configurations



Three types of participants

Each cell will include one or more of the following, but the aim is to manage as far as possible

Manage
Control of generation, storage and demand to align demand with available generation



Monitor
Full visibility (but no explicit control) of demand and generation within each property



Model
No visibility of generation or consumption but using AI to understand impact on remainder of cell



Three types of cells to be included in trial, based on existing and emerging archetypes



Fully balanced system (microgrid)

- System capable of islanding must be able to balance load with available generation in real time
- Remains connected to grid for majority of time facilitating the transfer of (balancing) energy and energy services to the grid
- Economic incentives within the microgrid minimize impact on grid
- No conflict between TSO (ESO) flexibility services and DSO requirements

Substantially balanced

- As microgrid but without the ability to operate in island mode
- Aim to substantially balance local demand with generation annually

Minimising impact

- Will involve an existing community
- Identified network constraints on additional renewable generation

Jeremy Harrison (LCP Delta)

COMMUNITY DSO

© LCP Delta 2024

Meeting Minutes

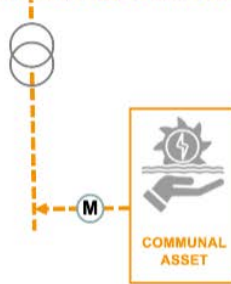
July 10, 2024

Community DSO Simple single source PPA rural archetype



Transition from subsidy led to value driven energy communities

- Majority of income derives from FIT subsidy on all generation
- Additional income from PPA of exported electricity
- Community invested in construction of micro hydro scheme
- Investors receive income by way of dividend payments
- No generated electricity is sold to or used by community (except parasitics on site)
- Not economically viable without FIT income
- No longer replicable in UK
- Key driver is community desire to produce green electricity
- Secondary driver to gain economic benefit for community



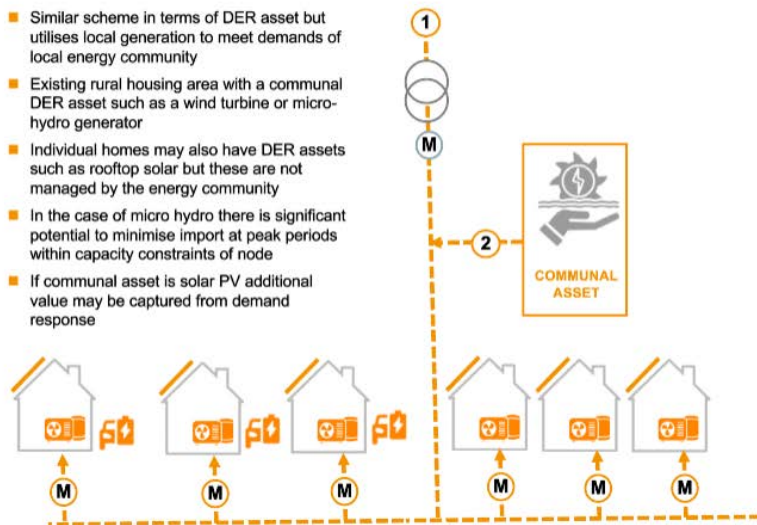
COMMUNITY DSO

© LCP Delta 2024

Community DSO Simple single source energy community rural archetype



- Similar scheme in terms of DER asset but utilises local generation to meet demands of local energy community
- Existing rural housing area with a communal DER asset such as a wind turbine or micro-hydro generator
- Individual homes may also have DER assets such as rooftop solar but these are not managed by the energy community
- In the case of micro hydro there is significant potential to minimise import at peak periods within capacity constraints of node
- If communal asset is solar PV additional value may be captured from demand response



- 1 Grid electricity supply metered at node for energy community
- 2 Communal generation asset can lower cost energy supply compared with grid depending on type of asset

- ELECTRICITY
- ELECTRIC HEAT PUMP
- ELECTRIC VEHICLE
- ENERGY COMMUNITY METER
- INDIVIDUAL HOME METER

COMMUNITY DSO

© LCP Delta 2024

Meeting Minutes

July 10, 2024

Ron Cunningham noted that in the US not all non-participants – people without smart meters – may want to opt out of the program. That profile would have to be included in the model.

Jeremy agreed – he said some may wish to participate and some may not. In the UK they can choose their own supplier. They may choose to not participate in the energy community. They may want to share their battery energy with another community and get a better price. If they are 10 KW, they would have to go through the same application process as the network operators and that may be refused because they don't want to have large amounts of unused energy flows.

Lorenzo said he really likes the idea of this project. Communities that can own their assets – for them it is like a private system. What about assets that belong to the DNO. What are the policies and are there some regulations to require DNOs to enable such communities to do local balancing in the way that you are describing? Is it allowable just on a pilot basis?

Jeremy replied that it is a 5-year project and there is a lot to learn. That is good question. The UK has no right to transact over the public network at this time. The two examples shown. The first one was using the local network. He explained the relationship and how fees are charged. For the other example, that was a microgrid scheme. The micro hydro scheme is using the local network. It is a white label energy supplier, so that is the work around. But he agreed with Lorenzo that it does erode value. The energy is sold to a licensed energy supplier that acts for that community.

Kay Aikin said it sounded like national grid is an enlightened utility and they really want to see this transition happen. Kay noted that in the US the utilities don't really want to see this transition. She asked about the three scenarios and asked how is value coming to the public? She added that this is making life simpler for network operation. How does the value stay with the customer? Kay likes DSOs but said that the more third parties there are, the more the value gets spilt among multi parties and it comes down to pennies and doesn't then it's not enough to interest the customer.

Jeremy said we are looking at total potential value. Looking at the profiles at electric, then at income, network reinforcement, flexibility from community outputs and we look at the potential total pot of money. These schemes need to be economically viable. We are incentivizing people to invest in an energy system. Often housing groups invest in solar and people like it but it has no economic advantage for customers. With wind turbines, many are completely commercial with some dividends. Those with PV and batteries may get some funds back. If someone buys a house in a new community with a solar system already installed, they have invested. Some may invest in a wind turbine and may get some rebates to their electric bill over time. EU legislation mandates network operations to facilitate energy communities and make cost exemptions. Some do and some don't. In the UK they don't have those same obligations as in the EU.

Mark Siira asked if in the evaluation of communities that they worked with looked at fleet charging or mobile charging systems.

Meeting Minutes

July 10, 2024

Jeremy replied that they did not on this project. They looked at different resilience models. He said that if they have major storms, they might send out a truck with batteries to help the community temporarily. There is a new report called resilient customer response on microgrid outages that might be of interest. There is some on PV battery and that type of thing.

Jaime tagged Jeremy on LinkedIn if some of the group wants to continue this conversation. There is a lot of complementary work going on within the GWAC community that relates to Jeremy's work.



GWAC Strategic Outreach Plan

- GWAC Mission and Vision Statements

Vision

The GridWise® Architecture Council supports a vision of a decarbonized, decentralized, and democratized electricity system to ensure the energy needs of today and that of future generations.

Mission

The GridWise® Architecture Council (GWAC) was formed in 2004 by the U.S. Department of Energy to propose principles for and accelerate the development and adoption of interoperability concepts and standards across all applications operating and interfacing with electric systems.

The Council's mission is to engage with stakeholders to accelerate the development and application of grid architecture concepts and principles. This leads to:

- Identification of critical paths to facilitate the effective evolution of the systems, devices, and entities that encompass the electric systems and achieve societal objectives.
 - Advancement of standards, applications, and systems interfacing with the current and future electric systems to ensure they are sustainable, reliable, resilient, efficient, extensible, and equitable.
- Guest speaker recordings continue to be developed and published to YouTube
 - Outreach through conference presentations
 - Slide deck to be developed with template and GWAC outreach slides.
 - Other organizations to "cross-pollinate" ideas with.
 - Identify liaison volunteers, e.g. INCOSE

Meeting Minutes

July 10, 2024



Planning the GWAC Conference

- Co-Located at RE+ in Anaheim, CA September 9-12, 2024
 - Planning on plenaries and two tracks
 - RE+ Technical Session is Monday and Tuesday.
 - GWAC Symposium will be Wednesday and Thursday
 - Coordinating with Lesley Fondren (RE+)
- Organizing Committee (OC)
 - Weekly meetings scheduled
- All Council Members Participating in Symposium Planning
 - Weekly meetings scheduled - Thursday 8AM PT/ 11AM ET
 - Council members assigned to manage panels
- Registration not yet open for symposium
 - Full conference coupon codes (30% off) available for all council members.
 - Friends of the council can reach out to jaime.kolln@pnnl.gov for 15% off codes
- LinkedIn – We are the council! Ron Bernstein posted.



GWAC members please attend the symposium organizing meetings as you can. They are early morning (Pacific time) meetings.

Coupon codes are available for full GWAC members – it includes a pass to the event “block parties” and to technical sessions the day before.

For full conference passes we have 15% off codes and for attending the GWAC conference. Contact Jaime or Susie for a code.

Meeting Minutes

July 10, 2024



Planning the GWAC Conference

- Co-Located at RE+ in Anaheim, CA September 9-12, 2024
 - Planning on plenaries and two tracks
 - RE+ Technical Session is Monday and Tuesday.
 - GWAC Symposium will be Wednesday and Thursday
 - Coordinating with Lesley Fondren (RE+)
- Organizing Committee (OC)
 - Weekly meetings scheduled
- All Council Members Participating in Symposium Planning
 - Weekly meetings scheduled - Thursday 8AM PT/ 11AM ET
 - Council members assigned to manage panels
- Registration not yet open for symposium
 - Full conference coupon codes (30% off) available for all council members.
 - Friends of the council can reach out to jaime.koln@pnnl.gov for 15% off codes
- LinkedIn – We are the council! Ron Bernstein posted.



11

Jaime encouraged everyone to get hotels soon, it will be a challenge, and he advised everyone to check out the public transportation system.

For Panel Speakers – they will get a good discount rate – there will be a separate registration portal for them. It will be sent to them individually (not viewable by the public). Panel chairs can send the information to their guest speakers.

Action: Jaime to provide the link to the portal for Panel Speakers to register at a discount.

Jaime encouraged panel leaders to start populating the symposium spreadsheet on Teams as their panel outlines and speakers come together.

Jaime talked with Aaron Smallwood. He has some materials that we may want to make available to symposium attendees about SEPA.

Ron B. has reached out to ASHRAE, and he has put his leads in the spreadsheet.

If anyone needs to load to the Symposium spreadsheet and doesn't have access, just send Jaime your information and he will populate it.

Meeting Minutes

July 10, 2024

Ro



“Next Big Thing” / “Back from the Future”

- Originally presented at AHR Expo
- Ron Ambrosio and Rahul Bahadur are leading a committee to develop a webinar on "The Next Big Thing"
 - Rahul Bahadur and Ron Ambrosio Updates
- Next Steps
 - Development of a concise slide deck
 - Draft presentation will be reviewed by GWAC
 - Web Page with details including GWAC activities



Ron Ambrosio has tasked work group members to set a meeting to finalize this paper. He is hoping to have it in the next couple of weeks. When the final deck is drafted, he will do some editing and formatting and then Ron B. and Jaime may need to do a final review.



Grid Vision & Future States White paper

- Grid 3.0 Future States has been incorporated as an appendix. Final “draft” of the report completed by PNNL editors GWAC administrator and lead author are addressing the last few recommendations.

Ron Cunningham will review some final comments from the PNNL editor.

Meeting Minutes

July 10, 2024



Grid Architecture for Regulators

- **Team members: Lorenzo Kristov, Kay Aikin, Larisa Dobriansky, Jeff Morris, Mark Paterson, Farrokh Rahimi, Chris Villarreal, Ron Bernstein**
- White paper will be aimed primarily to GWAC community:
 - Document experiences, observations & lessons learned from the use/non-use/value of Grid Architecture in policy & regulation venues
 - Provide a basis for strategies to promote Grid Architecture among policy makers
 - Paper will be a living document, starting with a few initial case studies and adding new case studies as available
- Initial case studies
 - U.S. — FERC Order 2222
 - State — Xcel Minnesota rate case; CPUC High-DER docket
 - Municipal — Portland Maine
 - International — Ontario, Canada
- Tentative target date: Draft for GWAC review by mid-November; ready for posting early 2024.

Lorenzo said that his original thoughts on this paper have gone in a new direction as the world keeps changing. He won't have anything to add before the Symposium.

His team is currently doing a DSO study for the state of Maine and that is causing him to clarify and refine a lot of the regulatory and policy issues that go into local energy – the thought processes involved as they try to respond to what the state legislation is asking for. And similarly, some input that he got while on a recent visit to Australia to attend a conference gave him input on how the Australians are responding to similar issues.

Kay Aikin expects to be interviewed for Lorenzo's DSO study. They will talk more offline.

Meeting Minutes

July 10, 2024



Applying Grid Architecture Concepts to Bridge Back from the Future Grid

Building on the previous GridWise Architecture Council work products, this document attempts to provide a roadmap for operators, planners, developers, integrators, and policy makers as guidance to develop interoperable systems that will architect the grid of the future as described in the future states. This paper will include discussions of motivating participation of customer owned assets and opportunities for avoided costs by working toward a long-term vision rather than only short-term needs. This document will be completed in FY24.

- Committee : **Mark Paterson**, Marc Costa, Ron Ambrosio, David Forfia, Kay Aikin, Lorenzo Kristov, Farrokh Rahimi, Aaron Snyder,
- 2:00 PM PT/ 5:00 PM ET Thursday 2 times 1st and 3rd Thursday of the month

If anyone would like to participate in these white paper working groups, please let Jaime know. For this paper you can reach out to Mark Paterson as well.

Meeting Minutes

July 10, 2024



Grid Architecture Concept Model for Transportation Electrification

Analyze various visions of the electrification of fossil fuel-based systems and identify areas where GWAC concepts could provide architectural value to bridge and coordinate between customer and grid objectives. Electrification will introduce dependencies such as those seen in the transportation sector due to electrification. Grid Architecture will be used to describe the touchpoints (for example through sector coupling) that will require collaboration. GMLC reference cases will be included. This activity will take place in FY24 and be completed FY25.

- 15-20 page whitepaper
- Committee: Jaime Kolln, Ron Cunningham, Farrokh Rahimi, Mark Ortiz, David Forfia, Aaron Snyder, Lorenzo Kristov, Bhaskar Mitra, Paul DeMartini
- 1:00 PM PT/ 4:00 PM ET, 4th Tuesday of the month

For this paper Ron Cunningham has been helping Jaime stay at a high level and not get too into the details. Jaime said that he has learned a lot participating in this group. Ron M. has been participating as GWAC Administrator emeritus. This group is meeting once a month. At a future date, perhaps after the Symposium, these will go to twice a month.

Ron Cunningham asked anyone listening on the call that is interested in being a part of this working group should let either him or Jaime Kolln know. They would be happy to add a couple names to this work group.

Meeting Minutes

July 10, 2024



Liaison Reports

- NIST – David Wollman
 - Green Button – Jeremy Roberts (*New*)
 - EPRI – Sean Crimmins
 - IEEE PES – Farrokh Rahimi, Shawn Chandler
 - ASHRAE, CTA, ASHB (formerly CABA) – Ron Bernstein
 - ISO/IEC, IREC – Ken Wacks
 - SEPA – Aaron Smallwood
 - NARUC – Jeff Morris
- *Are there other organizations we should be hearing from?*

Farrokh Rahimi – IEEE: Farrokh said he will be attending the IEEE PES General meeting in Seattle Washington.

He also noted that the IEEE PES Grid Edge Technologies Conference will be held January 21 – 23, 2025 in San Diego .

And the one more thing is there an electrification magazine that has been under PES and as of the 1st of January, it will be under a joint MOU between the Transportation Electrification Council, Power Electronics Society, and the Industrial Applications Society. It is very much focused on electrification of transportation. So, with respect to the concept paper, that is probably a venue that GWAC may want to consider publishing a paper in. It seems like a good opportunity.

Jaime asked if he heard the name Transportation Electrification Council correctly and Farrokh said yes that is correct and it is called TEC for short.

Ron Bernstein, ASHRAE: Ron attended the ASHRAE summer meeting. They have just published Guideline 13 Specifying Building Automation Systems; it was nine years in the making. There are many sections that relate to GWAC work such as smart buildings as a Transactive Energy hub.

Meeting Minutes

July 10, 2024

<https://www.ashrae.org/technical-resources/bookstore/ashrae-guideline-13-2015-specifying-building-automation-systems>

Ron Bernstein is working with the ASHRAE Decarbonization team to get them to participate at RE+ and with future GWAC meetings.

The cybersecurity team is going to vote next week on a new publication for a managed back net system that may have some implications for how a building control and automation system integrates to a grid system using some standard cyber security mechanisms.

ISO Ken Wacks: Ken said the home electronic system committee has developed about sixty standards and technical reports. There are a number of them that are just about ready for publication.

One of the most recent publications is the Application of Artificial Intelligence to Energy Management. It is for sale now through the ANSI webstore. Ken will have more to announce soon. There should be four or five more in the next few weeks.

Ken will attend the next meeting scheduled for mid-September in Japan. Unfortunately, it is in conflict with the dates of the RE+ so Ken will miss the GWAC 20-year reunion.

The group has completed the development of several standards. They are being prepared for publication including a standard for cybersecurity protection of customer data, privacy, and safety. He will let us know when it is published.

IREC Ken Wacks: Ken chairs the Customer Grid Edge (CGE) committee. The CGE is meeting this Friday. The featured speaker is Elizabeth Parks, the president and CMO of Parks Associates. Her presentation started on May 31; a video of her earlier presentation is available on the IREC website. Her talk this week is "*Incentives for the Adoption of Load Management Solutions in the Electric Energy Industry.*" There is no charge to attend the Zoom meeting that starts 1:30pm Eastern Friday, July 12. IREC website: <https://irecusa.org/>

Jaime reminded Ken and the group that we will have a virtual link to the GWAC meeting in San Diego after the RE+ meeting. Jaime encouraged Ken to join the meeting from Japan. We will put a link in the Agenda.

Ron Bernstein noted that there will also be a Saturday morning GWAC meeting. This will be followed by a fun event for those that can join of sailing in the San Diego Harbor. That activity will end at about 6:00pm and the location is near the San Diego airport.

SEPA – Ron Melton: Ron noted said there is a change to the meeting time for Grid Architecture working group. In the past it has met on the 2nd Friday of the month at 8:00am Pacific time. It will now be on the 3rd Tuesday of month at 9:00am Pacific time, or Noon Eastern time. Also, there is another change. The Grid Ontology working party will now meet on the Second Tuesday of month, also at 9:00am Pacific time. These meeting time changes will start in September.

Meeting Minutes

July 10, 2024

Ron Melton also noted that the times will change for the TE working group, but he doesn't have the new times yet. Ron Cunningham said he thought the new day will be a Thursday. SEPA is trying to move all the work groups to either a Tuesday, Wednesday, or Thursday. Ron Melton added that SEPA will be changing the software that supports the work groups.

Ron Melton referenced the SEPA Work Groups website for more information:

<https://sepapower.org/knowledge/working-groups/>

Jaime noted that the Grid Storage Launchpad facility on the PNNL campus is opening is coming up soon.

Lorenzo Kristov mentioned that Scott Hempling at FERC gives a course in regulatory law. There will be a 12-week course starting in September. There is a related book and Lorenzo noted that Scott is a great teacher. This is a course that Lorenzo has taken. Contact Lorenzo Kristov for more information. NARUC courses are listed here: <https://www.naruc.org/about-naruc/our-programs/regulatory-training-initiative/>

Jeff Katz noted in the chat that the FWIW 2nd edition of Big Data Application in Power Systems has been published. He and John McDonald, GE are authors. <https://shop.elsevier.com/books/big-data-application-in-power-systems/arghandeh/978-0-443-21524-7>



Upcoming GWAC Meetings

Date	Topic or Speaker	Format	Other
August 6 th , 2024 (Tues.)		Virtual	
September 9-12, 2024	GWAC 2024 Symposium	In Person	Anaheim, CA
September 13-14, 2024	GWAC Face-to-face and 20th Anniversary Celebration	In-Person	San Diego, Casa Bernstein
October 16 th , 2024?		Virtual	Teams
November 20 th , 2024?		Virtual	Teams

Future speakers ideas:

Meeting Minutes

July 10, 2024

Jaime noted that Thanksgiving will be November 28 and 29 this year. We will need to consider when the November GWAC meeting should be.

Ron Ambrosio, Acting Chair, asked for a motion to adjourn. Andy Bordine gave the motion. Lorenzo Kristov seconded the motion.



Adjourn

GWAC online August 6, 2024



<https://gridwiseac.org/>