

# **Con Edison**

# **Energy Storage Activities**

June 15, 2015

## **EIA Conference**

# **Con Edison Energy Storage (ES)**

## **Presentation Overview**

- Introduction to Con Edison
- Potential benefits of storage on our system
- Unique urban challenges
- Con Edison storage related activities
- Going forward

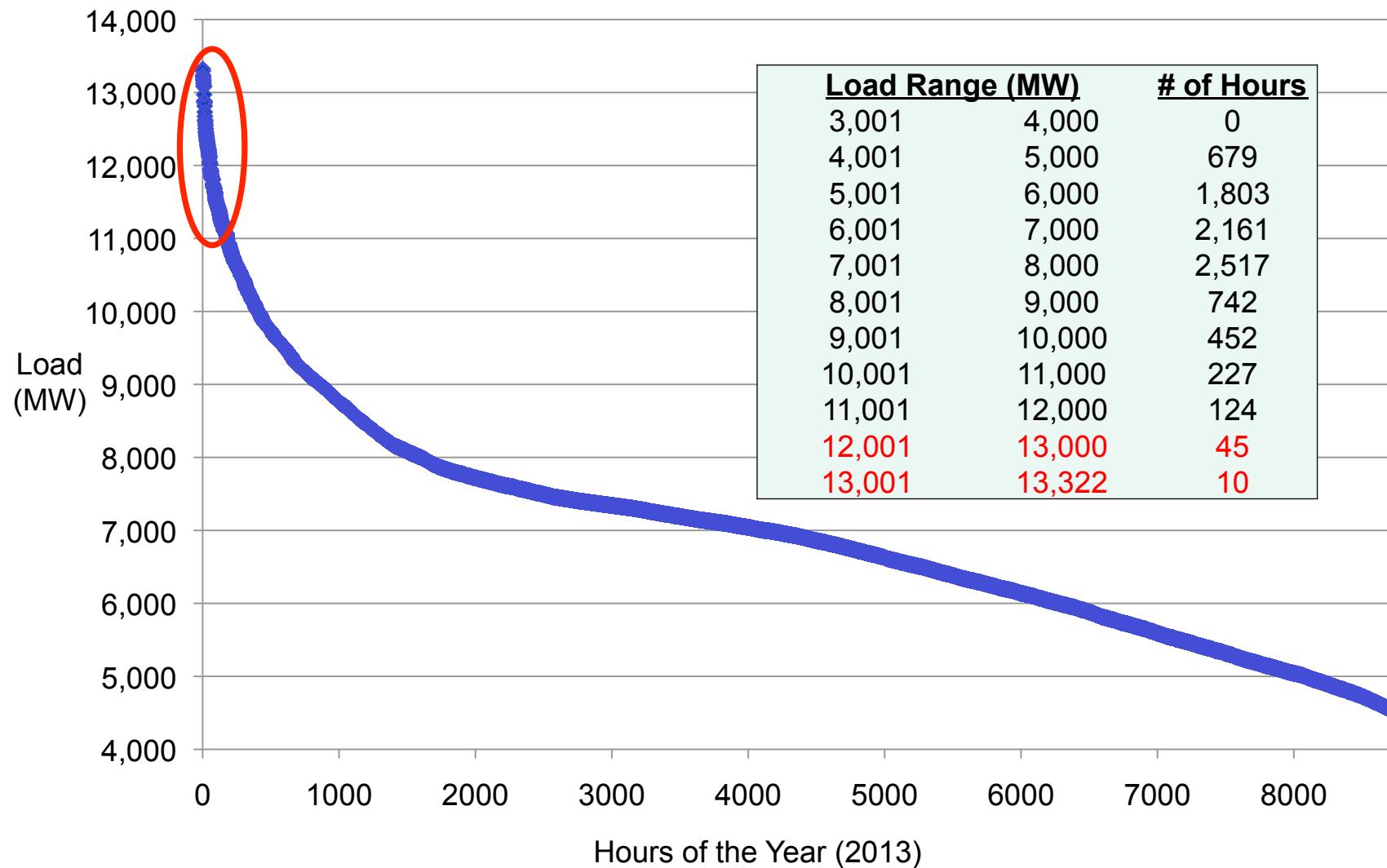
# Con Edison: Overview

	Customers	Infrastructure	Service Territory
Electric	3.4 million	One of the worlds largest underground electric systems	All 5 boroughs of NYC and Westchester County
Gas	1.1 million	4,333 miles of gas mains & services	3 out of the 5 NYC boroughs & Westchester County
Steam	1,700	Largest district steam system in the world	Manhattan below 96 <sup>th</sup> Street

- In Manhattan, up to 70,000 customers/sq mile; 2,000 MW/sq mile
- Our customers create about 4% of U.S. GDP – home to ~10% of Fortune 500 Companies

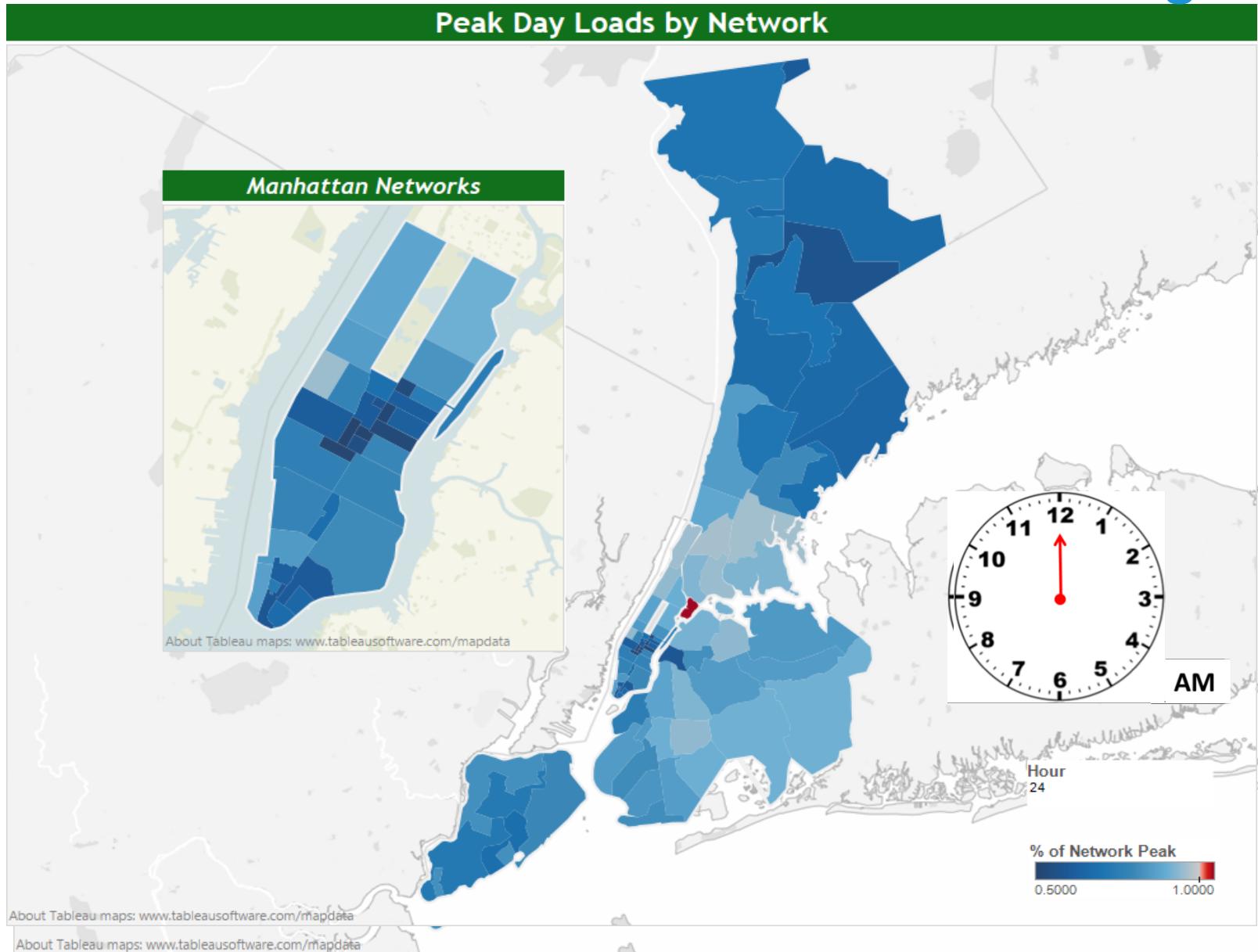


# Con Edison System Load Characteristics



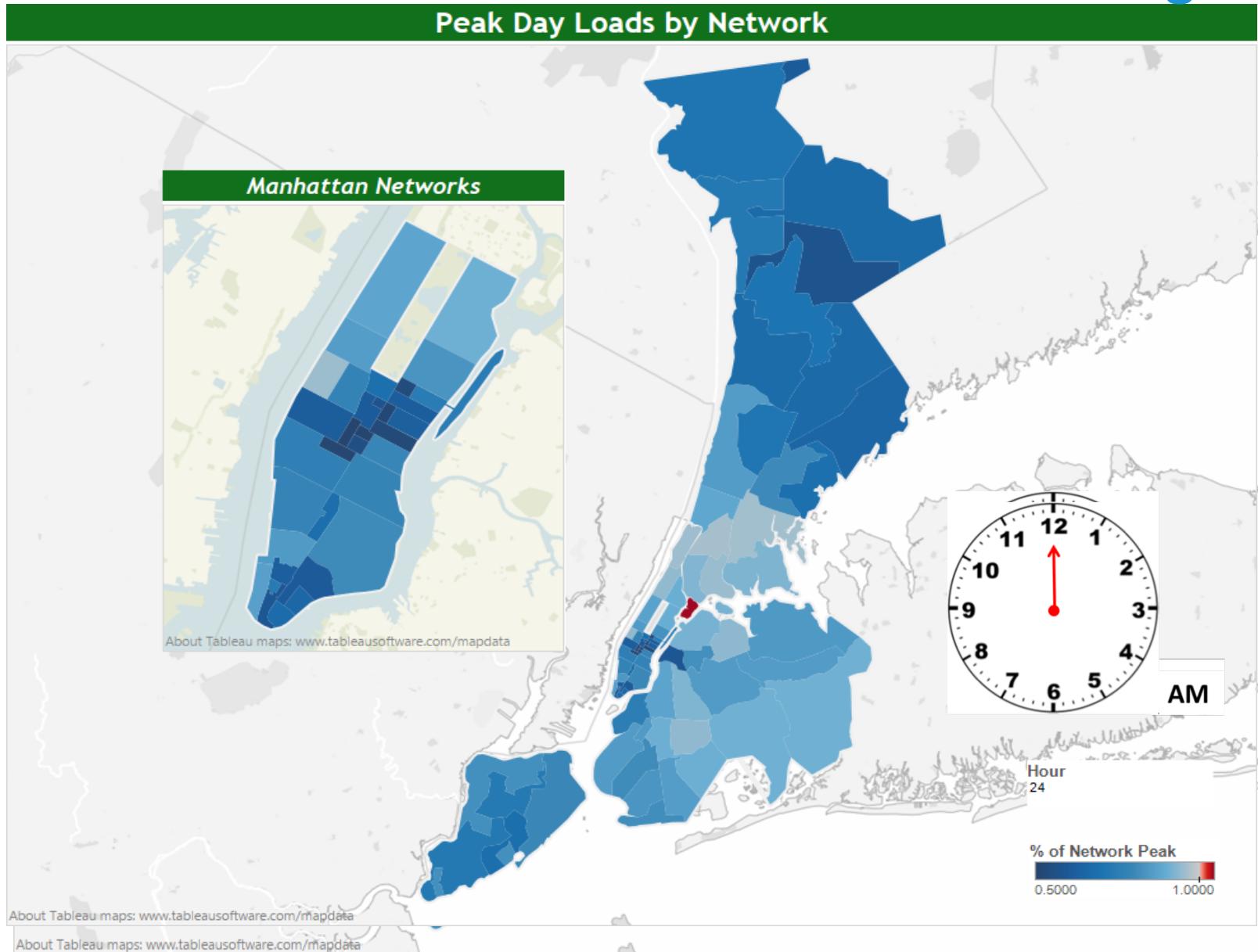
# Animated Illustration of Network Load Changes

## Peak Day Loads by Network



# Animated Illustration of Network Load Changes

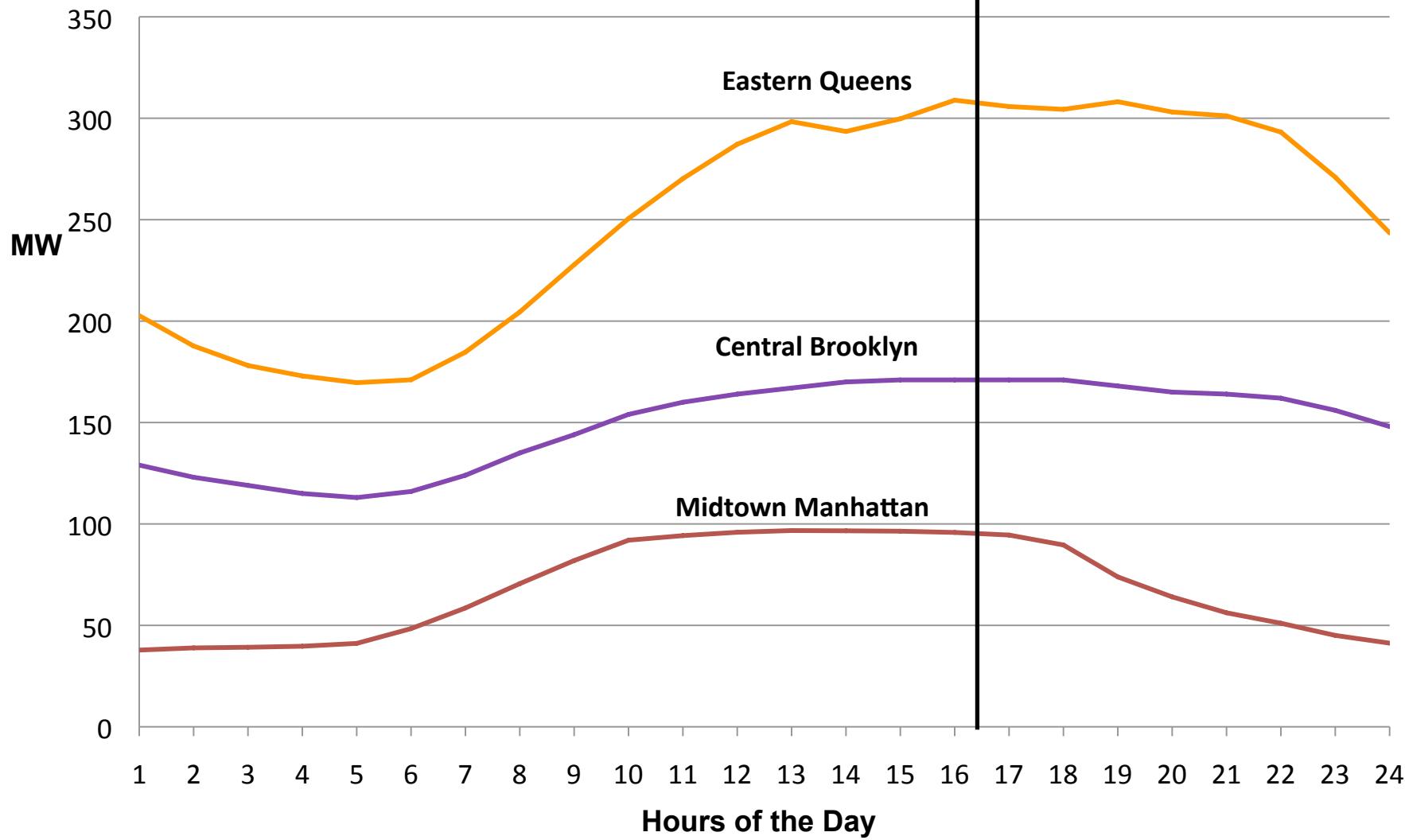
## Peak Day Loads by Network



# NYC Neighborhoods Use Electricity Differently

June 24<sup>th</sup>, 2013

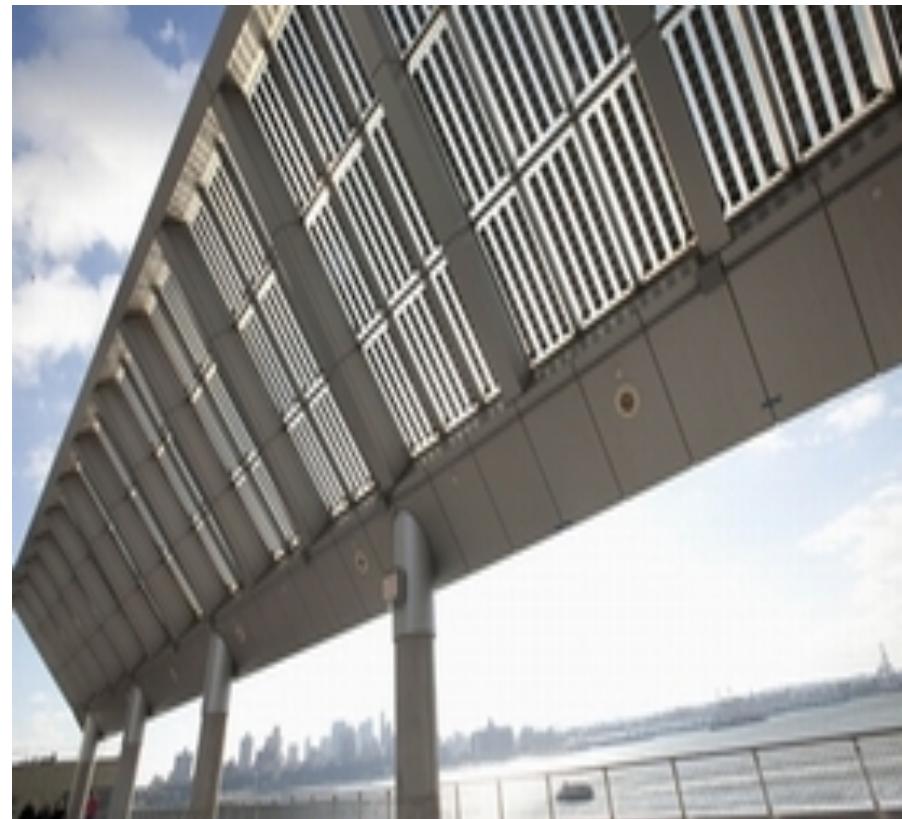
System  
Peak: 4-5 pm



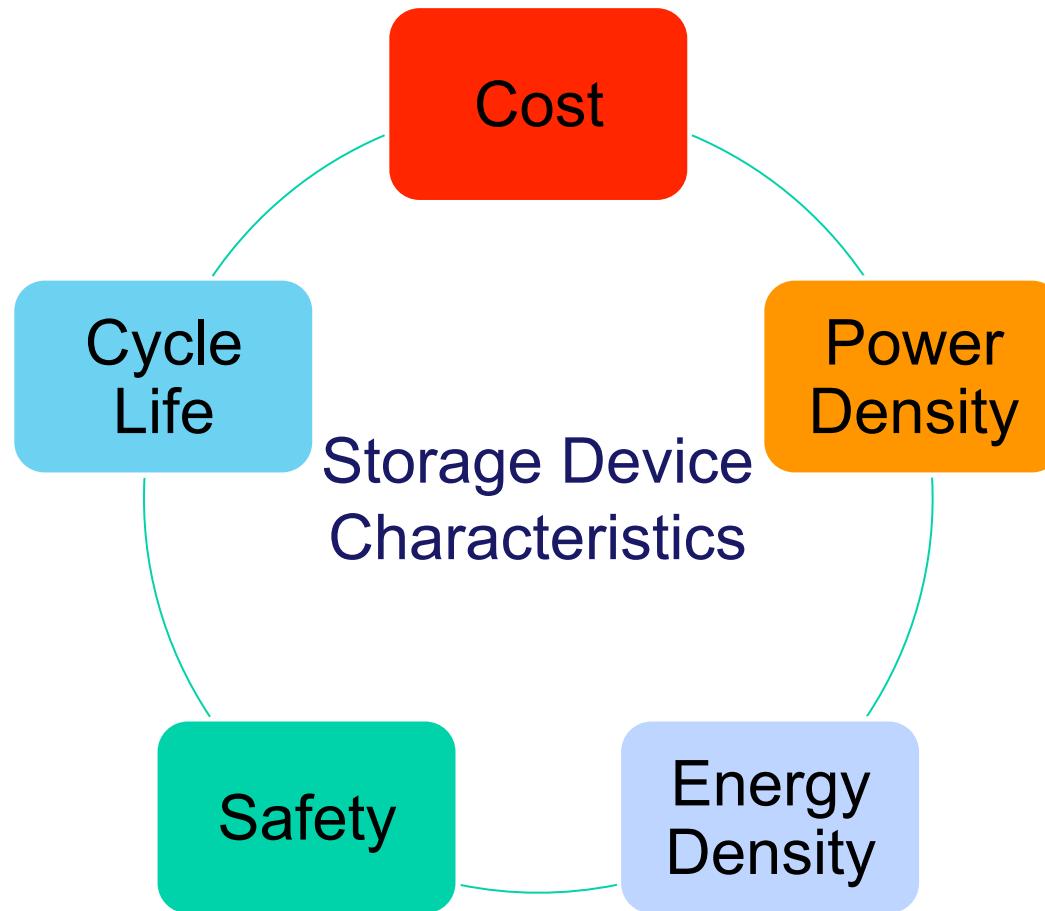
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# Why is Con Edison Interested in Energy Storage?

- Improved Asset Utilization
  - Peak Shaving
  - Infrastructure Deferral
- Integration of Solar
- Ancillary Services



# Cost is One Consideration



# Energy Storage Challenges in New York City

- Limited Space
  - High value real estate
- Installation Challenges
  - Existing infrastructure
  - Complex construction projects
  - Specialized labor force
- Permitting
  - Fire Department of NY
  - NYC Department of Buildings



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# Innovating Solutions: Brooklyn-Queens Demand Management Program

Deferral of \$1 billion in traditional network upgrades with distributed solutions

- Meets capacity shortfall through a \$200 million program
- Energy Storage is included as part of both utility & customer-sited solutions
  - 1 MW Con Edison owned battery Integrated into our distribution system
  - Additional customer-sited solutions



# **Additional Con Edison Storage Activities**

- Indian Point Contingency Plan
  - Targeted 125 MW of permanent peak demand reduction in the Con Edison service territory by 2016
  - Includes battery & thermal storage incentives for large customers
- Demonstration Projects
  - Transportable Energy Demonstration System (TEDS)
  - CCNY Nickel Zinc Battery
  - EOS Zinc-Air Battery Demonstration
  - Molten salt energy storage feasibility study

## Going Forward

- Challenges & Opportunities
  - Grid integration ready
  - Competitively priced options
  - Uniform performance protocols and standards
  - Engaging customer-sited solutions
  - Reforming the Energy Vision Proceeding

# Q&A



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