PANEL:
The Growing Role of EE in Deferring T&D and Relieving Energy Supply Distribution Constraints

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DSM is integrated into Engineering & Planning

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Demand Response Programs
Energy Efficiency Programs
Demand Management Programs

GENERAL MANAGER
Energy Services

CHIEF ENGINEER
Regional Engineering

CHIEF ENGINEER
Distribution Engineering

Central Engineering
Transmission Planning

hands-on support starts here
DSM has a measurable impact on demand per CECONY Ten-Year Electric Peak Demand Forecast

Including DSM in the forecast reduces peak demand growth by 35% over next 5 years.

5-Yr CAGR:
- w/o DSM: 14,575 1.4%
- w/ DSM: 14,250 0.9%

September 2014 Forecast w/ DSM
- September 2014 Forecast w/o DSM
DSM impacts varies by electric load area
Bottom-up Forecast with DSM included

Source: Consolidated Edison Company of New York

Notes:
- Richmond Hill is split between Brooklyn and Queens for illustration only. Data reflect total Richmond Hill values and are not additive.
- Westchester notarized; Shrub Oak is new and not included in map above.
DSM impacts varies by electric load area
Bottom-up Forecast without DSM included

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Infrastructure build deferrals via system-wide programs and targeted DSM

In this illustrative example, accounting for DSM in the forecast defers build two years. Add’l targeted DSM pushes build two more years.
Integrated Demand Side Management model evaluates potential and economics

INPUTS
Technology Screen & Potential Analysis
Primary and Secondary Data

MODELS
Economic Global Inputs
Ranking and Economic Global Inputs

OUTPUTS
Economic Potential
Output by Load Area
Adoption Plan
Selection Module

INPUTS
User Adjusts
Forced and Removed Measures

Feedback Loop

Baseline Market Characteristics
Universal List of EE/DR/DG/STR Measures
Screened Technical Potential
Maximum Achievable Potential

EE Module
DR Module
CSG Module
STR Module

Combined Ranking and Potential
Animated illustration of network load changes over 24 hours of a peak day.
Demand response valuation tool accounts for location and timing of resources

- Considers:
  - Location of needs and at risk areas (i.e. high/low capacity networks)
  - Characteristics of needs and programs (e.g. load shapes, timing)

- Informs cost effectiveness and incentive amounts
DR value model groups networks by timing, load shape, and high/low excess capacity.
Brooklyn Queens Demand Management (BQDM) Program Overview

• Subtransmission feeders serving two networks in Brooklyn and one network in Queens overloaded (>800MW)

• Company developed multi-faceted solution to address forecasted overloads including:
  – Traditional utility solutions (e.g. load transfers)
  – Non-traditional customer and utility solutions (BQDM)

• BQDM filing on July 15, Order received on December 12
  – Commission approved $200m
    • Customer Sided 41 MW ($150m) and Utility Sided 11 MW ($50m)
    • Expenditures treated as 10 year capital assets with regulated return
    • Includes a 100 basis points bonus incentive per 3 performance metrics
BQDM Networks
BQDM Solutions
RFI Evaluation and Purchasing

Duration Analysis

+ 

EPRI Evaluation

+ 

RFI Detailed Review

Inputs → RFI Evaluator(Nexant) → Outputs → Portfolio with top options → Purchasing timeline and strategy
DSM Resource Portfolio Selection
(for illustration only)

Effective MW of resources calculated based on:

- Technology characteristics
- Customer segment type
- Demand reduction duration

Sample network 2016 peak day load curve
Retrofi ciency Screen Shots (Brownsville customers)
Small Business Program targeted to constrained Brooklyn & Queens networks

- Targeted existing small business program
  - Adjusted existing 70% incentive to 100% incentive
  - Considered measure impacts outside TRM (e.g. outdoor lighting)
  - Sold 1,750 customers, > 5.6 MW; installed 1,000 customers, >3.6 MW
  - Exploring expansion of MW goals and incentivized measures (LEDs)
BQDM next steps include RFI selections, EE targeting, and Order clarifications

- RFI selections and purchasing
- Evaluate progress against checkpoints (on-going)
- Stakeholder engagement (on-going)
- Expand Small Business EE program targeting
- Implement Multi-family EE program targeting
- Dispatch strategy for dynamic resources
- Await clarification on several aspects of the Dec 12 Order