

Meeting Minutes

May 19, 2021

GWAC Members

David Forfia, GWAC Chair

Kay Aikin, Introspective Systems

Ron Ambrosio, Independent Energy
Transformation Professional

Ron Bernstein, President, RBCG, LLC

Andrew Bordine, VP Energy Mkts & Innovation,
Anterix

Ron Cunningham, American Electric Power

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

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

Stuart McCafferty, President, GridIntellect

Ahlmahz Negash, Sr. Engineer, Tacoma Power

Farrokh Rahimi, Senior Vice President, Open
Access Technology International, Inc

Leonard Tillman, Partner, Balch & Bingham, LLP

GWAC Associates & Emeritus

Rahul Bahadur, Mgr. of Eng., VMWare, Inc.

Chris Villarreal, President, Plugged In Strategies

Ken Wacks, Home, Building & Utility Systems

GWAC Members and Assoc. not present

Aaron Snyder, Dir. of Grid Tech. Consulting,
EnerNex (absent, excused)

Jeff Morris, Principal, Energy Horizon Corp.

Mark Paterson, CSO, Strategen

GWAC Guests

Fatima Amara

Mohseni-Bonab, Seyed Masoud (Hydro Quebec)

John Chowdhury

Christopher Fleck

Jaime Kolln, PNNL

Dave Levee, PwrCast

Seemita Pal, PNNL

Alex Papalexopoulos, ECCO International

Aaron Smallwood, SEPA

David Wollman, NIST

PNNL Support

Karen Studarus, PNNL Administrator

Susan McGuire, GWAC Coordinator

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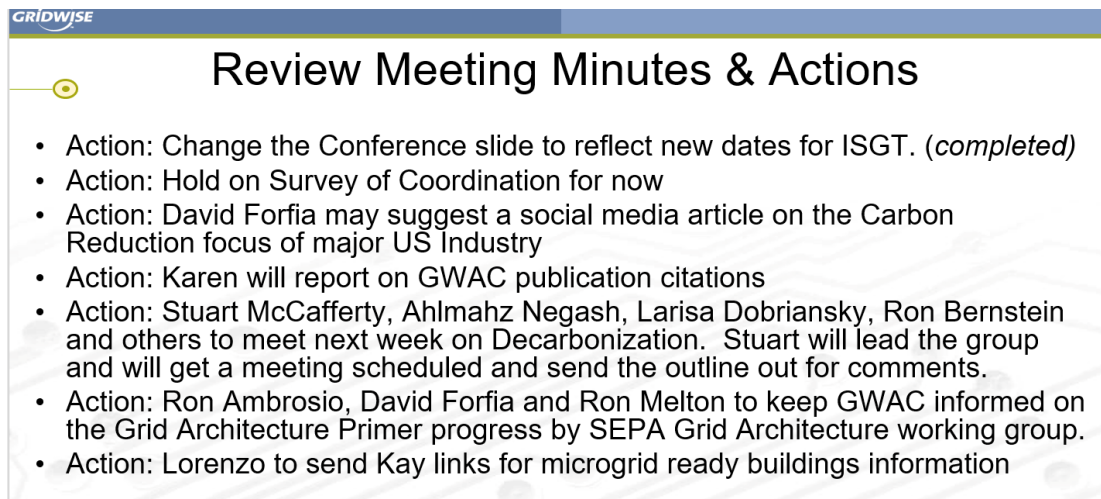
GWAC Administration

Chair David Forfia called the meeting to order at 12:03 Central Time.

David Forfia noted that Aaron Synder is not able to attend today due to a conflict.

Karen Studarus noted that Farrokh's edits to the minutes had been incorporated. David asked for a motion to approve the minutes. Farrokh gave the motion to approve and Ron Ambrosio seconded the motion. There were no objections. The minutes were approved.

Action review



The screenshot shows a presentation slide with the GridWise logo in the top left corner. The title is 'Review Meeting Minutes & Actions'. There is a yellow circle with a dot next to the title. The slide contains a bulleted list of action items.

- Action: Change the Conference slide to reflect new dates for ISGT. (*completed*)
- Action: Hold on Survey of Coordination for now
- Action: David Forfia may suggest a social media article on the Carbon Reduction focus of major US Industry
- Action: Karen will report on GWAC publication citations
- Action: Stuart McCafferty, Ahlmahz Negash, Larisa Dobriansky, Ron Bernstein and others to meet next week on Decarbonization. Stuart will lead the group and will get a meeting scheduled and send the outline out for comments.
- Action: Ron Ambrosio, David Forfia and Ron Melton to keep GWAC informed on the Grid Architecture Primer progress by SEPA Grid Architecture working group.
- Action: Lorenzo to send Kay links for microgrid ready buildings information

Leonard Kristov commented that the microgrid links have been sent to Kay Aikin.

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GWAC Related Conference and Events



The screenshot shows a presentation slide with the GridWise logo in the top left corner. The title 'Conferences and Events' is prominently displayed. Below the title, a note in parentheses explains the formatting: '(Bold = GWAC speakers, blue = complete since last GWAC meeting)'. A bulleted list follows, detailing various conferences and events, including the Smart Energy Summit 2021, Premier Home Automation Conference, IEEE PES General Meeting 2021, Solar Power International (SPI), NCEP, GWAC F2F – Fall Meeting, DistribuTech 2022, ASHRAE Winter Conference, AHR Expo, IEEE ISGT 2022, IEEE Rural Electric Power Conference REPC, and TESC2022 – May 2022.

Conferences and Events
(**Bold** = GWAC speakers, **blue** = complete since last GWAC meeting)

- Smart Energy Summit 2021, Virtual, Apr. 28, Aug. 4, Oct. 27
- Premier Home Automation Conference, May 25 – 26 2021
- IEEE PES General Meeting 2021, July 25-29, 2021 Virtual
- Solar Power International (SPI) Sept. 20-23, 2021 New Orleans, LA (SPIE affiliated)
- NCEP Sept. 13-15, 2021 (National Council on Elec Policy)
- **GWAC F2F – Fall Meeting**
- DistribuTech 2022 – Jan 26 – 28, 2022, Dallas, TX
- ASHRAE Winter Conference, Jan 29 – Feb. 2, 2022, Las Vegas, NV
- AHR Expo, Jan. 31 - Feb. 2, 2022, Las Vegas Convention Center
- IEEE ISGT 2022, Washington, DC, February 21-24, 2022 – now Virtual (updated dates)
- IEEE Rural Electric Power Conference REPC, Cleveland OH, May 17 – 20, 2022
- **TESC2022 – May 2022**

Farrokh Rahimi commented that the IEEE ISGT in Washington DC may still be F2F. They will make a decision in early June. Currently the slide says Virtual. He said one of the problems is that the hotel will charge a significant penalty if the rooms are cancelled. Because of that they are considering a hybrid or face to face format. Hybrid may be difficult to manage but is not off the table.

Action: Check next month with Farrokh on the ISGT 2022 format

Ken Wacks commented that current corporate travel policies could also restrict people from traveling.

Ron Cunningham said that AEP is enjoying the reduction in travel costs. He's expecting a reduction in travel at this company for some time to come.

Karen asked the council if they can commit to doing a virtual conference in May 2022 based on this information and the success of the 2019 meeting as virtual.

Farrokh gave an emphatic yes for virtual and Negash also agreed.

Chris Villarreal commented that the NARUC meeting in July 2021 will be hybrid with an emphasis on in person and that beyond meeting he expects future meetings to move to face to face.

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Ron Bernstein noted that it seems too soon to commit to face to face. He would like to continue to keep the door open on face to face or Hybrid. He agreed with earlier comments today that there is significant value in face to face meetings.

David Forfia agreed and cautioned the group to make the call soon so that a venue can be lined up if needed. He expects that we need to make the call in the next 12 weeks for logistical reasons.

Karen said that would make July a drop dead date. She feels GWAC should lock in sooner on details than it did last year.

Farrokh noted that the hybrid option does give flexibility.

Concerns were raised about non-refundable costs for hotels and venues.

Farrokh suggested that TESC 2022 meetings should plan to have IEEE on the calls.

David suggested that the planning committee start meeting in June. He said that Roseanne Jones would be invited to participate as an IEEE representative.

Karen will change the IEEE TESC 2022 application for the conference to not be purely virtual.

Action: TESC 2022 organizing committee to begin meetings in June. Karen will change the IEEE TESC 2022 conference format to keep a face to face meeting format as an option.

Karen reminded the group that she and Jaime Kolln are reviewing GWAC publication citation histories. She said that she and Jaime Kolln will update the GWAC group by email in the next few weeks.

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Progress & Accomplishments

- 2006 – Interoperability Constitution
- 2007 – Interoperability Decision Maker's Checklist
- 2008 – Interoperability Context Setting Framework
- 2009 – Interoperability Benefits Papers
 - *Environmental Benefits*
 - *Financial Benefits*
 - *Reliability Benefits*
- 2010 - Interoperability Decision Maker's Checklist update
- 2011 – Smart Grid Interoperability Maturity Model Beta Version
Electrical Power Engineering Academic Landscape
- 2007-2012 – Grid-Interop Forum
- 2011-current – Transactive Energy Workshops,
Framework, Checklist & Infographic

Ron Bernstein commented on the GWAC historical slide noting that he uses it in presentations when he mentions his involvement in GWAC. He commented that he would like to see an additional page to capture the more recent GWAC accomplishments such as the 2020 publications and the TE FAQs.

Action: Karen and Susie to send the existing history slide to Ron B. and he will update it. Jaime and Karen will send him some additional data regarding more recent publications.

Stuart McCafferty thought the GWAC stack should be noted on the history slide. Ron Ambrosio replied saying that it is shown in the 2007 Interoperability Framework document.

Ken Wacks reminded the group that the GWAC Interoperability Framework was the first GWAC document approved for international publication by the ISO/IEC. He also reminded the group that GWAC documents that were published internationally can be purchased from the ANSI (American National Standards Institute) website:

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

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Information technology - Home electronic system (HES) application model - [Part 3-8: GridWise transactive energy framework](#)

Jaime Kolln commented on the slide saying that most recent publications are not included on this slide.

Stuart McCafferty shared a link to a mini-forum on May 25 hosted by QualityLogic and GridIntellect called "GridEdge Intelligence Mini Forum Registration: Is 2030.5 The DER Protocol? GWAC speakers include Stuart, David Forfia and James Mater.

<https://www.qualitylogic.com/gei-webinar-registration-is-2030-5-the-der-protocol/>

TESC 2022

Karen commented that TESC 2022 is in need of a treasurer. Karen said last year since the meeting was virtual the treasurer role was not bad. Keeping track of budget, spending (with an online form from IEEE), use of wire transfers and a debit card. She said she had to do a summary report at the end of the conference but there were not many charges.

David suggested that the meeting theme be the first order of business for the TESC 2022 organizing committee for TESC 2022.

Action: TESC 2022 organizing committee should pick a theme as the first order of business.

Grid Future States

Ron Cunningham said the group continues to meet and they now have six sources for the assessment and may end up at eight sources. Then they will parse out writing assignments. They are still trying to get the data gathering finalized so that content preparation and assessment can proceed. He is hoping to have a white paper by the end of the summer.

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• New Work Products – next steps...

- Action: Ron Ambrosio, Ron Melton, David Forfia will keep GWAC informed on the progress of the Grid Architecture Primer by the SEPA working group on Grid Architecture and how it can be complementary to GWAC work products.
- New Sub-Group: "Application of Grid Architecture in the Policy and Regulatory Arenas." Participants are Lorenzo Kristov, Larisa Dobriansky, Kay Aikin, Farrokh Rahimi, Chris Villarreal, Mark Paterson and Karen Studarus.
- Action: Stuart McCafferty, Ahlmahz Negash, Larisa Dobriansky, Ron Bernstein and others to meet next week on Decarbonization. Stuart will lead the group and will get a meeting scheduled and send the outline out for comments.

New Work Products -

SEPA Grid Architecture Primer - David Forfia said that a definition of grid architecture by the SEPA working group is in progress. He missed the last meeting. Seemita Pal, PNNL, created a revised version and David has provided comments but then missed the follow-up discussion. Ron Cunningham also contributed feedback to the definition.

Seemita Pal said that David's comments covered it well. She added that some sections of the Primer have been started thanks to David's efforts. It is a work in progress. Karen noted that it is focused on definitions and how to make them relevant.

Lorenzo Kristov gave an update on the new subgroup that he is leading on Architecture & Policy. He said nothing has changed this month because he had some conflicts and couldn't get the most recent meeting scheduled. He said the idea is that as a first step they will identify a list of regulators such as commissioners or staff that they have contact with. They hope to talk with them one on one about their experience with Grid architecture. Also, a question set needs to be developed. They will serve as a guideline for questions posed by in person conversations or by email. Then with that data from those conversations, they will regroup to develop strategies. One might be to create a white paper on how grid architecture might help regulators solve their problems; another might be on the regulatory process and how it works and then how grid architecture could help. He commented about how silos in policies that can be a barrier to grid architecture. The team will reconvene around question development for the next meeting.

Farrokh agreed with Lorenzo's summary and had nothing to add.

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Stuart McCafferty said that the Decarbonization subgroup has been meeting every couple weeks. They first went over the outline and recast it and made revision and assignments. Right now, it is maybe still too comprehensive. There are three key parts; an introduction challenges for decarbonization; changes that need to occur for carbon neutrality; and a high level conclusion and then the call for action or maybe a roadmap. Group members include Kay Aikin, Ahlmahz Negash, Tonya Barham, Rahul Bahadur, David Katz, Ron Bernstein, Leonard Tillman, Lorenzo Kristov, Larisa Dobriansky, Tim Schoechle, and Heather Donaldson has said she wants to join the group.

Ken Wacks asked Stuart about how the group relates to GWAC interests. Stuart replied that for decarbonization to occur, there are institutional and society changes needed, as well as infrastructure changes, policy and regulatory changes, and economic and technical changes needed. Ken said that is a lot for one group to take on. Stuart agreed saying they will whittle down the scope to something more manageable. They have only had one meeting so far.

Kay Aikin commented that the group is weighing the business case for why the work for GWAC should be used and understood for the decarbonization effort.

Stuart said it would be to convey the GWAC point of view.

Lorenzo said he is very interested in the tie-in to GWAC.

Tim Schoechle noted that yesterday the International Energy Agency just this week made an about face and said there should be no more fossil fuel generation or development for the electric power business, ever. He asked how GWAC would recommend that the Electric Power Industry implement this guidance?

Kay said this is why we want to lay the groundwork for why architecture and regulatory and policy arenas are important. That is why GWAC is important to the decarbonization effort.

Stuart answered Lorenzo about the punchline by saying there are many key points and many punchlines as you bucketize these things. Many things will need to be addressed to reach true carbon neutrality.

Ken feels that GWAC documents are too complex for regulators. How do we simplify our message so that it is actionable?

Stuart invited Ken to join the group saying that they have only met once and have much left to do.

Karen thanked the Decarbonization group for taking this on.

David Forfia commented that he has his first social media posting ready to go but would like to call out the new GWAC website in it. He will also comment on the TE FAQ document in the first article. David noted that he also has tapped another GWAC member who is on deck with a second article. He is also planning to drive traffic to it with a Linked In post.

Karen has been working with the website developers at PNNL and is hopeful that the updated GWAC website will be ready very soon. She will share it with David Forfia before it goes live. David will use

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Linked In for his upcoming social media post and hopes that GWAC participants will rebroadcast it in their social media.

Karen reminded the group that for now the Survey of Coordination is on hold.

Seemita Pal suggested a social media post on GWAC work products. Karen agreed saying that it may be a good way to show who GWAC is and what they have done. Seemita said the list that Karen and Jaime have created will be interesting to see as a summary. Seemita said she was thinking that a post on the work products statistics would serve as a glimpse into GWAC's efforts and impacts

David Forfia said he that he will work some of the SEPA Grid Architecture Primer into his upcoming social media blog as an introduction.

Liaison Reports

NIST - David Wollman- NIST recently published NISTIR 8366, Guidance for NIST Staff on Using Inclusive Language in Documentary Standards – <https://nvlpubs.nist.gov/nistpubs/ir/2021/NIST.IR.8366.pdf> - the Guidance was announced in a NIST [press release](#), and the Guidance has garnered the attention of standards organizations such as [ANSI](#), [ASME](#) and [IETF](#).

NIST's Avi Gopstein gave some video presentations as part of the National Association of Regulatory Utility Commissioners' online cybersecurity online training course for regulators and staff. See for example: [About NIST and the Smart Grid Framework](#) and [NIST Cybersecurity Framework & Risk Profiles](#) and [Understanding North American Electric Reliability Corporation Critical Infrastructure Protection Standards and NIST Cybersecurity Framework](#)

ISO - IEC -Ken Wacks shared that the group is currently meeting on the Home and Building Systems informally called the IOT and related standards for home and buildings. Standards underway include lighting and energy management. Much is underway currently. Participation has been very high.

The group just got approval to proceed with nine new standards.

They have more than 50 published so far with five in advanced stages of review. To be approved 2/3 of the voting nations must vote YES, less than a quarter NO, and five nations must agree to participate. It usually takes several ballots to approve a standard. The group is currently making progress on the residential gateway, interoperability, interfaces to devices, and enabling energy management functions at the customer site rather than controlling energy usage by command of a public utility. They are meeting a few hours each scheduled day. If anyone would like to participate, please [contact Ken Wacks](#)

Meetings are in progress. If anyone is interested in sitting in as a guest as a representative of the United States, Ken can get them set up for this session and then help them to join the ISO/IEC after the meeting.

Ken commented that basically the group is like the United Nations for engineers. Negotiations and diplomacy are important for getting standards approved.

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Ken asked to have IREC (Interstate Renewable Energy Council) added to the GWAC liaison list.

Aaron Smallwood - not much is new this month. There is a H2Power, SEPA and EPRI hydro conference June 15 and 16, all virtual - emerging role of hydrogen, regulatory, stakeholder engagement, and emerging integrated revenue streams.

He will put a link in about SEPA carbon reduction tracker. They are going to Ver. 2.0. A Carbon reduction map. It's a simple map of carbon reduction commitments by utilities.

<https://sepapower.org/utility-transformation-challenge/utility-carbon-reduction-tracker/>

Stuart McCafferty commented that it is a helpful link, well done and he uses it.

Gerald Gray EPRI - noted meetings that EPRI is hosting this month and next, starting with May 17 - 20, for Building to Zero; June 7 - 10 Frontiers of e-Mobility; and June 28 - 30 A Net-Zero Energy System for All. No cost to register. He gave a link to more information: <https://www.electrification2021.com/>

ASHRAE - Ron Bernstein - June 21 -25 plus a few things in the following week. It will be virtual. Ron is not presenting this time. He will make GWAC aware of any interesting highlights.

He was interviewed last week by NREL and PNNL on integrated lighting campaign. It will be a three page article in their newsletter and he will send the link when it comes out.

Ron sent Karen a link about the E-merge alliance in the DC solar world. He said a standard was recently published on DC revenue grade meters possibly in preparation for DC loads in buildings supplied by a revenue based utility or entity. He noted that there will be DC meters as well as AC.

Ken Wacks said some cities still have DC supplies from old Edison generators.

Ron B. No there is a way to build a revenue grade meters, not only on the side of a building but building metering capability into equipment. So, a generator could be set its metering capability to those requirements.

Ron B. also commented on a hospital in San Diego that was affected by a cyber security attack that disrupted all aspects of hospital functions for about a week. It was a very comprehensive attack that went on for several weeks. Ron had some comments about it and about protecting computer addresses on public facing documents. He said it's an IOT issue.

He is writing it from scratch. He said he sees IP addresses published often.

Ken commented that IP addresses can also be guessed. Particularly if the guesser is a computer.

Ron said it's not just that but it's a combination of numbers but they are not being protected.

Ron added comments about how this is happening.

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Jaime Kolln also had some information to share with Ron on document control. He said the lighting group that interviewed him recently published something. Jaime will send him the link and with introductions to some of those involved. Ron B. said he is very interested. He said not a lot of people are interested in document control and information control.

Farrokh Rahimi commented on the general meeting to be held on July 28 as a virtual conference. There will be a 5 hour session on blockchain in energy. TE is a good part of the theme. There will be a full hour of Q&A at the end.

The IEEE ISGT meeting will be held in Feb. 2022. The final decision as to whether it will be face to face will be made in the next few weeks.

There is a position paper on blockchain energy titled "blockchain enabled TE" as part of IEEE standards. IEEE PES smart building customer loads and systems is the new location for blockchain work and Ron Melton is the chair of the committee. Farrokh noted that the position paper was written before the move. So GWAC has a strong influence in this.

EBC - Tony Giroti noted an upcoming blockchain webinar. The next one will be held in June and then another one after that. If anyone is interested in joining as a participant or speaker please let Tony know. These are usually on the first Friday of every other month.

EBC is working on developing a net zero home using blockchain technology. They are starting a pilot project using a platform they developed using a home with a solar panel and battery storage. They will bring the data into blockchain. It will have a DER registration process to register assets. He explained how that would work for incoming solar energy. It is the first phase of the project.

The next goal is computations to create a net zero home with EBSC and battery. They will work with a utility using blockchain. It will show how a homeowner with solar could push energy back into the grid.

The overall goal is to create a sustainability platform. These are applications to allow people to contribute to a more sustainable world.

Lorenzo Kristov commented that for utilities this can be a revenue loss for the utilities. Tony said that if utilities don't participate in these changes, they will lose more and more. He identified some potential benefits for utilities from this changeover. He explained some about DERMS products as well.

Lorenzo said he is struggling with the answer to the question from the utility's perspective. He said they want to build additional capacity.

David Forfia put a link to the EBC webinars, which are at no cost in the chat: <https://energy-blockchain.org/webinars/>

Kay said utilities don't have to have visibility inside the meter.

Karen said this is a good line of discussion but that we need to move on.

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Chris Villarreal - NARUC summer meeting will be July 18 -21 in Denver CO ; it will be a hybrid meeting. NARUC staff and commissioners will be there in person.

Ken Wacks - IREC - The Home-to-Grid Working Group and Building-to- Grid Working Groups were combined into the Customer Grid Edge (CGE) Working Group at SEPA. Last year SEPA had no resources to continue supporting CGE. So, the Interstate Renewable Energy Council (IREC) offered to host CGE. CGE started meeting at IREC a couple of months ago. Meetings are held on every other Friday afternoon for 90 minutes starting at 1:30 PM ET. IREC focuses on clean energy and energy efficiency by working with regulators and installers of DER. They provide a smooth path for installers to do their work. IREC trains installers and advocates for regulations that promote and facilitate solar, wind, and storage (DER in homes and buildings).

Contact Ken Wacks if you are interested in participating in CGE at IREC. There is no cost to participate in IREC activities.

David Forfia mentioned a panel that he and Stuart McCafferty are participating in on May 25, on 2030.5. It is part of a mini-Forum that James Maters organization, QualityLogic is (QL) is sponsoring. David noted that there are over 300 people registered. There is no cost to attend. Link:

<https://www.qualitylogic.com/gei-webinar-registration-is-2030-5-the-der-protocol/>

David then asked for a motion to adjourn the meeting.

Stuart McCafferty gave the motion to adjourn and Leonard Tillman seconded the motion. There were no objections; the meeting was adjourned.

David announced that the next GWAC Online meeting will be June 16, 2021.