

# IEEE P2800: Interconnection Requirements for BPS-Connected Inverter-Based Resources

- IEEE PES PSRC K10 September 2020
  - See [Website](#) for more info
- Jens C. Boemer, WG Chair\*
- Bob Cummings, Babak Enayati, Ross Guttromson, Mahesh Morjaria, Manish Patel, Chenhui Niu, Vice-Chairs
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\*Also Chair of the sponsoring  
ED&PG Wind and Solar Plant Interconnection Working  
Group  
([Link to Website](#))

This effort is, in part, funded by the Alliance for Sustainable Energy, LLC, Managing and Operating Contractor for the National Renewable Energy Laboratory (NREL) for the U.S. Department of Energy (DOE) under the DOE project “Accelerating Systems Integration Standards II (ACCEL II)” under the grid performance and reliability topic area focusing on the distribution grid.

# What to expect from IEEE P2800?

- **Value**

- widely-accepted, unified **technical minimum requirements** for IBR
- **simplification and expedition of technical interconnection negotiations**

- **Specifications** for

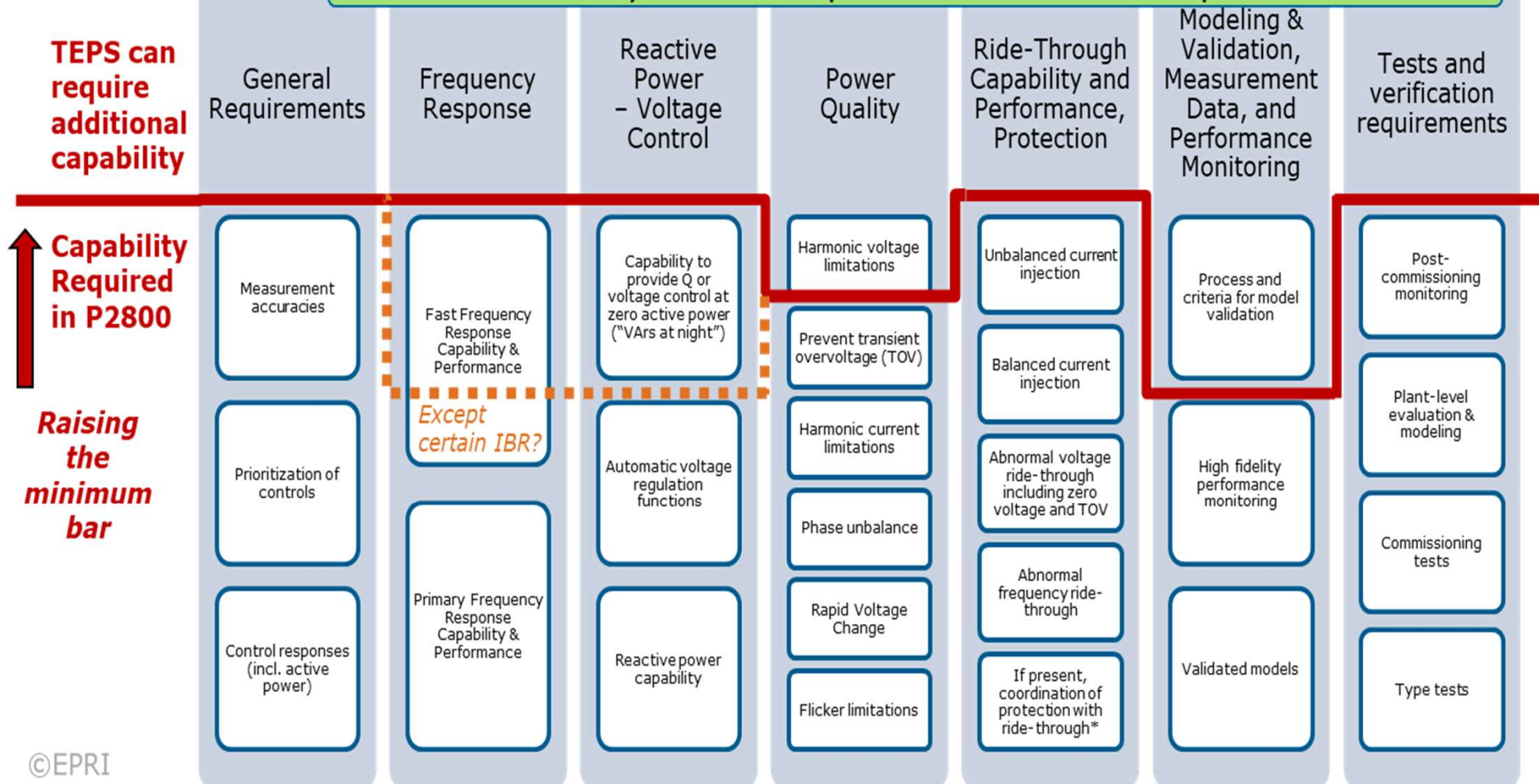
- performance and functional **capabilities**
- functional default **settings** and ranges of allowable settings
- measurement data for performance monitoring and **model validation**
- required type and commissioning **tests, and other verifications means**

- but not their detailed procedures (→ IEEE P2800.1)

- **Applicable to** BPS-connected, large-scale **wind, solar, energy storage** and **HVDC-VSC**

# IEEE P2800 Technical Minimum **Capability** Requirements – Draft 4.0

*Utilization* of any of these capabilities is outside the purview of P2800

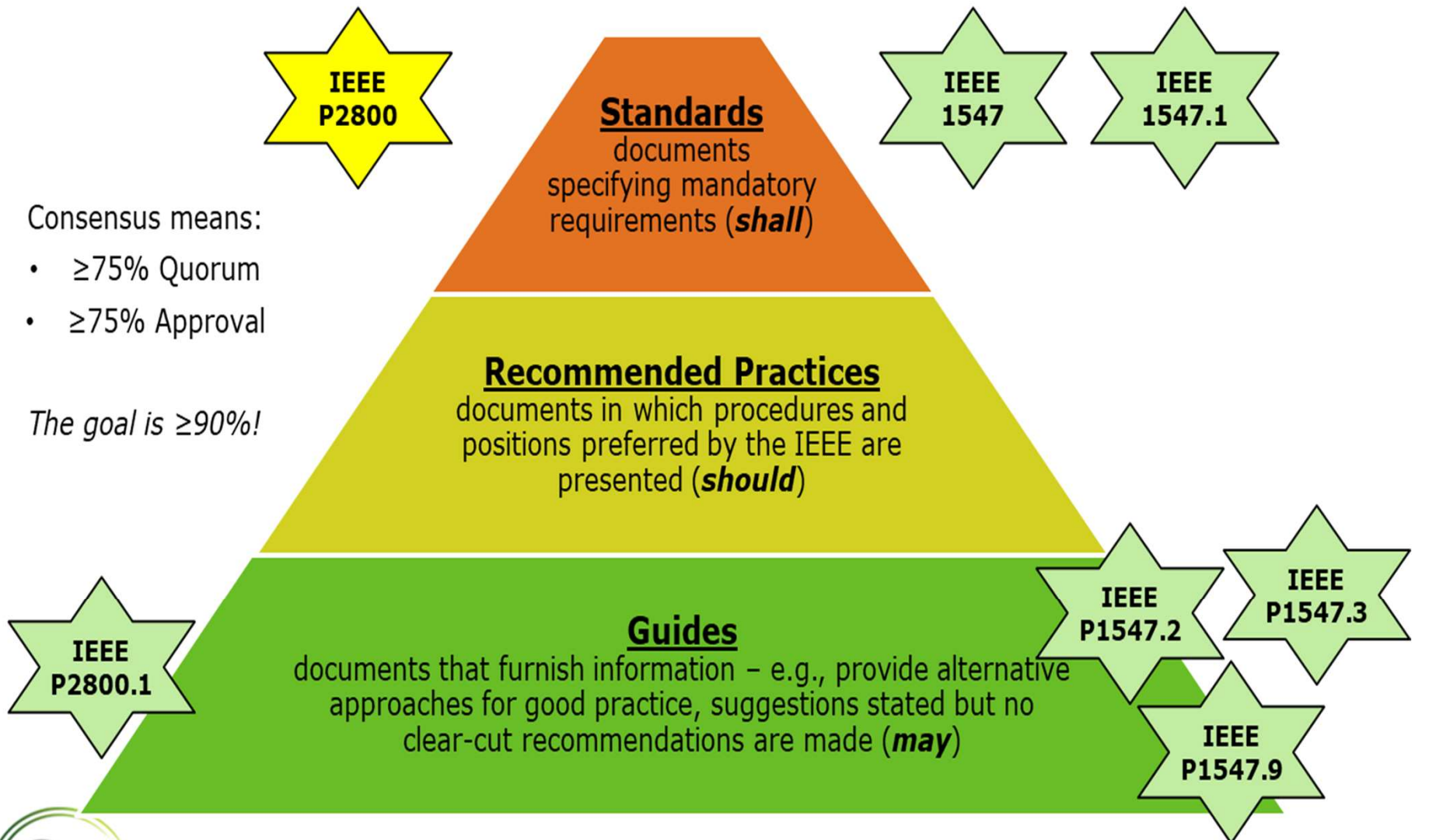


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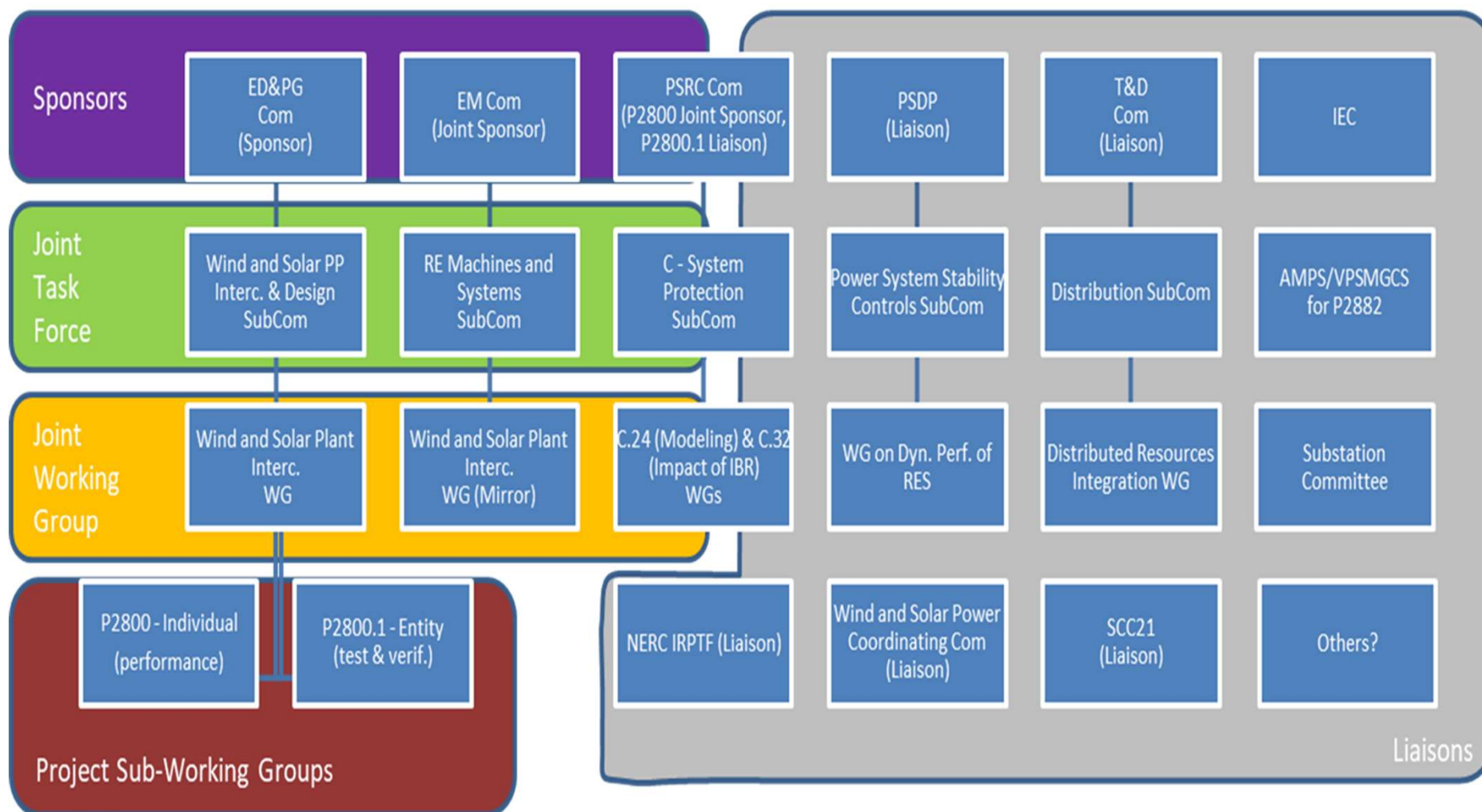
\*P2800 does not require IBR protection for overcurrent, voltage, frequency, ROCOF, etc. But if present, it shall be coordinated with the ride-through requirements.



# IEEE Standards Classification and Consensus Building



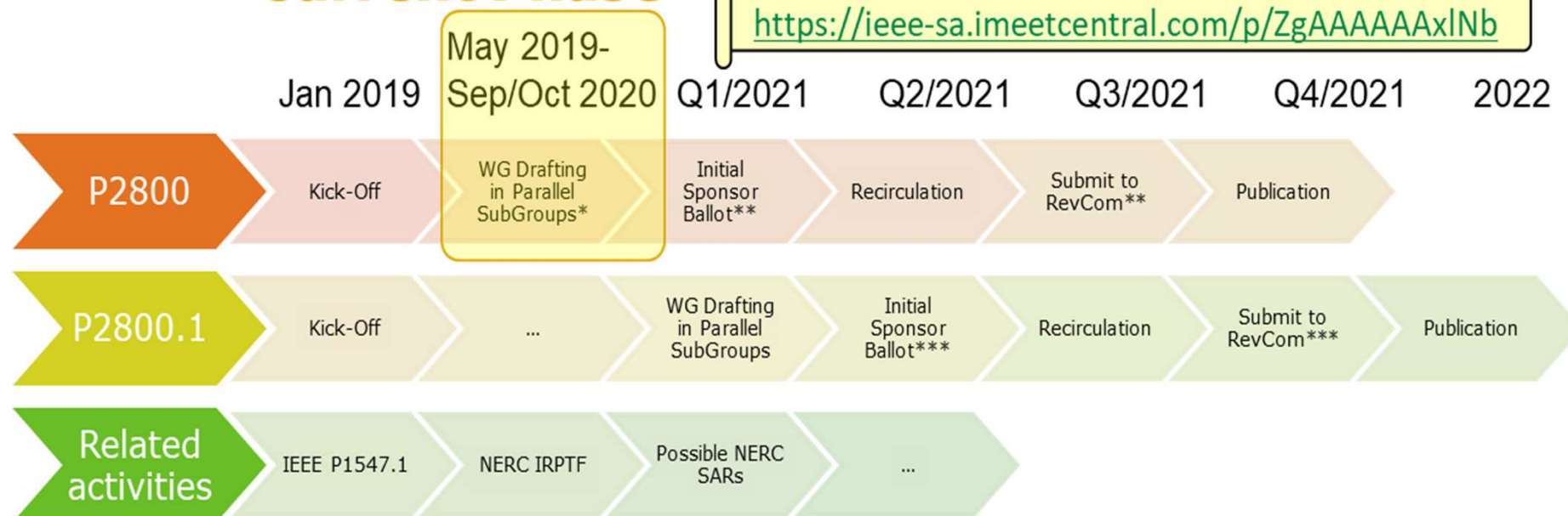
# P2800 Joint Sponsorship & Coordination



# Timeline With Stretch Goals

## Current Phase

Draft 3.1 is available on iMeet at  
<https://iee-sa.imeetcentral.com/p/ZgAAAAAAxINb>



\* Please contact the SubGroup leads and sign up for their Mailing Lists to engage.

\*\* The P2800 PAR states June 2021 for Initial Sponsor Ballot and October 2022 for submission to RevCom.

\*\*\* The P2800.1 PAR states Dec 2021 for Initial Sponsor Ballot and October 2022 for submission to RevCom.

**The ability to meet this tentative timeline is only possible due to the strong commitments of Working Group leadership and members, incl. DOE and NERC support.**

# Timeline With Stretch Goals

<b>Milestone:</b> Draft 4.0 (WG Draft)	September 21, 2020 (SG Input)	October 5, 2020* (Posted on iMeet)
•Redlines + resolved comments	•SG Redlines + resolved comments	•Redline + Clean + resolved comments
<b>Milestone:</b> WG Vote on Draft 4.0	Oct 19, 2020 (iMeet polls close during the first meeting session)	
WG Meeting w/ Voting on Drafts 4.x	Oct 19-23, 2020*, Virtual	
<b>Milestone:</b> Draft 4.x (WG Draft)	TBD, 2020* (SG Input)	TBD, 2020* (Posted on iMeet)
Sponsor Coms Approve WG Draft 4.x	January 2021* at IEEE JTCM	
Initial Ballot	Q1/2021*	
Recirculation	Q2/2021*	
<b>Milestone:</b> Submission to NesCom	Q3/2021*	
<b>Milestone:</b> Publication	Q4/2021*	



# Draft - Revised PAR

- **Scope**

This standard establishes the ~~recommended~~required interconnection capability and performance criteria for inverter-based resources interconnected with transmission and ~~networked~~ sub-transmission systems. Included in this standard are ~~recommendations on~~ performance requirements for reliable integration of inverter-based resources into the bulk power system, including, but not limited to, voltage and frequency ride-through, active power control, reactive power control, dynamic active power support under abnormal frequency conditions, dynamic voltage support under abnormal voltage conditions, power quality, negative sequence current injection, and system protection. The standard may also be applied to isolated inverter-based resources that are interconnected via dedicated HVDC-VSC transmission facilities.



# Draft - Revised PAR

- **Purpose**

This document provides ~~a~~ uniform standard requirements for the interconnection, ~~requirements-capability~~, and lifetime performance of inverter-based resources interconnecting with transmission and sub-transmission systems.