

18<sup>th</sup> Annual

## Renewable Energy Law Institute

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# Emerging Topics in DER Regulation for Energy Law Practitioners

*Panel: Distributed Energy and Virtual Power Plants: Regulatory Challenges and Opportunities to Leverage Consumer-Driven Electrification*

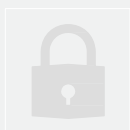
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## Emerging Legal and Regulatory Topics for DER Technology



Inverter Standards  
Implementation – IEEE  
1547-2018



Cybersecurity



Distribution Utility  
Interconnection Service  
Rules for Customer-Sited  
Technologies



ISO/RTO Compliance and  
Operations

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## IEEE 1547-2018

Standard specifying requirements for distribution interconnection, and now interoperability, in the USA

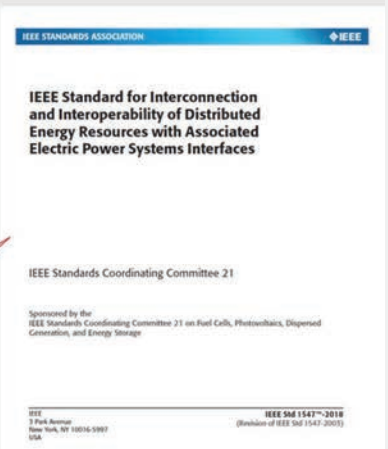
### IEEE 1547-2003

- Default Trips
- Reconnection
- Anti-islanding



### IEEE 1547-2018

- Customizable Trips
- Ride Throughs
- Reconnection
- Anti-islanding
- Smart Functions
- Communications
- Accuracies



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## IEEE 1547-2018

Summary of Main Changes from IEEE 1547-2003 and UL 1741 SA

- Communication via one of Modbus, DNP3, 2030.5 is required.
- All ratings, statuses and settings must be able to be read and written

### Interoperability

- For sites > 500kVA, responses are expected at the site level, rather than at the inverter.

### Plant-Level Responses

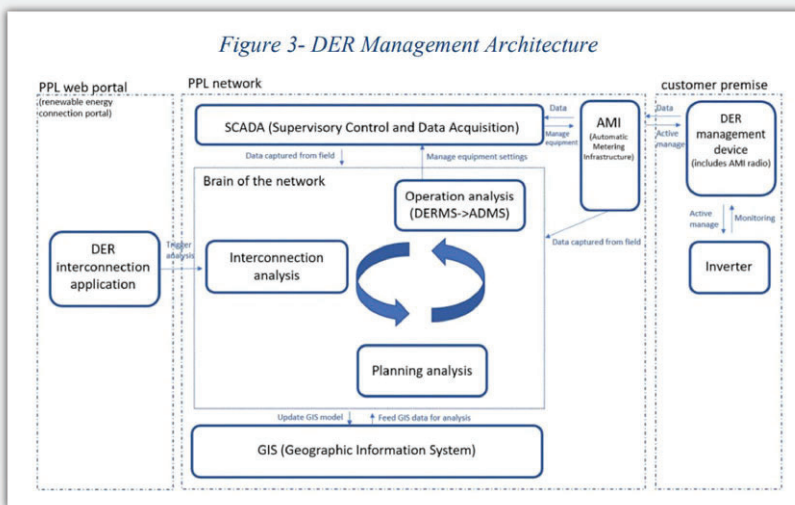
- New functions
- Tweaks to existing functions
- Minimum measurement accuracy
- Open phase detection

### New Functionality

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## Interoperability Challenges for DERs

A PA Utility DER Pilot “Management Plan” exercises jurisdiction behind the utility revenue meter to control and monitor customer-sited inverter and gathers customer information under a DER “pilot”



PPL Utility DER Management Device:  
“Featuring an AMI radio, this device connects to the DER’s local communication interface, enabling monitoring and management of the DER through the existing AMI Mesh Network. This device allows PPL Electric to remotely monitor the attributes and performance of the DER and manage its grid support settings as needed.”

Source: PPL Electric Utilities Corporation, DER Management Pilot Implementation Plan (March 1, 2021, Docket No. P-2019-3010128 <https://www.puc.pa.gov/pcdocs/1694930.pdf>)

See also: <https://www.pplelectric.com/utility/about-us/electric-rates-and-rules/remsi/approved-metering-and-equipment-tables-index/solar-inverters>

## IEEE 1547-2018 Implementation

# Technical Standards Policy Considerations for DERS in Australia

### Evaluation Framework includes Consumer Equity and Acceptability Metrics

[Source: FTI Consulting, DER interoperability assessment framework: *An assessment framework to develop interoperability policy for distributed energy resources in Australia* (December 2021)(Framework for Australia Energy Security Board Consultation)]

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## Title search: Emerging Topics in DER Regulation for Energy Law Practitioners

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"Distributed Energy and Virtual Power Plants: Regulatory Challenges and Opportunities to Leverage Consumer-Driven Electrification "