

# 16th Annual Symposium on Energy in the 21st Century

## Integration of Renewables into the NY Grid

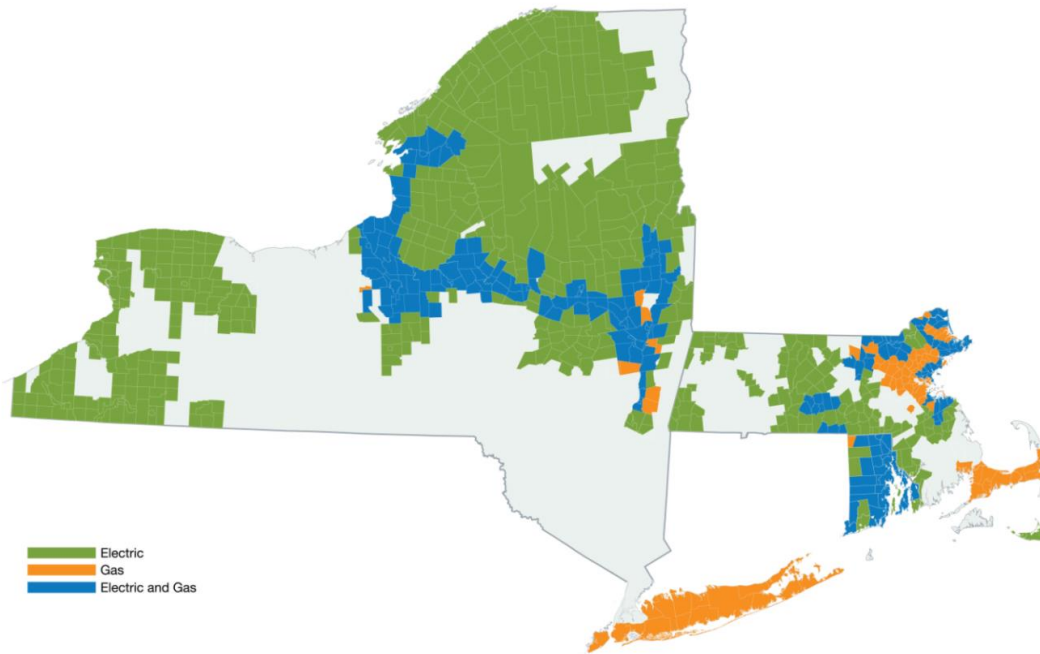
Chris Kelly

10/26/20

**nationalgrid**



# National Grid's US Electric & Gas Service Territories

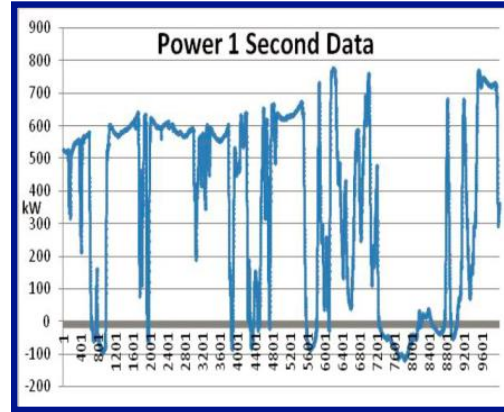
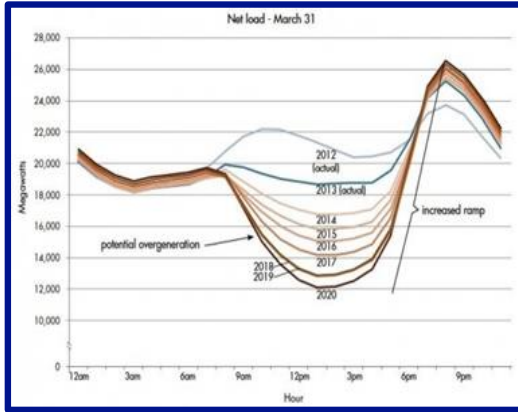


## By the Numbers: Our Upstate NY Electric Business

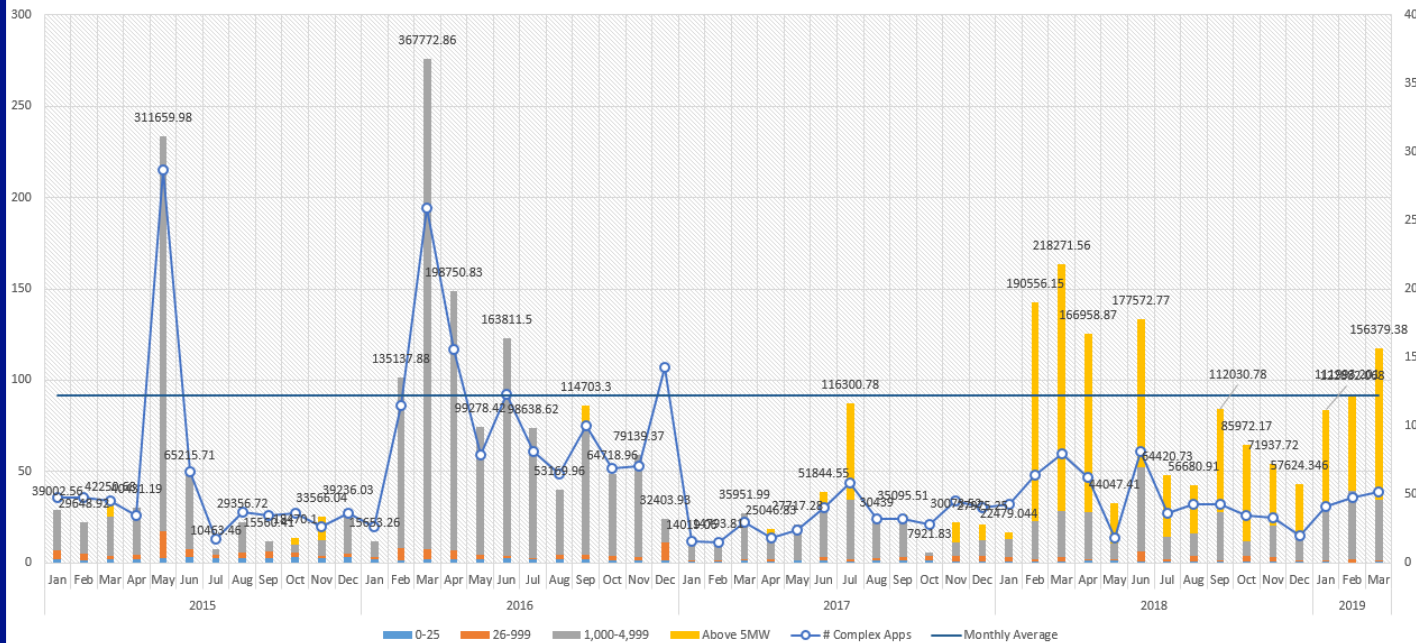
1.6M	Customers
25,000	Square miles
5,000+	Transmission miles
3,000+	Sub-transmission miles
40,000+	Distribution miles
700+	Substations
2,000+	Distribution feeders

# The Challenges of Renewable Energy

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



DG Applications Received in NY since 2015



**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

## Planning

- Forecasting distributed generation trends
- NYISO collaboration
- System planning

## Funding

- Cost allocation for system modifications
- Multi-value projects

## Communicating

- KPIs scorecard to measure performance
- Internal - key stakeholders/departments
- External – regulators, developers, municipalities

## Connecting

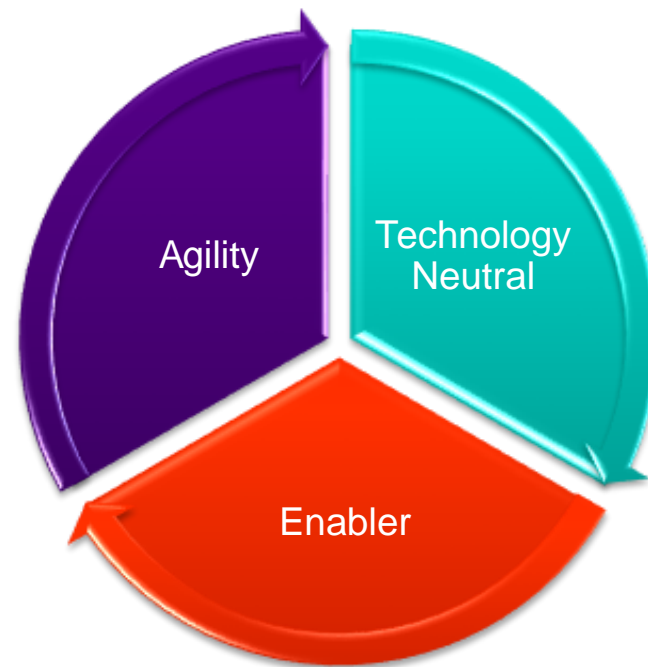
- System data transparency / hosting capacity maps
- Automation in application processing and study work
- Process efficiencies and improvements

## Operating

- Progressing the Distributed System Platform
- Grid modernization
- R&D of emerging technologies with industry leaders

# National Grid Strategy

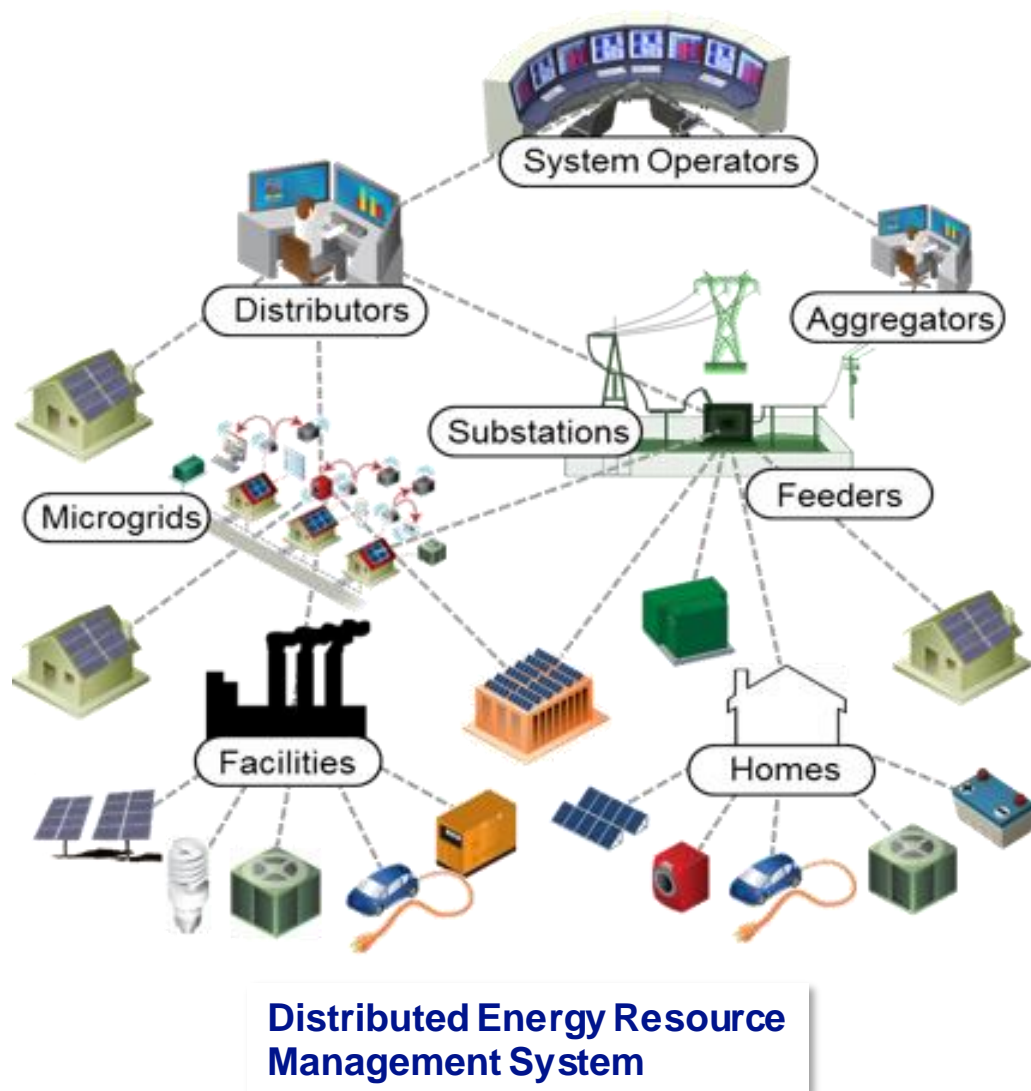
- Enable and optimize distributed generation –part of National Grid’s *Net Zero by 2050* framework.
- Adopt to the changes in technologies and location, and act as an enabler to state and customers’ needs.
- Continue to work with Distributed Energy Resource developers to offer new creative ways to integrate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



# 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

national**grid**