

Meeting Minutes

August 17, 2022

GWAC Members

David Forfia, GWAC Chair

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

Ron Bernstein, President, RBCG, LLC

Andrew Bordine, VP Energy Mkts & Innovation,
Anterix

Marc Costa, the Energy Coalition

Ron Cunningham, IT Enterprise Architect,
American Electric Power

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

Rahul Bahadur, VMWare, Inc.

Mark Knight, Emeritus

Stuart McCafferty, Siemens

James Mater, Emeritus

Jeff Morris, Schneider Electric

Ken Wacks, Home, Building & Utility Systems

GWAC Members and Assoc. not present

Ron Ambrosio, Independent Energy
Transformation Professional

Paul DeMartini, Managing Partner, Newport
Consulting

Mark Paterson, CSO, Strategen

Chris Villarreal, President, Plugged In Strategies

GWAC Guests

Sean Crimmins, EPRI

Larisa Dobriansky

David Katz

Jaime Kolln, PNNL

James Orenstein

Seemita Pal, PNNL

Hayden Reeve, PNNL

Elizabeth Sisley

David Wollman, NIST

Jiri Skopek

Tim Schoechle

PNNL Support

Susan McGuire, GWAC Coordinator

Ron Melton, Acting PNNL Administrator

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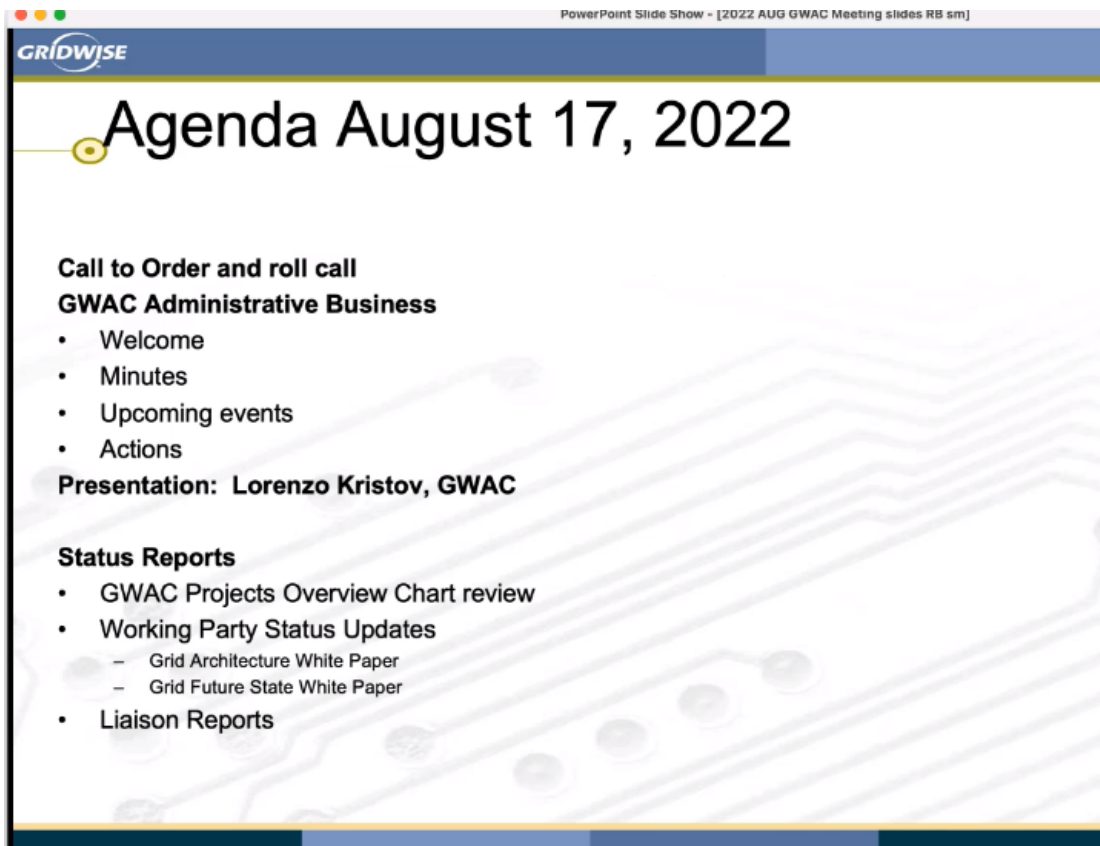
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Ron Bernstein opened the meeting at 10:03am Pacific time with a quorum.

Ron Melton read the proprietary information notice.

Susie noted that no edits have come in for the July meeting minutes since they had only recently gone out to the group. It was agreed that since no edits had yet come in, we will hold the minutes approval until next month.

ACTION: postpone the July minutes vote until next month



PowerPoint Slide Show - [2022 AUG GWAC Meeting slides RB sm]

Agenda August 17, 2022

- Call to Order and roll call**
- GWAC Administrative Business**
 - Welcome
 - Minutes
 - Upcoming events
 - Actions
- Presentation: Lorenzo Kristov, GWAC**
- Status Reports**
 - GWAC Projects Overview Chart review
 - Working Party Status Updates
 - Grid Architecture White Paper
 - Grid Future State White Paper
 - Liaison Reports

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Conferences and Events

Date	Event	Location	Attend	Speak	Topic
Sept 19 - 22, 2022	SEPA RE+	Anaheim, CA	Ron Melton, Ron Cunningham, Farrokh Rahimi ?	Yes	
Oct 4 - 6, 2022	GWAC F2F	San Diego, CA	ALL	Yes	The Next Big Thing
Oct 4 - 6, 2022	UCA OpenFMB Plugfest	Charlotte, NC	No	No	
Jan 16 -19, 2023	IEEE ISGT	Washington, DC		Yes	
Feb 4 - 8, 2023	ASHRAE (Co-sponsor with IEEE) / AHR Expo	Atlanta, GA	Ron Bernstein, Farrokh Rahimi (tent)	Yes	Standardized Building Datasets for Benchmarking Control Algorithms, Energy Efficiency, Modeling, and Decarbonization, Possible GWAC F2F
Feb 7 – 8, 2023	GWAC Seminar and F2F (co-located at AHR Expo)	Atlanta, GA	All		GWAC Seminar. AHR has reserved a free meeting room for a F2F meeting.

(Add the COP meeting)

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Actions

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

July Actions:

- ✓ **Action: Kay and Susie to collaborate on the next blog post for Ron Bernstein (done)**
- Action: Possible speaker from SEPA on future blockchain and TE related initiatives (Aug, Sept)**
- ✓ **Action: Schedule Steve Widergren to present on the TE Conceptual Model from the SEPA TE working group in September**
- ✓ **Action: David to schedule a meeting with Seemita to discuss the stakeholder section of the white paper.**
- ✓ **Action: GWAC members submit nominations for GWAC associates by end of July (done)**
- Action: GWAC attendees who have suggested topics or presenters for the F2F meeting, please let Ron M. and Ron B. know and copy Susie.**

Action Review

Ron M. noted the latest Blog post from Ron Bernstein on Decarbonization has been posted.

Ahlmahz Negash asked that we repost under our own name on LinkedIn and not under the GWAC super user page.

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Ron B. noted he thought he did it correctly and reposted to his personal page but asked her to let him know if not.

Ron M. said we might benefit from Ahlmahz giving the LinkedIn GWAC users a short tutorial on this.

Rahul said he did one post for all 4 Blogs. Ahlmahz will show him how to do multiple links.

Gerald Gray noted a meeting of IEC WG 13/WG14/WG16/WG19 - Software Interfaces for Operation and Planning of the Electric Grid will meet from Sept. 19 – 23, 2022 in Medina, Minnesota.

Steve Widergren will present to GWAC next month.

David and Seemita have met on the Grid Architecture white paper.

Ron M. encouraged anyone with an action item to send an email to Ron M, Ron B and Susie anytime.

2022 GWAC Associates

Continuing:

Rahul Bahadur

Mark Paterson

Jeff Morris

New:

Marc Costa

GWAC Associates

Ron M. welcomed Marc Costa as a GWAC Associate and congratulated the associates who will be continuing.

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Presentation by Lorenzo Kristov, GWAC

**AUGUST SPEAKER: LORENZO KRISTOV, GWAC, CPUC
HIGH-DER FUTURE PROCEEDING; CONCEPTS AND
TERMINOLOGY**

Track 2 of the CPUC's High-DER Future proceeding - terminology and concepts, based on GA principles, for specifying and comparing alternative DSO models

**— DSO 101 —
A Framework for Designing and
Comparing DSO Models**

R.21-06-017 Track 2 Workshop, August 23, 2022

**Lorenzo Kristov, PhD, Principal Market Architect
Electric System Policy, Structure, Market Design**

Lorenzo announced that the first CPUC workshop on the High-DER Future Proceeding will be held August 23. Lorenzo will present “DSO 101” to the group to help them to understand the basic concept of DSO. Most of the audience is not familiar with Grid Architecture. He will establish a conceptual model and how to think about it.

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The High DER Future requires changes. DER growth is happening now, and High-DER requires upgrading the distribution system and system operator.

Key Takeaways

- **DSO is not a well-defined thing.** It's a placeholder for the entity to be designed in Track 2 of this proceeding
- **DSO is not an option.** DER growth is happening, and High-DER requires upgrading the distribution system and system operator
- **Roles & Functions — building blocks of the system — must be defined** independently of the Actors who perform them
- **A DSO Model is an assignment of Roles and Functions to the DSO** and specification of its required interactions with other Actors
- **Alternative DSO Models should be evaluated based on how well they serve specified goals and principles**

Why we need to talk about a “DSO”

Growth of DER has two major implications for the electricity system:

1. **The traditional function of electric distribution — one-way delivery of kWh to consumers — is not adequate for the future**
 - The distribution system must operate reliably with diverse grid-edge assets, bi-directional energy flows & variable operating conditions
2. **DER adoption just for private benefits leaves grid & societal benefits on the table**
 - Many customers are investing in DER because DER are increasingly cost-effective, customizable and attractive
 - DER offer large potential grid benefits (reduced infrastructure, flattening the ducklings) and societal benefits (decarbonization, resilience)

=> The grid needs performance upgrades & new regulatory provisions to realize the full benefits of a high-DER future

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The Context: Electricity for the 2020s and Beyond

Electricity systems today must serve **three major societal goals** that were not big issues in the 20th century power system

- **Sustainability =>** transition away from damaging energy systems; decarbonize society
 - **Resilience =>** continuous electricity service for essential local functions when major disruptions occur
 - **Energy Justice =>** equitably distribute benefits & burdens of energy systems; mitigate past inequities for DAC & frontline communities
- ... without compromising traditional reliability, affordability, safety goals.

Customers and many local governments are formulating local approaches to these goals, and DER are offering local solutions

What is a DSO Model?

A “DSO Model” is :

- An assignment of **Functional Roles & Responsibilities** to an entity called the DSO, which is an enhancement of the electric distribution utility for a high-DER future plus
- Specification of the DSO's **required interactions with other Actors** who comprise the whole electricity system

Note

Choice of a DSO Model has implications for Roles & Responsibilities of other Actors in the system

- E.g., the more the DSO takes responsibility for coordinating DER activities, the less DER coordination the ISO has to do
- E.g., the more the DSO coordinates DER activities to smooth net load profiles & volatility, the less operational impacts on the ISO

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Functional Roles, Functions, Actors, DSO Models

- **Functional Roles** = the Building Blocks of the Whole System
 - To be described independent of the Entity or Actor that performs each Role
- **Functions [DSO 201]** = Specific activities required for the system's performance
 - More granular than Functional Roles
 - Examples: real-time balancing, grid planning, forecasting, interconnection, dispatch
- **Actors** = Entities who participate in the performance of the system
- **Functional Roles and Responsibilities (FRR)** = a bundle of Functional Roles & specific Functions to be assigned to a particular Actor

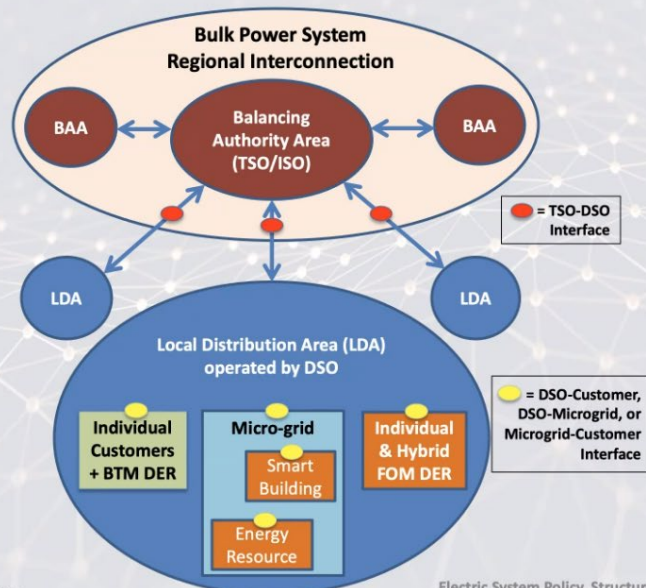
A DSO Model = an assignment of FRR to the DSO entity, plus specification of its required interactions with other Actors/Roles

- Also called a **System Structure** or **System Architecture** because all Roles in a complex system are inter-related
- Each DSO Model has implications for the FRR of other Actors

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Layered Architecture: Focuses on the interfaces between layers



- Main layers are Bulk System; Distribution System; Customer/DER
 - Multi-customer microgrid may exist in between Dist. System & Customers
- Unit of analysis is the **Local Distribution Area (LDA)** associated with a single T-D interface (ISO/RTO pricing node)
- Each layer needs to manage its interfaces with adjacent layers above & below
- Focus on interfaces => Operator of each layer does not need visibility or control of assets within the layer below
- Interfaces allow for bi-directional flows
- Each layer can "island" from layer above at the interface point
- Layering has implications for who is responsible for what

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Questions for Lorenzo:

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Kay Aikin said the audience will be varied and suggested talking about the DSO definition early in the presentation at a high level. It could be reiterated as you go but should be at the beginning.

Distribution System Operator is DSO. It derived from ISO.

Ron B. suggesting the addition of a brief history of the definition would be good.

Ron Cunningham said for characterizing, he and Paul De Martini contributed to the Canadian framework. He suggested that whatever the criteria make sure it is significant and of major importance. He added that because of constructs in place, there is a subset of DSO models to be considered.

Ron C. asked if there is a CAL ISO relationship with muni's, co-ops, public authorities, within the state proper that might have different relationships based on the DSO?

Lorenzo replied that the CPUC is really dealing with the IOUs so it's not relevant for this talk.

Lorenzo replied to Ron B. that white paper that came out in April talks about NY Rev and Australia – so yes, they are looking at other jurisdictions.

Ken Wacks asked if the commission is aware of the activities in New York. He also asked if the New York project went far enough to answer some of the questions discussed.

Lorenzo said that NY has not gone that far toward answering many of these questions. They were calling the DS platform so bundling the assets in existing utilities will become the DSO. Not much has been done with third party DERs.

Lorenzo replied to Ken that he is a participant in the proceeding and is just one of many. He's not involved in political strategies.

Larisa Dobriansky noted that she was involved with NY Rev. She made comments regarding utilities setting up platforms and they looked at third parties, but the process has been delayed. She added that independence is important.

Jeff Morris said at the locational level, such as with the CAISO – state sovereignty issues arise.

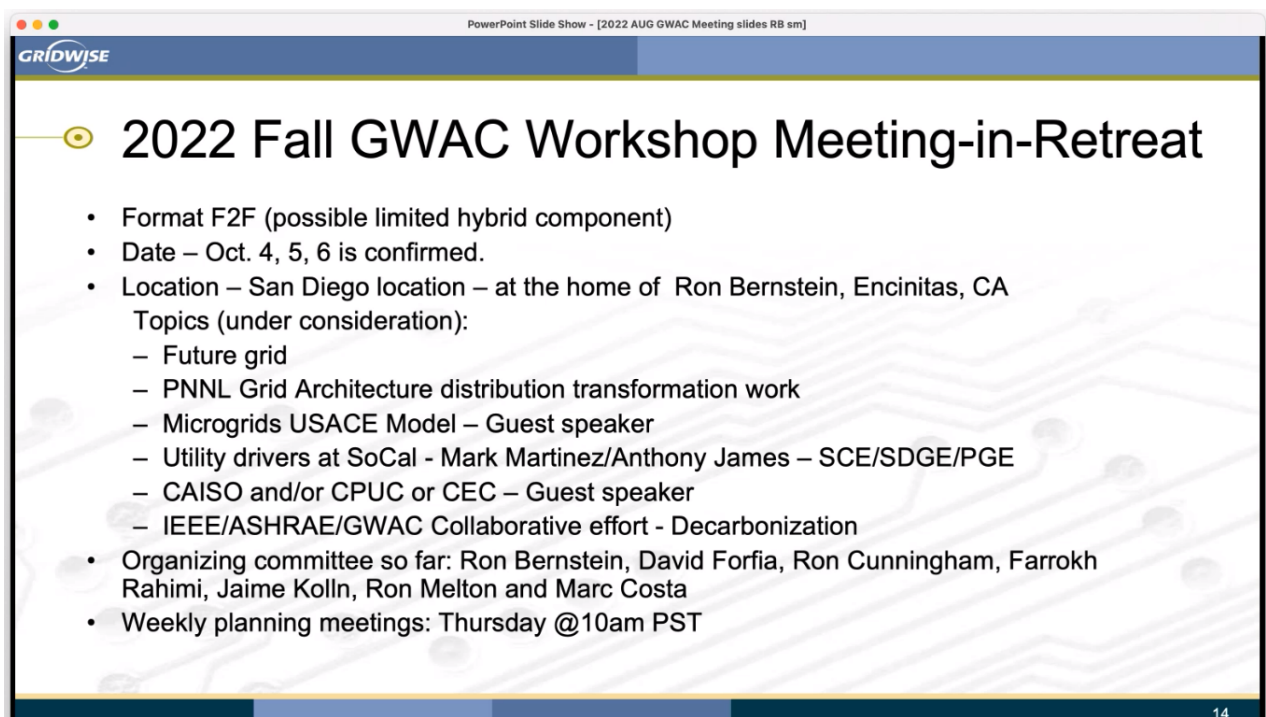
Lorenzo noted that FERC Order 2222 raised very complex issues and there will be a lot more questions before these issues are resolved. A CASIO could use a non-wires alternative, and real-time congestion relief, without getting into the wholesale market session.

Action: Susie will get a copy of Lorenzo Kristov's talk today and have it posted to the GWAC website.

Ron M. suggested that aggregation be a function and not a role. Lorenzo will consider that.

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The screenshot shows a PowerPoint slide with a blue header bar containing the GridWise logo. The slide title is '2022 Fall GWAC Workshop Meeting-in-Retreat'. Below the title is a bulleted list of details about the workshop, including format, date, location, topics, and organizing committee. The slide is numbered 14 in the bottom right corner.

- Format F2F (possible limited hybrid component)
- Date – Oct. 4, 5, 6 is confirmed.
- Location – San Diego location – at the home of Ron Bernstein, Encinitas, CA
 - Topics (under consideration):
 - Future grid
 - PNNL Grid Architecture distribution transformation work
 - Microgrids USACE Model – Guest speaker
 - Utility drivers at SoCal - Mark Martinez/Anthony James – SCE/SDGE/PGE
 - CAISO and/or CPUC or CEC – Guest speaker
 - IEEE/ASHRAE/GWAC Collaborative effort - Decarbonization
- Organizing committee so far: Ron Bernstein, David Forfia, Ron Cunningham, Farrokh Rahimi, Jaime Kolln, Ron Melton and Marc Costa
- Weekly planning meetings: Thursday @10am PST

GWAC Fall F2F

Ron M. asked the group to consider COVID issues relative to the meeting date. He noted that new vaccines are coming in September and October.

Ron Cunningham said he's not sure if companies will allow travel in certain locations. He suggested following the CDC guidelines if there is high outbreak for the meeting location during October.

Ron M. said he has seen several COVID cases occur from recent conferences.

Some additional discussion people will check with their employers about covid restrictions and travel.

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2022 Fall GWAC F2F – Rough Agenda

Theme: Future GWAC Efforts in Support of Deep Decarbonization

- **Day 1 - Afternoon**
 - GWAC Administrative
 - Set up discussion / activity / presentation(s) for Day 2: Overview of GWAC Past activities
 - Context Setting Interop Framework
 - GWAC Stack
 - TE Framework
 - Future States Work
 - Guest Speaker: To provide outside perspective
 - PM - Social Activity
- **Day 2 - Morning**
 - DOE Perspective(s) - Chris Irwin (?)
 - Some sort of presentations on the F2F topic: What are the challenges for achieving deep decarbonization?
- **Day 2 - Afternoon**
 - Interactive session - workshop of some kind: What can GWAC do to help address the challenges of deep decarbonization?
 - PM - Social Activity
- **Day 3 - Morning**
 - Discussion: How do the individual interests and activities of the GWAC members apply
 - Moving Forward: GWAC Action Planning
- **Day 3 - Afternoon**
 - Social Activity (Optional)

Jeff Morris noted the Miramar (Marine Corps station) microgrid with SDGE. He said they are digitized.

Ron B. said SDGE is a potential speaker that we could invite to the Fall F2F meeting.

Ron M. asked if Jeff had some contacts to invite.

Lorenzo noted deep decarbonization of the power system and society and reducing reliance on fossil fuels. He asked the group to consider what are cities doing and how to bring it in. If local, how does DOE look at this and bring it into a bigger collaborative effort to decarbonize?

Ron M. said that the TSP project under Hayden Reeve has some work in this area, that decarbonization can be very apparent in city settings and he noted that there was a GMLC project that touched on it.

Ron B. asked where the funding opportunities from DOE for decarbonization are? He knows of some saying that possibly these new opportunities could shed some light on this.

Lorenzo noted that it is a bottom up meets top-down activity and that so far not much attention is going to the bottoms up aspect to his knowledge.

Ron M. said that this could be a good future topic for the GWAC.

Ron C. asked about the supply chain of electrical resources through all the components. He said a diagram that starts at the fuel source. For example, how to decarbonize the components of a system.

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Ron M. noted that the next GWAC F2F Planning meeting will be tomorrow at 10am Pacific time.

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GWAC Projects						
Project	Grid Arch for Regulators	Grid Architecture White Paper	TESC 2022 Conference	Grid Future States	GWAC Blog Content and Review Committee	THE NEXT BIG THING
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	Council's primary focus for the next year -- results of F2F meeting.
Audience	Policy Makers	Geared to stakeholders who aren't familiar with grid architecture	Decision makers, solution providers, labs, academics, policy, solution providers	Industry Stakeholders	Industry stakeholders, public facing website	Council, Friends, All Stakeholders
Status	On hold until after TESC 2022	Collected inputs and comments from working party members	Complete	Material prepared and presented at TESC 2022	4 blogs released, 3 in queue	Concept phase
Actions	Group: Lorenzo Kristov, Larisa Dobriansky, Kay Aikin, Farrokh Rahimi, Chris Villarreal, Mark Paterson	Waiting for working party comments Finalize draft	Conference Closeout (final accounting, reporting in process RB)	Convert TESC 2022 presentation material into report sections	Group: Kay Aikin, Ahlmahz Negash, Larisa Dobriansky, Ron Bernstein, Tonya Barham, Rahul Bahadur, Leonard Tillman, David Katz, Tim Schoechle, Heather Donaldson	Potential focus of seminar at AHR Expo in Atlanta in Feb. 23
Leadership	Lorenzo Kristov	Seemita Pal, PNNL	GWAC members on the OC	Ron Cunningham	Kay Aikin	Council

GWAC Activities

Seemita gave the group an overview on progress of the GWAC Grid Architecture white paper.

Lorenzo noted that has reached out to his work group everyone wants to stay active. He will schedule a call after the CPUC presentation. They want to try to have something ready in time for the F2F meeting. Ron M. said they could also give an update at the next online meeting.

Ron M. noted that the TE conference can come off the list now. Ron B. asked David F. if he had what he needs to close out the meeting. David said the organizing committee should have all received a thank you email from David.

Kay Aikin said that the Blog committee will resume probably in September

Rahul has the next blog to be posted.

The next big thing will be discussed at the F2F.

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GWAC Vision/FutureStates Project Scope, Work Plan, expected Deliverables and Outcomes

- Assess Electric Industry stakeholder organizations' Visions/ FutureStates (9 stakeholders assessed, 3 recent ones to be mentioned)
- Characterize, timelines, identify similarities, differences/divergence(?) of assessed content
- Provide characterization of architecturally significant challenge/gap areas needing clarity or development and GWAC insights and vet with stakeholder organizations
- Publish project results e.g.: assessment /characterization whitepaper(s); architectural gaps collab opportunities & transition roadmaps; and presentations to contributing stakeholder groups and electric industry

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PowerPoint Slide Show - [2022 AUG GWAC Meeting slides RB sm]

Grid FutureState White Paper TOC – initial draft

<ul style="list-style-type: none"> • Abstract • Executive Summary • Vision/Futurestates good, bad, ugly • Found Stakeholders' Visions /FutureStates Assessed/Recent • Vision/FutureStates: <ul style="list-style-type: none"> ◦ Timeline /Similarities /Differences via web/radar chart, Harvey baGrid FutureState White Paper TOC – initial draftll chart Divergence – 2nd refactor & graphic, prose drafted 	<p>GWAC Insights</p> <ul style="list-style-type: none"> ◦ Vision/Futurestates Challenges – barriers ◦ Stakeholder impacts ◦ Architectural Challenge-gaps ◦ Industry Grid Drivers / Systemic Issues ◦ GWAC IOP Stack Relevance <p>Complete rest of TOC sections e.g. next steps; Terms/defs</p>
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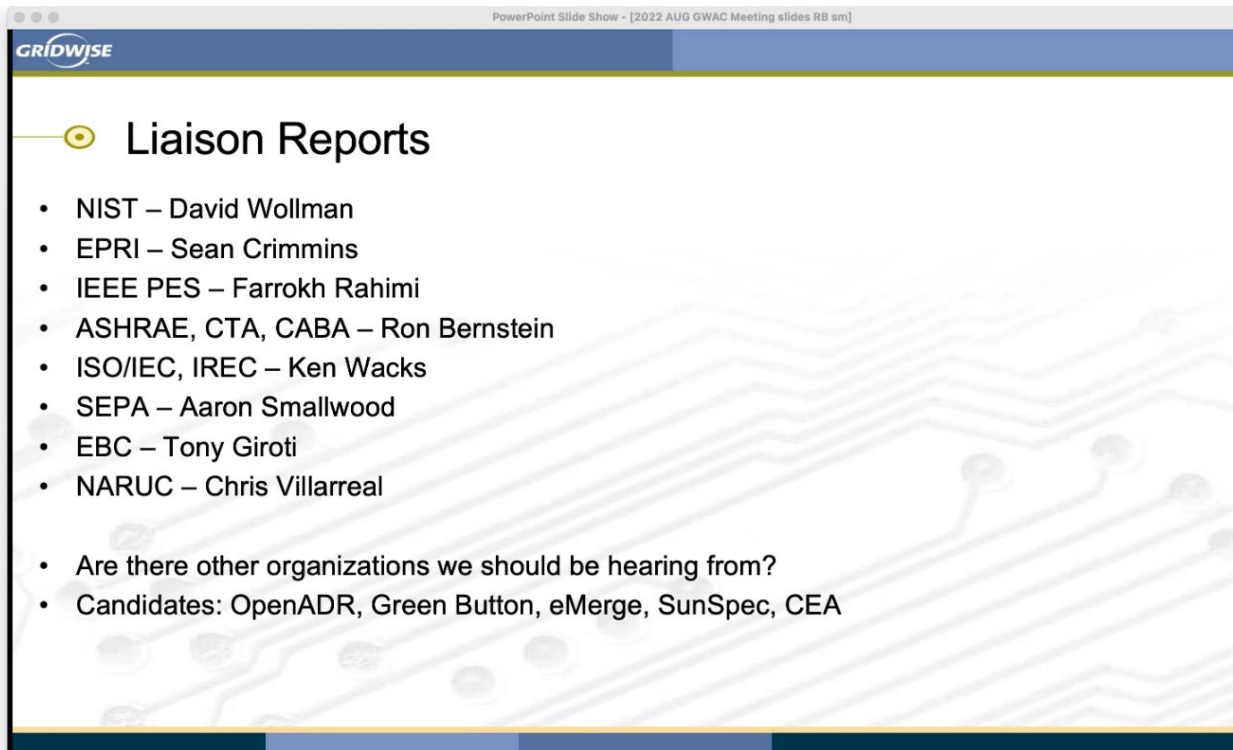
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Ron Cunningham gave the group an overview of the Grid Future States work group activities. He noted that the tan areas are the active areas currently in progress.

This group is planning to have a draft for review at the F2F meeting.



Liaison Reports

NIST - David Wollman: NIST is starting it an upgrade of their Cyber security program. He provided a link to today's workshop. All videos will be posted. This group should be interested. The privacy framework will get folded into the Cybersecurity framework.

David W. had participated in a consumer Cyber event recently and used Smart Grid as a key use case. The NIST cyber framework relies on an organizational framework. Where things meet consumers such as with PV on home roofs, if the responsible party is not a DSO aggregator, some with PVs may not be well positioned to satisfy those responsibilities.

Ken Wacks noted that his work group is writing a standard involving consumer technology. He noted that Kat Magus has gotten in touch with Tobin Richardson and the consumer standards alliance is aware of these activities, but he will ask them about it when he sees them.

EPRI – Gerald Gray Noted a press release of Mitsubishi Power and Georgia Power at an EPRI plant, and he provided the link.

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He noted that EPRI has a new climate ready 3-year initiative. They published a new white paper – starting point. Links below:

EPRI press release: <https://www.epri.com/about/media-resources/press-release/5milZFaUfTqYtlhJeuxGyr>

EPRI Climate Initiative: <https://www.epri.com/about/media-resources/press-release/5gC3CMLgFkSucyyVUD6Gsh>

Also, for those who still use the GWAC Stack – EPRI has published a business capability model – from the top of the stack where use cases are. Link:

<https://www.epri.com/research/products/000000003002009987>

Ron Cunningham gave a link to the Grid Architecture Primer published 29 Jul 2022

<https://sepapower.org/resource/grid-architecture-primer/>

Ron Cunningham also gave a group a link to another recent SEPA publication:

Microgrid Feasibility Studies – Wisconsin Office of Energy Innovation Grant 21Jul2022

<https://sepapower.org/resource/microgrid-feasibility-studies-wisconsin-office-of-energy-innovation-grant/>

Ron B. added that he presented to EPRI a couple weeks ago with a GWAC presentation as an invited speaker. Ron B. has been in touch with Sean Crimmins, the new GWAC EPRI liaison about the connection.

Farrokh asked about TESC conference papers being published in IEEE Xplore. He has heard that the papers are there but wondered if we can confirm this?

Ron M. noted that the talks are available to IEEE PES members at no charge through the resource center otherwise there may be a charge. The papers can be referenced in future publications.

David Katz added that access to conference materials was available for 30 days after the conference but now that time has passed.

Ron M. noted that the TESC 2022 conference presentations are available in the IEEE resource Center. He wasn't sure what IEEE requires for access. He added that GWAC is not allowed to distribute the conference papers, adding that we don't have permission to distribute. The Technical committee had access to the papers for review purposes.

IEEE - Farrokh noted that IEEE PES is now a voting member for Blockchain Enabled Energy. He and Ron are involved in this group.

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Ron M. said the Blockchain category is broad – transactive energy and medical use cases are being considered. The governing board of PES will continue to support block chain.

Ron M. noted the Grid Edge conference will be held April 10 – 13, 2023 in San Diego. He noted that is three months after IEEE ISGT. It will be a trade show format and will be held in San Diego Convention Center.

ASHRAE - Ron Bernstein - the next CTA meeting is next month in San Diego. They will work on standards. ASHRAE – AHR expo is going to let GWAC have a conference room at their next conference in Atlanta in February 2023. GWAC can present at this meeting. We will need to plan a meeting and presentation. He suggested Lorenzo Kristov and Ron Cunningham present on something like, “How does Decarbonization filter from the bottom up?” It seems to be a very appropriate topic.

ISO/IEC -Ken Wacks - ISO IEC: At the September meeting they will work on a rewrite of energy management for creating autonomous energy management for control of consumer energy within premises. The hallmark is the energy management agent. Tim Schoechle, who is on this call, will do one on hosting the energy management agent on the residential gateway. The Home Electronic System is the group they are both working under – on the HES Gateway.

IREC meets every other week; they just had presentations by Mark Paterson, GWAC, on smart grids in Australia. This Friday David Katz will present on activities in Canada. Ken said Canada has very innovative work that tends to go unnoticed. He would like to see more visibility in the U.S. for what utilities in Canada are doing and how they are producing at lower cost in many cases and their pioneering energy resources.

David Katz said that Canada and the US are interconnected, and harmonization is so important.

Ken encouraged people to attend David’s presentation.

Jeff Morris – NARUC – the next NARUC meeting is Nov. 13 – 16 in New Orleans. There will be panels on digitization, distribution, and demand response.

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Upcoming GWAC Meetings

Date	Topic or Speaker	Format	Other
September 14	Steve Widergren is invited to present on TE Conceptual Model from the SEPA TE working group	Web	May need to reschedule due to conflict with SEPA RE+ event
October 4 - 6	Topic TBD	F2F	Hosted by GWAC Chair Ron Bernstein
November 16	TBD	Web	
December 14	TBD	Web	
February 7- 8	AHR Expo Seminar on F2F Meeting	F2F	Co-located at AHR Expo. Free conference room arranged

Ron M. would like to have a presentation in the future on PR 100 efforts. David Forfia liked the idea.

Ron M. also said that in January the Consumer Electronics Show, DistribuTech, and ISGT are all scheduled.

Ron B. noted that there are several guests on today's calls, and he welcomed them and invited their feedback for the group.

Ron Bernstein on behalf of GWAC thanked Lorenzo Kristov for his presentation today and then adjourned the meeting.