Strengthening User Pull: Thoughts from New York State Policy

NASEM Workshop July 28, 2020

What slows down adoption of innovative clean energy?

- Many markets are mature, served by entrenched competitors
- Markets aren’t valuing externalities
- Costs are too high
- Sustainable solutions require large sums of capital
- Businesses often rely upon government policy

Evolving Government Policy: Old View

- Costs of climate change solutions too high
- Need to invest in innovation, then deploy
- Fund demonstration, first of a kind projects
- Fret over valley of death

Evolving Government Policy: New (York) View?

- Increasing awareness of relationship between markets, innovation, scale and costs
- Funding single projects can build a pier, not a bridge
- Greater emphasis on getting more leverage on public dollars

Evolving Government Policy: New (York) View?

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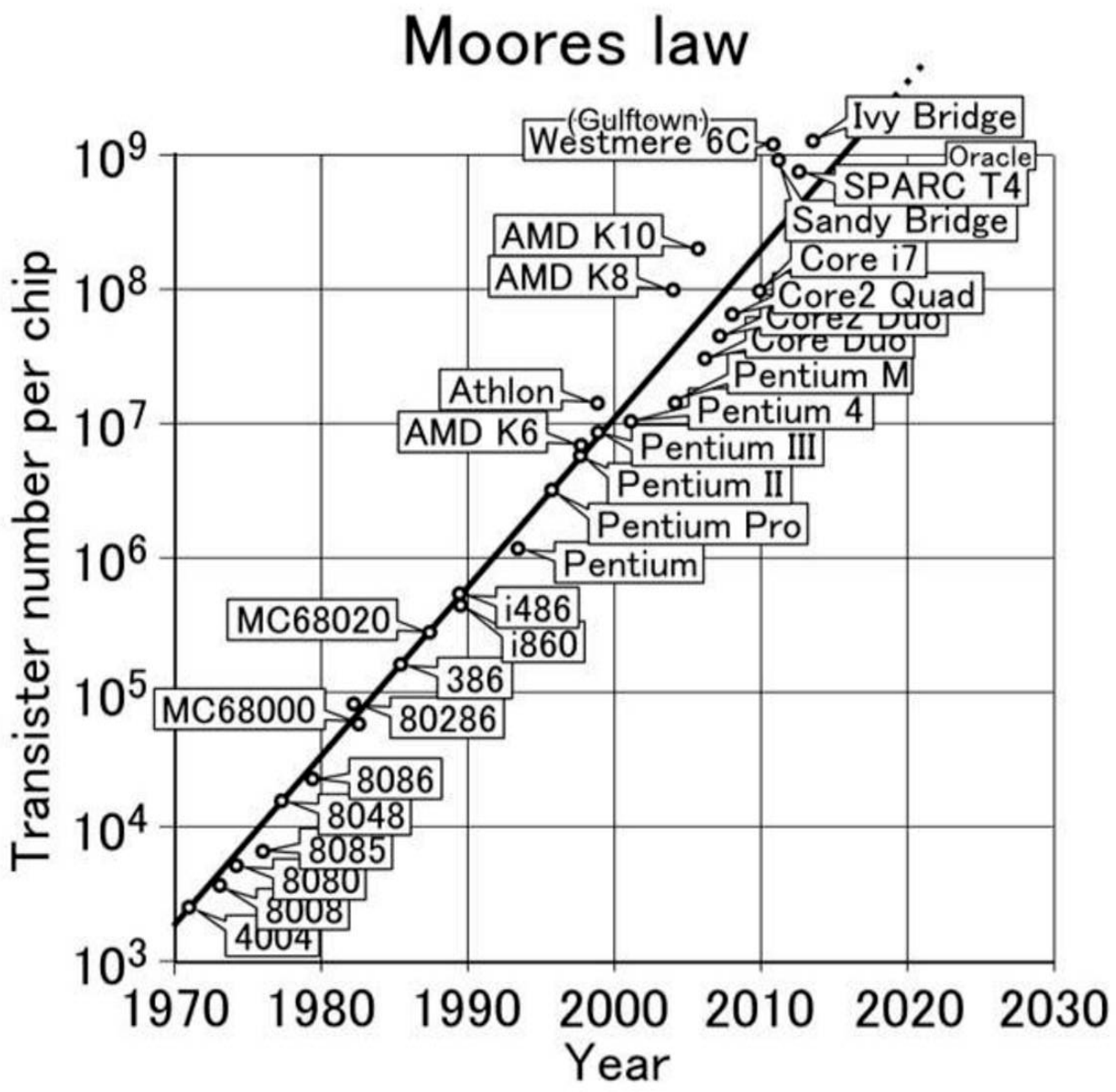
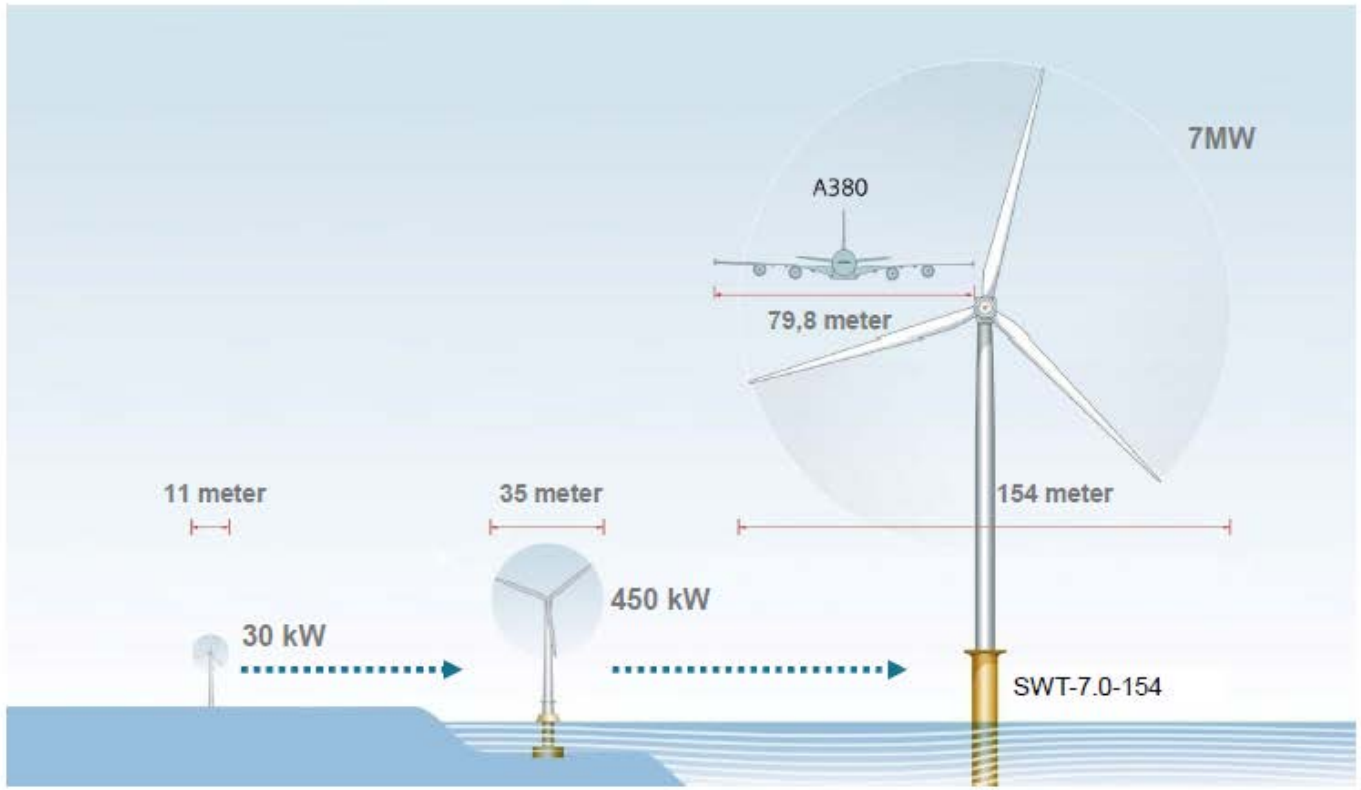
- Funding single projects can build a pier, not a bridge
- Greater emphasis on getting more leverage on public dollars
- States can’t control equipment costs, but can have big influence over soft costs

A law of markets, not physics

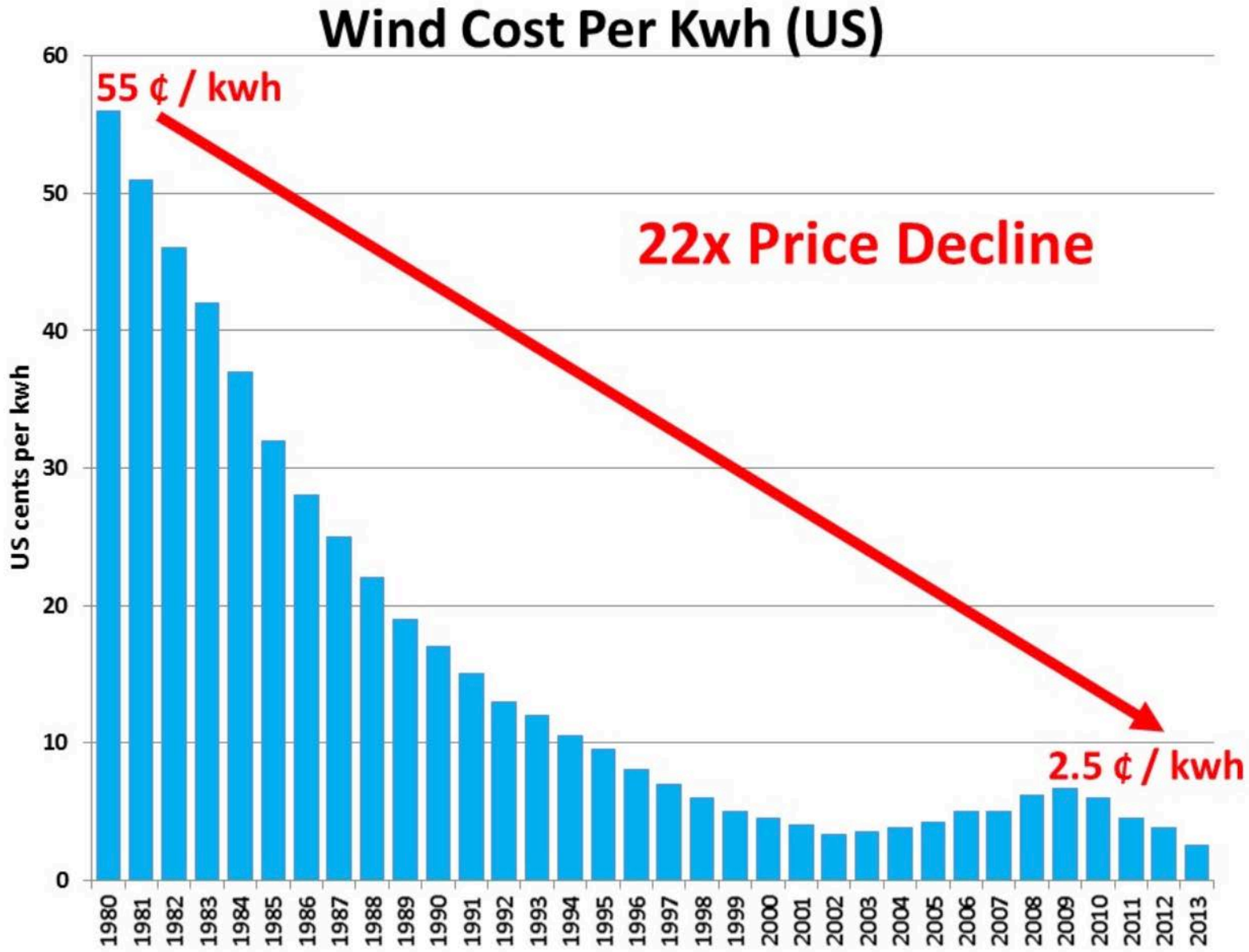


Technology Development of Siemens Wind Power
From 30 kw to 7 MW in 30 years

SIEMENS



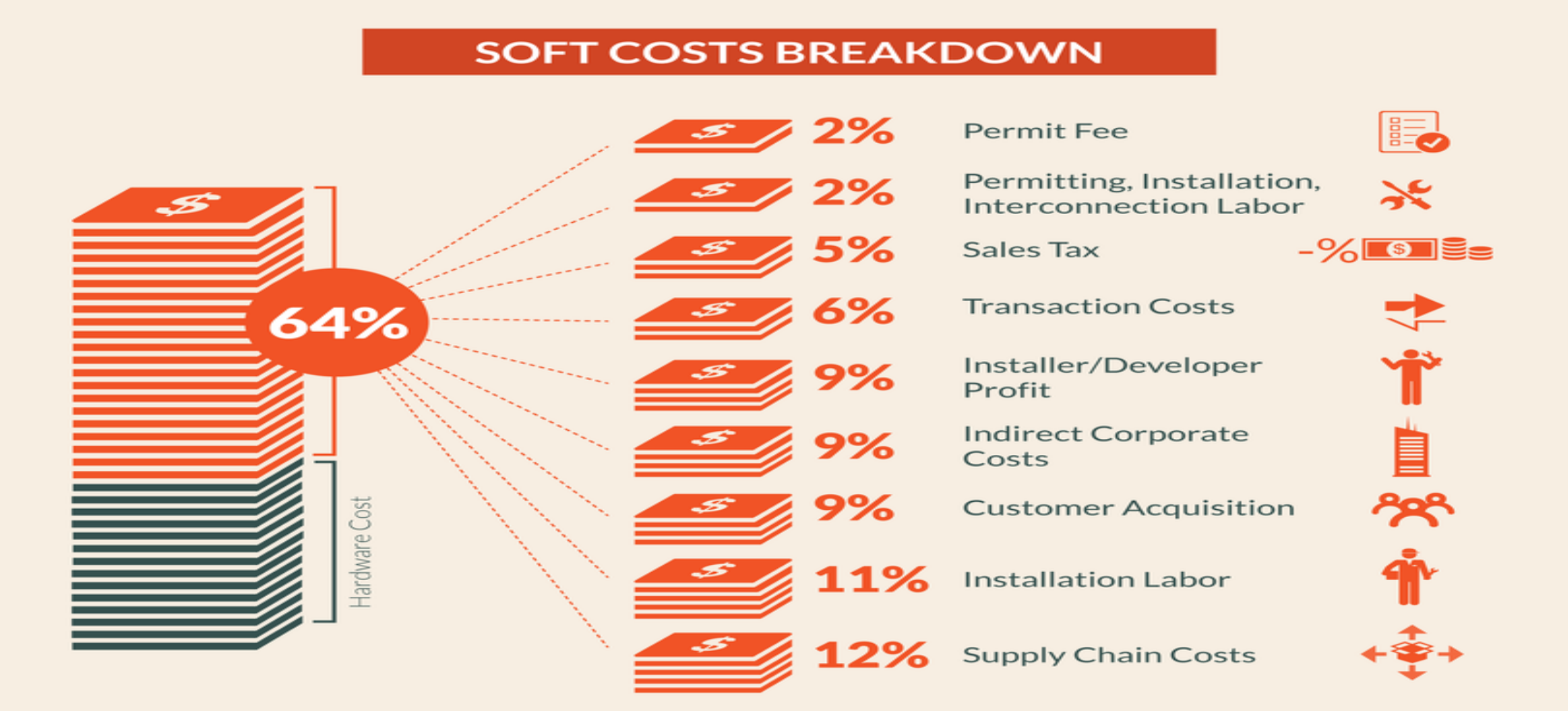
Peter J. H. Esmann, WP OF PLM



NEW YORK STATE OF OPPORTUNITY. | NYSERDA

States Funded One Project at a Time

Solar “Soft” Costs Greater than Panel Costs



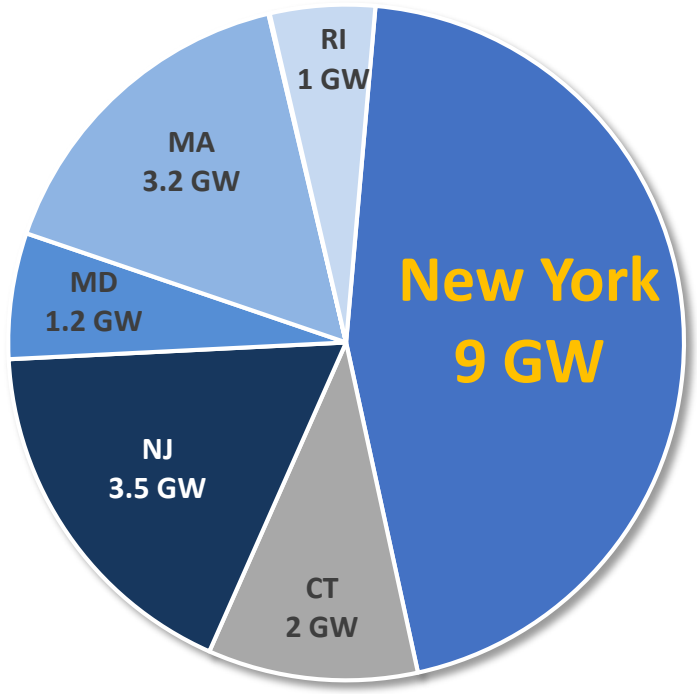
Funding a Community Meeting on Solar: Reducing Customer Acquisition and Installation Costs

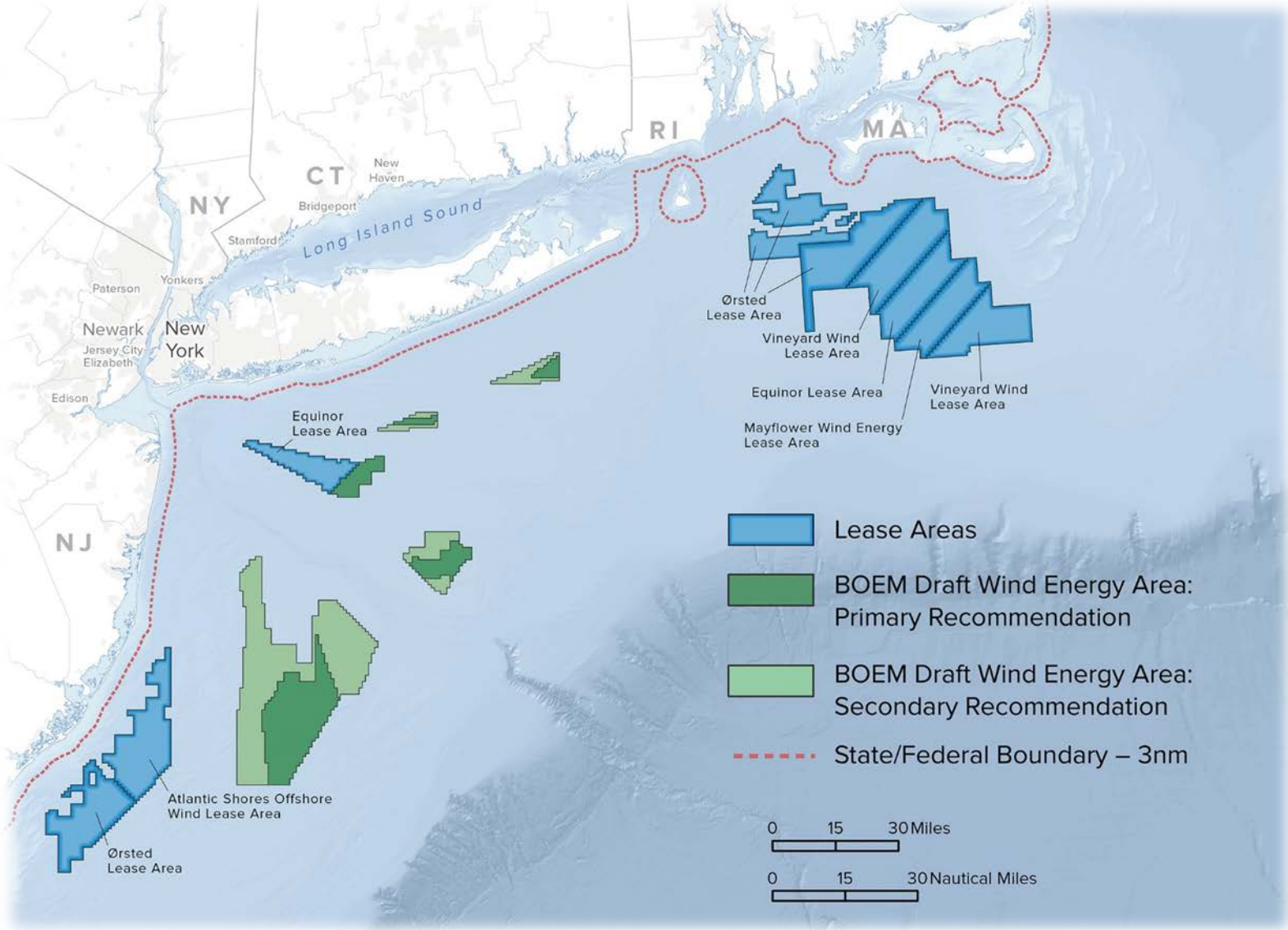
New York State Government Actions

- Established a large end market opportunity within New York State
- Encouraged Collaboration ("Friendly Competition") with Other States
  - DOE helped fund this collaboration

Regional Market Potential, 20 GW

Offshore Wind
Goals by State





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Master Plan Supporting Studies and Surveys

Social and Regulatory

- Aviation and Radar Assets
- Health and Safety
- Shipping and Navigation
- Cultural Resources
- Cable Landfall Permitting
- Marine Recreational Uses
- Visual Threshold Study

Environmental

- Marine Wildlife Survey
- Analysis of Multibeam Echo Sounder and Benthic Survey
- Birds and Bats
- Environmental Sensitivity Analysis
- Fish and Fisheries
- Marine Mammals and Sea Turtles
- Preliminary Wind Resource Assessment
- Sand and Gravel Resources
- Consideration of Potential Cumulative Effects

Economic and Infrastructure

- Pipelines, Cable, and Other Infrastructure
- Ports and Supply Chain
- Workforce Opportunities in New York
- Jones Act Compliant Vessels
- Project Cost Projections
- Offshore Wind Injection Assessment

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- **Reduced Development Costs and Time Through Community Engagement Activities**
- **Mobilized Potential Supply Chain**

And Cost?

Cost-effectiveness: The Empire Wind and Sunrise Wind projects have an average all-in development cost of $83.36 per megawatt hour (2018 dollars) with an expected average OREC cost of $25.14 per megawatt hour. The average bill impact for residential customers will be less than a dollar per month per customer – approximately $0.73. These prices are approximately 40 percent less than projected by NYSERDA's 2018 analysis, signaling that offshore wind is an increasingly competitively priced renewable energy resource.

The Cycle can Accelerate

- DOE has funded an OSW R&D center in NYS
- NYS just announced the next solicitation of 2,500 MW of OSW