

IEEE Standard 2800-2022 NPCC Regional Adoption

New York State Reliability Council
IEEE 2800-2022 Workshop
Shayan Rizvi, Senior Engineer
NPCC, Reliability Assessment & Performance Analysis
September 13, 2022





Outline

Inverter-Based-Resource (IBR) Reliability Concerns

Regional Resource Outlook

IEEE STD 2800-2022 Technical Parameters

IEEE STD 2800-2022 Adoption Strategy



IBR Reliability Issues

NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

**900 MW Fault Induced
Solar Photovoltaic
Resource Interruption
Disturbance Report**

Southern California Event: October 9, 2017
Joint NERC and WECC Staff Report

February 2018

NERC
NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

**1,200 MW Fault Induced
Solar Photovoltaic
Resource Interruption
Disturbance Report**

Southern California 8/16/2016 Event

June 2017

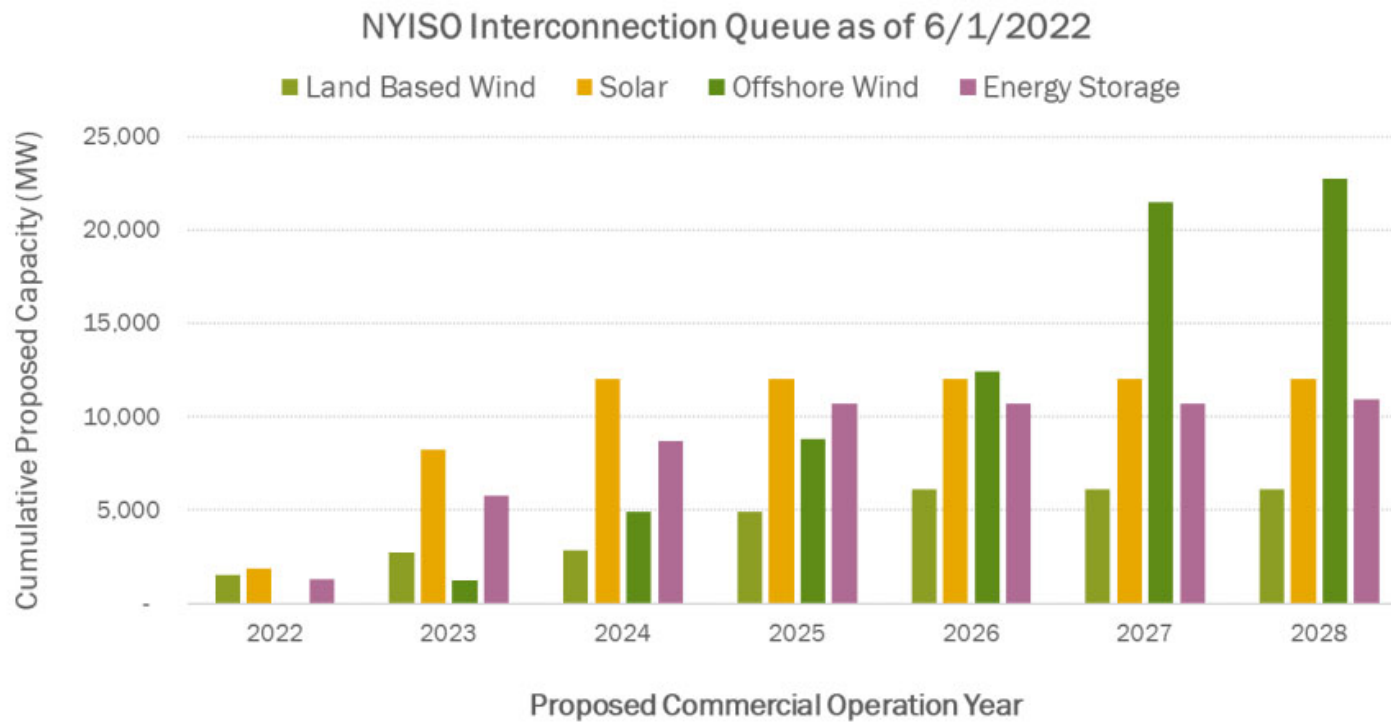
RELIABILITY | ACCOUNTABILITY

3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

- Systemic issues are present within IBRs
 - Momentary cessation
 - Unexpected tripping
 - Oscillations
 - Voltage ride-through capabilities
- The need for standard implementation exists and for IBR standardization



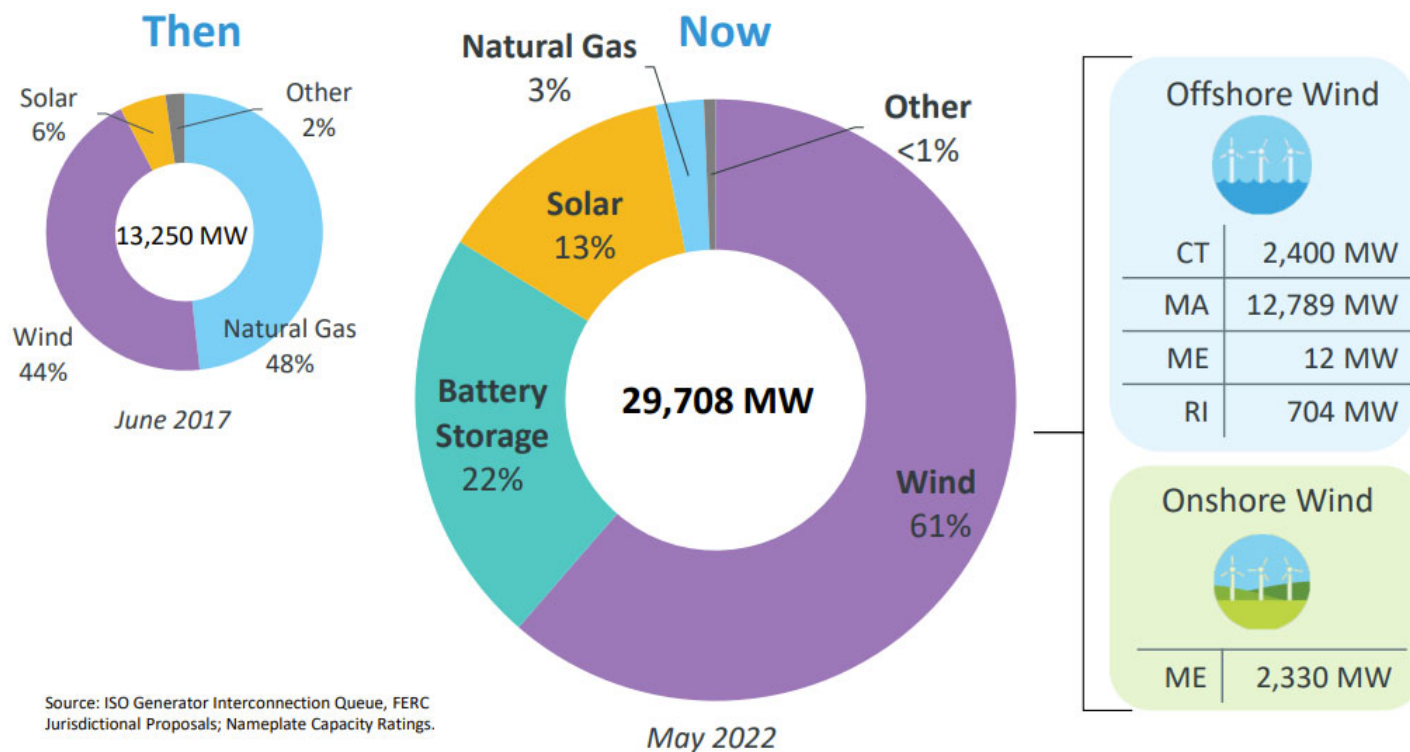
NYISO Resource Outlook



Source: NYISO 2021-2040 System & Resource Outlook [Draft], August 31st, 2022



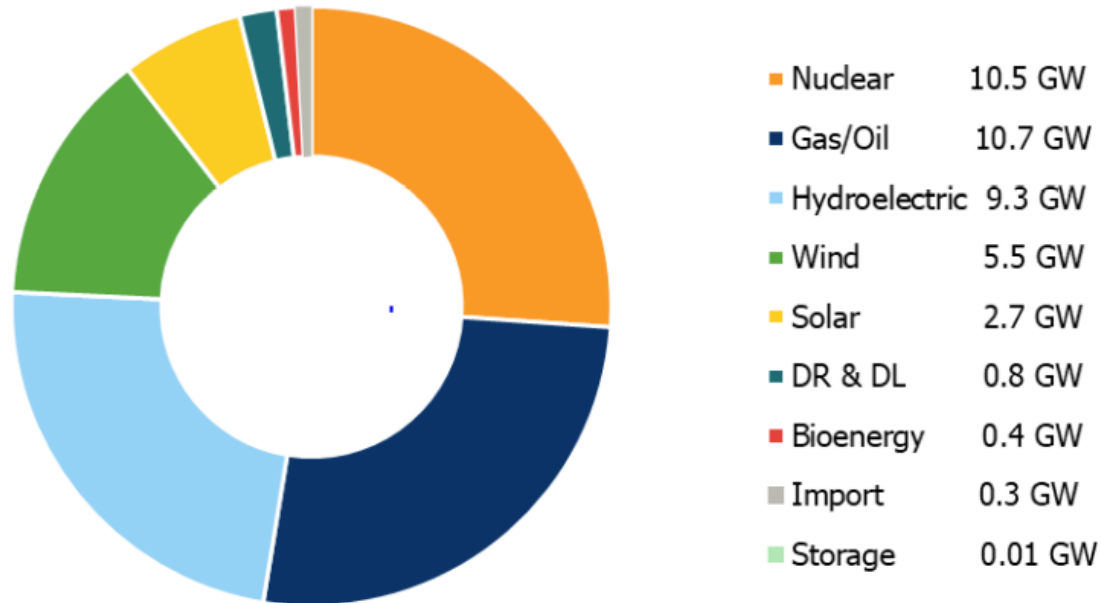
ISO-NE Resource Trend



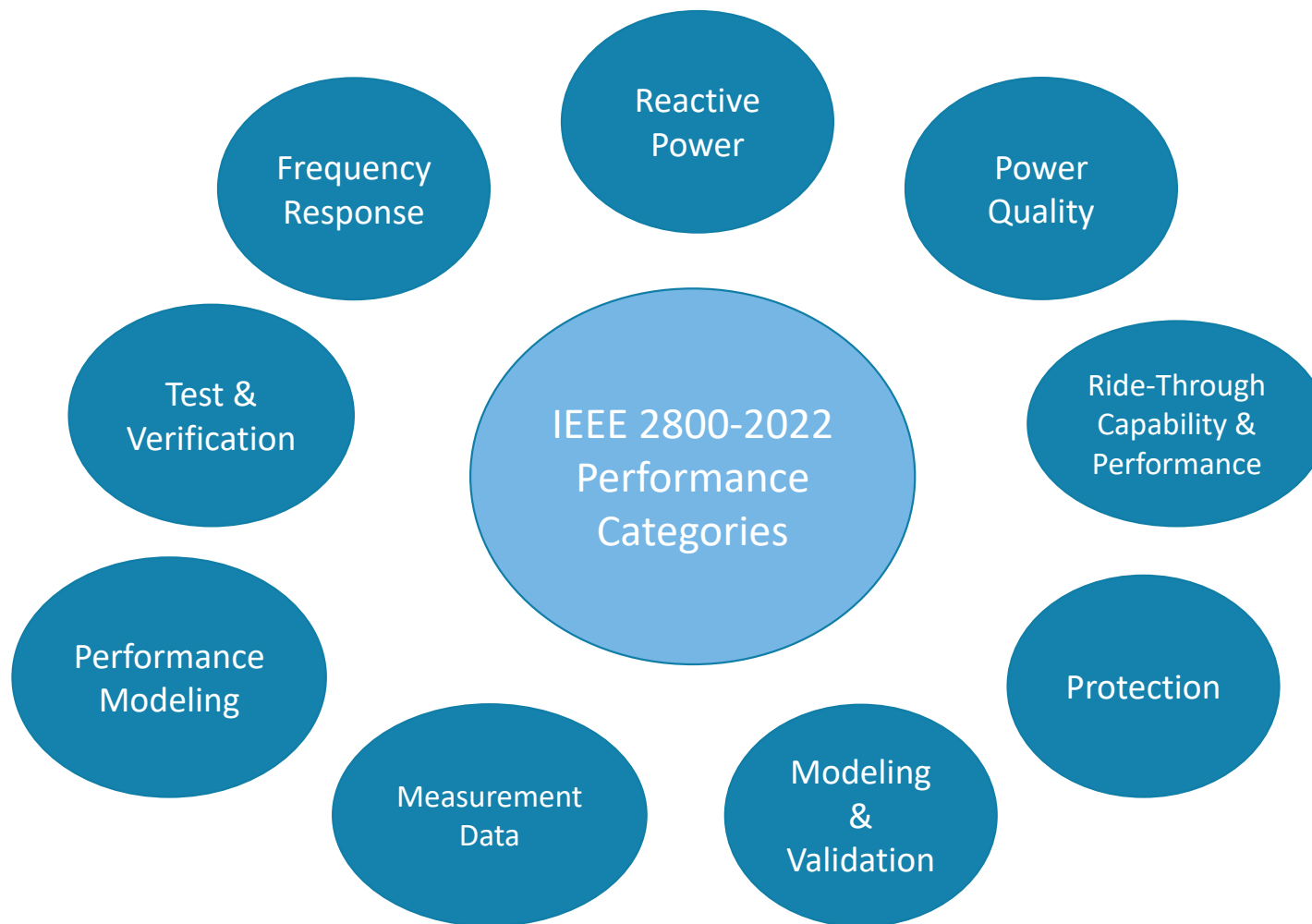


IESO Installed Capacity

Figure 5 | 2022 Installed Capacity by Fuel Type



Source: IESO 2021 Annual Planning Outlook, December 2021





IEEE 2800-2022 Adoption Strategies



PERFORMING GAP
ANALYSIS



INTERCONNECTION
UPDATES



IMPROVED MODELING
PRACTICES



STANDARD
IMPLEMENTATION



INDUSTRY
INVOLVEMENT



IEEE 2800-2022 Adoption Strategies (Cont'd)

Performing Gap Analysis

- Comparing existing requirements IEEE 2800-2022
 - Creates path forward for updating performance specifications
 - Look to update planning, operating, & modeling procedures

Interconnection Updates

- Current solar, wind, & storage interconnection requirements should be improved
- IBR capability is unique, different from synchronous generation
- Interconnection process can benefit from improved accuracy in study measures



IEEE 2800-2022 Adoption Strategies (Cont'd)

Improved Modeling Practices

- Models must be representative of resource capability at the time of interconnection request submission
 - IEEE 2800-2022 specifies sufficient technical requirements
 - Expected performance of IBRs become more accurate by setting forth an agreed set of minimum requirements

Standard Implementation

- Deciding how to implement IEEE 2800-2022
 - Complete adoption vs. clause-by-clause adoption
- Clause-by-clause adoption can lead to complete adoption through incremental resource improvement



IEEE 2800-2022 Adoption Strategies (Cont'd)

Industry Involvement

- Continuous engagement in industry activities.
 - Standard development, providing comments, involvement in balloting process, etc.
 - Active engagement allows for regional specific issues to be considered in standard development leading to an easier adoption path once the standard development process has concluded
- IEEE 2800.2 currently under development
 - Focus of this version is around conformance procedures



Summary & Conclusion

- Recent disturbances have shown IBR technical insufficiencies – prove a need for an agreed upon set of minimum requirements
- Proliferation of IBRs are increasing across the system
- IEEE STD 2800-2022 has developed a set of minimum technical requirements for IBRs to improve system reliability and maintain operation through system disturbances
- Adoption of IEEE STD 2800-2022 can be achieved through industry collaboration and technical assessments of current regional planning , operating and modeling practices



Questions