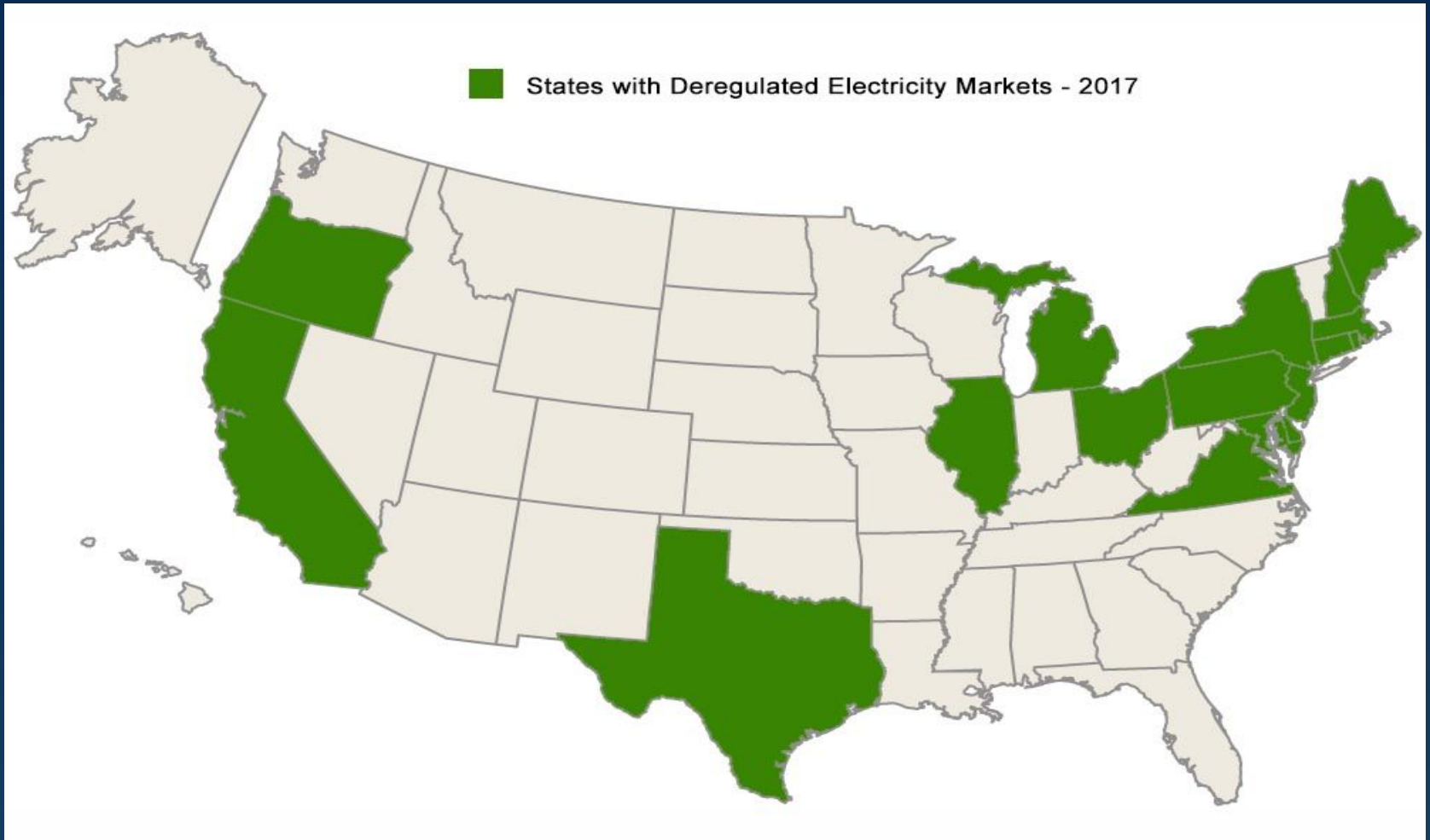
REV: Reforming the Energy Vision

New York State's Policy to Remake the Grid

Quebec Energy Regulation Workshop

March 2021

Background: Vertically Integrated Utilities or Not?



Background: Vertically Integrated Utilities or Not?

- In most states electric utilities are “vertically integrated,” meaning they own generation, transmission and distribution
- In 16 states, utilities do NOT own generation

Background: Structure of Utilities in New York State

- Utilities are “wires” companies
- They only own transmission and distribution
- Through rates set by regulators, utilities recover their cost of service but get their profit based upon a regulated rate of return on capital

Background: Structure of Utilities in New York State

- Utilities are “wires” companies
- They only own transmission and distribution
- Through rates set by regulators, utilities recover their cost of service but get their profit based upon a regulated rate of return on capital
- Utilities do not make more money if customers use more electricity

Background: Structure of Utilities in New York State

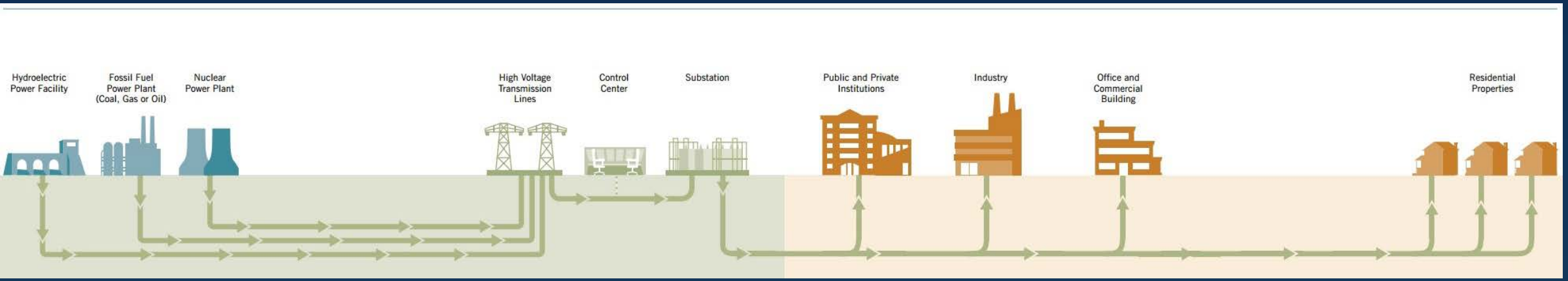
Utilities can't own Distributed Energy Resources (DER)

- DER must be owned by market participants, not utilities
- Owners can be companies, homeowners, businesses, or communities

Policy rationale:

- DER not a natural monopoly
- Entrepreneurs will develop projects efficiently
- Markets bring innovation

Background: The Grid Of Today



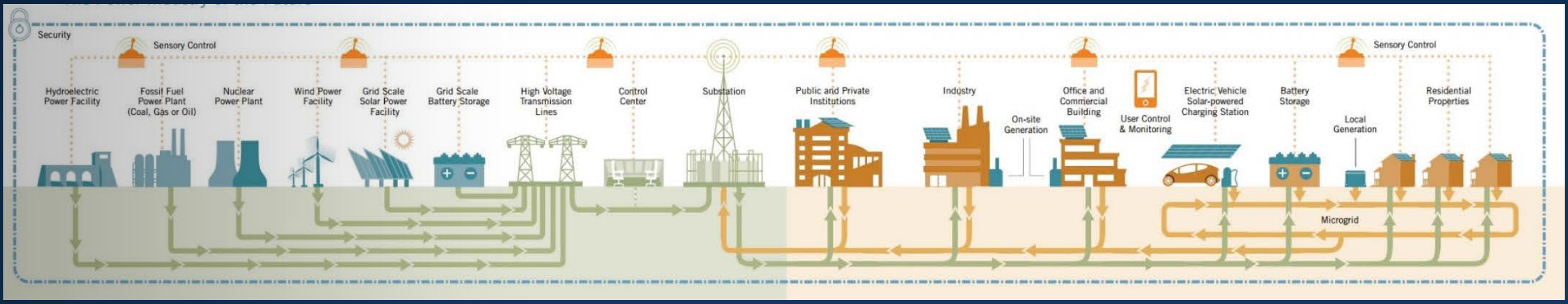
Renewables have been “bolted on” to the grid

The Challenge: Meeting 100 percent Clean

To achieve our climate objectives, we will need much more energy efficiency, much more storage, EVs and electric heating.

We cannot achieve our climate objectives mandate by continuing to “bolt on” Distributed Energy Resources (DER) and renewable energy to a grid architecture that wasn’t designed for those types of resources

The Challenge: Creating the Grid of Tomorrow



The Challenge

Why aren't we building the 21st century grid?

The Challenge

Because we have policies and regulations that keep us rebuilding the old grid

New York: Reforming the Energy Vision (REV)

Reforming the Energy Vision (REV) is a set of new policies and regulations designed to to build the 21st century grid

Why is REV market-based:

- Markets mobilize large amounts of money quickly
- Markets bring innovation
- Markets can bring efficiency

Why Markets Can Work

The good news:

- The current grid is energy inefficient (it was not designed that way)
- The current grid is financially inefficient

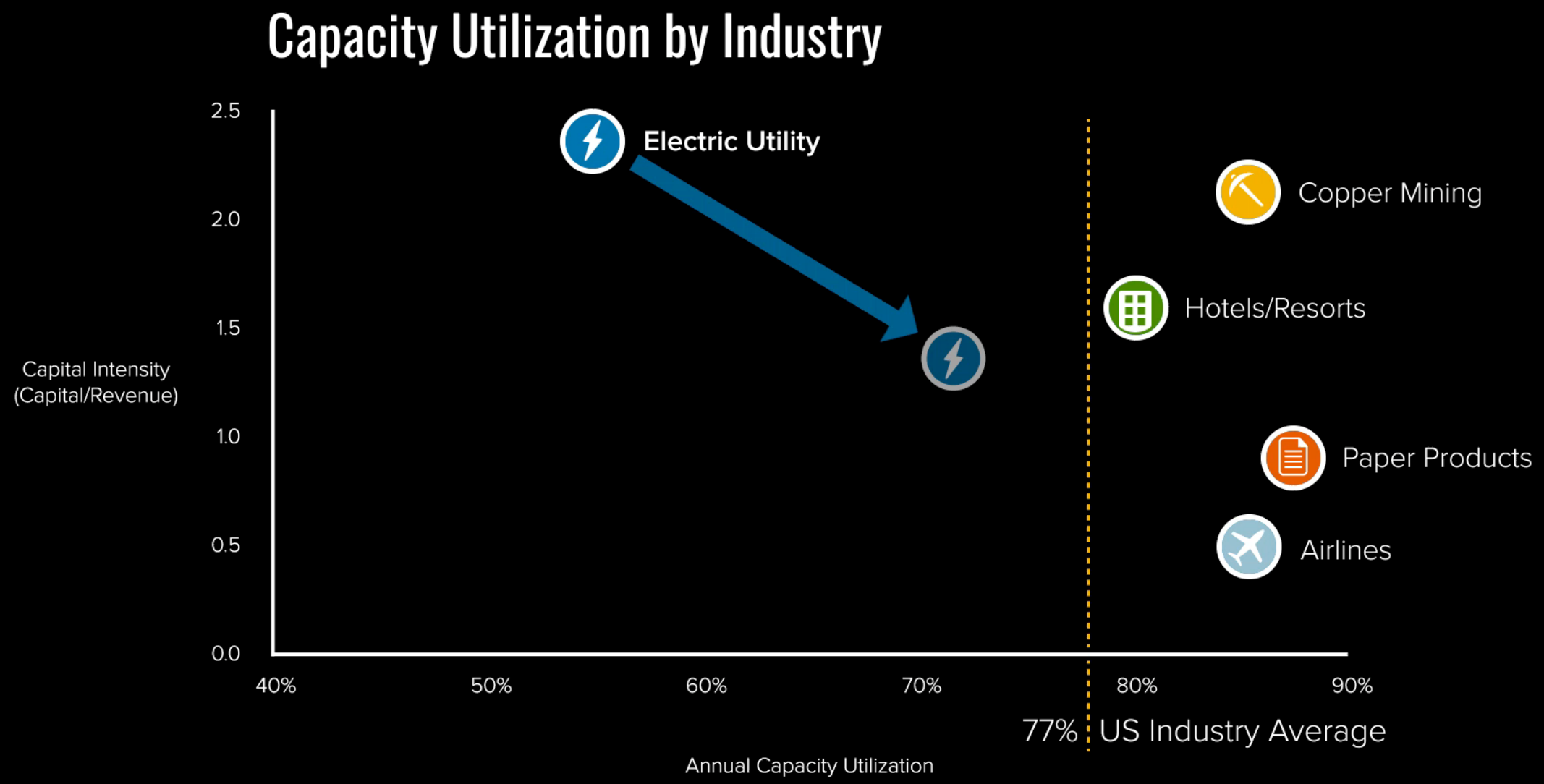
The Challenge: Underutilized Assets

Capacity utilization of New York's electric grid is 54%

Why Markets Can Work

Low capacity utilization:
The grid is built for the hottest hours or days of the year, but customers pay all year long

Why Markets Can Work



Why Markets Can Work

Low capacity utilization:
Because the current grid is so financially inefficient, in New York State we can largely build the new grid within the “cost envelope” of the existing bill

Three Elements of Reforming the Energy Vision:

1. Establish locational value for Distributed Energy Resources
2. Change regulated utility incentives and business practices
3. Stimulate grid edge activity with government resources

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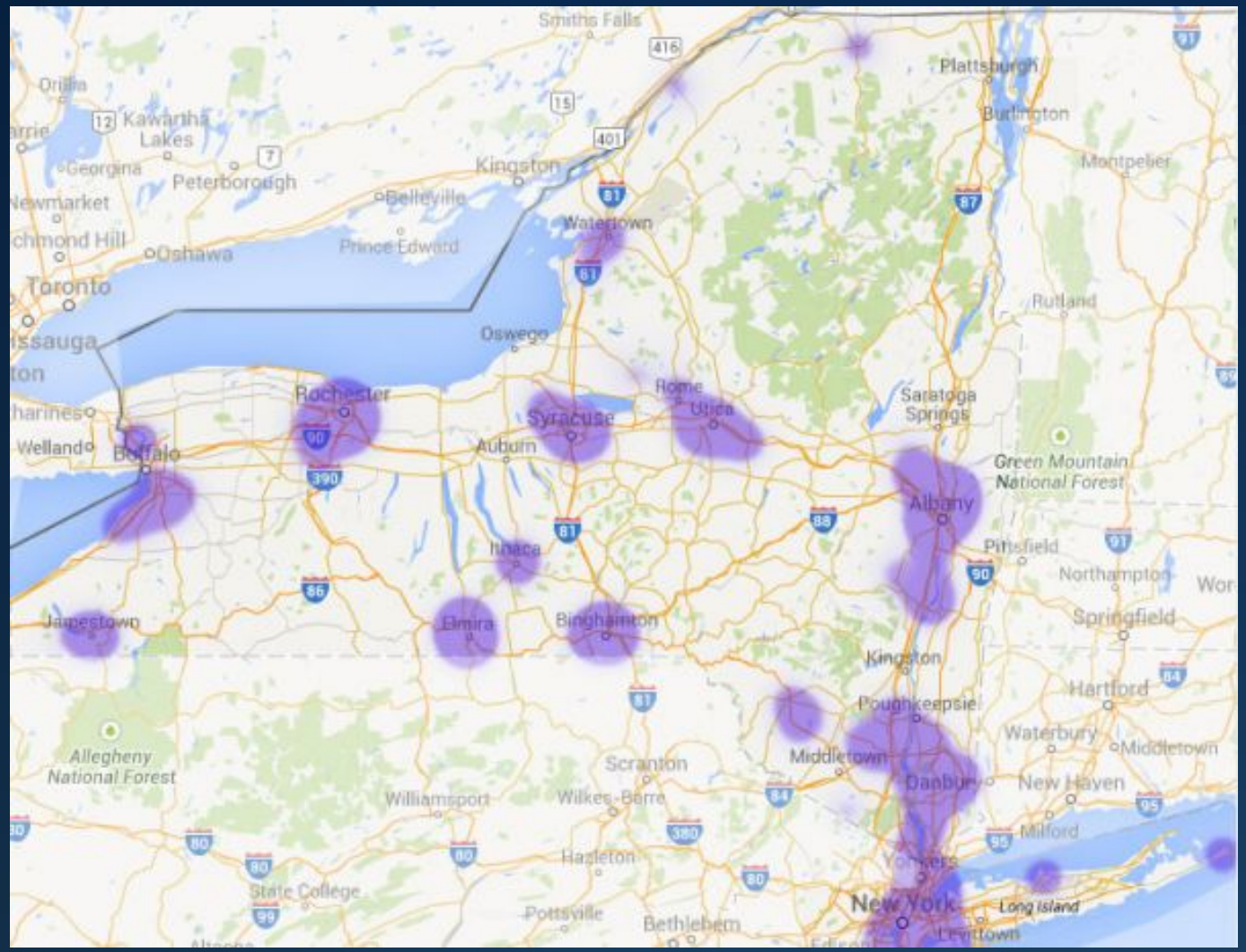
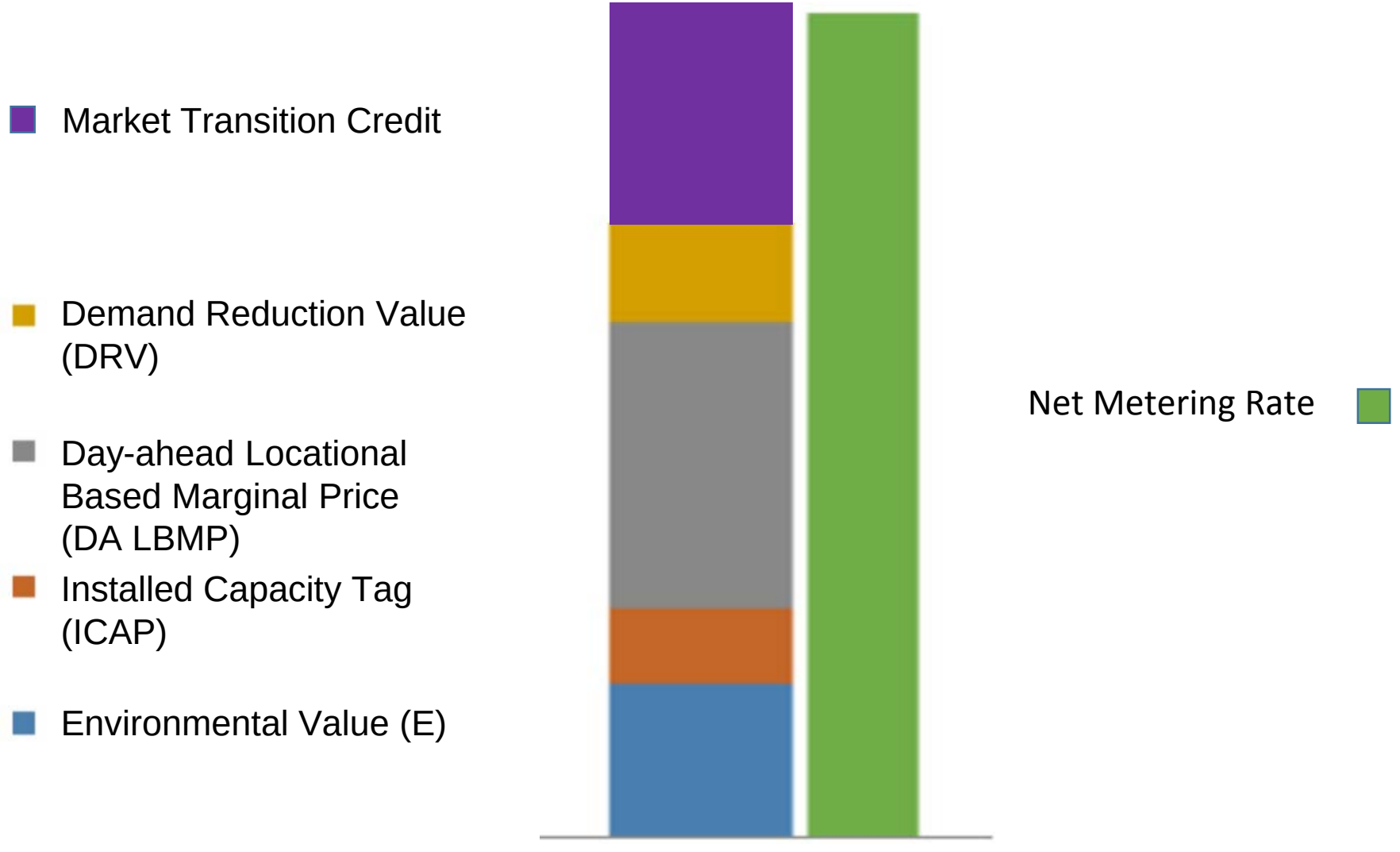
1. Locational Value: Grid "Opportunity Zones"



Opportunity Zones

Value of DER Just Exceeds Net Metering



Three Elements of Reforming the Energy Vision:

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2. Changing Utility Financial Incentives

Traditional Utility Business Model:

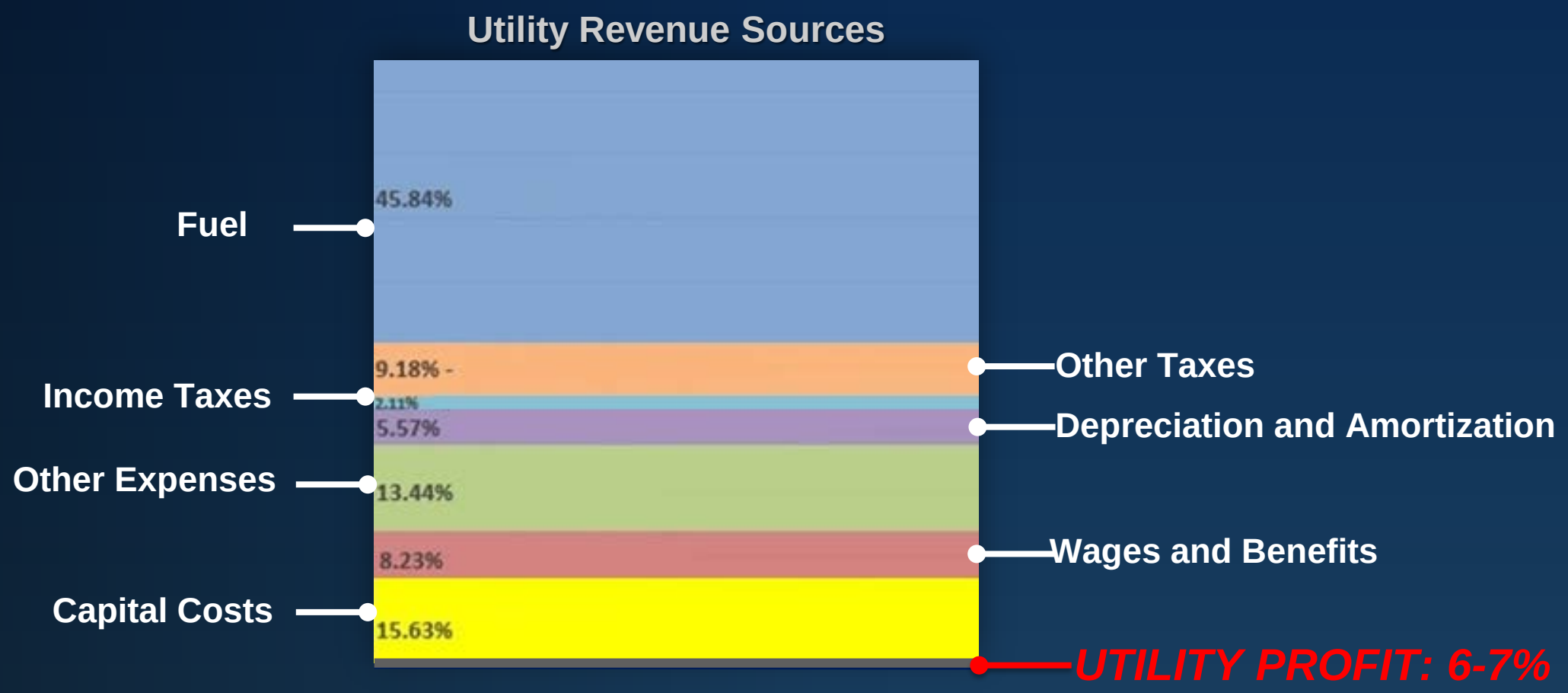
- Through rates, utilities recover costs of providing service plus a regulated return on capital deployed (known as *rate based regulation*)
- The more capital deployed, the greater the profit
- The more capital deployed, higher rates unless there are more customers to share costs

2. Changing Utility Financial Incentives

What's wrong with the model:

- It's expensive: excess capital deployed
- It's a deterrent to adoption of new technology
- It discourages use of distributed energy resources (DER)

2. Changing Utility Financial Incentives



2. Changing Utility Financial Incentives

Old Utility Model:

- Commits capital to build the grid
- Gets paid for how much capital it deploys
- Is indifferent to energy efficiency

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Old Utility Model:

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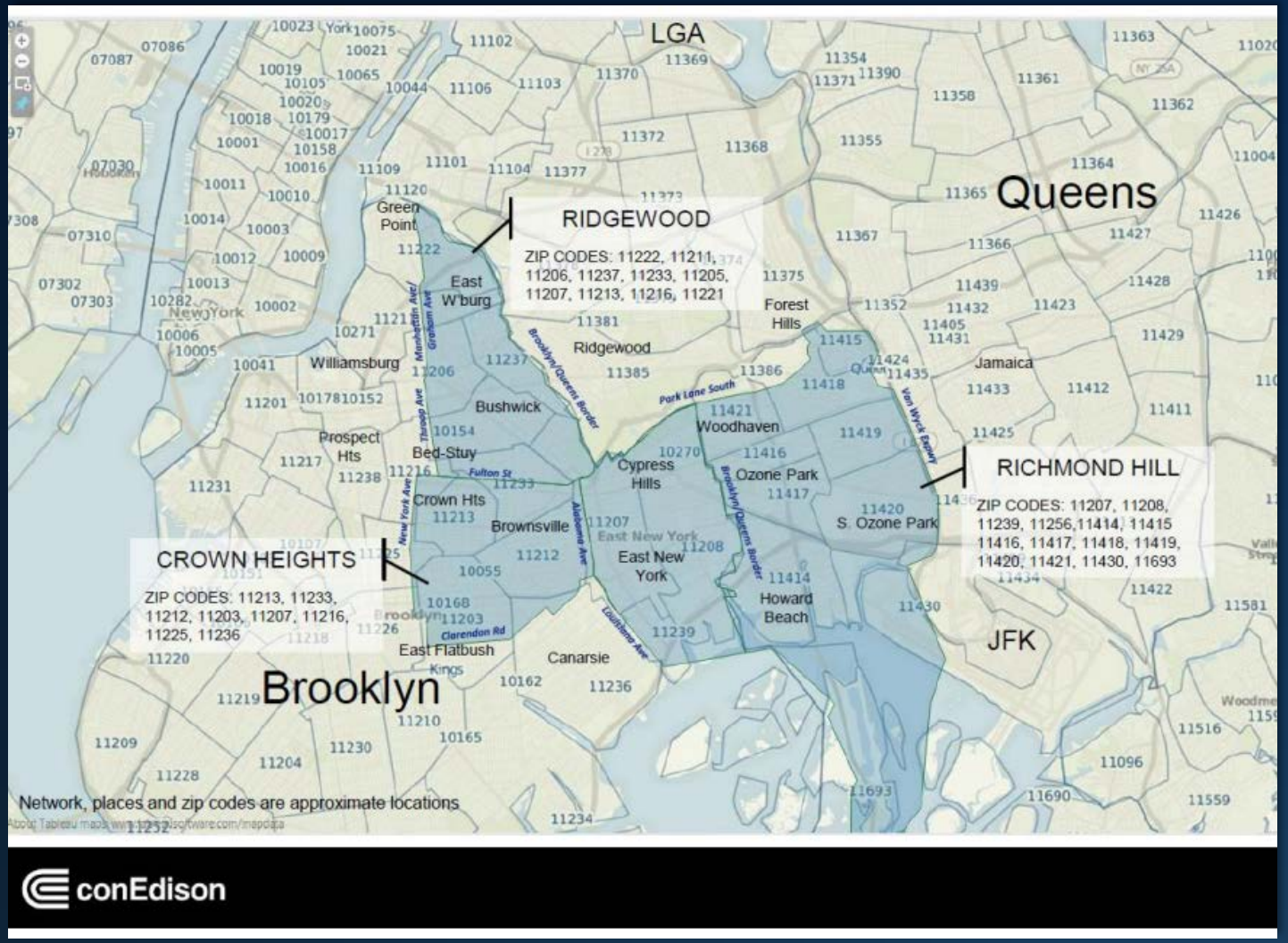
New Utility Model:

- Acts as systems integrator
- Gets paid for capital it deploys
- Gets paid for enabling more efficient deployment of other people's capital
- Has positive incentive for energy efficiency

2. Changing Utility Financial Incentives



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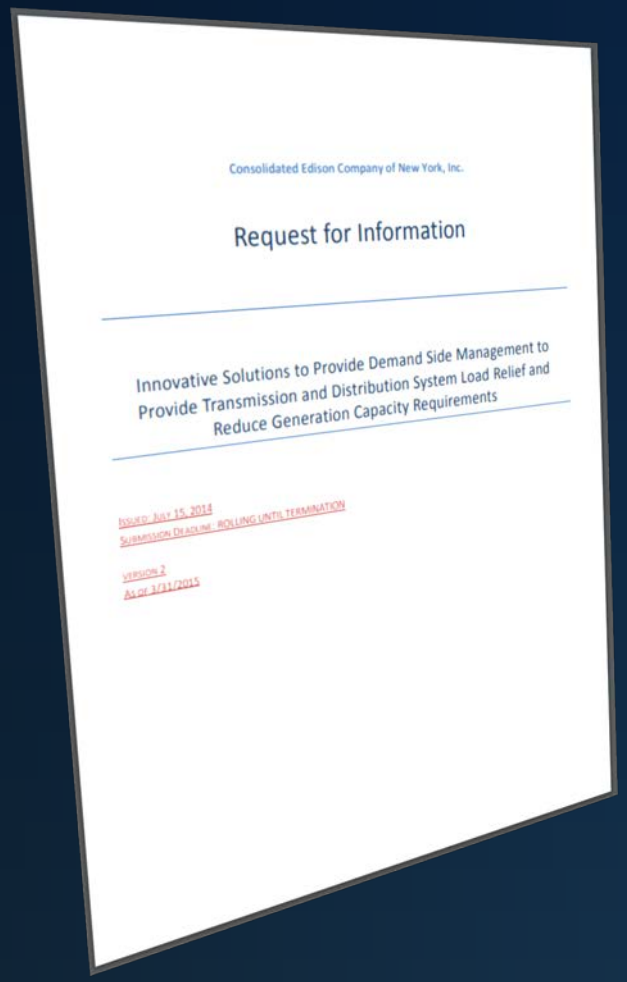
2. Changing Utility Financial Incentives

Traditional solution: $1.2 billion substation

2. Changing Utility Financial Incentives

NEW YORK STATE OF OPPORTUNITY.

Instead of Request for ***Proposals…***



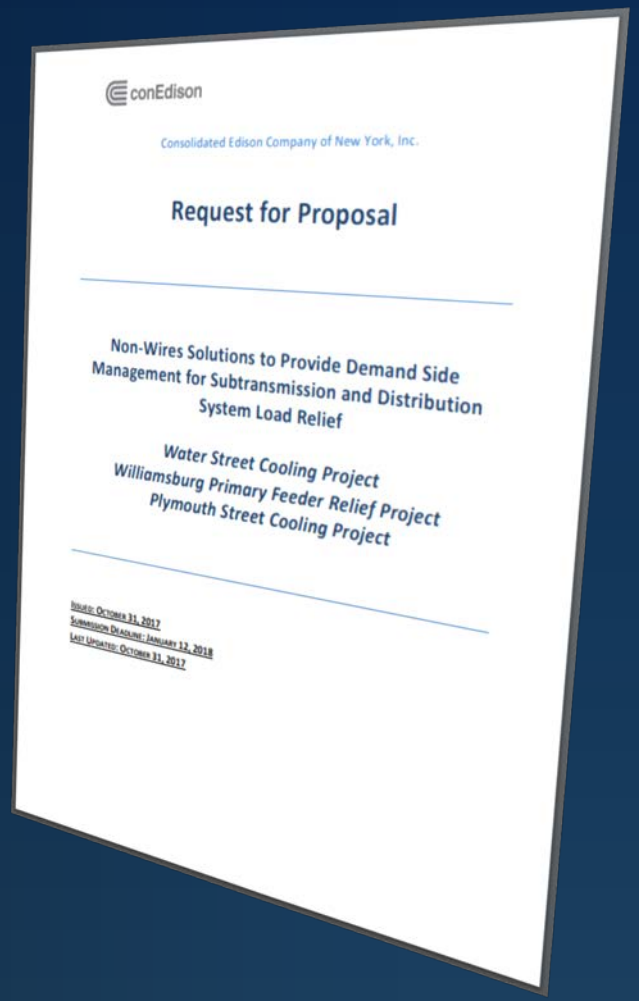
Consolidated Edison Company of New York, Inc.

Request for Information

Innovative Solutions to Provide Demand Side Management to Provide Transmission and Distribution System Load Relief and Reduce Generation Capacity Requirements

Issued: July 15, 2014
Submission Deadline: Rolling Until Termination

Version 2
As of 3/31/2015



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Consolidated Edison Company of New York, Inc.

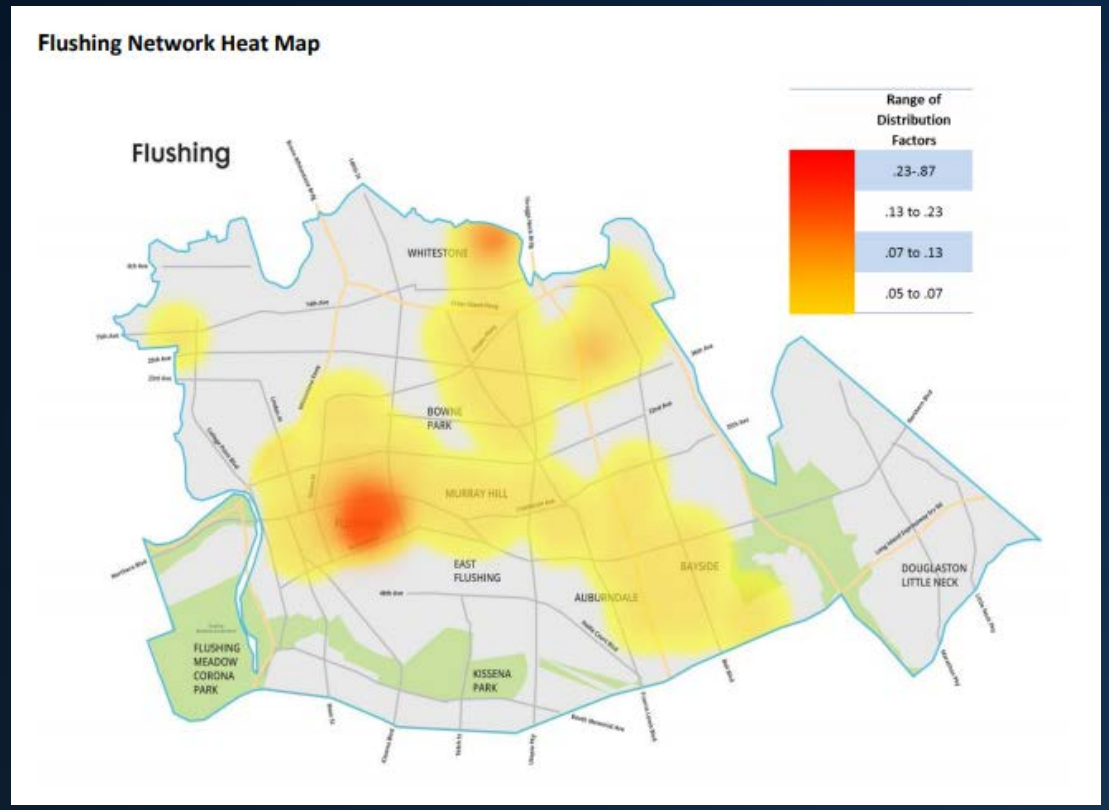
Request for Proposal

Non-Wires Solutions to Provide Demand Side Management for Subtransmission and Distribution System Load Relief

Water Street Cooling Project
Williamsburg Primary Feeder Relief Project
Plymouth Street Cooling Project

Issued: October 31, 2017
Submission Deadline: January 12, 2018
Last Updated: October 31, 2017

… request for ***Non-Wires Solutions***



$200 million for:

- *Solar*
- *Storage*
- *Efficiency*
- *CHP*
- *Demand response*

Instead of $1.2 billion substation

2. Changing Utility Financial Incentives

Two Methods of Changing Compensation:

- "Performance Based Regulation": determining rates of return based on achieving certain targets
- "Shared savings" models

2. Changing Utility Financial Incentives

Utility Revenue Sources

Fuel

Income Taxes

Other Expenses

Capital Costs

Other Taxes

Depreciation and Amortization

Wages and Benefits

UTILITY PROFIT: 6-7%

2. Changing Regulated Utility Financial Incentives

We can go beyond "non-wires alternatives":

- Utilities now have incentive to reduce power supply costs
- We will now see if "negawatts" are a possible business for utilities

Three Elements of Reforming the Energy Vision:

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3. Stimulating Grid Edge Activity

*Stimulating grid **edge activity** with government resources…*

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Previous support programs:
$1 billion per year – 85% in the form of ***one-time grants…***

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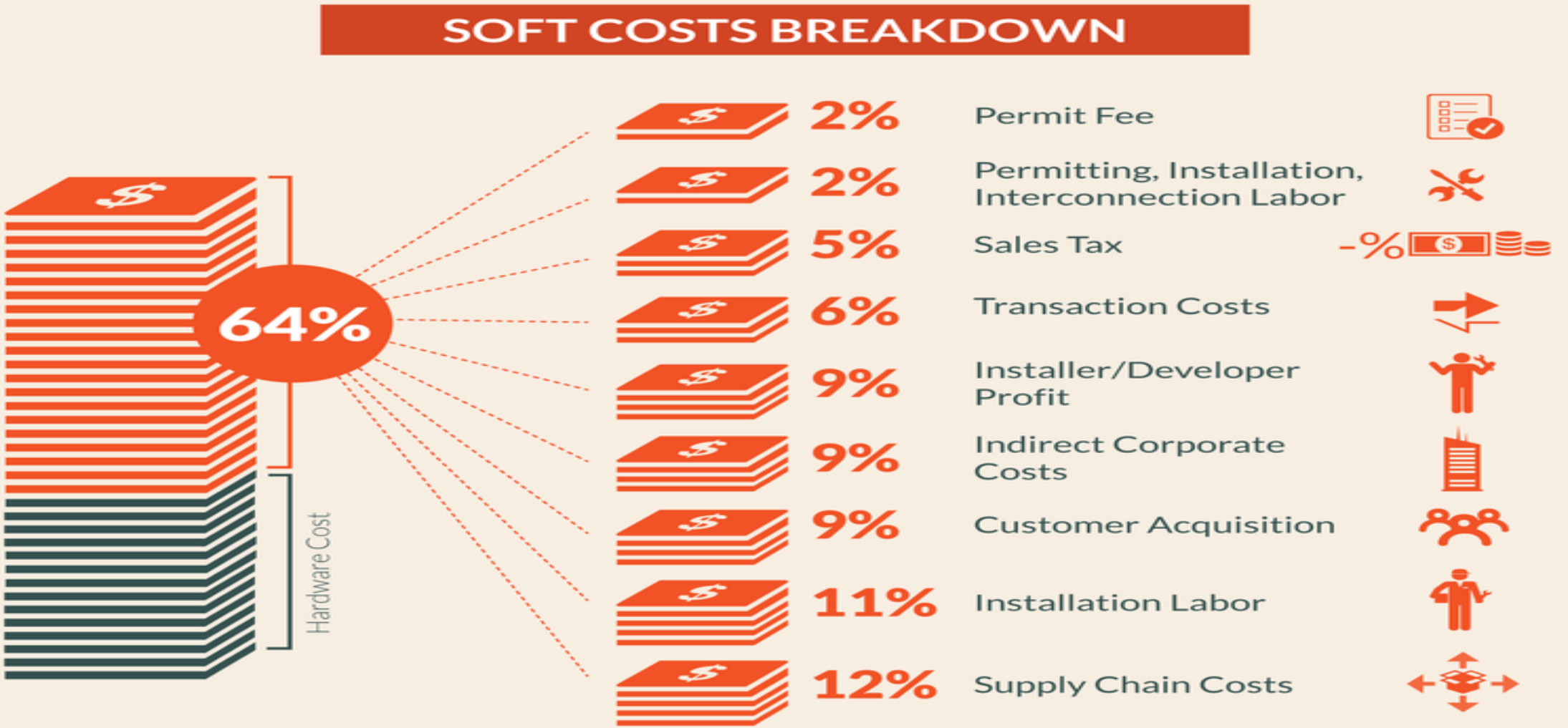
Problem: Lack of Scale

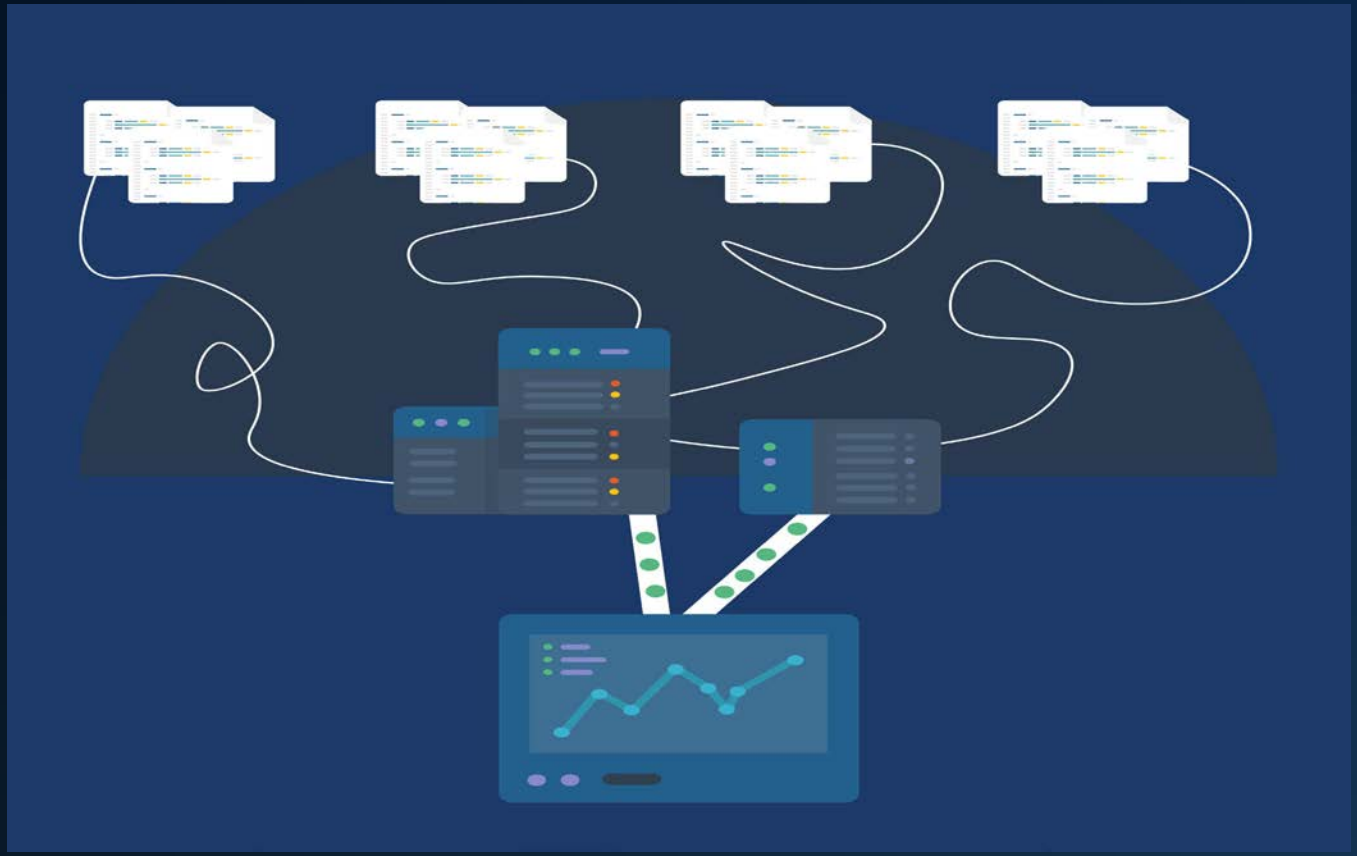
One Time Grant: Good

Solar “Soft” Costs Greater than Panel Costs



Funding a Community Meeting on Solar: Better

3. Stimulating Grid Edge Activity



Competitive Markets:
Building the IT Network on top of the physical grid

How the Pieces Fit Together

- Competitive markets build distributed nodes
- Utilities have financial incentive to encourage renewables, DER and Energy Efficiency, EVs
- Utilities and competitive market actors build IT system to help optimize system