GridWise® Architecture Council

Meeting Minutes

July 15, 2026

GWAC Members

Ron Bernstein, GWAC Chair, President, RBCG, LLC

Ron Ambrosio, Independent Energy Transformation Professional

Andy Bordine, Sr. Practice Mgr in Grid Automation, Actalent

Shawn Chandler, GWAC Vice Chair, Exec VP Innovation & Mkts, QGEMS Energy

Ron Chebra, Executive Director, Chebra Consulting Group

Marc Costa, Director of Policy Planning, the Energy Coalition

Yashar Kenarangui, Sr. Principal Engineer, Xcel Energy

Mark Ortiz

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

Aaron Snyder, Dir. of Grid Technology Consulting, EnerNex

GWAC Associates & Emeritus

Rahul Bahadur, Associate

Ron Cunningham, Emeritus

Mark Knight, Emeritus

GWAC Friends

Allistair Adams

Larissa Affolabi

Larisa Dobriansky, General Microgrids

Peter Fitzgerald, Alt Engineering, LLC

Alaa Mahjoub, Independent Digital Business Advisor

Bruce Nordman

James Orenstein

Jeremy Roberts, Green Button

Chirath Pathiravasam

Hayden Reeve, PNNL

Tylor Slay, PNNL

Guest Speaker

McGee Young, WattCarbon

PNNL Support

Jaime Kolln, PNNL GWAC Administrator

Susie McGuire, GWAC Coordinator

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GRIDWISE Architecture Council

Agenda

Call to Order and Roll Call

- Welcome

GWAC Administrative Business

- Minutes
- Upcoming events
- GWAC Accomplishments
- Action Items

Guest Speaker

- McGee Young, WattCarbon
  Title "

Work Product Status Reports

- Grid Arch for Regulators White Paper – presentation from Matt McDonnell
- Grid Architecture Concept Model for Transportation Electrification
- New Work Products Update

Future Activities

- GWAC Outreach
- Planning 2027 GWAC Symposium

Liaison Reports

New Business

Chair Ron Bernstein noted GWAC had quorum at 10:30am.

Jaime opened the meeting and read the proprietary info. He announced that today's guest speaker will be McGee Young with WattCarbon. Jaime asked everyone to hold questions until the end of the presentation.

Jaime asked the GWAC to let Susie know if you will not be able to attend the monthly meeting and he thanked those who have been doing that. This helps us know if we will be able to make quorum.

Chair Ron Bernstein called the meeting to order. He asked for a motion to approve the June meeting minutes. Ron Ambrosio seconded the motion.

The group had no objection to approving the GWAC June Meeting minutes.

Farrokh Rahimi noted that he is leading a panel at the IEEE PES General Meeting in Montreal. Jaime asked if he could use a copy of the GWAC introductory videos in one o f his talks. Farrokh said he would

show the videos at the beginning of each panel. Susie will send Farrokh the link to the GWAC introductory videos.

Jaime thanked Farrokh for being a great advocate for the GWAC.

Shawn Chandler and Jaime Kolln are planning to attend the RE+ Mid-Atlantic meeting in September and Jaime noted that because Matt McDonnell and Lorenzo Kristov are not able to attend that PNNL's Jeremy Twitchell will also attend. The three will represent GWAC at the event and give an overview of the systems thinking for regulators paper that was recently published by the GWAC. Jeremy had participated in work group meetings for the paper and had lead some of the writing tasks. Jaime said if Kay Aikin is able to attend, she also will be a presenter, but her availability is not yet confirmed.

Ron Bernstein posted the titles of talks he will be giving at the Middle East Energy Conference in Abu Dhabi, UAE.

- Panel Discussion: *Corporate Digital Transformation in the Utility Sector,*
  Wednesday, September 2: 02:50 PM - 03:35 PM
- Panel Discussion: *Securing Grids Against Cybersecurity Threats,*
  Thursday, September 3: 12:00 PM - 01:00 PM. Speakers: Ron Bernstein , Stephanie Wu , Goran Novakovic

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Conferences and Events

GRIDWISE Architecture Council

Date	Event	Location	Attend	Speaker	Topic/Notes
July 19-23, 2026	IEEE PES General Meeting	Montreal, Canada	Farrokh Rahimi, Shawn		Powering the Digital Era
July 19-22, 2026	NARUC Summer Policy Summit	Minneapolis, MN	Kay	July 19-22, 2026	NARUC Summer Policy Summit
Aug. 12-13, 2026	RE+ Mid-Atlantic 2026	Philadelphia, PA	Jaime Kolin, Jeremy Roberts, Kay Aikin, Ron B.,Shawn		
Sep. 1-4, 2026	Middle East Energy Leadership Summit	Abu Dhabi, UAE	Ron Bernstein	Ron Bernstein	Panel participant-Digital Strategies for Corp. Transformation
Sept. 1-3, 2026	T & D World	Orlando, FL	Chebra		
Sept. 15 - 16, 2026	Empower Executive Energy Summit 2026	Boston, MA	Aaron Snyder		Updated Location?
Nov. 8-11, 2026	NARUC Annual Meeting & Education Conf	Puerto Rico			
Nov. 16-19, 2026	RE+	Las Vegas, NV	Kay Aikin, Shawn, Jaime		Renewing What's Possible
Nov. 19-21, 2026	Decentralized Energy Canada	Banff, Alberta	Kay Aikin	Kay Aikin	
Jan. 6 - 9, 2027	Consumer Electronics Show	Las Vegas, NV	Wacks		
Jan. 25 – 27, 2027	AHR Expo 2027	Chicago	Bernstein, Shawn		NRECA is a host
Feb. 14 – 17, 2027	Tech Advantage 2027/Power XChange	San Diego, CA			
Mar. 1-4, 2027	DTECH	Atlanta, GA	Aaron Snyder		
April 19-22, 2027	IEEE PES Grid Edge Technolgies Conference	Salt Lake City, UT	Farrokh Rahimi, Jaime		

Action: Susie will send links to Farrokh Rahimi for the GWAC introductory video series for him to use at IEEE PES General Meeting. (done)

Farrokh Rahimi noted that he is hosting 2 panels: *AI in Power*, and *Flexible interconnections.*

August RE+ Mid-Atlantic – Jaime is discussing our timing with Aaron Smallwood, SEPA. There may be a hiccup.

Jaime Kolln noted that Jeremy Twitchell with PNNL will cover the Regulators paper content at the meeting. Jaime and Shawn Chandler will be there and Jeremy Roberts. Kay has not confirmed; she may have a conflict.

Ron Bernstein can't yet confirm if he will be presenting in person at the meeting in Abu Dhabi.

Ron Chebra will moderate to panels at the T&D World conference; *Wildfire*, and *Innovation in Grid*, in September.

Action: Send Ron Chebra the GWAC video links. (done)

Action: Farrokh will attend DTech 27 in Atlanta – please add his name to the list. (done)

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Ron Bernstein sent an abstract of the talk he has planned for the Middle East energy conference:

Cutting-edge roadmaps aligning technology investment with business objectives — case studies from leading organizations leveraging digital capabilities to drive operational excellence, customer value, and competitive advantage.

Panel Discussion: Corporate Digital Transformation in the Utility Sector. Wednesday, September 2: 02:50 PM - 03:35 PM

Panel Discussion: Securing Grids Against Cybersecurity Threats. Thursday, September 3: 12:00 PM - 1:00 PM

Speakers: Ron Bernstein , Stephanie Wu , Goran Novakovic

Jaime noted that the recently published Bridging back needs to be added to the GWAC Accomplishments slide and it is on Linked In.

Action: Update the slide on the template for this meeting with the Bridging Back paper and also update the slide set with the new publication.

Jaime introduced today's guest speaker, McGee Young with WattCarbon:



THE STREETLIGHT EFFECT

We tend to look where the light is

The bulk system is **where the light is**: nodal LMPs, EIA generators, energy markets. We focus there because it's the layer we can actually see.

Everyone knows there's a wallet in the darkness.

- The distribution edge: where load growth, DERs, EVs, and data centers actually land
- DERs will never be able to solve grid problems if they can't be managed to the grid's needs in the first place

You won't find it under the lamp. So we are lighting the park.



WHY IT'S STRUCTURAL

A systemic data problem

Distribution level data sits behind utility firewalls; PII and national security claims protecting profit incentives to build more infrastructure. The market is left out in the cold.

Actor	Question they bring to the table	Today's answers
Utility planner	Where is headroom, where is stress building?	Call Guidehouse; wait 3 years
DER developer	Where does a battery earn its keep?	Cross fingers, hope for the best
Data center siting team	Which substations can absorb a large load, and when?	Good luck!
Trader / asset manager	Which nodes look tight over the next week?	Roll the dice

The missing structure is a **shared, forward-looking view of the grid**, not more private data in more silos.

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HOW IT WORKS

A digital cousin for the grid

A novel approach to modeling the grid: rebuild the load from the physical building stock, one structure at a time.

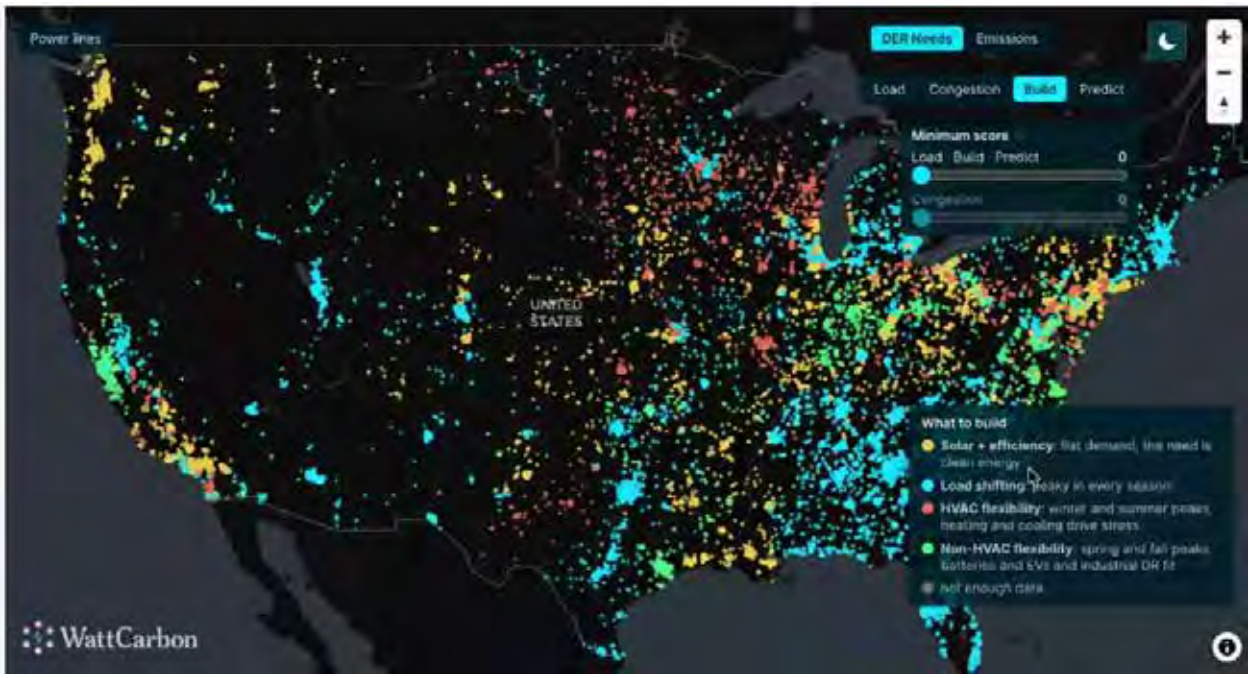
1. **Every building** — FEMA USA Structures footprints, typed by use (residential / commercial / industrial), size, height
2. **A load shape per building** — NREL End-Use Load Profiles by type give a modeled 8760, calibrated to building type, square footage, and climate zone
3. **Geocode and roll up to the substation** — sum every building in each node's ~12 km catchment into a building-stock signature (65k+ nodes, 48 states + DC)
4. **Weather normalize the baseline** — normalize the raw 2018 NREL loadshapes for weather and use the model to forecast load in the week ahead using 7 day weather forecasts
5. **Net out rooftop solar** — subtract behind-the-meter PV so the shape is what the grid actually sees

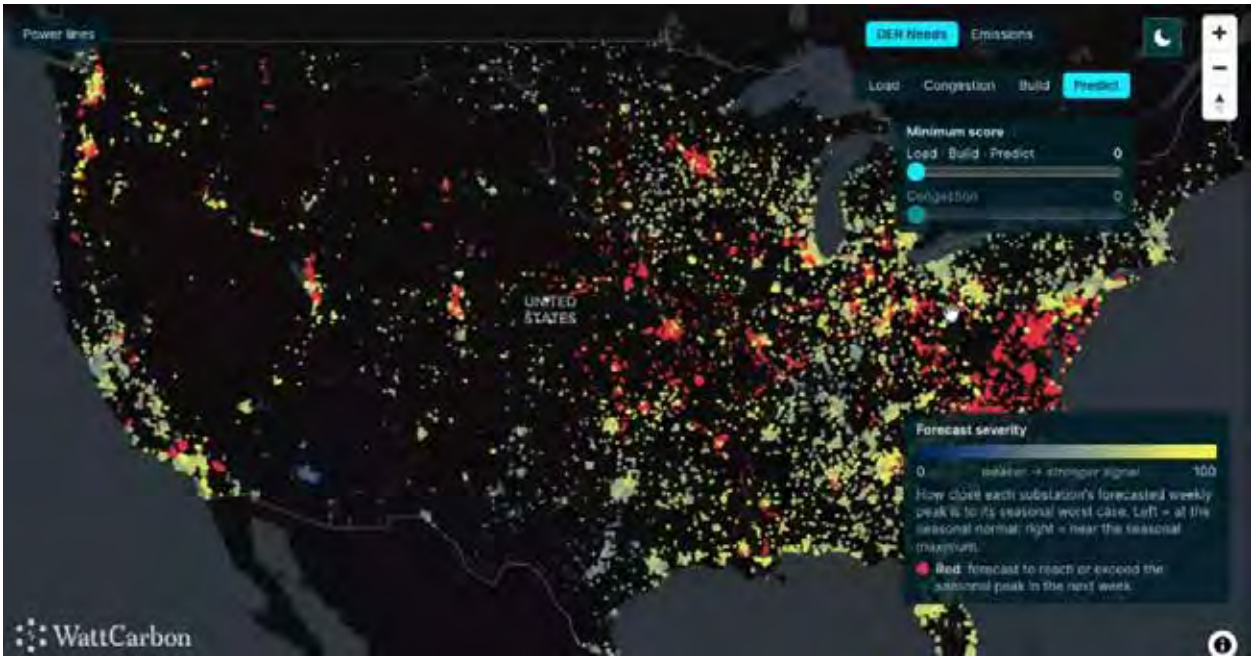
Validate where truth exists: score the modeled shapes against measured aggregate data



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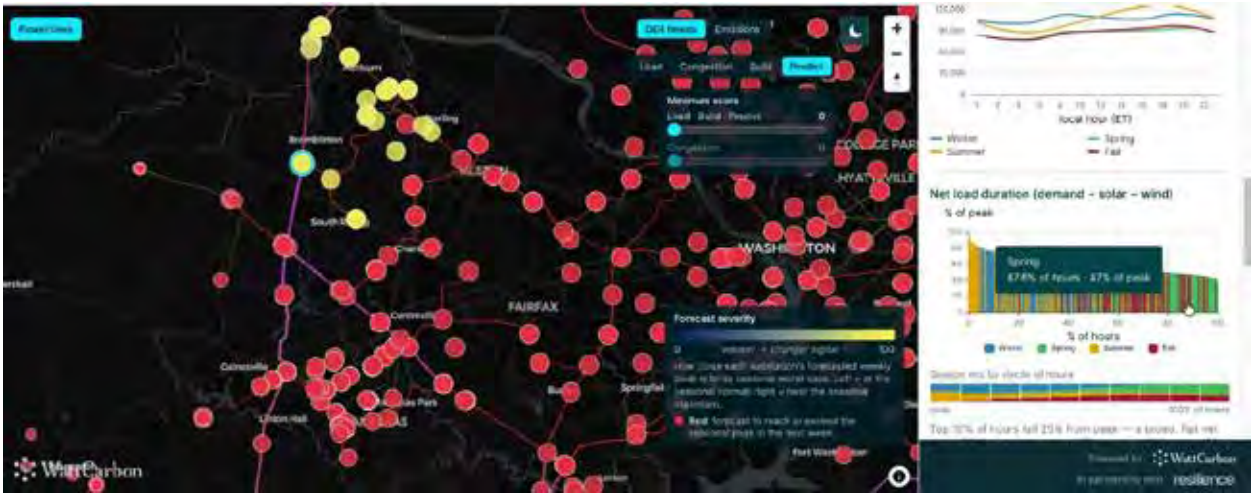




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McGee asked the group for their questions.

James Orenstein

Q For comment here or follow up w/McGee: Are you following the TX PUCT activity to update the Distribution Grid Interconnection Policies & Procedures & Cost Recovery under dockets 54233 & 54224?

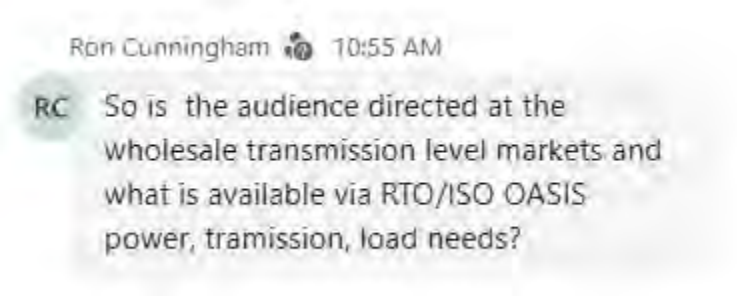
A I've been following it. Anything in particular catch your eye?

Marc C – building America data set from ORNL – they calibrated the models and have a partnership with Google to have all the buildings from the ground up. It might be interesting to look at that.

McGee said he would look at it.

Marc said it's called Model America.

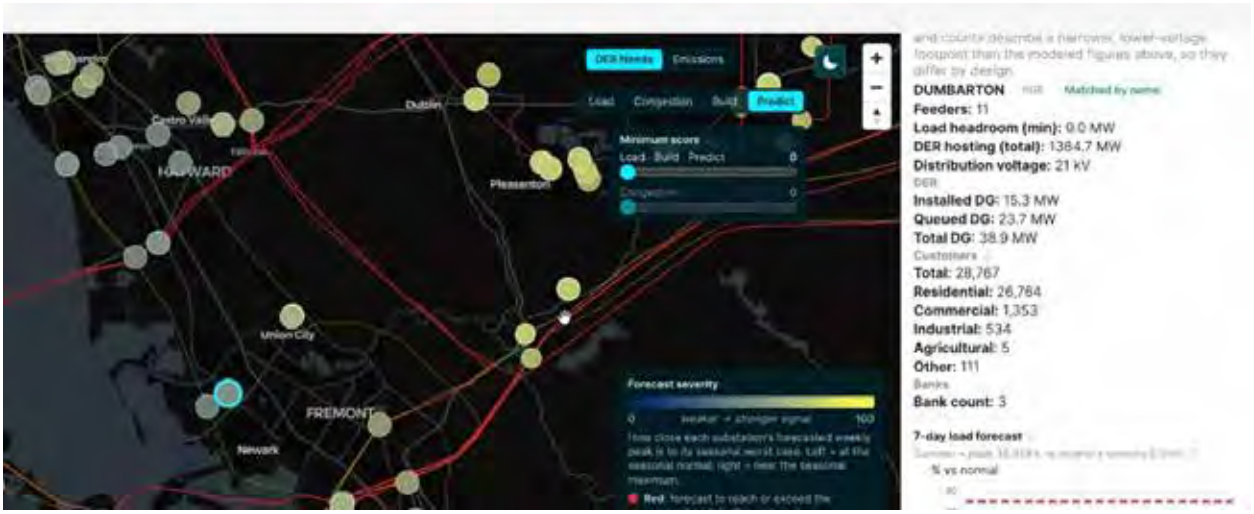
Marc also said that Kay Aikin has access to some models that might be interesting. Marc thought DQ sensitivity would be interesting.

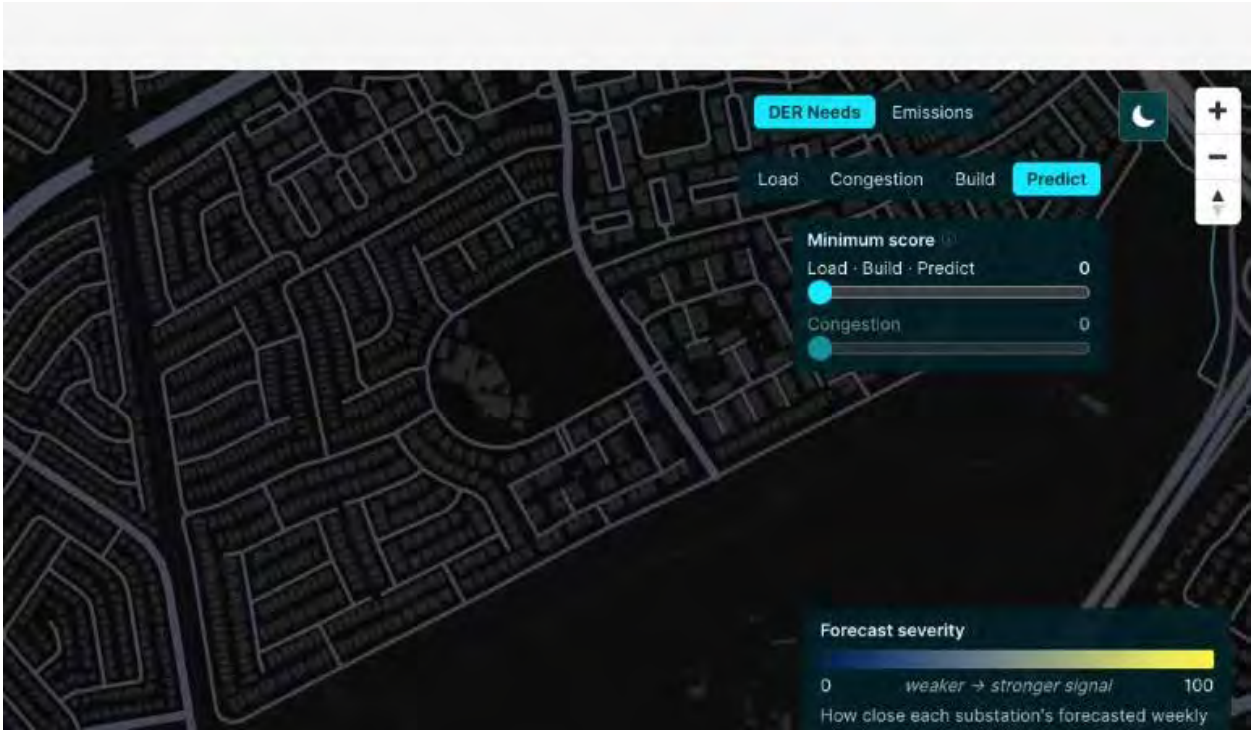


As an industry, the wholesale market ecosystem is pretty well developed. He hopes the information will be helpful to them. They hope to build their way down to the distribution level.

Ron Cunningham said the scope of what they are taking on gets exponential in the amount of information required.

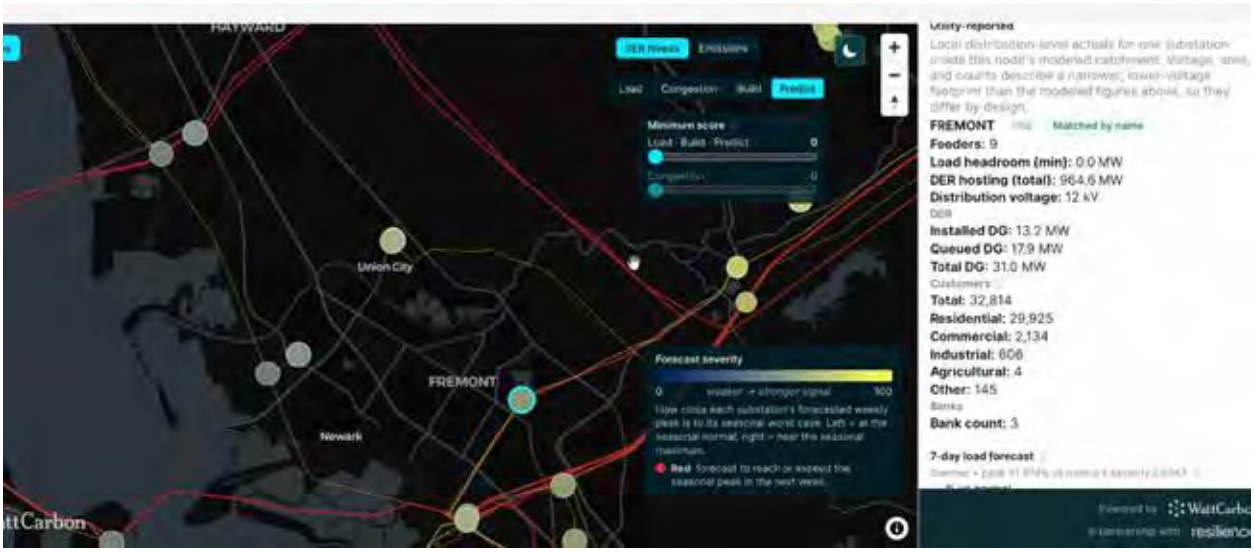
McGee said PGE is helpful in sharing their data. He gave an explanation:





At the substation level there is no load data available. As you get more granular, they limit the information. He explained the steps they took to work with it.

A Transmission substation is not as trackable as to exactly who it serves.



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GRIDWISE Architecture Council

Action Items

- Send speaker ideas to Jaime Kolln and Ron Bernstein and copy Susie McGuire.
- Planning a kickoff meeting to a new meeting series focused on the relationship of energy efficiency and Grid Architecture.
  - Kay Aikin, Aaron Synder and Ron Ambrosio participating. Shawn is looking for a few additional participants, please contact Shawn if interested. Plan to kick-off in Q3/FY26.
- GWAC conference presentation opportunities. Participants? Which events?
  - Farrokh, Yashar, Jaime, Alex Nassif – Grid Edge Tutorial
- Next NARUC opportunity? Shawn and Andy to confirm.
- October F2F Maine – Logistics? Kay
- In Person Workshop –
- Timing? Participant? Alternate location?

Jaime Kolln and Shawn Chandler will discuss next steps for the new work group.

Jaime asked if we have a "we are the Council" set of slides. Ron Ambrosio replied that there is a folder for it (under General) and it probably needs to be updated.

Jaime reviewed who will attend Grid Edge as a GWAC representative:

- GWAC conference presentation opportunities. Participants? Which events?
  - Farrokh, Yashar, Jaime, Alex Nassif – Grid Edge Tutorial

Jaime said they will be submitting a panel to the Grid Edge Tech Conference.

Ron B. will represent GWAC at the AHR Expo 27. He said the format will be an educational or training session. He said that the AHR is interested in hosting more training programs. He wants to use some of the Jeff Taft model. He asked who will be able to attend that event.

Regarding NARUC opportunities Jaime will talk more with Shawn Chandler and Andy Bordine.

Regarding the GWAC Face to Face in Maine, Kay is having some logistical issues. Jaime will schedule a planning meeting soon.

Jaime is looking for some new ideas for an in-person workshop. If someone has an idea please let him, Ron Bernstein and Susie, know.

Peter Fitzgerald was interested and asked what is needed for a meeting site.

Jaime said depending on the topic, the focus and audience will vary. He said typically they expect to have about 20 attendees.



Jaime said that the December 2026 timeframe target for this paper may be too optimistic.

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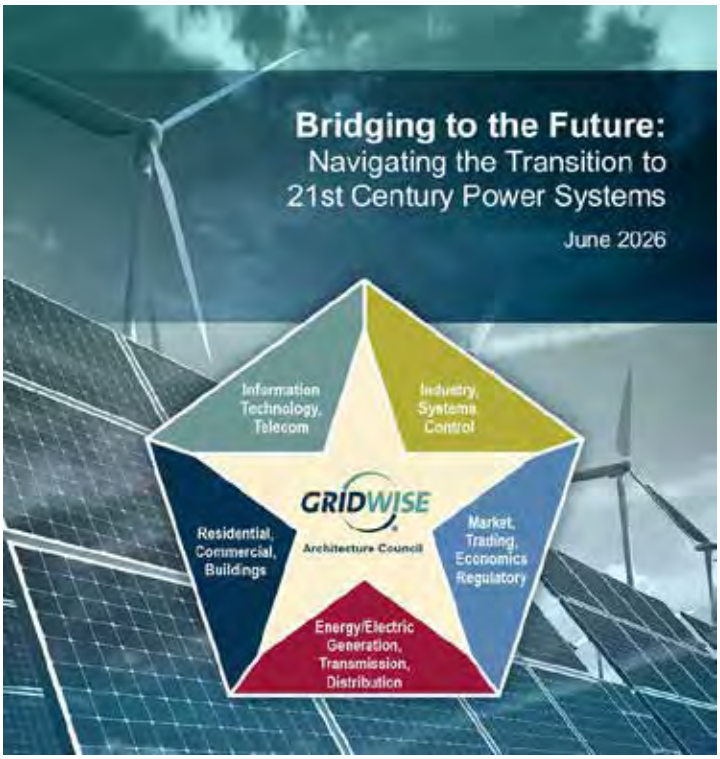
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GRIDWISE Architecture Council

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 rationale for operators, planners, developers, integrators, and policy makers to explore a Bridge Back from the Future approach to develop transition plans 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 FY26, with mid April publication.

- Published on the GWAC website: Bridging to the Future
  - Committee : **Mark Paterson**, Marc Costa, Ron Ambrosio, David Forfia, **Kay Aikin**, Lorenzo Kristov, Farrokh Rahimi, Aaron Snyder, Shawn Chandler, Nicholas Domich



GRIDWISE Architecture Council

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 has been underway since Q4/24 and is on target to be completed FY26.

- 15-20 page whitepaper
- Committee: Ron Cunningham, Shawn Chandler, Farrokh Rahimi, Mark Ortiz, David Forfia, Aaron Snyder, Lorenzo Kristov, Bhaskar Mitra
- 1:00 PM PT/ 4:00 PM ET, 2nd and 4th Tuesday of the month
- Final deliverable date of July 30, 2026

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- Final deliverable date of July 30, 2026

Ron Cunningham explained that the paper looks at various scenarios.

Jaime noted that this group meets twice a month. One of the meetings had fallen off the schedule but he set it back up again as a recurring meeting.


GRIDWISE Architecture Council

New Topics for Future Work Products.

From Regulation to Coordination: Governing the Distributed Grid

In the New Energy Landscape, the central governance challenge is no longer simply how to regulate individual actors, technologies, or markets, but how to establish the decision rights, obligations, and accountability structures needed for operational coordination across a distributed and decentralized grid. Without this governance layer, even technically sound coordination architectures may fail to scale because economic signals, physical constraints, cybersecurity responsibilities, and customer autonomy will remain misaligned.

- Team: Kay, Marc Costa,
- Deliverable date: Spring 2027

Operational Coordination

Draft... This paper will explore how applying Grid Architecture concepts such as layered decomposition and coordination nodes supports interoperability, flexibility, and varying objectives to delivers greater scalability and resilience. Relevant scenarios will be discussed helping walk through key coordination elements.

- Team: Mark Ortiz, Yashar, Jaime
- Deliverable date: Summer 2027

Marc Costa asked if this would be a sequel to the other regulatory paper. Kay is not on the call today. Jaime said that Lorenzo Kristov, Mark Ortiz, and Yashar Kenarangui have given him some feedback on the proposed abstract. Jaime explained the thinking behind this to Marc Costa. He referred to the Jeff Taft coordination Venn Diagrams. He said kay wanted to look at the regulatory implications of coordination. She sees it as a companion to the other paper.

Marc said on the Regulators paper, he has a resource that he can share but he was also looking at state utility regulations and uses Claude to search state by state. It gave some really interesting information that may apply to this new paper. Jaime agreed they can take a look at that.



Jaime asked about the plan for Ron Ambrosio's Bridging Back webinar. Ron Ambrosio said it should start no earlier than 9:00 am west coast time. He thought that one hour would work but one and a half hours would be best to allow for Q&A. Ron A. will be the sole presenter.

Jaime said that Vanessa can work with him to help promote this.

Ron B. said it could go out as a calendar event. Several dates were discussed.

Ron B. said that August 25th might be the best. Ron Ambrosio agreed.

Jaime updated the slide:

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GWAC Outreach

- Upcoming Events with GWAC presence
  - RE+ Mid Atlantic August 12-13 in Philadelphia.
    - Jaime Kolln, Jeremy Roberts, Shawn, Jeremy Twitchell – Please confirm. Kay Aikin, Chebra is a maybe, NO: Ron A, Farrokh, Marc C, Mark O, Andy B., Forfia, Bernstein, Aaron Snyder, Yashar, Matt
  - **Webinars – volunteers needed.**
    - **First Week of August 25th "Bridging Back" 10AM PT**
    - **Early September "for Regulators"??**
    - **Late September "Transportation Concept Model"?**

GRIDWISE Architecture Council

GWAC Symposium 2027: The New Energy Landscape

Main Topics:

Three existing work products plus:

- Customer Driven Innovation
- One Grid –Fireside Chat
- Operational Coordination
- From Regulation to Coordination: Governing the Distributed Grid

Where:

Tampa, FL March 23-25th, 2027

Key Details:

- Vanessa Whitten (PNNL) will coordinate logistics
- Sponsorships need to be identified early
- Paid event to fund the management/organization support of the event
- Council Members Participating in the Organizing Committee
- At Least 4 Council Members
  - Ron Ambrosio – Local Coordinator
  - Ron Bernstein and Shawn Chandler – Co-Chair
- Call for participation is the kickoff; it will include a timeline of due dates for presenters.

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Ron Bernstein gave a brief recap of the GWAC Symposium this morning. Ron Ambrosio has meet with the facility point of contact for the Marshall Center. The best available dates now are March 16 – 18.

He said the registration fee schedule will be very streamlined compared to past meetings. Likely just three categories; students, lifetime members and standard registration.

Ron B. said we can use the previous sponsorship flier and amend I for this symposium. He encouraged GWAC to get the word out about sponsorship opportunities.

Aaron Synder asked about the cost of each level.

Ron B. said the sponsor schedule is being developed.

Ron Ambrosio is working with the local PES chapter and local utilities, and he is hoping to drum up some sponsorships from groups in the Tampa Bay area.

Marc Costa said that Chris Castro, a past guest speaker has a lot of contacts and might be helpful.

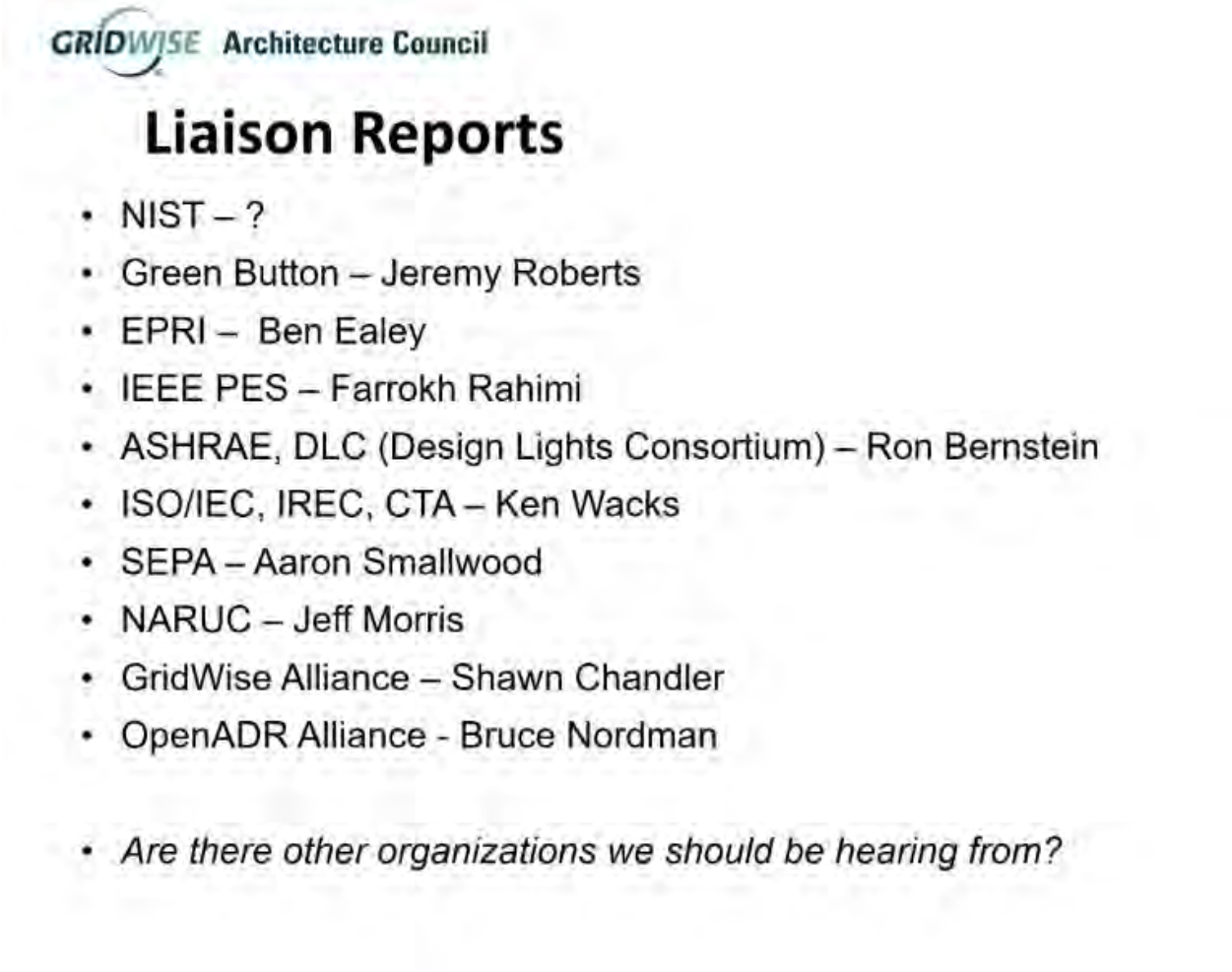
Ron B. supports the idea of having a table available for some of the sponsorship levels.

Ron A. wants to leave a little time first thing on Day 1 before the keynote speaker to make a Thank you announcement for sponsors.

Jaime said that there may be a cost for the Tutorial on Day 1.

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NIST - Ron B. said he is on a panel with some representatives from NIST, ASHRAE and the Consortium for Smarter Buildings. The group is putting together a kind of primer on cybersecurity to bring more insights into cybersecurity to people in industry with little background in that area. It will address a variety of environments. It is an ongoing effort.

EPRI - Jaime said that EPRI is continuing their interoperability work with 1547 type devices. The EPRI FLEXIT project is ongoing. It looks aggregatory and utility integration.

IEEE - Farrokh Rahimi mentioned that he is chairing two panels at the IEEE PES this month.

Ron B – ASHRAE has invited GWAC to do some educational programs at their annual meeting.

For the AHR EXPO in 2028 GWAC is aiming for three presentations on topics such as Cybersecurity and Enterprise Solutions for things related to a building, interconnections, and design principles.

Aaron Smallwood is not on today.

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Ron Cunningham gave information on SEPA. Standards IEC…there will be a standards doc coming later this year

Interop GWAC material link – Bruce Nordman – no official announcement yet but will be online. Customer devices and how customers relate to the grid demand flexibility. Sharing information both ways. Ron B. is interested in this topic. Ron is working on a military project in this area.

Peter Fitzgerld said how distribution planning will change what DERS are actually looked at as non-transmission alternatives. Jaime asked if there was a role for GWAC in this? GWAC can participate, review, and convene on dockets with NARUC. Maybe something we have already done can be used as an example. The GWAC can do that. PNNL staff cannot. Jaime referred him to Shawn Chandler.

Peter said there is another docket – no non-bars alternatives for upgrades. He expects some changes soon.

GRIDWISE Architecture Council

Upcoming GWAC Meetings

Date	Topic or Speaker
August 19th, 2026	NARUC recap?
September 16, 2026	Speaker TBD
October 19-22, 2026	Portland Maine!!!!

Future speaker ideas: Webinar practice runs? Bruce Nordman

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Bruce Nordman mentioned that the California Energy Commission is planning a workshop on interoperability in early September. He is helping to organize it. Once it is announced he will share it with the GWAC.

He asked about some of GWAC's material and Jaime said he will send Bruce some links.

Bruce may be a virtual speaker at the Oct meeting.

Ron B. adjourned the meeting.

