### IEEE P2800.2 9<sup>th</sup> Working Group Meeting

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October 30 – November 1, 2024

Some content derived from IEEE 2800 WG and Jens Boemer, 2800 WG Chair





### Please record your attendance

- Please record your attendance at:
  - https://imat.ieee.org/attendance
    - -> Select "P2800.2 WG meeting"
    - -> Select <u>PE/EDPG/P2800.2-T&V of BPS-connected IBRs Attendance</u>

OR

- <u>https://imat.ieee.org/wg656400043/attendance-log?p=4944400005&t=656400043</u>
- Meeting attendance determines eligibility for WG voting membership
  - Credit for attendance will be given to those who attend at least 2 of 3 days this week
- In lieu of verbal roll call, please type your name and affiliation in the chat window
  - IEEE affiliation FAQs: <u>http://standards.ieee.org/faqs/affiliation.html</u>





## Acknowledgements and disclaimers

- General disclaimer:
  - The views presented in this presentation are the personal views of the individuals presenting it and shall not be considered the official position of the IEEE Standards Association or any of its committees and shall not be considered to be, nor be relied upon as, a formal position of IEEE, in accordance with IEEE Standards Association Standards Board Bylaws 5.2.1.6.
- Draft standard disclaimer:
  - P2800.2 is an unapproved draft of a proposed IEEE Standard. As such, the document is subject to change, any draft requirements and figures shown in this presentation may change.
- For those working group members whose effort on the standard was partially or fully supported by the U.S. DOE's National Renewable Energy Laboratory, the following statement applies:
  - This work was supported in part by the National Renewable Energy Laboratory, operated by Alliance for Sustainable Energy, LLC, for the U.S. Department of Energy (DOE) under Contract No. DE-AC36-08GO28308.
     Funding provided by U.S. Department of Energy Office of Energy Efficiency and Renewable Energy Solar Energy Technologies Office and Wind Energy Technologies Office. The views expressed in the article do not necessarily represent the views of the DOE or the U.S. Government.





## Working Group Policies and Procedures

- We have the same P&Ps as the 2800 WG, as previously approved by the sponsor, available here: <u>https://sagroups.ieee.org/2800/wp-</u> <u>content/uploads/sites/336/2020/08/EDPGC-Sponsored-WG-P-</u> <u>and-PV2Jan2020\_IEEE-P2800-WG.pdf</u>
  - Introduced at previous WG meetings
  - Link provided in meeting agenda
- Given ~150 WG members total, we have a quorum if 26 members or more are present





## Agenda

- Day 1
  - Call to order and welcome
  - Roll call and declaration of affiliation
    - (via chat window)
  - Approval of agenda and past minutes
  - IEEE patent, copyright, and participant policies
    - Call for potentially essential patents
  - Introduce IEEE P2800.2 Draft 2.0 and commenting/voting process
  - Subgroup 1: General Requirements
  - Power Quality Task Force
  - Frequency Scanning Task Force
- Day 2
  - Presentation and discussion on IECRE OD009 certification scheme Bernhard Schowe-von der Brelie, FGH
  - Subgroup 2: Type Tests
  - Subgroup 5: Post Commissioning Model Validation, Monitoring, and Periodic Evaluations
- Day 3
  - Subgroup 4: Commissioning Tests and As-built Evaluations
  - Subgroup 3: Design Evaluations
  - Wrap-up and next steps



US ET	US MT	Wednesday October 30	Thursday October 31	Friday November 1
11:00	9:00	Introduction	Presentation on IECRE OD009	Subgroup 4 - Commissioning and as-built
		Subgroup 1 - Overall document	Subgroup 2: Type tests	Subgroup 4 - Commissioning and as-built
12:00	10:00	Subgroup 1 - Overall document	Subgroup 2: Type tests	Subgroup 3 - Design evaluation
		Subgroup 1 - Overall document	Subgroup 2: Type tests	Subgroup 3 - Design evaluation
1:00	11:00	Break (recess)	Break (recess)	Break (recess)
		Break (recess)	Break (recess)	Break (recess)
2:00	12:00	Power Quality Task Force	Subgroup 2: Type tests	Subgroup 3 - Design evaluation
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3:00	1:00	Frequency Scanning Task Force	Subgroup 5: Post-commissioning steps	Subgroup 3 - Design evaluation
		Frequency Scanning Task Force	Subgroup 5: Post-commissioning steps	Wrap-up and next steps



## Last meeting's minutes

- The minutes of the last WG meeting (Apr/May 2024) were <u>posted</u> on iMeet Central shortly after the meeting
- WG members were notified of an opportunity to review the minutes upon posting
- Call for comments
- Approval of last meeting minutes





## IEEE patent policy and legal notices

- IEEE Patent Policy
  - <u>https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.pdf</u>
  - Call for potentially essential patents
- IEEE Copyright Policy:
  - <u>https://standards.ieee.org/content/dam/ieee-</u>
     <u>standards/standards/web/documents/other/copyright-policy-WG-meetings.potx</u>
- IEEE Participant Behavior:
  - <u>https://standards.ieee.org/wp-content/uploads/import/documents/other/Participant-Behavior-Individual-Method.pdf</u>
- IEEE Privacy Policy <u>https://www.ieee.org/security-privacy.html</u>
- (Links also provided in meeting agenda)





## Status of IEEE 2800-2022

- 94% ballot approval. **Published April 22, 2022**.
- Harmonizes interconnection requirements for large solar, wind, and storage plants (and other inverter-based resources)
- A consensus-based standard developed by over ~175 Working Group participants from utilities, system operators, transmission planners, & OEMs over 2+ years
- IEEE standards are voluntary until adopted by an appropriate entity. Such entities are encouraged to consider adoption of 2800 to the extent feasible even before IEEE P2800.2 is complete. Many entities have begun adoption process.

IEEE Std 2800™-2022

IEEE Standard for Interconnection and Interoperability of Inverter-Based Resources (IBRs) Interconnecting with Associated Transmission Electric Power Systems

Developed by the

Energy Development & Power Generation Committee, Electric Machinery Committee, and Power System Relaying & Control Committee of the IEEE Power and Energy Society

Approved 9 February 2022

IEEE SA Standards Board



Available at <a href="https://standards.ieee.org/ieee/2800/10453/">https://standards.ieee.org/ieee/2800/10453/</a>



## P2800.2 Overview (from PAR)

- Title:
  - Recommended Practice for Test and Verification Procedures for Inverter-based Resources (IBRs) Interconnecting with Bulk Power Systems
- Scope:
  - Define recommended practices for test and verification procedures to confirm plant-level conformance of IBRs interconnecting with bulk power systems in compliance with IEEE Std 2800
  - Applies to IBRs in transmission and sub-transmission systems (both meshed and radial)
  - May also apply to isolated IBRs interconnected to an AC transmission system via dedicated voltage source converter high-voltage direct current (VSC-HVDC) transmission facilities, e.g., offshore wind farms
  - Specifications for the equipment, conditions, tests, modeling methods, and other verification procedures that should be used to demonstrate conformance with IEEE 2800
- Includes:
  - Type tests (unit level, not full compliance)
  - Design evaluation, including modeling
  - As-built evaluation and commissioning tests
  - Post-commissioning model validation, monitoring, periodic tests, and periodic verifications
- Recommended practice: Uses "should" language, not "shall" language.





### P2800.2 – Relationship to the IBR interconnection process

- Defining (or re-defining) an interconnection process is not in the scope of IEEE P2800.2
- Procedures recommended by P2800.2 are intended to be used <u>as part of</u> an interconnection process:
  - P2800.2 type tests can inform interconnection process
  - P2800.2 design evaluation, commissioning tests, and post-commissioning model validation can occur during interconnection process (along with other steps not in scope of P2800.2)
- In an early meeting, we agreed that in P2800.2, our job is (only) to write procedures to verify that IBRs conform to IEEE 2800
  - Important discussions related to interconnection that do not relate to IEEE 2800 conformance verification can take place primarily outside P2800.2
  - By providing standardized procedures, we are taking a major step to improve the interconnection process (without trying to fix everything)





### Role of P2800.2 in IEEE 2800 Adoption

Almost all requirements of IEEE 2800 apply at Point of Measurement (POM) by default



# Overview of conformity assessment steps in IEEE P2800.2



Some variations permitted.

PES

### IEEE P2800.2 Subgroup Scopes



### IEEE P2800.2 Email Listservs

- Overall listserv "P2800-2" is used to communicate meeting dates, agendas, etc.
- Each subgroup and task force has a listserv sign up to get involved in that group:
  - Overall Working Group: P2800-2
  - Subgroup 1 (overall document): STDS-P2800-2-SG1
  - Subgroup 2 (type tests): STDS-P2800-2-SG2
  - Subgroup 3 (design evaluation): STDS-P2800-2-SG3
  - Subgroup 4 (commissioning and as-built): STDS-P2800-2-SG4
  - Subgroup 5 (post-commissioning): STDS-P2800-2-SG5
  - Power quality task force: STDS-P2800-2-PQTF
  - Frequency scanning task force: STDS-P2800-2-FSTF (new)
- To join a listserv, send an email message to <u>listserv@listserv.ieee.org</u>
  - In first line of email body, write: SUBSCRIBE <list name> < Your Name>







## P2800.2 Working Group Membership

- >160 Voting members
- >45 Non-voting members
- All major stakeholder groups represented





## Draft 2.0 open for comments and voting

- Draft 2.0 available for comment by WG members until November 27
  - <u>https://ieee-sa.imeetcentral.com/p2800-</u>
     <u>2/folder/WzIwLDE5MDk3NDc0XQ</u>
  - Submit completed comment spreadsheet on <u>iMeet here</u>
  - Prioritize technical comments
  - Use comment spreadsheet template
  - Use page/line numbers from D2.0 Clean
- Vote: "Do you approve of sending Draft 2.0 to IEEE-SA for balloting?
  - Voting options: Approve, Disapprove, Abstain
- Resolutions of comments from last round can be seen here (and in redlines)







## Draft 2.0

- Draft 2.0 posted on iMeet Central 10/24/2024 for WG member review
- Six versions:
  - Redline relative to D1.0a in Word
  - Redline relative to D1.0a in PDF
  - Clean version in Word, with and without comments
  - Clean version in PDF, with and without comments





### Summary of comment resolutions for Draft 1.0a

- 529 comments received
- 89% addressed. Remaining comments deferred
  - 22% accepted (verbatim)
  - 47% revised (some change made)
  - 21% rejected (no change made)



## Commenting on Draft 2.0

- Please **focus on technical comments**. We are not requesting comments on formatting, grammar, minor wording changes, etc.
- Please **comment on the clean version** for alignment of clause and page numbers. Use page numbers as printed on the page.
- Please submit comments using the comment spreadsheet (also <u>on iMeet</u>).
  - (Review comment spreadsheet)
  - In "Proposed Change," try to be as specific as possible
- The draft is over 200 pages start early if possible.
- Feel free to focus on clauses or annexes of your interest/expertise if you cannot read the whole thing.
- Per IEEE policy, you must be a member of the WG to access the draft, so only WG members can submit comments.





## Voting on Draft 2.0

- Voting members of WG, please submit a vote responding to the question, "Do you approve of sending Draft 2.0 to IEEE-SA for balloting?"
- Voting options: Approve, Disapprove, Abstain
- "No" votes without comments count as "abstains"
- Non-voting WG members can comment, but vote will not be counted
- Voting to gather information/feedback. We don't anticipate passing in this round





### Next: SGs and TFs provide overview of redlines

Questions welcome





## Subgroup 1

- Scope: General requirements and overall document
  - Anything that does not fall under other subgroups
- Leads:
  - Andy Hoke, <u>andy.hoke@nrel.gov</u>
  - Manish Patel, <u>Manish.P@ieee.org</u>
- 139 members on SG1 listserv. ~20-30 members typically attend biweekly meetings
- Logistics details on a later slide





## Subgroup 1 Content Overview

- Clause 1: Overview, Scope, Purpose, General remarks and limitations
- Clause 2: Normative references (none so far need to collect from other subgroups and PQ TF)
- Clause 3: Definitions, Acronyms
- Clause 4:
  - General content
  - Overview of conformity assessment process
  - Conformity assessment flow chart
  - Requirements that may require alignment of expectations
  - Requirements for which no verification procedure is provided
  - Power plant controllers
  - Retrofitting/augmentation of IBR plants
- Annexes A (bibliography), B (internal reference table), M (BESS augmentation)





## Subgroup 1 new material – Overview

- Added informational frontmatter:
  - Abstract. (Adapted from Scope of PAR)
  - Keywords. (From 2800 with a few additions)
  - Introduction. (Derived from 2800 introduction)
  - Not normative, so probably not worth commenting on
- Note: Scope and Purpose come verbatim from PAR. Cannot be changed without revising PAR.
- Added statement explaining use of "IEEE Std 2800" vs "IEEE Std 2800-2022". (Former preferred to maintain generality. Latter used only when referring to specific table/figure/clause of 2800.)
- Deleted some redundant language in Clause 1.5





# Standardizing on use of the phrase "conformity verification" or "conformity assessment"







## Subgroup 1 new definitions

**commissioning test:** Conformity verification test conducted in the field on an *IBR plant* to verify that the *IBR plant* as designed, delivered, and installed meets applicable requirements of IEEE Std 2800.

hardware-in-the-loop (HIL): A technique that allows closed loop interaction between a hardware of interest and a model of interest using a real-time simulator.

NOTE—This definition was obtained from IEEE Std 2004-2025 Refer to that standard for additional details.

controller hardware-in-the-loop (CHIL): *Hardware-in-the-loop* (HIL) where one or more hardware of interest are interfaced at the signal level to a model of interest where natural coupling is not intended to be preserved.

NOTE—This definition was obtained from IEEE Std 2004-2025, and a generalized controller HIL (CHIL) setup is shown in Figure 1 of IEEE Std 2004 2025. Refer to that standard for additional details.





## Subgroup 1 new definitions

**commissioning** test: Conformity verification test conducted in the field on an *IBR plant* to verify that the *IBR plant* as designed, delivered, and installed meets applicable requirements of IEEE Std 2800.

steady state: An equilibrium condition that occurs after the effects of transients have subsided so that they are no longer significant.

<u>NOTE—Noise and other effects can prevent true mathematical steady state (e.g. partial derivatives of all the relevant</u> variables being zero) from being fully reached.

• Some minor edits to other existing definitions





### Clause 4.2 - Overview of conformity assessment process

- Added to list of items that should be in the "IBR Plant Information Datastore (IBID)":
  - Protection related information
  - Control and PCC related information
  - Archived reports from conformity assessment process





### Annexes

- Reminder to SGs and TFs: send any references to SG1 for inclusion. Can include:
  - Normative references (which must be understood to apply standard)
  - Informative references (which may be helpful but are not essential)
- Annex B (Summary of performance tests) is still a skeleton

   Will either fill in or remove. Opinions?
- Annex M (BESS Augmentation) rewritten to align with IEEE standard style.

- Intent and information presented remain same





## Next steps in SG1

- Address comments from WG on D2.0
- Incorporate and refine definitions and references as they arise in other subgroups
- As other subgroups complete their content, fill in:
  - References, definitions, acronyms
  - Tables in Clause 4.5 (requirements for which no conformity assessment procedure is provided)
  - Internal reference table (Annex B)
- WG priority is achieving consensus on the conformity assessment procedures in Clauses 5-13 (i.e., SG2-SG5, PQ Task Force)





## Subgroup 1 – Overall document: Logistics

- Plan
  - Biweekly meetings (as needed), Mondays, 10am Mountain Time
- Leads
  - Andy Hoke (andy.hoke@nrel.gov)
  - Manish Patel (manish.p@ieee.org)
- How to get involved: Join listserv by sending an email message to <u>listserv@listserv.ieee.org</u>
  - In first line of email body, write: SUBSCRIBE STDS-P2800-2-SG1 < Your Name>
  - For example, "SUBSCRIBE STDS-P2800-2-SG1 Andy Hoke"





## 60 minute break – <mark>Back at 12:00 Mountain (2:00</mark> <mark>Eastern)</mark>

- PQ TF up next
- Reminder: record your attendance in iMat:

https://imat.ieee.org/wg656400043/attendance-log?p=4944400005&t=656400043





### Power Quality Ta

y task f	orce		SG 2	SG 3	S	G 4	Ý	SG	5	
	Requirement	RPA at which requirement applies	IBR unit-level tests (at the POC)			IBR plant-level	erifications (at th	ie RPA)		
			Type tests <sup>152</sup>	Design evaluation (including modeling for most require- ments)	As-built installation evaluation	Commissioning tests	Post- commissioning model validation	Post- commission- ing monitoring	Periodic tests	Periodic verification
						Responsible En	ty			
			IBR unit or supplemental IBR device manufacturer	IBR developer / TS owner / TS operator	IBR developer / TS owner / TS operator	IBR developer / TS owner / TS operator	IBR developer / IBR operator / TS owner / TS operator	IBR operator / TS owner / TS operator	IBR operator / TS owner / TS operator	IBR operator / TS owner / TS operator
	4.12 Integration with TS grounding	POM	NR.	R	R	NR	NR	NR	D	NR
Excerpt of		Cla	use 5 Reactive Power—V	oltage Control I	equirements wit	thin the Continuous (	peration Region			
	5.1 Reactive power capability	POM	R	R	R	R	R	D	D	D
2800 Table 20:	5.2 Voltage and reactive power control modes	POM	D	R	R	R	R	D	D	D
			Clause 6	Active-Power -	requency Respo	onse Requirements				
Verification	6.1 Primary Frequency Response (PFR)	POC & POM	NR <sup>153</sup>	R	R	R	R	D	D	D
Methods Matrix	6.2 Fast Frequency Response (FFR)	POC & POM	R <sup>154</sup>	R	R	R	R	D	D	D
			C	ause 7 Response	to TS abnormal	conditions				
	7.2.2 Voltage disturbance ride- through requirements	POC <sup>155</sup> & POM <sup>156</sup>	R	R	R	NR	R	R	D	D
/	1			Clause	Power quality					
	8.2.2 Rapid voltage changes (RVC)	POM	NR	R	R	R	D	R	D	D
	8.2.3 Flicker	POM	NR	NR	NR	R	D	R	N/A	D
PQ Task	8.3.1 Harmonic current distortion	POM	R <sup>157</sup>	R	R	R	D	R	N/A	D
Force	8.3.2 Harmonic voltage distortion	POM	D	D	D	D	D	D	D	D
i i de la composición	8.4.1 Limitation of cumulative instantaneous over-voltage	POM	R	R	R	NR	NR	R	NR	NR
l l	8.4.2 Limitation of over-voltage over one fundamental frequency	РОМ	D	R	R	NR	NR	R	NR	NR



### Frequency Scanning Task Force

			SG 2	SG 3	S	G 4		SG	5	
Frequency			Type tests	Design Evals.	Comm and	issioning As-built	Post-co validat	ommissio ion, mon	oning r litoring	nodel J, etc.
Task Force	Requirement	RPA at which requirement applies	IBR unit-level tests (at the POC)		 	IBR plant-level	erifications (at th	ne RPA)		
(New)			Type tests <sup>152</sup>	Design evaluation (including modeling for most require- ments)	As-built installation evaluation	Commissioning tests	Post- commissioning model validation	Post- commission- ing monitoring	Periodic tests	Periodic verification
~						Responsible Ent	t ty			
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	4.12 Integration with TS grounding	POM	NR	R	R	NR	NR	NR	D	NR
Excernt of		Cla	use 5 Reactive Power—V	oltage Control I	equirements wit	thin the Continuous (	peration Region			
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2800 Table 20:	5.2 Voltage and reactive power control modes	POM	D	R	R	R	R	D	D	D
Verification		DOG 6	Clause 6	Active-Power -	frequency Respo	onse Requirements		1		1
Methods Matrix	6.1 Primary Frequency Response (PFR)	POC & POM	NR <sup>153</sup>	R	R	R	R	D	D	D
	6.2 Fast Frequency Response (FFR)	POC & POM	R <sup>154</sup>	R	R	R	R	D	D	D
	7.2.2.3 July and distant source side	noclii e	0	ause 7 Response	to TS abnormal	conditions			1	1
	1.2.2 Voltage disturbance ride- through requirements	POC <sup>155</sup> & POM <sup>156</sup>	R	R	R	NR	R	R	D	D
				Clause	Power quality					
	8.2.2 Rapid voltage changes (RVC)	POM	NR	R	R	R	D	R	D	D
	8.2.3 Flicker	POM	NR	NR	NR	R	D	R	N/A	D
	8.3.1 Harmonic current distortion	POM	R <sup>157</sup>	R	R	R	D	R	N/A	D
	8.3.2 Harmonic voltage distortion	POM	D	D	D	D	D	D	D	D
	8.4.1 Limitation of cumulative instantaneous over-voltage	POM	R	R	R	NR	NR	R	NR	NR
	8.4.2 Limitation of over-voltage over one fundamental frequency period	POM	D	R	R	NR	NR	R	NR	NR



## Welcome to Day 2 of IEEE P2800.2 WG meeting

• Please record your attendance at:

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		Frequency Scanning Task Force	Subgroup 5: Post-commissioning steps	Wrap-up and next steps



Presentation and discussion on IECRE OD009 certification scheme

• Bernhard Schowe-von der Brelie, FGH





## Subgroup 2





### 60 minute break – Back at 12:00pm MT, 2:00pm ET

- Subgroup 2 continues next
- Reminder: record your attendance in iMat:

https://imat.ieee.org/wg656400043/attendance-log?p=4944400005&t=656400043





## Subgroup 2





### Subgroup 5 – Post-Commissioning Model Validation, Performance Monitoring, and Periodic Tests





## Welcome to Day 3 of IEEE P2800.2 WG meeting

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		Break (recess)	Break (recess)	Break (recess)
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		Frequency Scanning Task Force	Subgroup 5: Post-commissioning steps	Wrap-up and next steps

## Subgroup 4 – Commissioning and As-Built





## Subgroup 3 – Design Evaluations





### 60 minute break – Back at 12:00pm MT, 2:00pm ET

- Subgroup 3 (design evaluation) continues next
- Reminder: record your attendance in iMat:

https://imat.ieee.org/wg656400043/attendance-log?p=4944400005&t=656400043





## Subgroup 3 – Design Evaluations





## Draft 2.0 open for comments and voting

- Draft 2.0 available for comment by WG members until November 27
  - <u>https://ieee-sa.imeetcentral.com/p2800-</u>
     <u>2/folder/WzIwLDE5MDk3NDc0XQ</u>
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- Vote: "Do you approve of sending Draft 2.0 to IEEE-SA for balloting?"
  - Voting options: Approve, Disapprove, Abstain
- Resolutions of comments from last round can be seen here (and in redlines)







## Wrap-up and Next Steps

- WG members provide comments and votes
  - If this was your <u>first</u> WG meeting, you can email me and Manish to request <u>non-voting membership</u>
  - If this was your second WG meeting, you can email me and Manish to request voting membership
  - All members (voting and non-voting) can submit comments
  - You can use "must-be-satisfied" column to .....
- Leadership collect comments and distribute to SGs and TFs
- Subgroups and task forces address comments
- You can still join any subgroup or task force aligned with your interest/knowledge
  - You do not need to be a WG member
  - Join listserv, and send a note to the lead so they are aware
  - Consider volunteering to address comments in that subgroup
- Aiming to have next draft ready for approval to send to IEEE-SA for balloting





## IEEE SA resources

- To easily find IEEE resources from our <u>iMeet site</u>:
- Click on "SA Resources" tab
- "Editorial resources" link takes you to the IEEE style manual and other resources

800-2 - Test and Home Files	& Discussions Project Management  Calendar Calendar SA Resources Settings People Properties + Add Tab
Files by Folder -	P2800-2 – Test and Verification of BPS-connected Inverter-Based Resources WG -
All Items	🗌 Lininari 💌 New 💌
Ø Attachments	
P2800-2 – Test and Verification of	Membership List
FS Task Force (4)	Meeting Related
Meeting Related	WG Policies and Procedures
Membership List	
PPC model validation (2)	Working Group Discussions
PQ Task Force (5)	Standards Development
Reference Material (13)	Reference Material
SG2 - Type tests (5)	
<ul> <li>SG3 - IBR design evaluation</li> </ul>	SG1 - Overall document
SG4 - Commissioning and as	G2 - Type tests
SG5 - Post-commissioning (4	SG3 - IBR design evaluation
Standards Development	
WG Policies and Procedures	SG4 - Commissioning and as-built
Working Group Discussions	SG5 - Post-commissioning
Trash	
Pages	Editorial Resources
SA Resources	Editorial Resources
Help	
IEEE SA Resources	For additional help contact sa_templates@ieee.org
Audcom Baseline Operating Pr	00 IFFE S& Style Manual: https://mentorieee.org/myproject/Public/mytools/draft/styleman.pdf
Editorial Resources	
Electronic Meeting Guide	
IEEE SA Copyright Policy	
IEEE SA Participant Behavior S	Sin
IEEE SA Patent Policy	
IEEE SA Policies and Procedur	e
IEEE SA Process Resources	
<ul> <li>IEEE Standards Dictionary</li> </ul>	Tags:
<ul> <li>NesCom and RevCom Guidance</li> </ul>	ce
ourdance	Like this William Ferguson likes this.

Version History (2) Audit Log



## Next WG meeting

- Date will be determined once we can estimate how long subgroups will need to address comments on D2.0
- Perhaps February 2025

### **Potential P2800.2 completion timeline**

Oct 30-Nov 1	WG meeting
Nov 2024	Comment/vote on D2.0
Dec-Jan 2024	SGs and TFs address comments on D2.0
Feb 2025	Produce D3.0
Feb 2025	WG meeting (1-day?)
Feb 2025	Vote on D3.0. Goal: approve to move to IEEE-SA ballot*
Mar 2025	Start IEEE-SA ballot
April-Oct 2025 (7 months)	Balloting and ballot comment resolution (tight timeline; might take longer)
Q1 2026	Publish

\*Outstanding comments could be submitted and addressed through IEEE-SA ballot comment resolution





## To get involved in IEEE P2800.2:

- To join Working Group:
  - If you have attended two WG meetings and want to be a WG voting member, email Manish Patel: <u>Manish.P@ieee.org</u>; CC <u>Andy.Hoke@nrel.gov</u>
  - If not, attend two meetings and request membership
- Join listserv for any subgroup or task force of interest
- WG member iMeet site: <u>https://ieee-sa.imeetcentral.com/p2800-2/home</u>
  - Contains draft documents, subgroup documents, references, etc.
- Public website: <u>https://sagroups.ieee.org/2800-2/</u>





### IEEE P2800.2 Email Listservs

- Overall listserv "P2800-2" will be used to communicate meeting dates, agendas, etc.
- Each subgroup and PQ task force have listserv sign up to get involved in that group:
  - Overall Working Group: P2800-2
  - Subgroup 1 (overall document): STDS-P2800-2-SG1
  - Subgroup 2 (type tests): STDS-P2800-2-SG2
  - Subgroup 3 (design evaluation): STDS-P2800-2-SG3
  - Subgroup 4 (commissioning and as-built): STDS-P2800-2-SG4
  - Subgroup 5 (post-commissioning): STDS-P2800-2-SG5
  - Power quality task force: STDS-P2800-2-PQTF
  - Frequency scanning task force: STDS-P2800-2-FSTF (new)
- To join a listserv, send an email message to <u>listserv@listserv.ieee.org</u>
  - In first line of email body, write: SUBSCRIBE <list name> < Your Name>







### How To Express interest in IEEE myProject?

- 1. On the myProject Home Screen, click on Menu and then on "Manage Profile and Interests"
- 2. Click on the Interests tab, then on "Add Groups"
- 3. Find P2800.2 under PES/EDPG per screenshot excerpts below
- 4. Click bullets under "Groups I Am Interested In" and follow instructions on screen

#### Why register on MyProject?

 This will make sure you get the invitation to join the IEEE-SA ballot pool when it forms.



Group Name       Committee       Group Ty         IEEE Nuclear and Plasma Sciences Society       NPS       Society         IEEE Nanotechnology Council       NTC       Society         IEEE Power and Energy Society       PE       Society         Analytic Methods for Power Systems ①       PE/AMPS       Standards Committee	pe Groups l Am Interested In
<ul> <li>IEEE Nuclear and Plasma Sciences Society</li> <li>IEEE Nanotechnology Council</li> <li>IEEE Power and Energy Society</li> <li>IEEE Power and Energy Society</li> <li>Analytic Methods for Power Systems          <ul> <li>PE/AMPS</li> <li>Standards Committee</li> </ul> </li> </ul>	
<ul> <li>IEEE Nanotechnology Council NTC Society</li> <li>IEEE Power and Energy Society PE Society</li> <li>Analytic Methods for Power Systems          <ul> <li>PE/AMPS Standards Committee</li> </ul> </li> </ul>	
IEEE Power and Energy Society     PE     Society     Analytic Methods for Power Systems      PE/AMPS     Standards     Committee	
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	e <b>O</b>
Energy Development & Power Generation      PE/EDPG     Standards     Committee	ο
Project Administration ③     PE/EDPG/ADMIN     Working G	iroup O
<ul> <li>P2800.2 - Test and Verification of BPS- connected Inverter-Based Resources ①</li> <li>PE/EDPG/P2800.2 - Working G T&amp;V of BPS- connected IBRs</li> </ul>	iroup
Recommended Practice for Test and       PE/EDPG/P2800.2 -       Project/Ta         Verification Procedures for Inverter-       T&V of BPS-       Group         based Resources (IBRs) Interconnecting       connected         with Bulk Power Systems ①       IBRs/2800.2	sk

### P2800.2 WG Timeline



### **Potential Adoption Timeline**





