



MIDWEST
RELIABILITY
ORGANIZATION

System Planning Impacts From Distributed Energy Resources Working Group (SPIDERWG) Update

**Sunny Raheem, Supervisor, Modeling,
Southwest Power Pool**

TOPICS

- **Background**
- **Current Activities**
- **Reference Links**
- **Q&A**





SPIDERWG UPDATE

BACKGROUND



CLARITY

ASSURANCE

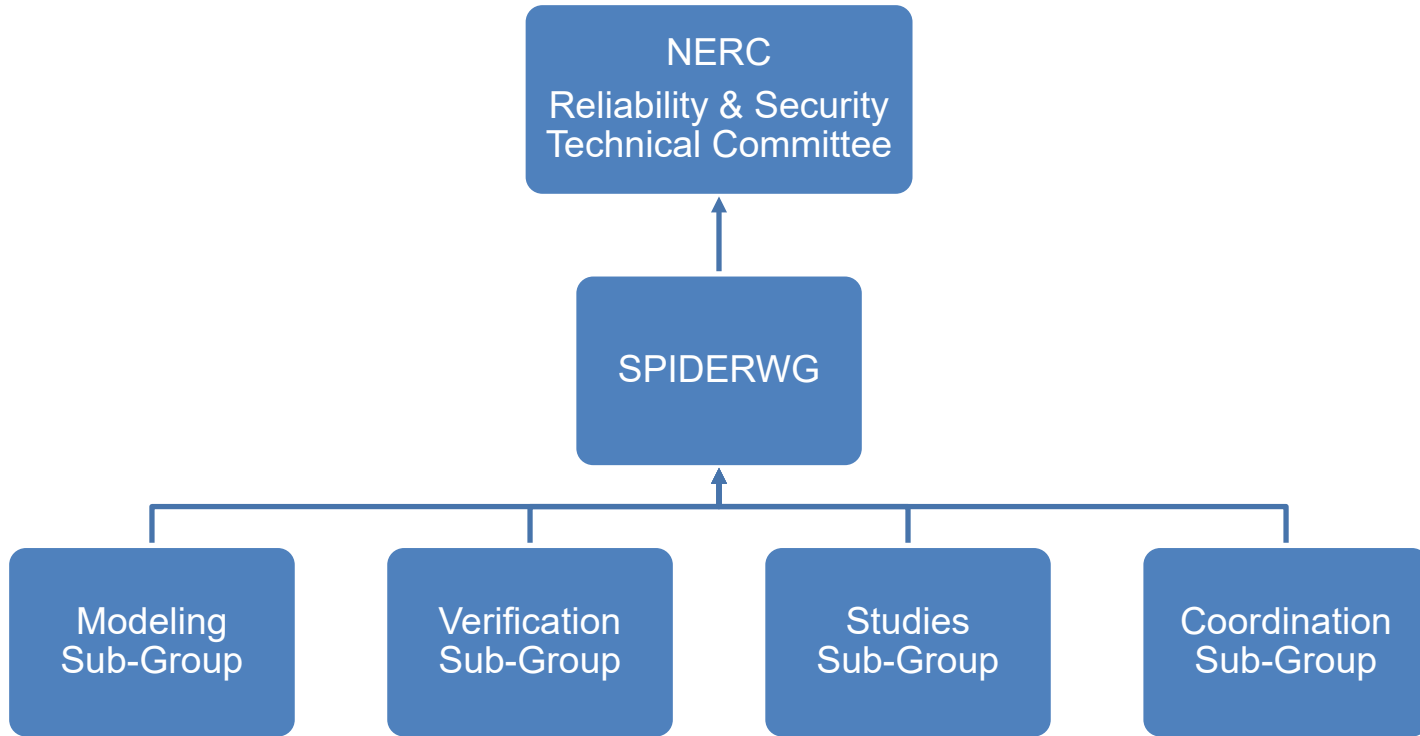
RESULTS

SPIDERWG OVERVIEW

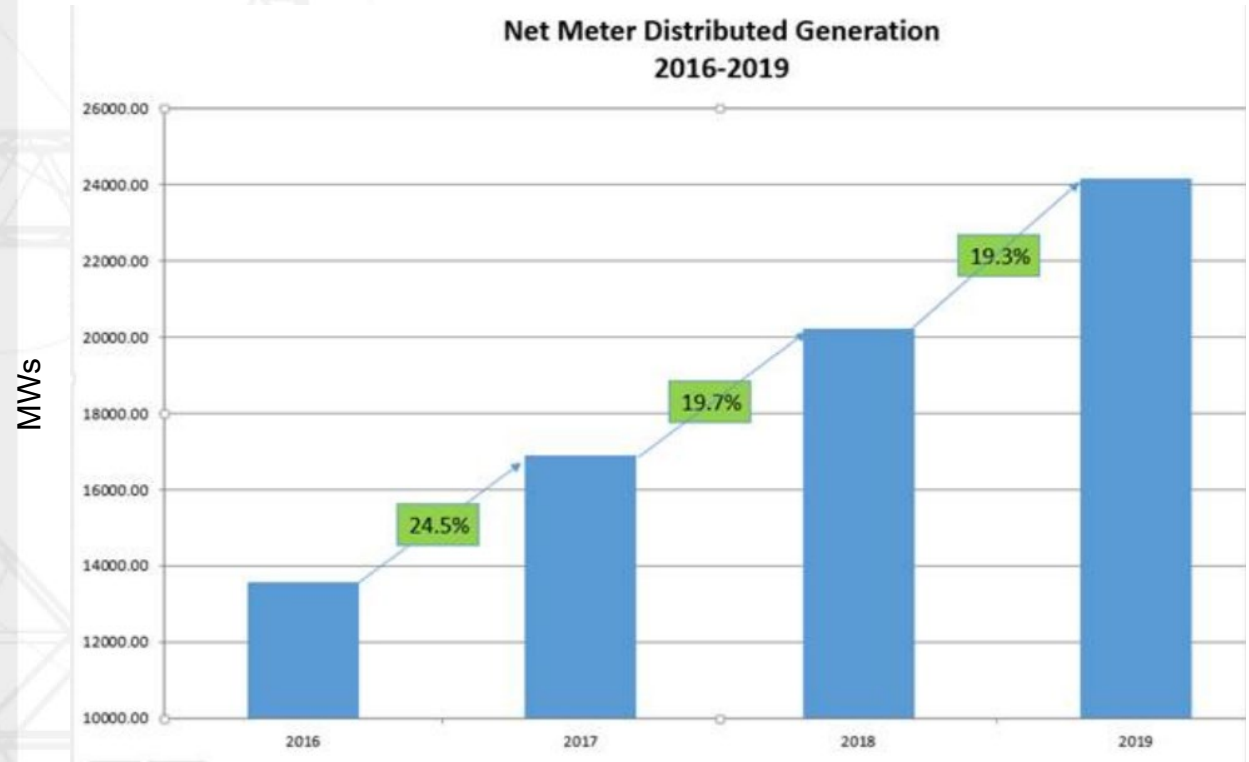
- The purpose of the [System Planning Impacts from Distributed Energy Resources Working Group \(SPIDERWG\)](#) is to address aspects of these key points of interest related to system planning, modeling, and reliability impacts to the Bulk Power System (BPS).
- This effort builds off of the work accomplished by the NERC Distributed Energy Resources Task Force (DERTF) and the NERC Essential Reliability Services Task Force/Working Group (ERSTF/ERSWG), and addresses some of the key goals in the ERO Enterprise Operating Plan
- DER is defined as *“Any resource on the distribution system that produces electricity and is not otherwise included in the formal NERC definition of the Bulk Electric System”*



SPIDERWG STRUCTURE



EIA Historical Solar PV Growth



- Source data: <https://www.eia.gov/electricity/data/eia861/>





SPIDERWG UPDATE

CURRENT ACTIVITIES



CLARITY

ASSURANCE

RESULTS

MODEL SUB-GROUP ACTIVITIES

DER Modeling Survey Report

- Critical Findings
 - Varying Modeling practices
 - Varying Load & DER forecasting
- Recommendations
 - Transmission Planner, Distribution Provider, and Planning Coordinator coordination improvements and applicability needed
 - Data Collection Guideline recommendation
- Target Completion - Mid-2021

Reliability Guideline: Distributed Battery Energy Storage Modeling

- Technical considerations of modeling DER storage, specifically distributed battery energy storage
- How to model multiple types of DERs
 - Example: DER storage & solar PV
- Target Completion - Q1 2022



VERIFICATION SUB-GROUP ACTIVITIES

- **Reliability Guideline: DER Forecasting Practices and Relationship to DER Modeling for Reliability Studies**
 - How forecasting practices are linked to DER modeling for reliability studies
 - Target Completion – Q3 2021
- **Discussing MOD-031-1 Impacts**



STUDIES SUB-GROUP ACTIVITIES

Reliability Guideline: Bulk Power System Planning under Increasing Penetration of Distributed Energy Resources

- Guideline providing recommendations and industry practices for performing planning studies considering the impacts of aggregate DER behavior
- Target Completion – Q4 2021

Standard Authorization Request: Updates to NERC TPL-001 Regarding DER Considerations

- Technical considerations of modeling DER storage, specifically distributed battery energy storage
- Rejected by NERC RSTC in March and under revisions
- Target Completion – Q4 2021



COORDINATION SUB-GROUP ACTIVITIES

NERC Standards Review and DERs White Paper

- Recommend if the NERC Reliability Standards require revisions, reliability guidelines, or implementation guidelines for DER considerations
- Initial impact analysis complete
- Technical review under way
- Target Completion – Q4 2021

DER Growth Trending and Tracking

- Utilizing publicly available data from ISO/RTOS or other planning data sources such as EIA data
- Target Completion – On-going



OTHER ACTIVITIES

- **White Paper: FERC Order 2222 and BPS Reliability Perspectives**
 - Identifying key BPS reliability perspectives with the recently released FERC Order 2222
 - Addressing gaps between FERC Order No. 2222 Terminology & NERC Defined Terms for DERs
 - Demand Response included in FERC Order No. 2222 and excluded from NERC SPIDERWG working definitions
 - Currently, neither DER or Distributed Energy Resource Aggregator is defined for NERC Reliability Standards Or Standards Applicability



REFERENCE LINKS

- [NERC SPIDERWG Webpage](#)
- [SPIDERWG Scope](#)
- [SPIDERWG Work](#)
- [SPIDERWG Terms and Definitions Working Document](#)
- [Reliability and Security Guidelines](#)



Q&A

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Afternoon Break

MRO's 2021 Virtual CMEP Conference

We will resume at 2:25 p.m. Central


CLARITY

ASSURANCE

RESULTS

slido

What is your favorite summer beverage?

 Start presenting to display the poll results on this slide.