16th Annual Symposium on Energy in the 21st Century

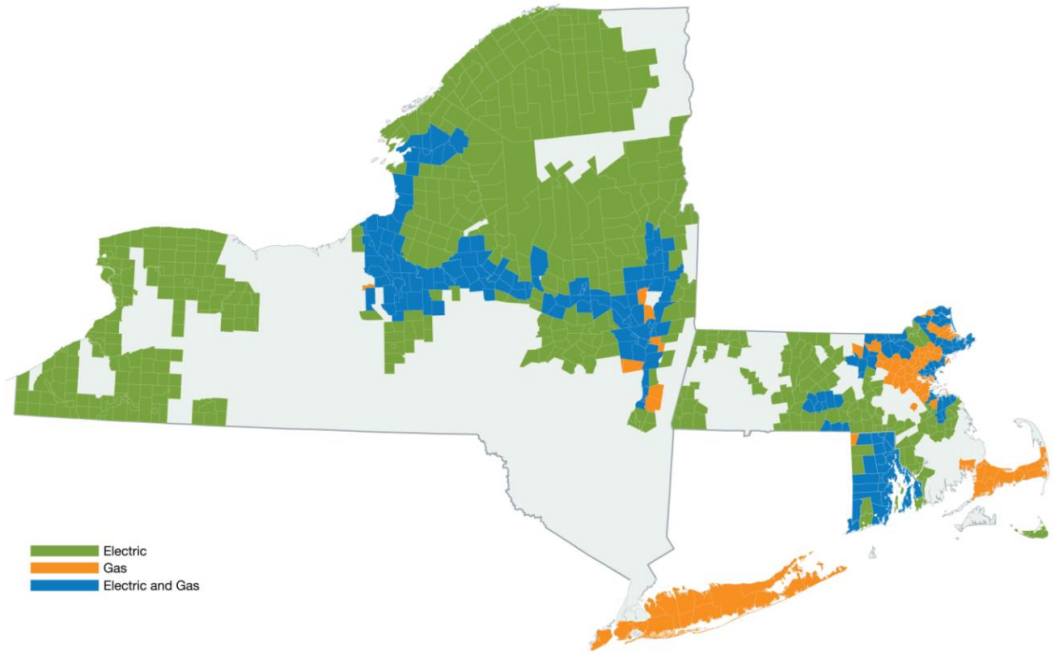
Integration of Renewables into the NY Grid

Chris Kelly

10/26/20

nationalgrid

National Grid's US Electric & Gas Service Territories

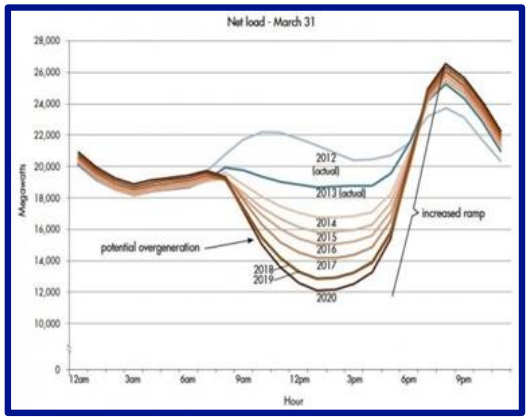


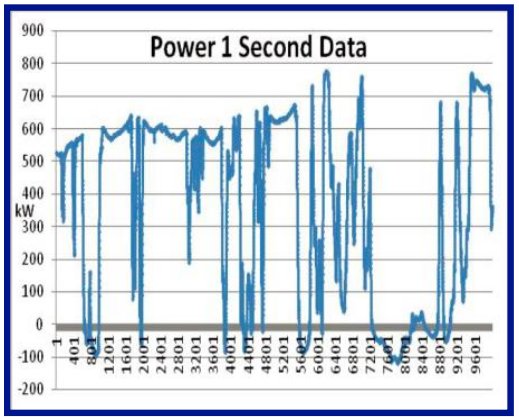
By the Numbers:
Our Upstate NY Electric Business

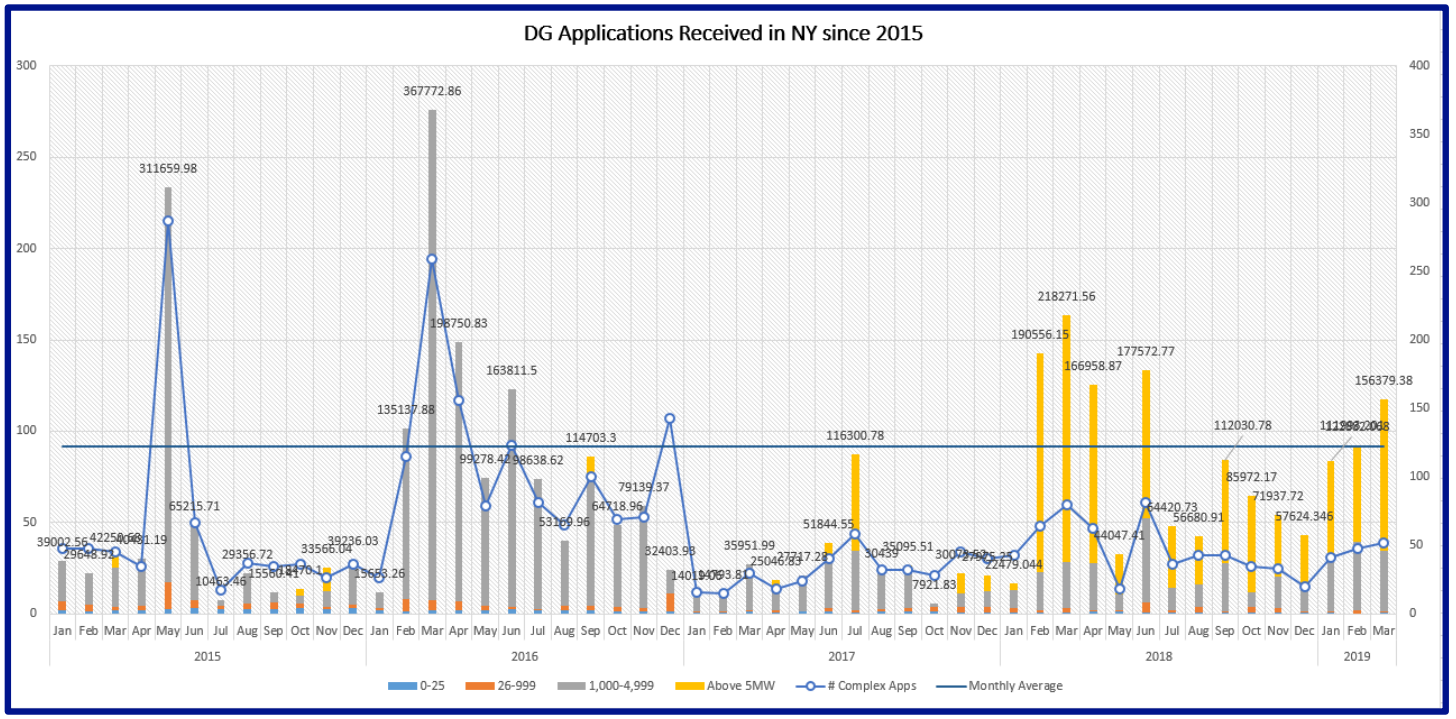
1.6M	Customers
25,000	Square miles
5,000+	Transmission miles
3,000+	Sub-transmission miles
40,000+	Distribution miles
700+	Substations
2,000+	Distribution feeders

The Challenges of Renewable Energy

It is time to change our mindset, if something is always unpredictable that means it can be predicted!







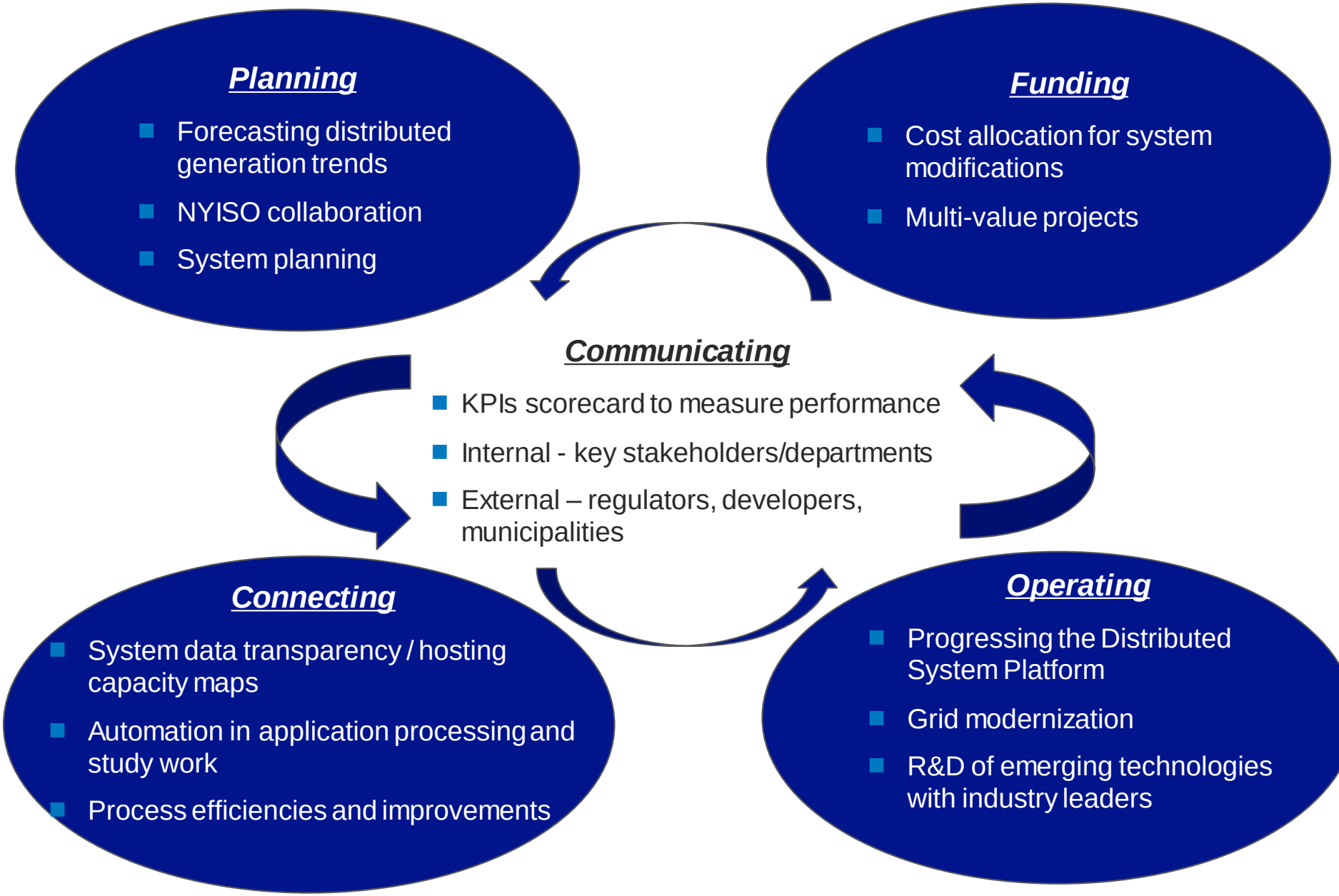
Average system size for complex applications: 5MW

Applications received in NY: 59,900

Connected: 22,000 projects/ 667 MW

In queue: 2.2GW

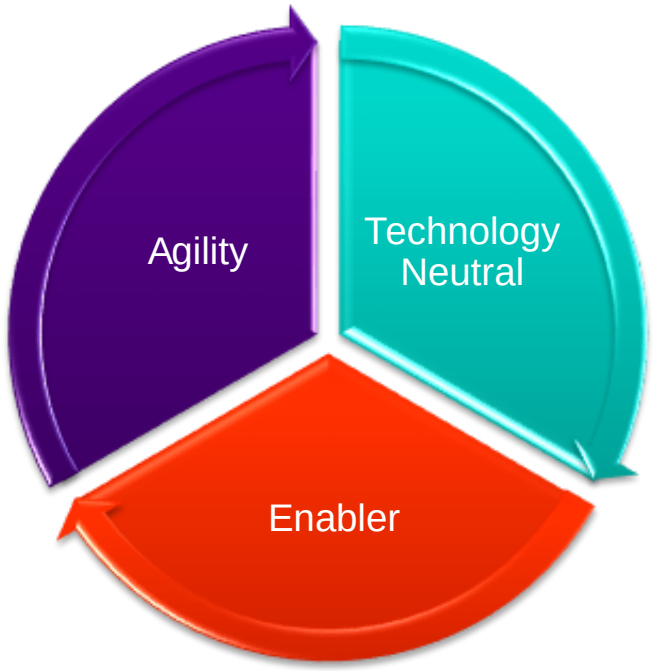
Keys to Integration of Renewables



4

National Grid Strategy

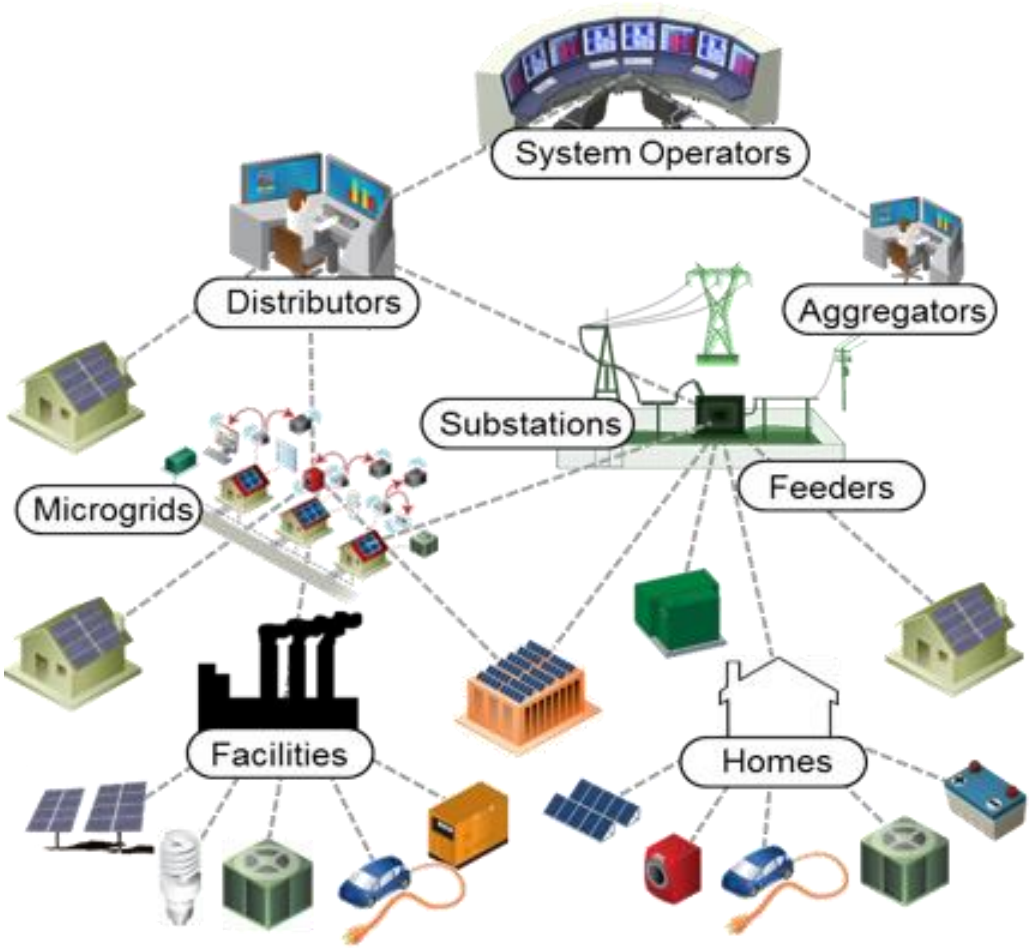
- Enable and optimize distributed generation –part of National Grid's *Net Zero by 2050* framework.
- Adopt to the changes in technologies and location, and act as an enabler to state and customers' needs.
- Continue to work with Distributed Energy Resource developers to offer new creative ways to integrate DER into our system.



Enable the energy transition for all by helping to achieve NY's Climate targets (**CLCPA**), delivering and enabling cost-effective clean-energy solutions, improving our ability to integrate a greater portfolio of Distributed Energy Resources, and delivering a future **Distribution System Platform** model.

The Role of Integration

- Integration will be one of the key enablers of Net Zero.
- Grid management will become more granular - considering near real-time impacts, and specific locational values and constraints - to reliably manage an increasingly complex and dynamic distribution system.
- The modern grid operator will use integrated processes and tools to leverage Distributed Energy Resources as an efficient resource for customers and the resiliency of the grid.



Distributed Energy Resource Management System

Future is here

National Grid is investing hundreds of millions in our clean energy future and we're integrating learnings from across our US operations to help support this race against time.

Market Services
Non-Wires Alternatives
Electric Vehicles
Energy Storage

DER Interconnections
Streamline Interconnections

Information Sharing
System Data
Customer Data

Grid Mod Investments
Field Deployments
AMI
CC Enhancements
Operational Data Mgmt

nationalgrid