Distributed System Implementation Plan (DSIP) Update Stakeholder Engagement

June 5, 2023

nationalgrid

Agenda

Background and Context (10:00 am – 10:15 am)

- National Grid
- 2023 DSIP Update Summary
- Distributed System Platform Services
- Coordinated Grid Planning Process Alignment
- DSIP Topics

Information and Planning (10:15 am – 10:45 am)

- Integrated Planning
- Data Sharing
- Hosting Capacity
- Forecasting
- Q&A

DER Integration (10:45 am – 11:25 am)

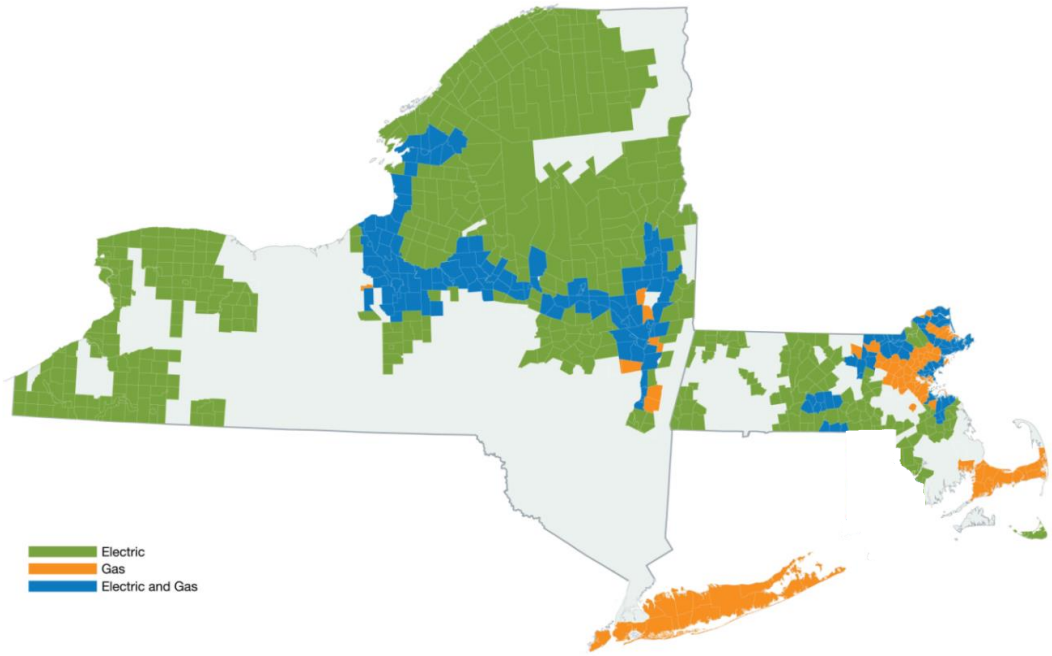
- Energy Storage Integration
- Electric Vehicle Integration
- Clean Heat Integration
- Energy Efficiency Innovation and Integration
- DER Interconnections
- Q&A

Market and Operations (11:25 am – 11:50 am)

- Beneficial Locations for DER & NWA's
- Grid Operations
- Advanced Metering Infrastructure
- Billing & Compensation
- Q&A

Closing (11:50 am – 12:00 pm)

National Grid's US Electric & Gas Service Territories



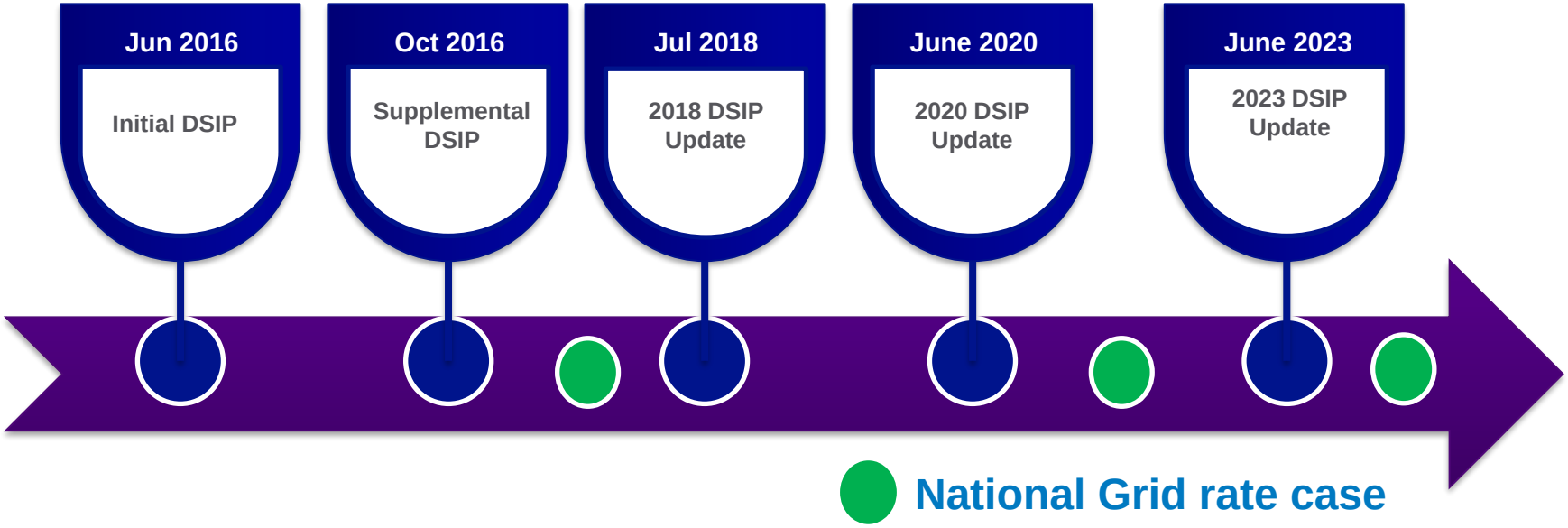
UNY Electric System Statistics

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

2023 DSIP Update

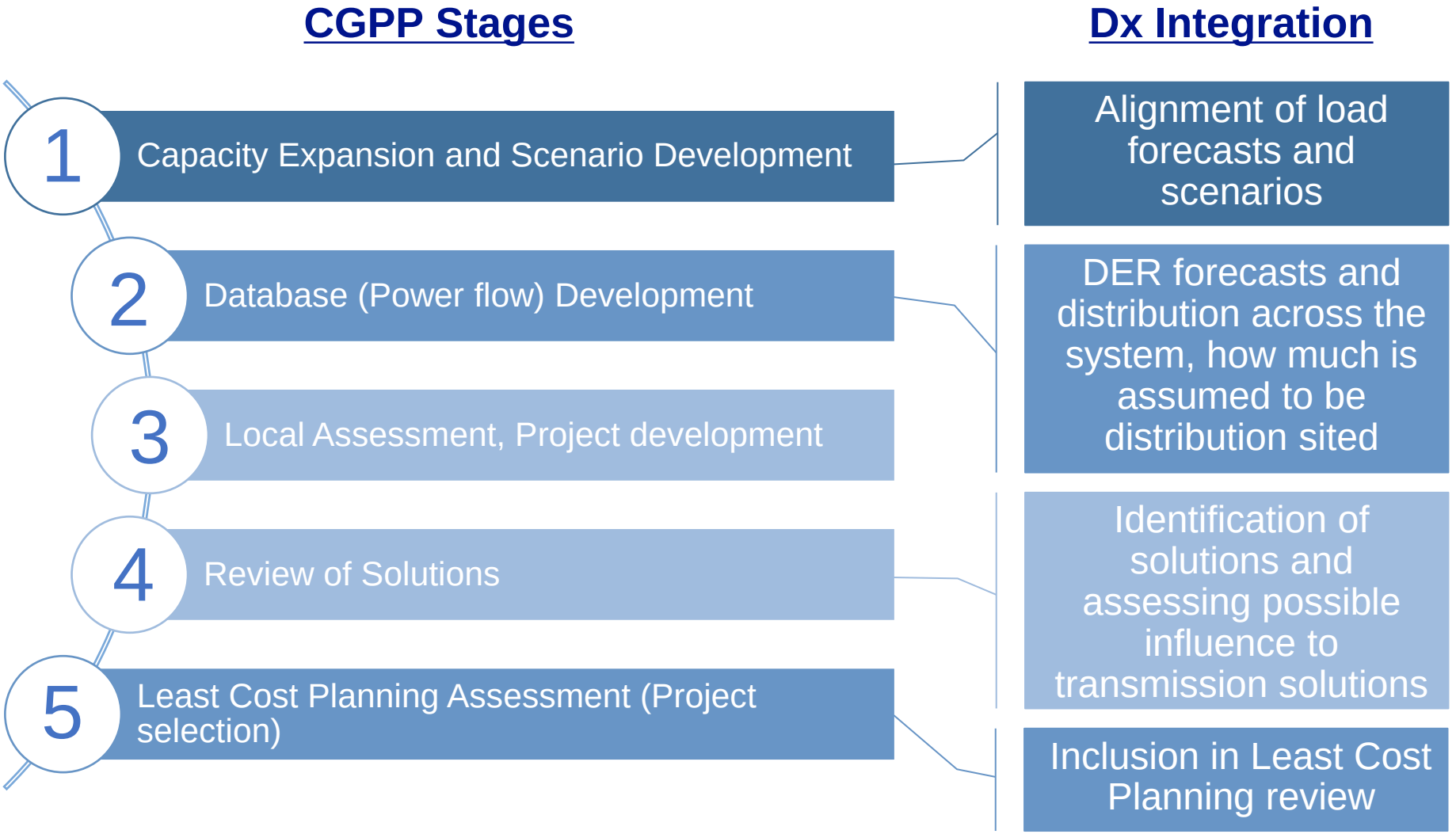
Within the 2023 DSIP Update National Grid will:

- Report on Distributed System Platform (DSP) actions and progress since the 2020 DSIP Update
- Describe National Grid's future five-year plans*
- Identify how distributed energy resources (DER) developers and other third parties can access available tools, information and potential business opportunities
- Provide useful links to frequently updated data so stakeholders have access to the latest information
- Describe upcoming new programs, projects and procurements to enable greater levels of DER



* All the future plans and investments presented in the DSIP are subject to rate case approval with corresponding impacts to timing

The DSIP helps align Dx planning with Tx CGPP



The DSP offers three core interrelated services

Utility programs, procurement, wholesale market coordination, tariffs, and other services that create value for DER customers and providers through market mechanisms

Planning and operational enhancements that promote streamlined interconnection and efficient integration of DER, while maintaining safety and reliability

Information and communications systems and processes that collect, manage, and share granular customer and system data, enabling customer choice and expanding participation of third-party vendors and aggregators in markets for DER

DSIP Topic Summaries and Q&A

- DSIP topics have been split into 3 segments representing each of the services the DSP provides
- National Grid Subject Matter Experts will present on each DSIP topic
- Please use the Q&A section during the presentations to submit questions
- SMEs will answer questions during the last 10-15 minutes of each segment

Information & Planning (10:15 am – 10:45 am)

1. Integrated Planning
2. Data Sharing
3. Hosting Capacity
4. Advanced Forecasting

DER Integration (10:45 am – 11:25 am)

5. Energy Storage Integration
6. Electric Vehicle Integration
7. Clean Heat Integration
8. Energy Efficiency Innovation & Integration
9. DER Interconnections

Market & Operations (11:25 am – 11:50 am)

10. Beneficial Locations for DER & NWA's
11. Grid Operations
12. Advanced Metering Infrastructure
13. Billing & Compensation

Integrated Planning

Progress Since 2020 DSIP
Data Enhancements (DER, device settings, scenario forecasts, etc)
Planning Software Improvements
Planning Studies
NWA + Flexible Connections
Climate Change Vulnerability Study

5-Year Plan
Integrated Modeling Software
Data Enhancements (AMI, AMM, Advanced forecasting)
FLISR Acceleration
NWA Procurement Platform

Stakeholder Value and Engagement
Enhance planning practices while minimizing conservative assumptions
Coordinated Grid Planning Process (CGPP) – improved alignment
Joint Utility Work Group collaboration + feedback loop (ITWG, IPWG, etc)
Enhanced transparency via NY System Data Portal

Data Sharing

Progress Since 2020 DSIP
Monthly submittals of DER use cases to IEDR staging
Hosting capacity data pipeline to IEDR staging
Sourcing of Customer data for IEDR Updates to Green Button Connect to include AMI data being developed

5-Year Plan
Deliver Phase 1 IEDR data
Continue scoping Customer Data for IEDR Phase 1
Continue scoping digitized rate and tariff for IEDR Phase 1
Planning for Phase 2 Use Cases

Stakeholder Value and Engagement
Identification of new opportunities to support NYS CLCPA
JU collaboration through IS WG
IEDR development team collaboration through Utility Coordination Group

Hosting Capacity

Progress Since 2020 DSIP
ESS Hosting Capacity Map
Nodal Criteria Violation HC values
EV Load Serving Map
Monthly DG Updates
API Access

5-Year Plan
Seasonal Hosting Capacity Scenarios
Planned Projects Impacting Hosting Capacity
Increased refresh rate of data sets
Continued granularity

Stakeholder Value and Engagement
Increased transparency to system data and interconnection information
Facilitate successful interconnection of DERs
API enabled integration to third party maps and applications
JU Stakeholder engagement session and documentation

Advanced Forecasting

Progress Since 2020 DSIP
Introducing new DER technologies – EHP, Medium and Heavy-duty EVs and Electric Buses
Enhancing DER forecasting methodologies – EV charging profile, EHP profile, non-rooftop PV penetration analysis
Enhancing forecasting process – alignments, scenarios

5-Year Plan
DER forecasting methods enhancements
Probabilistic forecasting techniques enhancements
Forecasting process and environment enhancements
Centralized database development
Alternative and additional data and information
Continually discussing and sharing best practices with JU

Stakeholder Value and Engagement
Essential step in distribution system planning process
Informing developer community on host capacity
JU best practices

Questions on Information and Planning (until 10:45)

Please use the Q&A feature to submit questions

Energy Storage Integration

Progress Since 2020 DSIP
Energy Storage Demo Projects (East Pulaski and North Troy)
Energy Storage Order (CAMP and Auto-DLM)
Energy Storage as NWA
Evolving Interconnection of Energy Storage

5-Year Plan
Potential Study for Storage to Support T&D
Energy Storage Supporting Fleet Electrification
Development of Best Practices for Operating Energy Storage Projects
Energy Storage Integration into EE and DR

Stakeholder Value and Engagement
Potentially increase opportunities for energy storage deployment to provide T&D grid support, enable further renewable energy deployment and improve system utilization
Improve or identify new quantifiable and qualitative energy storage valuation mechanisms
Expand best practices for the interconnection, integration and operation of energy storage to enhance the benefits they can deliver and/or decrease overall project costs

Electric Vehicle Integration

Progress Since 2020 DSIP
Supported >3,500 EV charging ports with make-ready grid infrastructure
Supporting MHD customers via grid-side infrastructure for class 3-8 vehicles
Completed 74 fleet assessments in New York, supporting >4,000 vehicles
Supported CDTA and NFTA transit authorities to reach 25% EV by 2025
Launched EV Charge Smart Plan, a monthly subscription for Resi drivers

5-Year Plan
Modifying the make-ready program to meet 2025 targets, with a focus on DACs
Expanding the MHD pilot to include more infrastructure support for more customers
Scaling the EV Charge Smart Plan and turnkey installation service through 2025
Proposed a Load Management Technology Incentive Plan, supporting BESS & software
Preparing demand charge discount, commercial managed charging, & Phase-in Rate programs

Stakeholder Value and Engagement
Enabling EV charging for 850k EVs in NYS, reducing the largest GHG emitting sector
Preparing grid infrastructure for the transition to zero-emission medium- and heavy-duty vehicles
Reducing zero-emission vehicle procurement & infrastructure barriers for fleets and public transit
Integrating EVs with managed charging for drivers, load management tech, and new rate design

Clean Heat Integration

Progress Since 2020 DSIP
Program Successfully Launched in March 2020
Significant results of over 3000 Res/Non-res Systems installed
Expanded trade partner network of installers to over 300 vendors territory wide

5-Year Plan
Rolling out new measures to existing program offerings in the fall of 2023
Looking for custom beneficial electrification work for C&I customers and partnership with existing Grid C&I programs
Advocating for larger more expanded budgets for Clean Heat Technologies in upcoming NE:NY Interim Review orders and Climate Action Council Scoping plan

Stakeholder Value and Engagement
Strong Partnership with NYSERDA and NEEP to ensure contractors and customers are educated about benefits of electrifying heating and cooling through Clean Heat Program.
Technical assistance programs launched to help educate consumers and workforce thus enabling robust network of installers to drive Clean Heat program expansion.
Current program to date savings to customers in excess of 234,000 MMBtu
Program is very popular in gas-constrained service territory.

Energy Efficiency Integration and Innovation

Progress Since 2020 DSIP
Halfway through existing NE:NY Order
Residential and C&I industry programs well received and productive (e.g. WX in DNY)
Aligned closely to CLCPA Goals for Disadvantaged Communities
In period of re-evaluation and transition

5-Year Plan
Adapt and respond to results of NE:NY Interim Review orders
Modify existing offerings to better facilitate/fund high-performing initiatives
Roll out new offerings to assist state goals of Beneficial Electrification and Decarbonization
Advocate for the extension of NE:NY to 2030

Stakeholder Value and Engagement
Several Federal initiatives coming on to assist in EE programs and remove barriers for existing electrification projects.
Incentives consistently being re-evaluated for market competitiveness and high adoption.
Regularly creating feedback loops with stakeholders to improve simplicity of use, standardize experience across service territory, and maximize benefit to end users.

DER Interconnections

Progress Since 2020 DSIP
Cost Sharing 2.0
Streamlined Witness Test
Improved End of Year Interconnections
Improved Customer Experience
More Transparent Requirements

5-Year Plan
Integrate more capable inverters
Greater visibility of project status
Clean Innovation Projects
More BESS Integration
IOAP Enhancements

Stakeholder Value and Engagement
Faster Interconnection Process
More granular information provided to developers earlier in the process
Ability to take greater advantage of technical capabilities
Stakeholder input via state working groups

Questions on DER Integration (until 11:25)

Please use the Q&A feature to submit questions

Beneficial Locations for DERs and Non-Wires Alternatives

Progress Since 2020 DSIP
NWA Website Enhancements
NWA Procurement Platform
Process Enhancements (contracting, evaluation, etc)
Promote adoption of DERs by providing T&D grid support

5-Year Plan
Progressing & Releasing NWA Opportunities
Solicitation & Procurement Enhancements
Continually discussing and sharing best practices with JU

Stakeholder Value and Engagement
Optimizing the NWA process by finding enhancements to the soliciting, evaluating, and contracting process to decrease implementation timelines and increase opportunities
Potentially increase opportunities for DER deployment to provide T&D grid support and enable further renewable energy deployment
Maintain or improve the electric grid's reliability and resiliency
Drive cost-effectiveness by deferring or avoiding planned capital investments

Grid Operations

Progress Since 2020 DSIP
Continued investment in Grid Modernization (Distribution Automation & Monitoring and Control) to create value and maintain reliability and safety in line with evolving industry expectations. E.g. VVO, CVR, FLISR, etc.
Application development and buildout to support evolving technologies and markets. E.g. ADMS, Short Term Forecasting, Monitoring and Control
Process and resource enhancements to support NYISO DER Aggregation Participation Model. E.g. Resources, Procedural development and revision, Operational application enhancements.

5-Year Plan
Continued investment in Grid Modernization; continuing to execute our plan.
Continued development and buildout to support evolving technologies and markets. E.g. ADMS enhancements to support ARI and modeling, continuing work on low-cost M&C, Integration of AMI, enabling functionality for ARI.
Continue to lead cutting edge technology demonstration projects to facilitate grid and market operations.

Stakeholder Value and Engagement
Align and support NYS CLCPA Goals
Grid Modernization and energy management tools optimize system
Preserves safety and reliability.

Advanced Metering Infrastructure

Progress Since 2020 DSIP
Field Area Network Design Completed
Testing of 5 Meters for MVP completed
Billing of MVP customers successful
Installation of meters has begun in Fabius and Homer, NY
Meter data Web display is underway

5-Year Plan
Further testing of electric meters underway as deployment is scaling
Development of time-of-use (TOU) rates
Gas Module testing
Bulk Meter Deployment
Community Engagement/Town Hall meetings and Marketing

Stakeholder Value and Engagement
TOU rates will provide customers with opportunities to shift energy usage to save on bills
Data Sharing via Green Button Connect to include AMI data for 3rd party companies
Web presentment and Web application for customers to display/view near-real time energy usage data and billing data
Sense application/load disaggregation data embedded in our electric meters can provide appliance level energy usage

Billing and Compensation

Progress Since 2020 DSIP
9 existing DER-related compensation programs: Volumetric Net Energy Metering (“NEM”), Monetary Net Metering NEM, Remote Net Metering, Remote Crediting, Net Crediting, VDER Phase One NEM, VDER Phase One NEM with Customer Benefit Contribution, Phase One VDER Value Stack, and Phase Two VDER Value Stack
2022 Community Distributed Generation – Net Crediting Implemented for Value Stack Projects 2023 VDER Value Stack Billing Automation Complete

5-Year Plan
FERC2222 Wholesale Market Participation
Host Community Benefit Program
Net Crediting for Volumetric NEM CDG
Expanded Solar for All

Stakeholder Value and Engagement
Participate in monthly meetings for the CDG Billing and Crediting Working Group
Accurate and timely billing improves market function
Compensation mechanisms promote the development of DERs

Questions on Market & Operations (until 11:50)

Please use the Q&A feature to submit questions

Closing – Stakeholder Information

National Grid's Interconnection Online Application Portal (IOAP)	National Grid nCAP Portal
National Grid System Data Portal	National Grid System Data Portal
National Grid Customer Market Place	National Grid Marketplace
NWA Website	National Grid Non-Wires Alternative
National Grid Energy Savings Program	National Grid Energy Saving
National Grid Electric System Bulletin Number 756	National Grid ESB 756
Joint Utilities of NY Stakeholder Information	Joint Utilities Website