## **Meeting Minutes**

## July 12, 2023

Mark Knight, Emeritus

### **GWAC Members**

Ron Bernstein, GWAC Chair and President RBCG, LLC

Ron Ambrosio, Independent Energy Transformation Professional

Andrew Bordine, GWAC

Ron Cunningham, IT Enterprise Architect, American Electric Power

Paul DeMartini, Managing Partner, Newport Consulting

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, Schneider Electric, New GWAC member

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

Aaron Snyder, Dir. of Grid Technology Consulting, EnerNex

Leonard Tillman, Partner, Balch & Bingham, LLP

#### **GWAC Associates & Emeritus**

Rahul Bahadur, Associate

Marc Costa, Associate

Jeff Morris, Associate

Ken Wacks, GWAC Emeritus

### **GWAC Friends**

Chris Irwin, DOE-OE

Jeremy Roberts, Green Button Alliance

David Katz

Mark Knight

Olayinka Kolawole

James Orenstein

Aaron Smallwood, SEPA

Dariush Rafinejad

Hayden Reeve, PNNL

Elizabeth Sisley

Jiri Skopek

Tylor Slay, PNNL

David Wollman, NIST

### **GWAC Members not present**

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

### **PNNL Support**

Susan McGuire, GWAC Coordinator

Ron Melton, PNNL Administrator

Jaime Kolln, PNNL Co-Administrator

# Meeting Minutes July 12, 2023

#### RIDWĮSE

# \_Agenda July 12, 2023

#### Call to Order and roll call GWAC Administrative Business

- Welcome
- · Minutes
- · Upcoming events
- Actions
- Speaker: Jeremy Roberts, Green Button Alliance

#### **Future Activities**

- GWAC Fall F2F Knoxville
- Planning 2024 "TE" Conference
- Next Big Thing

#### **Status Reports**

- · GWAC Projects Overview Chart review
- Working Party Status Updates
  - Grid Architecture White Paper
  - Grid Future State White PaperGrid Arch for Regulators White Paper
- Liaison Reports

Ron Bernstein opened the meeting with a quorum of the council present. Jaime Kolln asked if the June minutes have been reviewed. Ken Wacks noted that he had sent edits regarding his liaison report which have been made. Ron Bernstein said he had sent comments but no changes. The group agreed that the minutes were ready to approve. Ron Bernstein asked for a motion. David Forfia gave the motion to approve the minutes as amended and Ron Ambrosio seconded the motion. The minutes were approved by a vote of the Council.

# Meeting Minutes July 12, 2023

#### GRÍDWISE

## Conferences and Events

Date	Event	Location	Attend	Speaker	Topic
July 16-20, 2023	IEEE PES General Meeting	Orlando, FI	Ron Melton, Farrokh Rahimi, Ron Ambrosio	Ron M, Jaime K	Meeting the Energy Needs of a Dynamic World
Sept. 11-14, 2023	RE+ Solar Power International	Las Vegas, NV	Ron Melton, Jaime Kolln		SEPA
Sept. 12-14, 2023	T&D World	Sacramento, CA		Aaron S	Future distribution grid
Oct. 16-18, 2023	GridFWD	Skamania Lodge, Columbia River Gorge	Ahlmahz Negash	TBD	Grid Modernization – northwest region
Oct. 17-19, 2023	V2G Forum	Detroit, MI	Jaime Kolln, James Mater		Accelerating V2G in the emerging V1G charging standardization regime.
Nov 6-9, 2023	ISGT Latin America	San Juan, PR	Farrokh Rahimi, Ron Melton		Disaster recovery and network transformation in times of climate Change
Jan. 22-24, 2023	AHR Expo	Chicago, IL	Ron Bernstein?		Co-sponsored by ASHRAE and AHRI and is held concurrently with ASHRAE's Winter Conference
February 19-22, 2024	ISGT North America	Washington DC	Ron Melton, Mark Paterson, Farrokh Rahimi, Paul DeMartini,		
February 26-29, 2024	DistribuTech 2024	Orlando, FL	Farrokh Rahimi		

Jaime reviewed the list of relevant upcoming conferences.

Both Ron A. and Farrokh Rahimi will be at the IEEE PES meeting in Orlando this month. Jaime is planning to meet up with them during the conference.

Jaime is planning to set up a time to meet with Ahlmahz at the Grid Edge in Skamania, Washington.

Aaron Snyder noted that he is not going to T&D World. He will be on travel at that time.

### Action: remove Aaron from the T&D World list.

Ron Bernstein said is not planning to attend AHR 2024. He had attended 15 years in a row.

Jaime wondered if GWAC should have a meeting at DistribuTech this year since it's not a conflict with AHR.

### Acton: Ron B. will attend AHR committee meetings virtually.

Ron M. said from experience that holding a meeting during DistribuTech is quite difficult.

He suggested trying have a side meeting at IEEE ISGT North America or T&D Expo for a GWAC F2F instead.

The group considered future face to face meetings.

## **Meeting Minutes**

## July 12, 2023

Ron B. noted that David Forfia had offered to host the group in April 2024. David noted that there will be a solar eclipse at that time and the hotels are already booked so that date has a conflict. The eclipse date is April 8, 2024, so that date may not work very well.

Jaime, Ron B., and Ron M. will discuss offline along with a couple other details.

Action: Jaime to schedule a meeting in the week after IEEE PES GM.

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## **Actions**



- GWAC participants who have suggested topics or presenters please let Jaime Kolln, Ron Melton, and Ron Bernstein know and copy Susie.
- · Speakers from AHR Expo to record presentations
- · Look into speakers for future GWAC meetings. Possible speakers: DOE EERE, OE
- Website updates
  - · Reorganize, check links, and add video presentation section with YouTube links
  - Create a GWAC database of presentations for future talks and a speakers bureau post on the website
  - Create a catalog of speaker materials with links.
- · Discussion of the GWAC Mission statement form "strawman" Task Force
- · Met with RE+ Organizers, TBD: Schedule TESC 2024 Organizers meeting

Jaime has invited James Mater to give a presentation to GWAC next month on transportation, electricity, and interoperability and on ways GWAC can contribute perhaps with the decision maker's checklist.

Future months are open; more speakers are needed. Please send your speaker ideas to Jaime, Ron B., and Susie McGuire.

Action: GWAC send ideas for speakers to Jaime Kolln, Ron Bernstein, and Susie McGuire.

We will set up arrangements with speaker candidates including some background on what the Council has been working on.

Ron B. suggested speakers from eMerge Alliance and Sunspec Alliance.

Jaime mentioned that some bad links are being noted and edited on the GWAC website. And the GWAC AHR videos will be posted soon. Some are still coming in.

## **Meeting Minutes**

## July 12, 2023

Jaime added that GWAC speaker presentations can be added to the GWAC website. He asked Jeremy Roberts if some of his slides from today's talk would be able to be posted after today's meeting. Jeremy agreed to send something for posting.

Jaime noted that there had been a discussion at the Fall 2021 face to face meeting about revising the GWAC Mission and Vision statements. He had attended that meeting. He has a summary from the meeting and has been reviewing it. He suggested having a side meeting to review these again and discuss updates to the wording and future direction such as how we are now embracing electrification, decarbonization goals and so on.

Ron B. said he remembers that the group had been very engaged in the discussion and he said he is supportive of taking a look at the topic again.

Ahlmahz had suggested a refresh of the mission and vision a couple years ago, but it just was never completed. Several agreed to join the effort.

Jaime would like to organize a small team to take on the refresh of the GWAC Mission and Vision.

Jaime asked for names of those who would like to join in a discussion meeting about it. Ron B., Lorenzo, Ron A., Rahul, and David all asked to be a part of it. Jaime asked that anyone interested in participating please let him know.

# Action: Jaime will schedule a meeting to discuss the mission/vision refresh with those who are interested.

Ron B. asked about the AHR Expo talks – Jaime said he and Ron A still need to do their recordings.

Going forward Jaime will put all the GWAC presentations onto the new GWAC slide template.

Ron B. would like to create one continuous presentation from all the separate files from the GWAC panel at the AHR Expo.

Jaime asked if all the videos are in the same format and Ron B. said that if not, he will reformat them.

Jaime, Kay Aikin, and Ron Ambrosio are in progress on their video presentations. Ron B. said it would be good to get them posted in the next month.

Leonard Tillman said Ron B. had already converted his presentation to an MP4. It's on the Teams site.

Ron B. brought up the subject of the recording GWAC presentations for posting to the GWAC website.

Ron M. said that GWAC has done that in the past. We get the speakers permission first, and then make the talk available to those who request it.

Ron B. suggested adding a short, thirty second introduction to the presentations.

## **Meeting Minutes**

## July 12, 2023

Jaime asked about the Q&A and Ron B. said he recommends holding all questions to the end and then NOT including that content in what is posted to avoid needing more permissions.

Ken Wacks said with Grid Edge he finds that most companies are not willing to allow recordings of their speakers because it creates adds extra steps to the review and approval process.

Ron B. agreed that both the speaker and their company should have to give approval. He added that he tries to avoid lots of questions during a presentation that is being recorded for this reason. If the Q&A comes after the talk then you don't have to get extra releases from every person who asked a question.

Ron Bernstein noted that Roseanne Jones with IEEE has asked if GWAC will be putting on a meeting this year.

Jaime said we are waiting to hear back from RE+ to see if they will be willing to work with GWAC and possibly with IEEE as a technical partner also.

Ron B. noted that he wants to reply to Roseanne soon, please copy him on any response from RE+.

### Action: Jaime to copy Ron B. on any reply from RE+ about TESC24.

Ron C. said in coordinating between groups, IEEE may not be part of the RE+ meeting. He said another pairing that might well is SEPA and RE+. Jaime said he does know that RE+ has worked with IEEE in the past – it could still be an option to partner with both.

Ron M. said that unfortunately IEEE has had high profit expectations and PES is also reconsidering what conferences they will host. But the work group on smart systems and loads would still be able to be involved and GWAC could ask IEEE to be a technical co-sponsor with no financial obligations.

# **Meeting Minutes** July 12, 2023

### GRÍDWISE

## **GWAC Projects**

Project	Grid Arch for Regulators	Grid Architecture White Paper	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	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	Industry Stakeholders	Industry stakeholders, public facing website	Council, Friends, All Stakeholde
Status	Case studies in development	Collected inputs and comments from working party members	Submitted to PNNL for editing and information release	5 blogs released, 2 in queue	Seminar AHR Expo Presented
Actions	Group: Lorenzo Kristov, Larisa Dobriansky, Kay Aikin, Farrokh Rahimi, Chris Villarreal, Mark Paterson	Final document is being reviewed by GWAC	Final document is being reviewed by GWAC	Group: Kay Aikin, Ahlmahz Negash, Larisa Dobriansky, Ron Bernstein, Rahul Bahadur, Leonard Tillman, David Katz, Tim Schoechle, Heather Donaldson	Record Presenter Videos
Leadership	Lorenzo Kristov	Seemita Pal, PNNL	Ron Cunningham	Kay Aikin	Council

## GRÍDWISE

## Progress & Accomplishments

2007-2012 Grid-Interop Forum

2011 - GWAC Interoperability Constitution Whitepaper PNNL-20728

2011 – <u>Smart Grid Interoperability Maturity Model</u> 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



## **Meeting Minutes**

July 12, 2023

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## **GWAC Face-2-Face**

- Thanks to Aaron Snyder and EnerNex!
- October 2-5, 2023, in Knoxville
- · Monday Travel with "no-host" dinner
- Optional EPRI tour on the 3rd requires security check no less than 30 days prior
- Gunther Recipe (v2.0) Shrimp Boil on Wednesday (10/4)
- Maybe a University of Tennessee, Knoxville CURENT tour on the afternoon of the 5th

Ron B. asked Aaron about a list of hotels in the Knoxville area.

Aaron said EnerNex is working on a list of hotels located near EnerNex.

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# Planning the "TE" Conference

- · At RE+ in Annaheim, CA September 9-12, 2024
  - Format TBD
  - Tutorials are usually offered in advance of the conference
  - May be broken up inn up into shorter sessions to allow other show activities
- Schedule Organizing Committee (OC) Meeting
  - o Coordinating with Aaron Smallwood for SEPA regarding RE+ co-location
  - o May collaborate with IEEE (Masoud Nazari IEEE SBLCS Architecture Subcommittee). Awaiting confirmation from RE+
- · Council Members Participating in the Organizing Committee
  - o At Least 4 Council Members
  - o GWAC will Share Leadership Roles w IEEE OC Members
  - Organizing positions needed to fill: Conference Chair and Treasurer are filled; Technical Chair (Farrokh?), Secretary, sponsorship chair
  - o Sponsorship lead is one of the key spots needed
  - o David Forfia has volunteered to be the Treasurer
  - o The IEEE application is the first step and also a conference budget.
  - Call for participation is the kickoff; it will include a timeline of due dates by authors and presenters.

## **Meeting Minutes**

July 12, 2023

Ron M. said if we partner with IEEE and if we have papers the papers would be able to be posted in Explore and the Resource center for PPTS. Maybe SEPA has some sort of similar option to where we may or may not need IEEE.

Jaime asked that anyone who plans to attend the F2F in Knoxville who hasn't yet responded to please do so now. GWAC will send the RSVPs to Aaron Snyder regarding the EPRI tour on Oct. 3

#### GRÍDWISE



# "Next Big Thing" / "Back from the Future"

- Presented at AHR Expo
- Recordings to be Developed and Published to YouTube
  - Weekly release upcoming
- What next?
  - Webinar planning
  - Development of a concise slide deck
    - More web page updates ☺



Jaime Kolln introduced today's speaker, Jeremy Roberts with Green Button Alliance.



# Green Button Alliance GridWise Architecture Council

12 July 2023

NAESB REQ.21 ESPI ("Green Button®") standard

# Meeting Minutes July 12, 2023



# Green Button® standard

## NAESB REQ.21 ESPI (aka "Green Button")

North American Energy Standards Board, Retail Electric Quadrant, book 21, Energy Services Provider Interface



- Green Button provides two methods for data transfer...
  - Connect My Data<sup>®</sup>
    - A way for a customer to authorize a Third Party to obtain Utility data for them.
  - Download My Data<sup>®</sup>
    - A way for a customer to login and download their data from a Utility.

Jeremy gave a brief history of Green Button.

He explained the definitions of Connect My Data, CMD and Download My Data, DMD.

Meeting Minutes
July 12, 2023



# What do CMD and DMD do for us?

CMD allows a third-party company to <u>analyze continual (daily) data</u> on behalf of a mutual customer of the utility and the third-party company without the customer needing to manually and continually obtain the data.

With **DMD**, the utility customer must login, download data, and then upload (to a third party) or otherwise handle the data for analysis. It's great for <u>one-off or occasional data acquisition</u> (for sizing a solar array or determining historical usage).



## Connect with Us



GBA Twitter: @The GBA



**GBA LinkedIn:** 

linkedin.com/company/green-button-alliance



### **GBA YouTube Channel:**

https://www.youtube.com/@greenbuttonalliance

#GreenButton #ConnectMyData #EnergyData #DataAccess #DataSharing

Jeremy Roberts said if anyone would like to know more to please feel free to reach out to him directly.

# Meeting Minutes July 12, 2023



GWAC Online Meeting 2023-07-12

Thank you



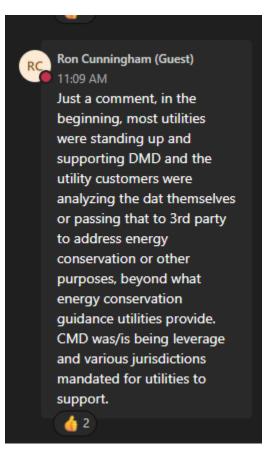
Jeremy J. Roberts, Executive Director

## **Green Button Alliance**

https://www.GreenButtonAlliance.org/info@greenbuttonalliance.org

Ron B. thanked Jeremy for the great presentation and welcomed his participation as a liaison for future meetings. Jeremy will make his slide deck available to the membership.

# Meeting Minutes July 12, 2023



# Meeting Minutes July 12, 2023

## Grid Architecture White Paper

- Working Group: Seemita Pal, Ron Cunningham, David Wollman, Ron Bernstein, Ahlmahz Negash, Larisa Dobriansky, David Forfia, Kay Aikin, Aaron Snyder, Ron Ambrosio, Lorenzo Kristov, Farrokh Rahimi, Rahul Bahadur, Gerald Gray, Mark Paterson, Timothy Schoechle, Jeffrey Morris, Leonard Tillman, Andrew Bordine, Chris Villarreal, Ron Melton
- White paper draft is uploaded on Teams site, and Seemita has emailed it to those working party members who do not have Teams access.
- Received reviews and Seemita is working through feedback so that we can finalize for publication. Once feedback is incorporated, Seemita will submit the final draft to editor for format review.
- Next steps
  - Any feedbacks will be addressed; final version will be run through PNNL's approval process and published shortly after
  - Blog post will be created to advertise the publication

#### **GWAC Work Products Status**

Seemita was not on the call, but her paper has been submitted to a PNNL editor. Seemita has reviewed the feedback from the GWAC.

Ron Cunningham is still working through comments from the PNNL editor.

Lorenzo Kristov has been working on the Grid Architecture for Regulators paper. He doesn't have anything new to share but he is moving forward with the idea of it being a living document that will expand as new contributions are submitted.

David Katz offered to provide a review of the draft with regard to the Ontario Canada content.

Lorenzo will write up the Ontario piece based on his experience, but he welcomed input from David Katz on this section.

# Meeting Minutes July 12, 2023

#### GKIDWJSE

# Liaison Reports

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

Ron Bernstein attended ASHRAE in Tampa, FL recently and had dinner with Ron Ambrosio. He gave two presentations; one was on interoperability, data sets and semantic information modeling. The other was on building specifications. Both are being reformatted so that he can share them publicly.

ASHRAE - Ron Bernstein. Ron said he often reviews postings such as DOE funding opportunities. He saw one this morning on heat pumps. He will put something into the chat. He sees an increase coming in US productivity of heat pumps and more equity incentives to move away from natural gas to electric heat pumps. He will send the information to anyone interested. More proposal reviewers are needed.

Marc Costa said he was interested in the opportunity to do reviews.

ISO/IEC Ken Wacks. ISO/IEC is preparing for the annual meeting in Berlin, Germany in October. They currently have the energy framework standard out for comment by member nations. Ken is the project lead on that.

Ken noted they are getting the gateway cybersecurity standard ready for a vote.

He said they also have about half a dozen additional standards in various stages of development.

# Meeting Minutes July 12, 2023

Ken Wacks also report that the Interstate Renewable Energy Council, (IREC), Customer Grid Edge Committee that he chairs meets about every two weeks. Most meetings have a featured speaker. This Friday the featured speaker is the CEO of a company in the United Kingdom called Ionate and their topic is Innovative Hybrid Intelligent Transformers. The title is, "Data Visibility and Real Time Power Flow Control Enabling the Customer Side DER Transition." There is no charge to attend. Contact Ken if you are interested in attending.

SEPA - Aaron Smallwood: Aaron reminded everyone of the upcoming RE+ conference in a few weeks. They are expecting attendance to be even higher than last year.

He provided links to recently published papers that may be of interest.

- Utility Carbon Reduction Strategies; <a href="https://sepapower.org/resource/utility-carbon-reduction-strategies/">https://sepapower.org/resource/utility-carbon-reduction-strategies/</a>
- Exploring DC fast charging load profiles: Implications for Utilities, Operators, and Regulators –
   https://sepapower.org/resource/exploring-dc-fast-charging-load-profiles-implications-for-utilities-operators-and-regulators/
- FERC 2222 Cyber-Resilience Stakeholder Briefing Summary; A summary of a yearlong stakeholder discussion about FERC 2222 implications related to cyber resilience. <a href="https://sepapower.org/resource/ferc-2222-cyber-resilience-stakeholder-briefing-summary/">https://sepapower.org/resource/ferc-2222-cyber-resilience-stakeholder-briefing-summary/</a>



# Meeting Minutes July 12, 2023

https://www.theverge.com/23751315/smart-home-energy-microgrid-efficiency-independent

Jeff Morris provided a link to the NARUC meeting Nov. 12-15, 2023. It will be held at LaQuinta, CA. The location is about 40 minutes from a Connected Communities grant location site. A tour is in the planning stages for people interested in seeing this community and hearing more about it. He gave a link to more on the site. Some recommendations have been developed from this study for regulators on data sharing and privacy.

Marc Costa is working with the International Energy Agency (IEC). They have a Global Observatory on peer-to-peer networks. They are compiling and launching case studies of transactive energy pilots, and they are collecting data. They will add narratives and develop it as a journal article. His team is currently working with Hayden Reeve and another person at PNNL. They are hoping to get a couple of US stakeholders included on an international case study.

He also shared that it will be focused on high performance buildings. The Energy Coalition is signing on with the U.N. to be a part of this. Kay Aikin may have some involvement. The initiative is just getting started.

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## Upcoming GWAC Meetings

I	Date	Topic or Speaker	Format	Other
	July 12, 2023	GWAC Meeting - 10:00am to 12:00pm PT	Online	Jeremy Roberts (tentative) Rescheduled for PES GM
1	August 16, 2023	GWAC Meeting - 10:00am to 12:00pm PT	Online	
	September 20, 2023	GWAC Meeting - 10:00am to 12:00pm PT	Online	
	October 3-5, 2023	GWAC Face to Face Meeting	In Person	EnerNex (Knoxville)
	September 9-12, 2024	TESC 24		Anaheim, CA

Rahul Bahadur gave a link to a recent press release by VMWare and the NSF highlighting their partnership to fund a few projects on sustainable digital infrastructure:

## **GridWise<sup>®</sup> Architecture Council**

# Meeting Minutes July 12, 2023

https://news.vmware.com/sustainability/national-science-foundation-sustainable-infrastructure

Rahul Bahadur also provided a link to Peninsula Clean Energy Community Programs; <a href="https://www.peninsulacleanenergy.com/community-programs/">https://www.peninsulacleanenergy.com/community-programs/</a>

Jaime or Ron B. will talk with Jeremy Roberts about the possibility of posting today's video.

Ron Bernstein adjourned the meeting at 11:52 am.



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**NEXT MEETING:** 

WEDNESDAY, AUGUST 16, 2023 10:00AM TO 12:00PM PACIFIC TIME



https://gridwiseac.org/

# Meeting Minutes July 12, 2023

