

Standards Coordinating Committee 21 (SCC21) Outreach for Coordination on IEEE 1547

Last update: April 22, 2021

Last modified by: [Jens Boemer](#), SCC21 Vice-Chair

Individuals highlighted in **YELLOW** attended the coordination call on 04/22/2021

Organization	Activities	Stakeholder Scope	Geographic Scope	Method & Deliverables	Contacts	Comments
IEEE Standards Coordinating Committee 21 (SCC21) / P1547 leadership	Outreach for trainings on 1547	Public	North America focused but open to Global	Conference presentations and tutorials, IEEE PES chapter tutorials, landing page on SCC21 website, limited outreach to energy regulators	<p><a href="#">Mark Siira (SCC21 Chair)</a></p> <p><a href="#">Babak Enayati (SCC21 Co-Chair)</a></p> <p><a href="#">Jens Boemer (SCC21 Vice-Chair)</a></p> <p><a href="#">Wayne Stec (P1547.2 Vice-Chair)</a></p> <p><a href="#">Patrick Dalton (Secretary)</a></p> <p><a href="#">Dave Narang (P1547 Chair)</a></p>	<p>New <a href="#">SCC21 website</a> has been substantially updated and includes:</p> <ul style="list-style-type: none"> <li>- All sites from grouper has now been moved to the new website</li> <li>- <a href="#">IEEE 1547 landing page</a>, including a list of relevant resources/references, a timeline for the roll-out of 1547-2018/1741-2020 certified inverters, and a link to the NARUC resolution on 1547</li> <li>- <a href="#">Procedure for obtaining SCC21 presentations</a></li> <li>- <a href="#">Procedure for obtaining discounted copies of SCC21 standards</a></li> <li>- Now also has a SCC21 standard revisions roadmap at <a href="https://site.ieee.org/sagroups-scc21/standards/">https://site.ieee.org/sagroups-scc21/standards/</a></li> <li>- <a href="#">Consider adding a link to EPRI's settings database at https://dersettings.epri.com</a></li> </ul> <p>SCC21 maintains an outreach tracker that is available to SCC21 Officers on BOX <a href="#">here</a>. Please send any presentations, workshops, or tutorials that relate to SCC21 standards to</p> <ul style="list-style-type: none"> <li>- <a href="#">Jens Boemer (SCC21 Secretary)</a></li> <li>- <a href="#">Wayne Stec (P1547.2 Chair)</a></li> </ul> <p>Preliminary activity to scope and schedule next IEEE 1547 revision. Refer to roadmap at <a href="https://sagroups.ieee.org/scc21/standards/">https://sagroups.ieee.org/scc21/standards/</a>.</p> <p>Ongoing revision of IEEE P2030 Smart Grid Interoperability Standards.</p> <p>Potential new IEEE-SA project for "DER Gateways"; for background see <a href="https://eprijournal.com/the-network-gateway-the-missing-link-for-integrating-distributed-energy-resources/">https://eprijournal.com/the-network-gateway-the-missing-link-for-integrating-distributed-energy-resources/</a></p> <p>Organized a workshop at SPI. Next event in April 2019. Canadian EPEC conference on October 16-17, 2019 on DER interconnection and Smart Grid Interoperability. Upcoming</p>

						<p>tutorials in New Foundland Nov 6 and Costa Rica Nov 13. Wisconsin Distributed Resource Consortium on Nov 9 with about 40 attendees.</p> <p>Mark Siira plans to present to the hydrogen and fuel cells association in late January 2021.  → Ask for requirements that may be too stringent or where there are gaps. File can be found here: <a href="https://epri.app.box.com/file/761595597812">https://epri.app.box.com/file/761595597812</a></p> <p>Mark Siira → overview presentation for Global Power Systems Transformation Consortium: <a href="https://epri.app.box.com/folder/50513919511">https://epri.app.box.com/folder/50513919511</a></p> <p><a href="#">Mark mentions a possible need to develop use cases for the Smart Grid Interoperability Model.</a></p>
<b>IEEE P1547a Amendme nt to IEEE Std 1547™- 2018</b>	Amending ranges of allowable settings for Category III	Public	North America focused but open to Global	Amended standard in May 2020	<a href="#">Dave Narang (P1547 Chair)</a>	<p>IEEE 1547.1-2020 has been published, see <a href="https://standards.ieee.org/standard/1547_1-2020.html">https://standards.ieee.org/standard/1547_1-2020.html</a> .</p> <p>The IEEE 1547a-2020 amendment has been published, see <a href="https://standards.ieee.org/standard/1547a-2020.html">https://standards.ieee.org/standard/1547a-2020.html</a></p>
<b>IEEE P1547 next revision</b>	Potential revision of IEEE 1547-2018	SCC21 task force	North America focused but open to Global	Revised standard	<a href="#">Dave Narang (P1547 Chair)</a>	<p>Early discussions about potential timeline and scope, using SCC21 roadmap as a starting point, <a href="https://sagroups.ieee.org/scc21/standards/">https://sagroups.ieee.org/scc21/standards/</a></p> <p>Ideas for potential scope</p> <ul style="list-style-type: none"> <li>• Common DER Settings File Format</li> <li>• Relationship to DER aggregation and new role of DER aggregator</li> <li>• New normative references for cybersecurity, intentional islanding/microgrids, DER aggregations (2030.11), etc. → waiting for publication of P1547.2 / .3 / .9.</li> </ul>
<b>IEEE P1547.2 Application Guide for 1547</b>	Aiming at drafting an application guide, the WG is set up as a <u>public</u> process to transfer knowledge, gather informatio	Public Voting rights require IEEE SA and P1547.2 WG membership	North America focused but open to Global	In-person meetings, conference calls, website under SCC21 website, white papers, IEEE 1547.2 Application Guide	<p><a href="#">Wayne Stec (P1547.2 Chair)</a></p> <p><a href="#">Jens Boemer (P1547.2 Vice-Chair)</a></p> <p><a href="#">Mike Kipness</a></p>	<p>Last meeting took place in June as a virtual meeting. The third meeting with a real draft, Draft 3. This draft includes not only language from the draft NERC reliability guideline on adoption of IEEE Std 1547-2018 that is targeted at state regulators and other responsible entities to encourage a timely coordination of DER ride-through, trip, etc. but also includes language on coordination of DER ride-through with distribution protection and some guidance on DER capabilities for dynamic voltage support and their utilization. Refer to the NERC section for further information.</p> <p>“Hybrid” structure including stakeholder responsibilities.</p> <p>Have begun regular monthly calls on every 1rd Thursday of a month, since November 1, 2018.</p>

	<p>n and lessons learned, and to coordinate outreach on application of 1547 to a wider stakeholders group, including energy state regulators. It may serve as the one-stop-shop for technical subject matter experts to join as this appears to be the activity with the widest outreach and open access.</p>				<p><a href="#">(IEEE SA Liaison)</a></p>	<p>Next meeting on in the fall as a virtual meeting.</p> <p>An emerging challenge is to coordinate various interpretations of IEEE 1547-2018.</p> <p>Deficiencies of IEEE 1547-2018 and proposed changes for a future revision are tracked in this <a href="#">SCC21 "1547 Fixes Tracker" spreadsheet</a> on BOX. Contact <a href="#">Charlie Vartanian</a> and <a href="#">Jens Boemer</a> to add proposed changes.</p> <p>Next draft (Draft 4.0) due date is August 28, in preparation of next WG meeting October 5, 2020 (virtual). The objective is to seek WG approval (voting!) to move the working group draft to initial ballot in early 2021.</p> <p>Input for Draft 5.0 is overdue by 1/7/2021. This draft will close some gaps from previous drafts. WG voting on new draft at meeting on Feb 24-26, 2021.</p> <p>WG meeting in February 2021 compiled a near-final document, yet had to adjust timeline but still aiming for initial ballot in early 2022. P1547.9 also wrapping up in 2021; some material will be moved over to P1547.2. P1547.3 going into 2023.</p>
<p><b>IEEE P1547.9</b></p>	<p>Application Guide for Energy Storage Systems</p>					

<b>IEEE Smart Grid Program</b>	Early in 2018, IEEE Smart Grids hosted <a href="#">four online tutorials</a> on the new IEEE 1547 which have been widely attended and are available for continued download by IEEE members & non-members. <a href="#">Additional tutorial on "Changes to PV Integration Methods"</a> .	IEEE PES Members and Non-Members	Global	Live + recorded webinars	<a href="#">Phyllis Caputo (Program Manager IEEE Smart Grid)</a>	Each of the four tutorials was attended by approx. 80-110 people and each of the recordings were downloaded approx. 10-15 times over the months of January - March 2018.  Mark to present on "smart grid interoperability standards" on March X, 2020. <a href="#">[LINK]</a>
<b>IEEE (Corporate)</b>	eLearning course on IEEE Std 1547-2018	IEEE Members and Non-Members	Global	Webinars, narrated by a professional narrator	<a href="#">Jennifer McClain (IEEE Senior Standards Education &amp; Business Development Manager)</a>	Published in September 2019. Available at <a href="#">ieeExplore</a> .
<b>IEEE Standards</b>	Support energy	Energy Regulators,	Global	IEEE Conformity	<a href="#">Ravi Subramani</a>	Jason demonstrated IEEE SA's collabratec forum for state regulators on IEEE Std 1547™-2018 which went live in September 2019 at <a href="https://iee-">https://iee-</a>

<p><b>Association (IEEE SA) &amp; IEEE Conformity Assessment Program (ICAP)</b></p>	<p>regulators around the world in the application of IEEE Std 1547-2018</p>	<p>including PUCs, et al.</p>		<p>Workshops, Collabratec User-space for registered/approved users from stakeholder target group with facilitated/curated discussions</p>	<p><a href="#">am (Technical Director of ICAP)</a> <a href="#">Jason Allnut (Program Specialist of ICAP)</a></p>	<p><a href="http://collabratec.ieee.org/app/workspaces/5367/IEEE-1547-Regulator-User-Space/">collabratec.ieee.org/app/workspaces/5367/IEEE-1547-Regulator-User-Space/</a> but requires personalized invitation from IEEE. Today, only a few pilot participants have been invited. Jason will think more about who may be invited to moderate the forum and reply to questions “authoritatively.” Feedback was that the forum can give visibility to the various interpretations and applications of IEEE 1547-2018 and offers an opportunity to SCC21 to learn about ambiguities that may require resolution in future revisions of the standard. From time to time, SCC21 could provide P1547 Officer opinions to the forum, following a process that still needs to be defined.</p> <ul style="list-style-type: none"> <li>- 06/25/2020 update: collabratec platform has stalled but is not abandoned</li> </ul> <p>ICAP plans to release a paper on commissioning.</p> <p>IEEE Conformity Workshops:</p> <ul style="list-style-type: none"> <li>- Washington, D.C. (2017)</li> <li>- Portland (2017)</li> <li>- Minnesota (March 2018)</li> <li>- Atlanta (September 2018)</li> <li>- Frankfurt, Kentucky (April 2019) – 60 participants, incl. utilities and regulators, same format</li> <li>- Texas – ERCOT has now publicly announced recommendation to adopt IEEE 1547-2018, see <ul style="list-style-type: none"> <li>o Mark Siira has a call with Texas PUC on 06/26/2020 to discuss next steps</li> </ul> </li> <li>- International (?)</li> </ul> <p>IEEE SA hosted its latest <a href="#">IEEE 1547 DER - A Standards and Conformity Assessment Workshop</a> in September 2018 at NERC’s premises in Atlanta. Georgia state commission plus utilities.</p> <p>Gave 3 out of 4 workshops for NIST: <a href="https://www.nist.gov/engineering-laboratory/smart-grid/smart-grid-interoperability-framework-workshops">https://www.nist.gov/engineering-laboratory/smart-grid/smart-grid-interoperability-framework-workshops</a></p> <p>Ravi presented to CEATI in October 2018.</p> <p>The following countries are interested in adopting IEEE 1547-2018: Ghana, Israel</p> <p>Recent article by Ravi in <i>Energy Storage</i> with interviews of SMEs like Michelle Rosier, et al. <a href="https://www.energy-storage.news/blogs/raising-standards-for-interconnecting-renewables-across-the-us-commissioner">https://www.energy-storage.news/blogs/raising-standards-for-interconnecting-renewables-across-the-us-commissioner</a></p>
---	---	-------------------------------	--	---	--	---

						<p>Publications on the ICAP "IEEE 1547 Education and Credentialing Program project".</p> <ul style="list-style-type: none"> <li>- Article - <a href="https://www.energy-storage.news/blogs/understanding-interconnection-of-distributed-energy-resources-der">https://www.energy-storage.news/blogs/understanding-interconnection-of-distributed-energy-resources-der</a> [energy-storage.news]</li> <li>- Press Release - <a href="https://standards.ieee.org/news/2020/standardized-education-program-for-future-of-grid-support.html">https://standards.ieee.org/news/2020/standardized-education-program-for-future-of-grid-support.html</a> [standards.ieee.org]</li> </ul> <p>Other resources includes:</p> <ul style="list-style-type: none"> <li>- <a href="https://standards.ieee.org/products-services/icap/programs/der/index.html">https://standards.ieee.org/products-services/icap/programs/der/index.html</a></li> <li>- <a href="https://standards.ieee.org/products-services/icap/1547-regulator/index.html">https://standards.ieee.org/products-services/icap/1547-regulator/index.html</a></li> </ul> <p>ICAP may address modeling and simulation in DER design evaluation step. EPRI can provide peer-review.</p>
<p><b>IEEE Power &amp; Energy Society (IEEE PES) Industry Technical Support Task Force</b></p> <p>(under MOU between IEEE and DOE)</p>	<p>IEEE PES has formed the Industry Technical Support (ITS) Task Force to facilitate global collaboration between the IEEE and governments, regulatory, and other industry organizations, such as the U.S. DOE, and to provide fast response</p>	<p>Governments, regulatory, and other industry organizations, such as the U.S. DOE</p> <p>IEEE members</p>	<p>Global</p>	<p>White papers, etc.</p> <p>Various contributors, see the white paper.</p>	<p><a href="#">Babak Enayati (WG Lead)</a></p> <p>As part of the collaboration initiative, the U.S. DOE has asked IEEE to develop a <a href="#">white paper on the impact of IEEE 1547 standard on smart inverters</a>. This white paper presents smart inverter features along with the implementation challenges and potential solutions. The paper starts with an introduction to smart inverter functions. It then describes the smart inverter modeling, protection, power quality, ride-through, distribution planning, interoperability, and testing and certification.</p> <ul style="list-style-type: none"> <li>- This paper has been updated and scheduled for publication in fall 2020. Charlie Vartanian, Michael Ropp, and Jens Boemer are involved.</li> <li>- IEEE PES Industry Technical Support Task Force (2020): Impact of IEEE 1547 Standard on Smart Inverters. Technical Report. PES-TR67.r1. IEEE. <a href="https://resourcecenter.ieee-pes.org/technical-publications/technical-reports/PES_TP_TR67r1_ITSLC_1547_082820.html">https://resourcecenter.ieee-pes.org/technical-publications/technical-reports/PES_TP_TR67r1_ITSLC_1547_082820.html</a></li> </ul> <p>Organizes a panel session for ISGT in February 2019, lead by Jay Liu.</p> <p>Mark Siira mentions a "Industry Transmission Initiative" that was released by IEEE recently.</p>	

	as required by changes that our industry is experiencing. The ITS Task Force works closely with the IEEE Standards Association (SA), IEEE-USA, and other societies.					
<b>Electric Power Research Institute (EPRI)</b>	EPRI's supplements project "Navigating DER Interconnection Standards and Practices" has similar scope as P1547.2 but exclusively addresses EPRI utility members, both distribution and RTOs/ISOs. EPRI will be	EPRI utility members, both distribution and RTOs/ISOs	North America focused but open to Global	Utility-focused training webinars (recordings + live Q&A), closed collaborative member site, reports, standardized DER setting forms, work flows, etc.	<p><a href="#">Jens Boemer (Project Lead of Part I - Applying IEEE Std 1547-2018)</a></p> <p><a href="#">Nadav Enbar (Project Lead of Part II - Improving Interconnection Processes)</a></p> <p>Tom Key (Leads certain</p>	<p>Contributed to a panel at the 2018 NARUC Summer Policy Meeting, see <a href="https://www.naruc.org/summer-policy-summit/2018-summer-policy-summit/agenda/daily-agenda-sunday-july-15/">https://www.naruc.org/summer-policy-summit/2018-summer-policy-summit/agenda/daily-agenda-sunday-july-15/</a></p> <p>Next panel is expected for the NARUC Spring Meeting. No panel is planned for the 2018 NARUC Annual Meeting in November 2018. NERC stresses the importance of this activity. Carl Linvil offers to support, also mentions regional meetings which are better to reach commissioners.</p> <p>2018 WIRAB Webinar: Implementation of IEEE 1547 Standard – Interconnection of DERs and Utility Electric Power Systems. August 21, 2018. <a href="#">Available online.</a></p> <p>Webinar Schedule</p> <ul style="list-style-type: none"> <li>- 6/7/18: Overview on IEEE Std 1547-2018 (also <a href="#">available online</a>)</li> <li>- 7/5/18: DER Ride-through Performance Categories and Trip Settings</li> <li>- 8/2/18: T+D Coordination for DER Ride-Through and Trip Requirements</li> <li>- 9/6/18: DER Reactive Performance Categories &amp; Voltage Control Functions</li> <li>- 10/4/18: DER Power Quality Requirements</li> <li>- 11/5/18: DER Testing, Certification, Evaluation, Commissioning</li> <li>- 11/29/18: DER Communications Protocols &amp; Deployment</li> </ul>

<p>setting up a collaborative user space that will include FAQs etc. related to application of 1547. After a short period of exclusive EPRI member access, we intend to feed that information (possibly including a straw man for P1547.2) in 1-2 years from now into the P1547.2 working group. I copy my colleagues Tom Key and Nadav Enbar who support me on this project. We also involve</p>				<p>utilities' TIR revisions)</p> <p><a href="#">Jose Cordova</a> (supports Jens)</p> <p>Brian Seal</p>	<p>Co-facilitated a PJM ride-through workshop on Oct 1-2, 2018. Proceedings are available at <a href="https://www.pjm.com/committees-and-groups/stakeholder-meetings/der-ride-through-workshop.aspx">https://www.pjm.com/committees-and-groups/stakeholder-meetings/der-ride-through-workshop.aspx</a></p> <p>Co-facilitated a MISO ride-through workshop on April 23-24, 2019. Proceedings are available at <a href="https://www.misoenergy.org/planning/generator-interconnection/ieee-1547/">https://www.misoenergy.org/planning/generator-interconnection/ieee-1547/</a></p> <p>Working with ISO NE and members of the MA Technical Standards Review Group, details available <a href="#">here</a>.</p> <p>Working with PJM that has a DERTF (<a href="#">link</a>) published their draft DER ride-through reliability guideline <a href="#">here</a>.</p> <p>Working with MISO that coordinates with stakeholders for 1547-2018 adoption and has recently published a draft DER reliability guideline, see this <a href="#">link</a>.</p> <p>Part 1: Training &amp; Education on 1547-2018  Part 2: Interconnection Processes  Part 3: Detailed review and revisions of TIRs</p> <p>EPRI published a report on T&amp;D Coordination in August 2019 available <a href="#">here</a>.</p> <p>EPRI has launching a DER Performance Capability and Functional Settings Database at <a href="https://dersettings.epri.com">https://dersettings.epri.com</a> soon. The database is a public, web-based repository for the settings that utilities require for interconnection of DER. Data can be directly entered into the database by authorized utility personnel. One or more DER settings files can be posted and associated with various metadata like DER types, IEEE 1547-specified performance categories, sizes, etc. Anyone can search this database (e.g. by region, by utility, etc.) and download the DER settings files of interest. DER manufacturers, installers, and utility interconnection engineers can use the DER settings files to configure and/or validate the functional settings applied in DER in the field; this can be done either offline during the DER commissioning or online by use of a DER management system (DERMS).</p> <p>EPRI has been working on a standardized file format that can be used to upload utility-required profiles (URPs) to EPRI's database. This is now available at:</p> <ul style="list-style-type: none"> <li>- Common File Format for Distributed Energy Resources Settings Exchange and Storage. 3002020201. With assistance of Interstate Renewable Energy Council (IREC), SunSpec Alliance (SunSpec), Institute Electrical and Electronic Engineers (IEEE), Electric Power Research Institute (EPRI). Palo Alto, CA: December 2020. [Online] <a href="https://www.epri.com/research/products/00000003002020201">https://www.epri.com/research/products/00000003002020201</a></li> </ul>
---	--	--	--	--	---



	<p>four subcontractors who coincide with former members of the P1547 Working Group that successfully revised the IEEE 1547 standard.</p>					<ul style="list-style-type: none"> <li>- Add webinar link from December 2020</li> </ul> <p>For those who like to review EPRI's presentation to FIGII on Nov 8, 2019, the meeting recording is available here:  <a href="https://irecusa.zoom.us/recording/share/pEQAAbNp2ho1EDft34HK_vWSmm-E8EgOWjUekJm3uuwlumekTziMw">https://irecusa.zoom.us/recording/share/pEQAAbNp2ho1EDft34HK_vWSmm-E8EgOWjUekJm3uuwlumekTziMw</a> [irecusa.zoom.us]</p> <p>NY ITWG Smart Inverter Workshop met on August 26, 2020 (virtual). Information is available at  <a href="https://www3.dps.ny.gov/W/PSCWeb.nsf/All/DEF2BF0A236B946F85257F71006AC98E">https://www3.dps.ny.gov/W/PSCWeb.nsf/All/DEF2BF0A236B946F85257F71006AC98E</a> .</p> <p>The meeting reviewed a proposal from EPRI for NYISO in coordination with the JU to develop a regional reliability guideline for DER ride-through capability and trip settings through adoption of IEEE 1547-2018. The JU proposed timeline stretched through 2025 and the discussion</p> <p>EPRI put together the 1547 state adoption maps based on public information and input from this and other stakeholder groups. Other resources that may provide information include:</p> <ul style="list-style-type: none"> <li>- <a href="https://www.seia.org/">https://www.seia.org/</a></li> <li>- <a href="https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx">https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx</a></li> <li>- <a href="https://www.dsireusa.org/resources/detailed-summary-maps/">https://www.dsireusa.org/resources/detailed-summary-maps/</a></li> </ul> <p>Presentation to NARUC on January 29, 2021.</p> <p>March 11, 2021, Senate Hearing with ISOs, NERC, et al., sending encouraging signals for future grid modernization, see <a href="https://www.energy.senate.gov/hearings/2021/3/full-committee-hearing-on-the-reliability-resiliency-and-affordability-of-electric-service">https://www.energy.senate.gov/hearings/2021/3/full-committee-hearing-on-the-reliability-resiliency-and-affordability-of-electric-service</a></p> <ul style="list-style-type: none"> <li>• Witness List for hearing included: <ul style="list-style-type: none"> <li>James B. Robb President and Chief Executive Officer North American Electric Reliability Corporation</li> <li>Mark A. Gabriel Administrator and Chief Executive Officer Western Area Power Administration</li> <li>The Honorable Pat Wood, III Chief Executive Officer, Hunt Energy Network Former Chairman, Federal Energy Regulatory Commission</li> <li>Michael Shellenberger Founder and President Environmental Progress</li> <li>Manu Asthana</li> </ul> </li> </ul>
--	--	--	--	--	--	---

						<p>President &amp; Chief Executive Officer PJM Interconnection</p> <p>Presentation to NWPP about IEEE 1547 and 2800 on Monday, April 26, 2021, <a href="https://www.nwpp.org/events/93">https://www.nwpp.org/events/93</a></p> <p>Presentation to NARUC, NASEO, and NASUCA about IEEE 1547 on Tuesday, June 22. Live sessions are only open to NARUC, NASEO, and NASUCA members. Sessions will be recorded and posted publicly to YouTube following live delivery.</p>
<p><b>National Renewable Energy Laboratory (NREL)</b> (funded by DOE)</p>	<p>Coordinate Education for IEEE 1547-2018. DOE support for trainings on 1547.</p>	<p>Various stakeholders, primarily state regulators</p>	<p>North America but accessible Global (no plans for non-English materials yet)</p>	<p>Recorded webinars on specific topics, white papers, briefings, public website.</p>	<p><a href="#">Dave Narang (Project Lead)</a></p> <p><a href="#">Michael Ingram (Project Co-Lead)</a></p> <p>Mike Coddington</p>	<p>NREL will assist in education and outreach to various stakeholders. Specifics have been developed and a dozen topics are proposed.</p> <p>Funding was granted by DOE for a 2-year project. Gap analysis started in Q4 2018 on what training materials are needed. Adoption guide for state regulators – coordination with IREC.</p> <p>A coordinating committee is reviewing the materials for coherency. Coordination and contribution to IEEE P1547.2. Has started to reach out to stakeholders with a questionnaire on identifying gaps in educational material. Intent is to point to existing materials on a new NREL 1547 website. The survey is available and there is no cut-off date, continued outreach: <a href="https://www.surveymonkey.com/r/IEEE-1547-2018">https://www.surveymonkey.com/r/IEEE-1547-2018</a></p> <p>Opportunity to coordinate what information to place where.</p> <p>Website has now been launched at <a href="https://www.nrel.gov/grid/ieee-standard-1547/">https://www.nrel.gov/grid/ieee-standard-1547/</a>. To date, the following documents are available:</p> <ul style="list-style-type: none"> <li>- <a href="#">Clause-by-Clause Summary of Requirements in IEEE Standard 1547-2018</a></li> <li>- <a href="#">An Overview of Behind-The-Meter Solar-Plus-Storage Regulatory Design: Approaches and Case Studies to Inform International Applications</a></li> <li>- <a href="#">An Overview of Distributed Energy Resource Interconnection: Current Practices and Emerging Solutions</a></li> <li>- <a href="#">Evaluating the Role of Pre-application Reports in Improving Distributed Generation Interconnection Process</a></li> <li>- A guide for AGIRs to update interconnection requirements is forthcoming</li> <li>- Most drafts completed: voltage regulation, protection, power quality, unintentional islanding, interoperability to be published in Q2/2021.</li> <li>- Added a list of “Suggested Readings” which are curated towards <a href="https://www.nrel.gov/grid/ieee-standard-1547/suggested-reading.html">https://www.nrel.gov/grid/ieee-standard-1547/suggested-reading.html</a> <ul style="list-style-type: none"> <li>o Authorities Governing Interconnection Requirements</li> <li>o Area EPS Operator (distribution utility planners)</li> </ul> </li> </ul>

						<p>- Could add a link to the SCC21 1547 website</p> <p>NREL (Dave, Michael), PJM (Jay Liu), and NERC (Ryan Quint) conducted a panel on IEEE 1547-2018 at the NARUC Winter Meeting in the context of their DOE education project.</p> <p>Dave Narang on the 1547 guidelines: Not much to report on public facing stuff. A backlog of publications still going through our internal and DOE review process. Updates coming in the next month or so. The draft adoption guide is in there along with a few others.....</p> <p>Presentation to NARUC on January 29, 2021 focused on educational outreach.</p>
<b>Interstate Renewable Energy Council (IREC USA)</b>	As a consumer advocacy group promoting the use of clean, efficient, and sustainable energy, IREC plans to target state regulators with trainings on the new IEEE 1547 and its implications on DER owners/operators.	Energy regulators, including PUCs, et al.	North America	White papers (what needs to be addressed in a stakeholder process), blogs, conference presentations, update of model interconnection rules	<a href="#">Brian Lydic (Regulator v Engineer)</a>  <a href="#">Sara Baldwin (Regulatory Director)</a>	<p>Completed MN Technical Interconnection and Interoperability Requirements (TIIR) engagement, including guidance on interim application. Utilities have now filed their companion Technical Service Manuals (TSMs).</p> <p>Can file comments in regulatory dockets.</p> <p>General adoption update:</p> <ul style="list-style-type: none"> <li>- Maryland will implement 1547-2018 January 1, 2022 per Title 20 (20.50.09) <ul style="list-style-type: none"> <li>o Utilities need to develop technical requirements</li> </ul> </li> </ul> <p>MN PUC stakeholder meetings have been completed. Formed a writing team to continue through March 2019 to document the consensus and define outstanding issues. Has been a very good learning process. Strawman was provided by one utility. Process may be a blueprint for other states. Lessons learned:</p> <ul style="list-style-type: none"> <li>- Technical process takes at least 1 year</li> <li>- Process updates may take another 1 year</li> <li>- Get the RTO/ISO engaged very early in the process for the ride-through and trip discussion</li> <li>- Other “hot” topics: non-exporting/inadvertent export</li> </ul> <p>The so-called ‘Technical Interconnection and Interoperability Requirements’ (TIIR) document is available <a href="#">here</a>.</p> <p>Iowa looked quickly how to adopt IEEE Std 1547-2018. Change was made to the interconnection procedures but does not take into account technical req’s. [ADD LINK]</p> <p>White paper on implementation of IEEE Std 1547-2018 published in January 2019, available <a href="#">here</a>. Geared toward regulators. About 20 pages long. No further activities planned to date.</p>

					<p>IREC release their DER Interconnection Model Rules, available <a href="#">here</a>. A few parts relate to IEEE Std 1547™-2018, like Power Quality, Power Regulation, etc.</p> <p>IREC kicked off the harmonization of HI Rule 14H with IEEE 1547-2018 in a call on Friday, Nov 15, 2019. Interested parties can contact Brian to be added. Harmonization scheduled to be completed in summer 2020. Changes from 1547-2018 include frequency trip settings and ride-through, f/W. Decisions based on broad technical analysis leveraging NREL reports and HECO engineering departments. Settings to be specified as “URP”. Any differences between new HI rule and 1547-2018 will be utility-specific requirements. Some requirements may become even more stringent than today. Need to clarify to the industry that HI may remain a “special case” and would need its own source requirement document (SRD), if technically justified. Other requirements like Cyber Security will not be included in this version of the SRD. A “CSIP” for Hawaii may be drafted in the future. SRD 2.0 is being issued to address equipment certification to UL 1741 SB ahead of final 14H changes taking place. This activity is being wrapped-up. Remaining topics include regulatory aspects of utilization of EPRI’s DER settings file format – does this need PUC approval? Fall 2020 as goal for PUC filing.</p> <p>CA PUC has started the IEEE 1547-2018 adoption into CA Rule 21. Advice letters to be filed in January 2021 – followed by a 6-12 month adoption period: <a href="https://www.cpuc.ca.gov/General.aspx?id=4154">https://www.cpuc.ca.gov/General.aspx?id=4154</a> Latest on 1/7/21 suggests that UL 1741 SB certified equipment can be used; but may leave (the utilization) specific functions out of CA Rule 21 like Volt/Watt. There is some discussion around normal ramp rates being an optional function capability, or at least a disabled function.</p> <p>Washington D.C. appears to be adopting IEEE 1547-2018 through utility guidelines: <a href="https://edocket.dcpsc.org/public/search/casenumber/fc1050">https://edocket.dcpsc.org/public/search/casenumber/fc1050</a></p> <p>Brian wrote an article on timeline of IEEE 1547-2018 adoption: <a href="https://www.energy-storage.news/blogs/the-long-awaited-ieee-standard-that-paves-the-way-for-more-energy-storage-o">https://www.energy-storage.news/blogs/the-long-awaited-ieee-standard-that-paves-the-way-for-more-energy-storage-o</a></p> <p>PPL Pilot following PA PUC settlement: Smart Inverters vs. DER Management Systems: Pennsylvania Utility Pilot Runs Them Head-to-Head, <a href="https://www.greentechmedia.com/squared/dispatches-from-the-grid-edge/pennsylvania-utility-takes-a-novel-step-in-the-smart-inverters-vs-derms-debate">https://www.greentechmedia.com/squared/dispatches-from-the-grid-edge/pennsylvania-utility-takes-a-novel-step-in-the-smart-inverters-vs-derms-debate</a></p>
--	--	--	--	--	--

						<p>PPL had asked for a new interconnection tariff that would mandate smart inverters (pre 2018) as well as mandatory control of all DERs (in May 2019). The control was not defined (e.g. no details on voltage settings, etc). NRDC pushed back on this need over the course of a year long proceeding, which resulted in this settlement. In the settlement, PPL agrees to separate DG customers into two buckets, one using smart inverters with Autonomous features (Volt/VAR, F+V ride through), and one with communications back to a PPL DERMS. The DERMS would use the communications link for monitoring, and for control - to only change the voltage regulation profile and remote disconnect during an island condition (e.g. belt and suspenders approach for anti-islanding).</p> <p>The purpose of the pilot was so that PPL could demonstrate that the extra expense and complexity of the DERMS control was better than the “control” group (no pun intended) that was fully autonomous</p>
<p><b>Forum on Inverter Grid Integration Issues (FIGII)</b></p>	<p>Issues around the application of IEEE Std 1547-2018 are discussed on an as-needed basis.</p>	<p>Inverter vendors, utilities, researchers, et al.</p>	<p>North America</p>	<p>Meets weekly on Fridays.</p>	<p><a href="#">Brian Lydic (Lead)</a></p>	<p>The FIGII is an informal forum that conducts meetings in compliance with all applicable laws, including anti-trust and competition laws.</p> <p>Recent discussions around “persistence” or “restoration” of DER settings for power cycles and also after DER software updates. Processes to get “the right settings” into the DER.</p> <p>Implementation of DER communications for California – lessons learned may be leveraged for IEEE Std 1547-2018 adoption. Even though deployment of comms may still be far away, there is an immediate need to address capability requirements/decisions.</p> <p>FIGII group has drafted a document for an interim solution based on UL 1741 SA and related settings. Overview with which settings UL 1741 SA inverters are currently shipped and capable of. One page plus a few tables. This has now been published by IREC as <a href="#">A Guide to Selecting Inverters and Settings in Jurisdictions Without Grid Support Functionality Requirements</a> . IREC is now hosting a <a href="#">website for FIGII</a>.</p> <p>FIGII group started some discussion on 1547-2018 transition in California a Hawaii. Another issue identified is how the transition will take place if gated on interconnection application, given that some application reviews can take 6mo+.</p> <p>FIGII group is being polled on what OEMs may want to see in regulatory databases.</p> <p>Inverter OEMs are discussing in FIGII about potential challenges around UL 1741 SB certification and related timeline to bring IEEE 1547-2018 certified inverters into the market. Original plans to meet a January 1, 2022 state PUC applicability dates are likely being delayed by a few months. Publication for corrected version of UL 1741 SB not expected for publication until September 2021. CA PUC and other PUCs may be moving to</p>

					<p>a Commission Notice; same likely to happen in Maryland. HECO revised to April 1, 2022. What are reasonable transition times to manage legacy product stocks?</p> <p>Inverter OEMs are discussing in FIGII about draft ISO NE “SRD 2.0” on timeline and field verification with EPRI’s Common DER Settings File Format; how does it get operationalized, etc; likely market-led; alternative approaches for cases when OEMs do not offer a tool (App, Device, or other) to configure the inverter accordingly.</p> <p>Abnormal performance category certification: most inverters are likely to be capable of Category III; how would the 1547.1 results reporting format consider dual certification for Category III and Category II. Many stakeholders may still not be aware of IEEE 1547a-2020 amendment that allows Category II settings on Category III certified inverters, see <a href="https://sagroups.ieee.org/scc21/standards/amendment-to-ieee-std-1547-2018-to-provide-more-flexibility-for-adoption-of-abnormal-operating-performance-category-iii/">https://sagroups.ieee.org/scc21/standards/amendment-to-ieee-std-1547-2018-to-provide-more-flexibility-for-adoption-of-abnormal-operating-performance-category-iii/</a></p> <p>AESO published a DER ride-through specification based on the CSA 22.3 standard which reduces Mandatory Operation region from 0.5 pu to 0.3 pu, see <a href="https://www.aeso.ca/assets/Uploads/DER-Ride-Through-FINAL-26MAR2021.pdf">https://www.aeso.ca/assets/Uploads/DER-Ride-Through-FINAL-26MAR2021.pdf</a>?</p>
<b>GridLab.org</b>	GridLab is a new organization that provides expertise to advocates and policymakers on grid transformation. GridLab plans to offer comprehensive technical expertise and education	Energy regulators, including PUCs, et al.	North America	To be defined (mostly presentation at conferences & meetings?)	<p><a href="#">Ric O'Connell (Executive Director)</a></p> <p>Ric proposed in early 2018 to organize a presentation or panel discussion at the NARUC Summer Meeting 2018.</p> <p>IEEE Std 1547-2018 may be less relevant in countries that have dedicated Grid Codes.</p> <p>Can file comments in regulatory dockets.</p> <p>CAISO submitted a Standards Authorization Request (SAR) for NERC to clarify NERC PRC-024-2. <b>What is the difference between -1 and -2?</b> New IEEE standard project for T-connected inverter-based resources (P2800). Kick-off call early November, reach out to Jens Boemer for further information.</p> <p>Some states are moving forward with UL 1741 SA listed inverters, e.g., Illinois.</p> <p>GridLab recently released the following paper to dispel some of the myth like “voltage regulation may curtail active power”. Recommendations for mass-market systems.</p> <p>[1] GridLAB (2019): REGULATING VOLTAGE. RECOMMENDATIONS FOR SMART INVERTERS. Available online at <a href="http://gridlab.org/wp-content/uploads/2019/09/GridLab_Regulating-Voltage-report.pdf">http://gridlab.org/wp-content/uploads/2019/09/GridLab_Regulating-Voltage-report.pdf</a>.</p> <p>Published a paper on FERC Order 2222 [add link].</p>

	<p>on the new IEEE 1547 to policy makers, advocates and other energy decision makers. GridLab is funded by the Energy Foundation , dedicated to serving the public interest by helping to build a strong, clean energy economy.</p>				<p>Kicked off a project with ESIG about a what a “Distribution System Operator” is, see <a href="https://gridlab.org/works/removing-barriers-to-der-in-wholesale-market/">https://gridlab.org/works/removing-barriers-to-der-in-wholesale-market/</a></p> <p>Involved in various state’s proceedings currently updating interconnection requirements and tariffs, e.g., New Mexico, New Jersey.</p>
<p><b>Smart Electric Power Alliance (SEPA)</b></p>	<p>The Smart Electric Power Alliance (SEPA) is a non-profit organization dedicated to working with electric power stakeholders through the most pressing</p>	<p>To be defined</p> <p>May address those stakeholders that are currently not addressed by any of the other activities.</p>	<p>North America with some global through the U.S. Chamber of Commerce</p>	<p>To be defined (mostly conference panels and tutorials, working groups, etc.?)</p>	<p><a href="#">Aaron Smallwood</a> (Aaron wrote he was unavailable on 3/21/2019 )</p> <p><a href="#">Kevin McGrath</a> (Sr. Manager SPI)</p> <p>For Solar Power International (SPI), September 24-27, 2018, Anaheim, CA, SEPA and IEEE SCC21 hosted a half-day Workshop on September 24 on the new IEEE 1547. Potentially very large audience.</p> <p>Coordinated with SCC21.</p> <p>May help IEEE P1547.2 to invite DER developers that attended the 1547 technical symposium and panel session at SPI. Planning an inverter workshop at North America Smart Energy Week 2019 in Salt Lake City (the event include Solar Power International).</p> <p>Day, Date, and Time: Monday, September 23, 2019   8:00 am - 12:00 pm  Title: An In-depth Review of the Revised IEEE 1547 Standard  Description: Topics will include positive implications for all distributed generation systems, particularly solar PV, energy storage and microgrids. This standard was approved by the IEEE Standards Board in 2018 and with pending approval of IEEE P1547.1 and UL 1741 Test procedures will have major impact on integration of solar PV systems for years to come.</p>

<p>issues affecting the growth and utilization of smart energy. We are a trusted platform for education, research, standards, and collaboration to help utilities, customers, and other players deploy and integrate solar, storage, demand response and other distributed energy resources. Through educational activities, working groups, peer-to-peer opportunities and advisory</p>				<p>Ryan Edge left SEPA in late February, replaced by Li Yates</p>	<p>Sponsored by ComRent.</p> <p>Key outreach groups are installers and developers/ system integrators. <b>Kevin shares registrants' demographics.</b> Few state regulatory staff and utilities.</p> <p><b>SCC21 and team to send final list of speakers and desired names of attendees to Kevin. Specify room and AV logistics (e.g., live polling).</b></p>
--	--	--	--	---	--



	services, SEPA engages interested parties in facilitating necessary information exchange and knowledge transfer to offer the highest amount of value for our membership and partner organizations.					
<b>Solar Energy Industries Association (SEIA)</b>	The Solar Energy Industries Association (SEIA®) is the driving force behind solar energy and is building a strong solar industry to power America through advocacy	SEIA members include installers, developers, service providers (including O&M, finance, legal, consulting, test labs, etc.), owners, manufacturers, recyclers and many	North America	<ul style="list-style-type: none"> <li>SEIA member group communications channels (on-line communities, blogs, media, articles, etc.);</li> <li>SEIA working group and committee teleconference</li> </ul>	<a href="#">Sean Gallagher</a> (VP State Policy)  <a href="#">Justin Baca</a> (VP Markets & Research)  <a href="#">Evelyn Butler</a> (Sr. Director, Codes & Standards)	<p>SEIA and SEPA co-own SETS which organizes SPI and other affiliated tradeshow, workshops and conferences. Codes and Standards topics are typically incorporated into the SPI Technical Symposium agenda.</p> <p>SEIA runs its own technical events; codes and standards-oriented events (such as the Annual SEIA Solar Codes &amp; Standards Symposium), webinars, development programs and initiative efforts (sometimes with partners).</p> <p>For Solar Power International (SPI), September 24-27, 2018, Anaheim, CA, SEPA and IEEE SCC hosted a half-day Workshop on the new IEEE 1547.</p> <p>Currently planning SEIA's Standards Symposium in week of April 22 in California. May have Mark Siira give another update as last year. Could also organize a panel. Typically, 100-120 technical attendees, including manufacturers, integrators/ aggregators, both R-DER and U-DER. 6-10 Authorities Having Jurisdiction (local inspectors) and also some energy regulators. Practical implementation.</p> <p>Provides ICC with comments and is open to co-brand publications of interest.</p>

	<p>and education. As the national trade association of the U.S. solar energy industry, which now employs more than 250,000 Americans, we represent all organizations that promote, manufacture, install and support the development of solar energy. SEIA works with its 1,000 member companies to build jobs and diversity, champion the use of cost-competitiv</p>	<p>other solar business entities</p>		<p>nces and webinars;</p> <ul style="list-style-type: none"> <li>• SEIA co-owned events and conferences (organized by Solar Energy Tradeshows (SETS))</li> <li>• SEIA-specific events such as the Annual SEIA Solar Codes &amp; Standards Symposium</li> </ul>		<p>Also contributing to NEC updates.</p> <p>May help IEEE P1547.2 to invite DER developers that attended the 1547 technical symposium and panel session at SPI.</p> <p>Future events speaker requests:</p> <ul style="list-style-type: none"> <li>- SEIA's Codes and Standards Symposium, San Diego, May 13, 2020, co-located with storage event – agenda is being drafted right now. Focus groups are design engineers and installers. Typically, 120 attendees. Covers technical product standards, building and fire codes, etc. <ul style="list-style-type: none"> <li>o Mark: may be able to present</li> <li>o Dan: presentation on federal requirements and relationship between state and federal level</li> <li>o SEIA can send information to the rosters</li> </ul> </li> <li>- SEIA's / SPI Technical Symposium, September, abstracts were due at <a href="http://solarpowerinternational.com">http://solarpowerinternational.com</a> back in February. Also, adjacent meeting of Codes and Standards Committee. Evelyn can help with late submissions for panels and posters. Potential ideas may include: <ul style="list-style-type: none"> <li>o DER configuration tools / Common DER File Format</li> <li>o Timelines and state adoption of IEEE 1547-2018 and UL 1741 SB</li> <li>o Non-export DER</li> </ul> </li> </ul>
--	--	--------------------------------------	--	--	--	---

	<p>e solar in America, remove market barriers and educate the public on the benefits of solar energy.</p>					
<p><b>NERC</b></p>	<p>The North American Electric Reliability Corporation (NERC) is a not-for-profit international regulatory authority whose mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid. NERC develops</p>	<p>NERC's jurisdiction includes users, owners, and operators of the bulk power system, which serves more than 334 million people.</p>	<p>North America</p> <p>NERC's area of responsibility spans the continental United States, Canada, and the northern portion of Baja California, Mexico.</p>	<p>To be defined</p>	<p><a href="#">Bob Cummings</a></p> <p><a href="#">Ryan Quint</a></p> <p>Stephen Crutchfield</p> <p>SPIDER Coordination SubGroup Leads:</p> <p><a href="#">Kun Zhu (MISO)</a></p> <p><a href="#">Taylor Woodruff (Oncor)</a></p> <p><a href="#">Dan Kopin (NERC SPIDER / NARUC Liaison)</a></p>	<p>NERC may inform on bulk system reliability considerations related to the new IEEE 1547 abnormal performance categories assignment.</p> <p>NERC is the electric reliability organization (ERO) for North America, subject to oversight by the Federal Energy Regulatory Commission (FERC) and governmental authorities in Canada.</p> <p>NERC has started their System Planning Impacts of DER (<a href="#">SPIDER</a>) Working Group in January 2019. Their "Coordination" SubGroup has discussed in detail a draft reliability guideline on adoption of IEEE Std 1547-2018 that is targeted at state regulators and other responsible entities to encourage a timely coordination of DER ride-through, trip, etc. A near-final draft will be posted for public comments in late Nov19/early Dec19 and can be obtained from NERC on request. The draft has also been included in IEEE P1547.2 Draft 2.</p> <p>NERC posted the following draft reliability guideline:</p> <ul style="list-style-type: none"> <li>North American Electric Reliability Corporation (NERC) (2019): Bulk Power System Reliability Perspectives on the Adoption of IEEE 1547-2018. Reliability Guideline. Draft. Available online at <a href="https://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Reliability_Guideline_IEEE_1547-2018_BPS_Perspectives.pdf">https://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Reliability_Guideline_IEEE_1547-2018_BPS_Perspectives.pdf</a>.</li> <li>NERC IRPTF published a reliability standards review <a href="#">here</a>.</li> <li><a href="#">NERC Draft Reliability Guideline on DER Data Collection for Modeling in Transmission Planning Studies</a></li> </ul> <p>Review all NERC standards relevant to DER with aim for a white paper.</p> <p>NERC SPIDER presentation at NARUC Winter Summit on UFLS, including impact of hosting capacity on UFLS: UFLS feeders tend to have more load. ERCOT issued a market notice</p>

	and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the bulk power system through system awareness; and educates, trains, and certifies industry personnel.					requiring all wholesale market DER to avoid UFLS feeders. Also consideration of future UFLS practices based on HECO and ISO NE approaches.
<b>Regulatory Assistant Project</b>	The Regulatory Assistance Project (RAP) <sup>®</sup> is an independent, non-partisan, non-governmental organization dedicated to accelerating	Power sector decision-makers and stakeholders	Focus on United States, also China, Europe, India.	To be defined	<a href="#">Carl Linvill</a> <a href="#">John Shenot</a> <a href="#">Ken Colburn</a>	<p>RAP helps energy and air quality decision-makers and stakeholders navigate the complexities of power sector policy, regulation, and markets.</p> <p>RAP can help breaking down the technical details of IEEE 1547 for a non-technical audience. Aiming for a high-level 5-page white paper. Level even higher than the WIRAB webinar; key message “getting things right; commit time”.</p> <p>RAP can help with linking presenters to energy regulators (incl. NARUC).</p>

	g the transition to a clean, reliable, and efficient energy future.					
<b>National Rural Electric Cooperatives Association (NRECA)</b>	The National Rural Electric Cooperative Association is the organization that represents the interests of over 900 electric cooperatives in the United States, to various legislatures .	Electric Cooperatives	North America		<a href="#">Robert Harris</a>  <a href="#">Mike Ropp</a>	<p>Guide below has been presented at NARUC technical meeting in 2019.</p> <p>NRECA (2019): Guide to IEEE 1547-2018 Standard for DER Interconnections. National Rural Electric Cooperative Association (NRECA). Available online at <a href="https://www.cooperative.com/topics/transmission-distribution/Pages/NRECA-Guide-to-IEEE-1547-2018-Standard-for-DER-Interconnections.aspx">https://www.cooperative.com/topics/transmission-distribution/Pages/NRECA-Guide-to-IEEE-1547-2018-Standard-for-DER-Interconnections.aspx</a> .</p> <ol style="list-style-type: none"> <li>1.) A “quick guide” (25 pages) to key differences between 1547-2003, 1547a, and 1547-2018</li> <li>2.) A discussion of how parameters should be set if an engineer wishes a 1547-2018-compliant DER to have behaviors as close as possible to those of a 1547-2003-compliant inverter</li> <li>3.) A brief discussion of those 1547-2018 features that cannot be disabled, and how those are expected to impact DER behavior on grids</li> </ol> <p>“Merging priorities and energy research for Alaska” panel with utilities, co-ops, muni’s, RTOs and DP, et al.</p> <p>NRECA started to work with members that have existing smart inverters on their grid and help them to identify the interoperability capabilities and identify the available voltage regulation functions and utilize them based on UL 1741 (SA) inverters.</p>
<b>Department of Energy / Solar Energy Technology Office (SETO)</b>	The D.O.E. SETO office supports various activities related to the IEEE 1547 series.	Research, public interest, energy regulators	United States	Standard development Education Research	<a href="#">Jeremiah Miller</a>	<p>Funding of NREL’s standards development and educational outreach.</p> <p>Interested in learning about stakeholder views on potential future IEEE 1547 revision.</p> <ul style="list-style-type: none"> <li>• Refer to SCC21 roadmap at <a href="https://sagroups.ieee.org/scc21/standards/">https://sagroups.ieee.org/scc21/standards/</a></li> <li>• Mark Siira senses need for clarification for scope relating to 2030 vs. 1547. Potential topics to coordinate on includes ‘verification of interoperability’ along the NIST roadmap.</li> <li>• End-to-End Interoperability – <i>where</i> would it belong?</li> <li>• Cybersecurity requirements beyond the guidance currently drafted in P1547.3?</li> </ul>

						<ul style="list-style-type: none"> <li>○ Would require a “systems-perspective” standard or project.</li> <li>○ Coordinate with NERC’s Security Integration and Technology Enablement Subcommittee (SITES), see <a href="https://www.nerc.com/comm/RSTC/Pages/SITES.aspx">https://www.nerc.com/comm/RSTC/Pages/SITES.aspx</a></li> <li>● Need to coordinate with ongoing P2030 revision.</li> <li>● Need to determine stakeholder groups to involve in brainstorming &amp; drafting of PAR</li> </ul> <p>[Update on DOE SETO FOA 2064 and other FOAs.]</p>
<b>NARUC</b>					<a href="#">Dan Kopin (NERC SPIDER Liaison)</a>	<p>NARUC published a resolution encourages states to initiate procedures to convene stakeholders to adopt IEEE 1547-2018 “soon”. Focused on <i>capability</i> but states will have latitude to <i>utilize</i> the new functions. Available online here <a href="https://pubs.naruc.org/pub/4C436369-155D-0A36-314F-8B6C4DE0F7C7">https://pubs.naruc.org/pub/4C436369-155D-0A36-314F-8B6C4DE0F7C7</a></p> <p>What are the potential implications?</p> <ul style="list-style-type: none"> <li>● The involved organizations seems prepared to respond to new state PUCs request for help with implementing IEEE 1547-2018.</li> <li>● ...</li> </ul>
<b>IEEE Canada Electrical Power and Energy Conference (EPEC 2019)</b>	Technical presentations and Workshops	Public	All of Canada	Conference presentations and tutorials, IEEE SCC21 has had workshops since 2014	<a href="#">Mark Siira (SCC21 Chair)</a>  <a href="#">Charlie Vartanian (SCC21 Treasurer)</a>  <a href="#">Wayne Stec (SCC21)</a>	<p>Current program will have two workshops: Interconnection and microgrids on October 16, 2019 and Smart Grid Interoperability and Cybersecurity on October 17. Montreal, Canada</p> <p><a href="https://epec2019.ieee.ca/">https://epec2019.ieee.ca/</a></p>
<b>American Society of Heating, Refrigerating and Air-Conditioning</b>	a global society advancing human well-being through sustainable technology for the built	Public	Worldwide, heavily concentrated in NA	Conferences, Workshops, Working Groups, Standards development, white paper development, publications.	<a href="#">Sheila Hayter (ASHRAE Past President and NREL)</a>	<p>Potential Interconnection and Smart Grid workshop at ASHRAE Winter Conference &amp; AHR Expo Orlando, FL   February 1 – 5, 2020.</p> <p>Most likely initial collaboration is with the Smart Building Systems - ASHRAE Technical Committee 7.5.</p> <p>Committee Chair is Jin Wen [ <a href="mailto:TC0705@ashrae.net">TC0705@ashrae.net</a> ]</p>

<b>Engineers (ASHRAE)</b>	environment. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability within the industry.				<a href="#">Mark Siira (SCC21 Chair)</a>	<p>TC 7.5 is concerned with the performance and interactions of smart building systems (SBS), the impact of smart building systems on the total building performance, methods for achieving more intelligent control and operation of building processes...</p> <p>Mark scheduled a webinar with TC67.5 to give an overview on 1547 and P2030.4 SGIP efforts in early December.</p>
<b>CA and HI Energy Regulators</b>	CA and HI are currently considering transitioning to IEEE Std 1547™-2018	Public	North America, Federal States	Stakeholder Meetings	TBD	Refer to IREC's activities to harmonize HI Rule 14H with IEEE 1547-2018.
<b>FERC</b>					<a href="#">Nicole Segal</a> (reliability group, informal, not a position of FERC)  <a href="#">Joe Baumann</a>  <a href="#">James Oddy</a>	<p>FERC has a rebranded website: <a href="https://www.ferc.gov/">https://www.ferc.gov/</a></p> <p>FERC conferences calendar available at <a href="https://www.ferc.gov/news-events/events/technical-conference-schedule-2021">https://www.ferc.gov/news-events/events/technical-conference-schedule-2021</a></p> <ul style="list-style-type: none"> <li>• Technical Workshop to Discuss the Functionality and Features of the Relational Database, Apr 22, 2021</li> <li>• Technical Conference to Discuss Electrification and the Grid of the Future, Apr 29, 2021</li> </ul> <p>FERC Order 2222 Update (RM18-9-000)</p> <ul style="list-style-type: none"> <li>• Find all docket filings at <a href="https://elibrary.ferc.gov/eLibrary/search">https://elibrary.ferc.gov/eLibrary/search</a> (type in "RM18-9-000)</li> </ul> <p>FERC policy group is hosting a DER aggregation workshop in June 25, 2020:</p>

					<p><a href="#">Jason Feuerstein</a></p> <p><i>This conference will focus on reliability-related issues for the bulk power system, including: (1) the changing resource mix; (2) inverter-based resources and inverter connected distributed energy resources; and (3) cybersecurity. Those wishing to be considered for participation in panel discussions should submit nominations no later than close of business on March 27, 2020 online at: <a href="https://www.ferc.gov/whatsnew/registration/06-25-20-speaker-form.asp">https://www.ferc.gov/whatsnew/registration/06-25-20-speaker-form.asp</a> .  <a href="https://ferc.gov/CalendarFiles/20200203180417-AD20-7-000%20TC.pdf">https://ferc.gov/CalendarFiles/20200203180417-AD20-7-000%20TC.pdf</a>  <a href="https://ferc.gov/eventcalendar/EventDetails.aspx?ID=13708&amp;CalType=%20&amp;CalendarID=116&amp;Date=06/25/2020&amp;View=Listview">https://ferc.gov/eventcalendar/EventDetails.aspx?ID=13708&amp;CalType=%20&amp;CalendarID=116&amp;Date=06/25/2020&amp;View=Listview</a></i></p> <p>Upcoming technical conference on i) carbon pricing and regulated electricity markets (<a href="https://www.ferc.gov/news-events/events/technical-conference-regarding-carbon-pricing-organized-wholesale-electricity">https://www.ferc.gov/news-events/events/technical-conference-regarding-carbon-pricing-organized-wholesale-electricity</a>), ii) offshore wind integration (<a href="https://www.ferc.gov/news-events/events/technical-conference-regarding-offshore-wind-integration-rto-sios-docket-no-ad20">https://www.ferc.gov/news-events/events/technical-conference-regarding-offshore-wind-integration-rto-sios-docket-no-ad20</a>), iii) climate change (June 2021)</p> <p>Questions:</p> <ul style="list-style-type: none"> <li>• Would one expect that DER participating in the wholesale market via a DER aggregation have to be compliant with IEEE 1547-2018?</li> </ul>
<b>UL</b>					<p>Tim Zgonena</p> <p>UL started the balloting on revised UL 1741 which now includes a new Supplement B and some changes to Supplement A. The ballot pool is limited to the roughly 50 Technical Standards group in UL and closes April 20, 2020 (45 days).</p> <p>Due date for votes is July 6, 2020 – already has consensus. Publication soon thereafter. UL has started a future revision of UL 1741 SB with regard to the interoperability of the communication interface: EPRI identified that there is a contradiction between an open interface versus a locked interface with a proprietary locking mechanism.</p>
<b>Duke</b>					<p>Anthony Williams</p> <p>Duke has published a roadmap for their Technical Standards Review Group (TSRG) to adopt IEEE 1547-2018 in March 2020 at <a href="https://www.duke-energy.com/_media/pdfs/for-your-business/generate-your-own-renewable/tsrg/de-ieee-1547-implementation-guidelines.pdf?la=en">https://www.duke-energy.com/_media/pdfs/for-your-business/generate-your-own-renewable/tsrg/de-ieee-1547-implementation-guidelines.pdf?la=en</a></p>
<b>Borrego Solar</b>	Developer				<p>Mrinmayee Kale</p> <p>Aharon Wright</p> <p>Shay Banton</p> <p>MA TSRG is continuing to work on IEEE 1547-2018 adoption. This will go beyond the UL 1741 SA certification that did not require ROCOF and phase angle jump ride-through. Steady state voltage support is being discussed – not dynamic voltage support during abnormal voltage conditions. Frequency droop tends to be enabled following learnings that UID will not be significantly impacted.</p> <p>MAPUC 1955 docket proposes to adopt IEEE 1547-2018 as part of the tariff as soon as possible.</p>



AES	Developer				Shazreen Meor Danial	
<b>Others?</b>  <b>Like AEE, APCA, NEC Committees, et al.</b>	[STAKEHOLDER GROUPS CURRENTLY NOT ADEQUATELY ADDRESSED]	1) DER owners/operators,  2) Project developers and system integrators,  3) Local inspectors of AHJs  4) DER installers.	North America	To be defined		To date, these stakeholders groups may already get involved in the IEEE P1547.2 Working Group.  [Add contacts that Mark Siira and Babak Enayati collected at SPI 2019 in Salt Lake City in Sep19]  [Brian Lydic took an action item to ask some developers to join this coordination call]  [Jens Boemer reached out to a few developers, including Shay Banton (BorregoSolar) and Shazreen Meor Danial (AES).]