

# Committed to our customers and the future of energy in New York



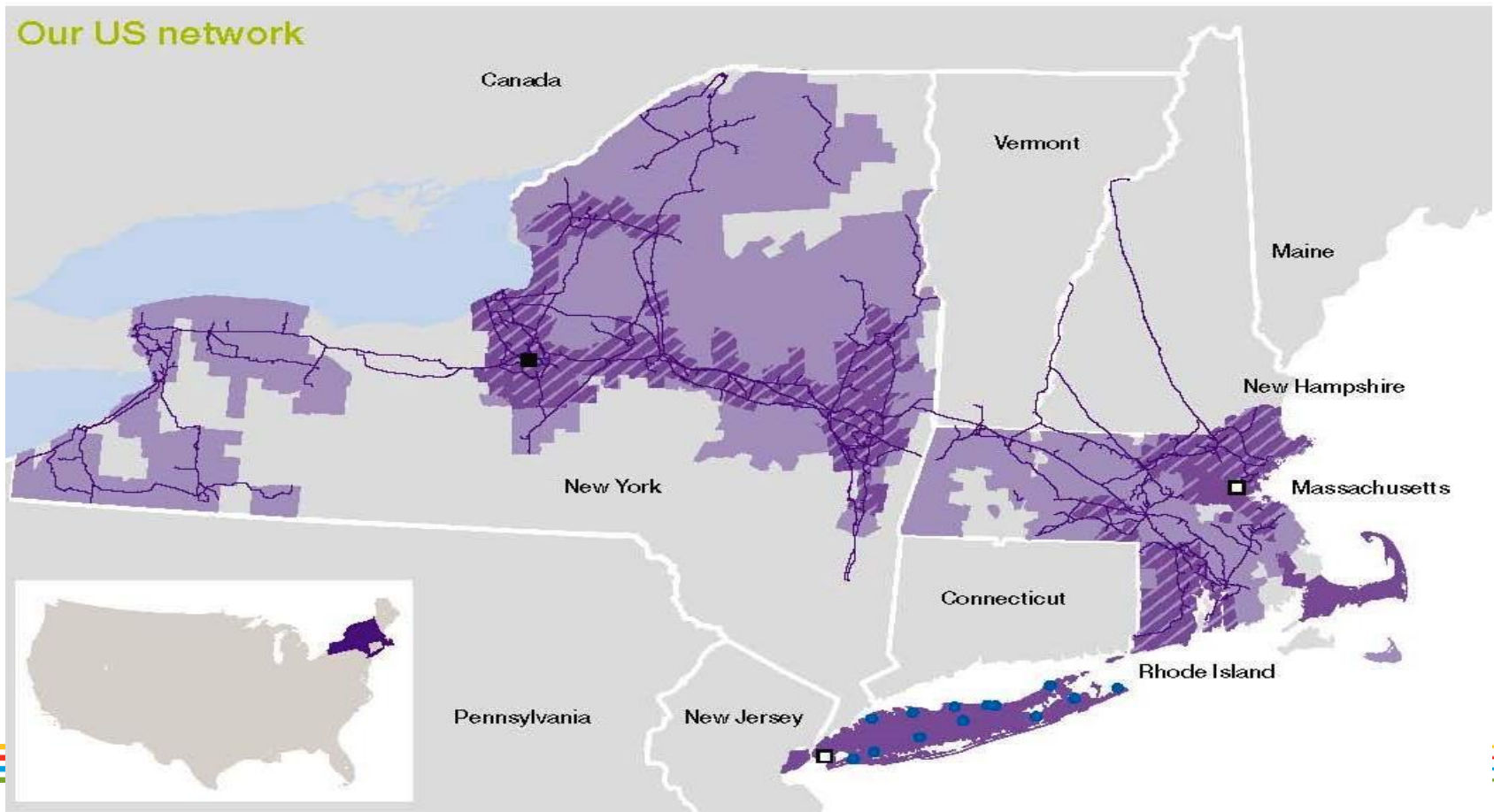
Ken Daly, President, National Grid New York  
June 5, 2017



# National Grid's US business

*National Grid is one of the world's largest investor owned utilities, with more than 7 million gas and electricity US customers and 22,000 employees in the US and UK.*

## Our US network



# Our Challenge

## The Energy Tri-Lemma

Provide customers with *Affordable*, *Reliable*, and *Sustainable* energy in the future.

- Modernize our infrastructure to meet 21<sup>st</sup> century demands.
- Put customers in charge.
- Connect our customers to renewable energy solutions.

# The transition is underway: Industry trends

## Solar

- Over the next five years, the **U.S. solar market is expected to nearly triple in size.** \*\*
- Since 2008, the **cost of solar panels has dropped by almost 80%.**

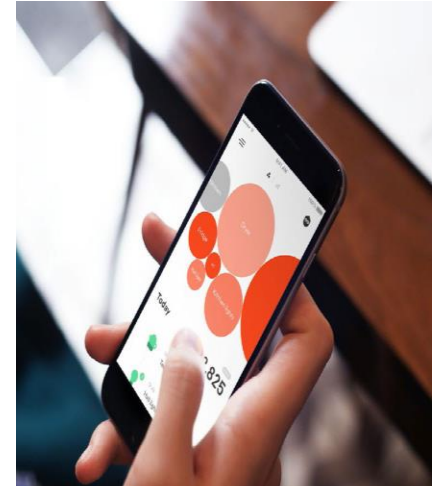


## Wind

- **Total U.S. installed wind capacity, through end of 2016: 82,183 MW.**

## Electric Vehicles (EV)

- The **EV market in the US** is expected to grow at an **annual growth rate of 24% over the next three years.\***



## Renewable Gas

- In 2011, American Gas Foundation (AGF) found that **with the right policies, Renewable Gas could meet the natural gas needs of half of all American homes.** \*\*\*

\* Technavio  
\*\*Solar Energy Industries Association (SEIA)  
\*\*\*American Gas Association

# The transition is underway: National Grid

## Solar

- **National Grid connects more solar customers than gas customers to its networks.**
- **We recently invested \$100 million in Sunrun, the largest dedicated residential solar company in the U.S.**

## Wind

- **We connected Deepwater Wind's Block Island Wind Farm the first offshore wind installation in the US - to the grid.**
- **We connect as much wind in the UK than anywhere else in the world.**

## Electric Vehicles (EV)

- **We own and have installed 165 EV charging stations.**

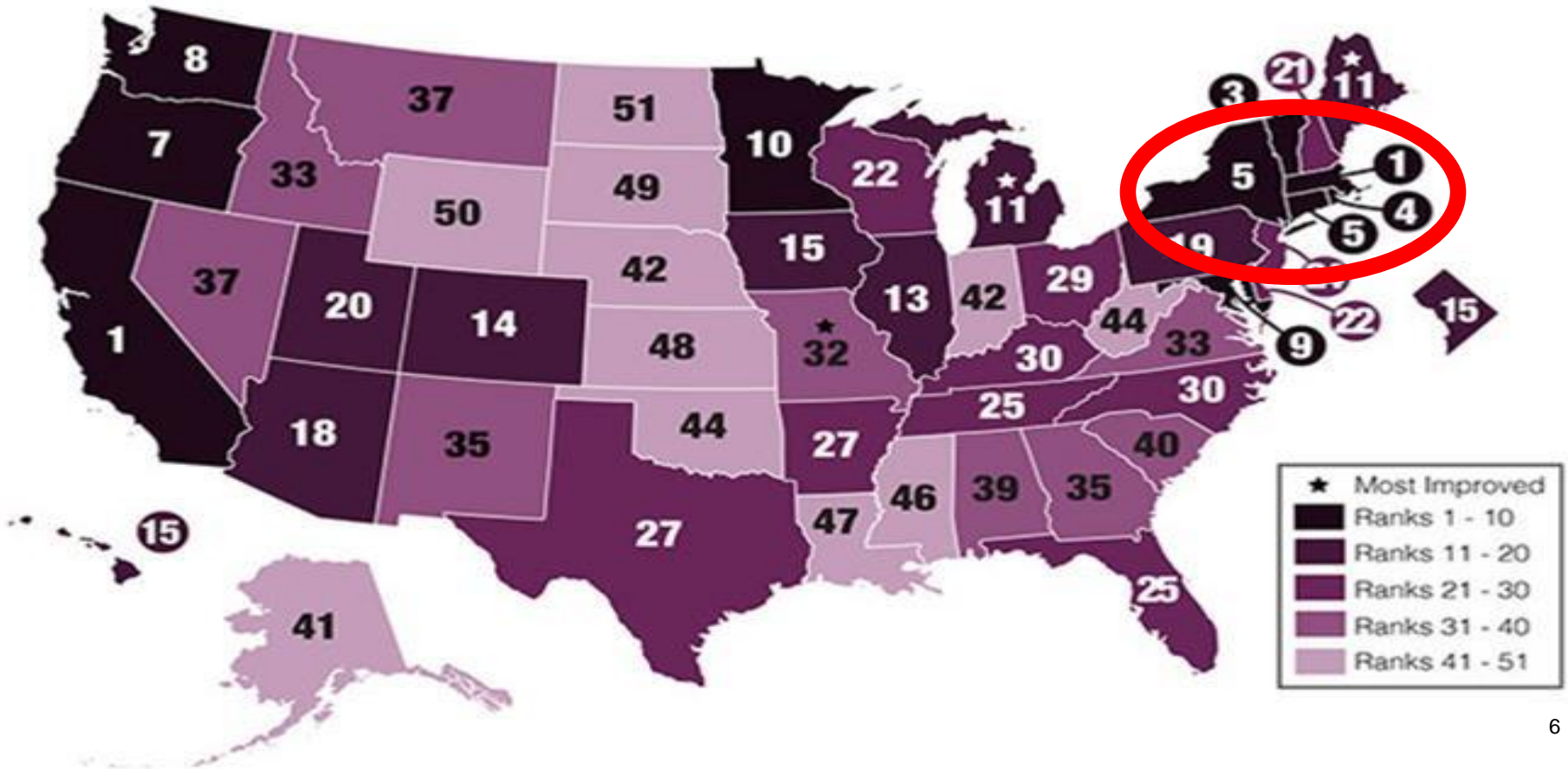
## Renewable Gas

- **Our Newtown Creek Renewable Gas Project is expected to inject enough renewable natural gas from organic waste to heat 5,200 residential homes.**



# National Grid's history of award winning Energy Efficiency Programs

- Key contributor to American Council for an Energy Efficiency Economy's (ACEEE) recent ranking of Massachusetts, Rhode Island and New York as three of the Top 5 states nationwide focused on energy efficiency and sustainability achievements.



# Investing \$3bn in our Downstate NY natural gas networks

Making significant investments to modernize and enhance the reliability and capacity of our DNY gas system:

- Brooklyn Queens Interconnect.
- Northern Queens Reliability Project.
- Northwest Nassau and Metropolitan Natural Gas Reliability Projects.



# Partnerships with NYC



- We've helped phase out the use of #6 and #4 heavy oils in approximately 800 buildings as part of New York City's Clean Heat Program.
- In Staten Island, we continue to convert Clean Eligible buildings to natural gas – helping create “NYC's First Green Borough.”
- Partnering with NYC Mayor's Office of Sustainability on Retrofit Accelerator initiative .



# Smart gas growth through Neighborhood Expansion Program (NEP)

NEP Pilot in East Hills has allowed **1000** residents to convert to natural gas resulting in over **\$1 million** in energy savings, the equivalent of pulling **15,000 cars** off the road – and created local jobs and economic development.

**NEP has successfully expanded into Suffolk County** with main extensions in:

- Dix Hills 10,000'
- Hampton Bays 10,000'
- East Islip 8,000'
- Stony Brook 5,000'

**\$1,000** rebate program for new customers that take service along route of planned main replacement



# Reforming the Energy Vision (REV)

We are developing REV  
Demonstration projects and  
partnering with key  
stakeholders to enhance the  
overall customer experience  
in NYS.



# Purpose of REV Demonstration Projects

## Before



- Centralized Grid
- Transactional customer relationships
- One time incentives



## REV Demos



- Customer, stakeholder, and partner engagement
- Developing new business models



## REV Future

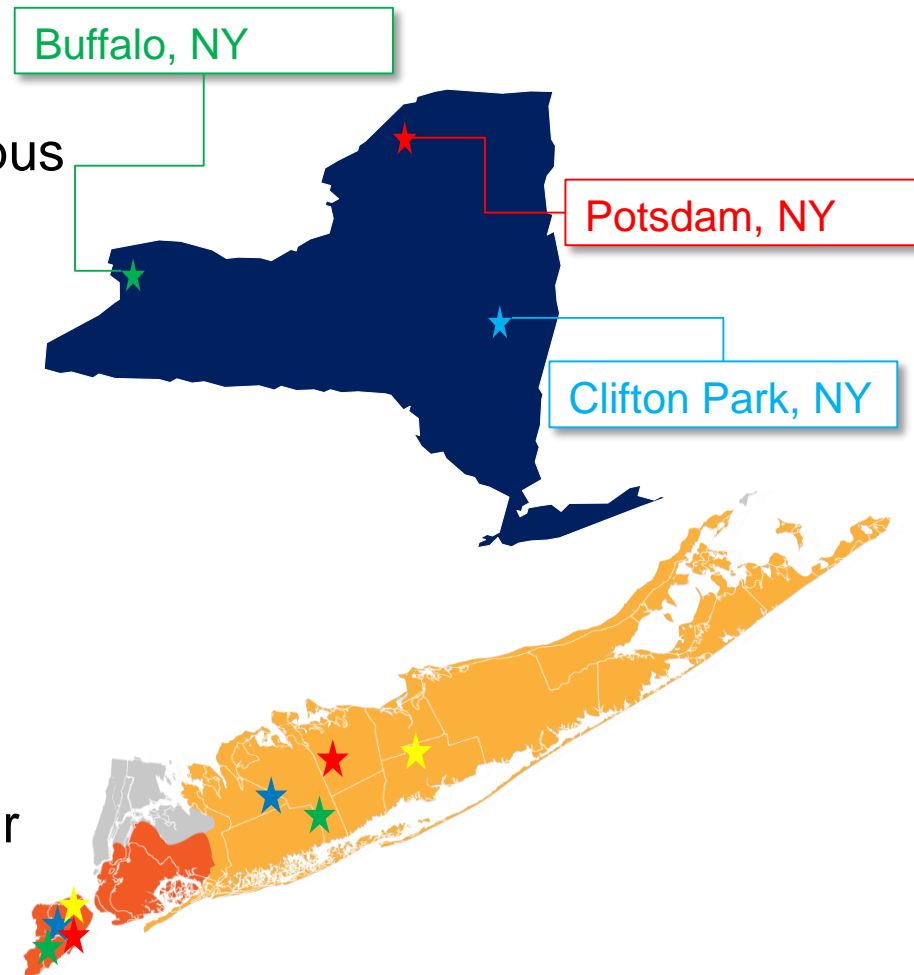


- Broad adoption of distributed energy resources
- Engaged customer base
- Animated market



# National Grid REV Demos

- Upstate New York Projects
  - Buffalo Niagara Medical Campus
  - Neighborhood Solar
  - Clifton Park
  - Potsdam Microgrid
- Downstate New York Projects
  - Gas Safety Smart Homes
  - Gas Demand Response
  - Micro-Combined Heat & Power
  - Geothermal on Long Island



# REV Demo Project Clifton Park – Customer Options



**We're building a smart grid** in the Albany-area suburb of Clifton Park to **improve efficiency, reliability and resiliency** while **reducing energy consumption**. This will provide customers with opportunities to better manage their energy usage and energy technologies options. and customer bills.

# REV Demo Project Potsdam – Microgrid

**nationalgrid**  
HERE WITH YOU. HERE FOR YOU.



**We're working with Clarkson University to develop a microgrid, making the school and surrounding community more resilient to extreme storms.**

The project could be a model for communities across the country that are vulnerable to extreme weather.

# REV Demo Project

## Buffalo Niagara Medical Campus

**nationalgrid**  
HERE WITH YOU. HERE FOR YOU.

**We're delivering integrated energy initiatives at the Buffalo Niagara Medical Campus – including neighborhood solar options in low- to moderate-income areas adjacent to the medical campus.**

**We're also supporting combined redevelopment efforts at RiverBend, a former brownfield that will be home to the largest solar manufacturer in the world.**



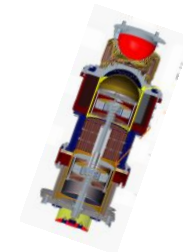
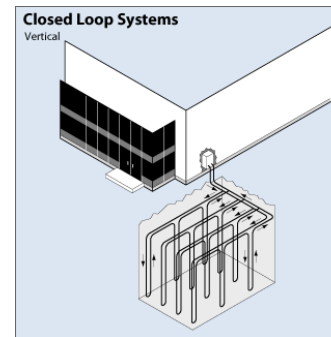
# Gas REV Demo Projects

Smarter Home Networks

Micro CHP/ Distributed Generation

Gas Demand Response

Geothermal Heating & Cooling





# Partnering with communities to support resilient microgrids

**nationalgrid**  
HERE WITH YOU. HERE FOR YOU.

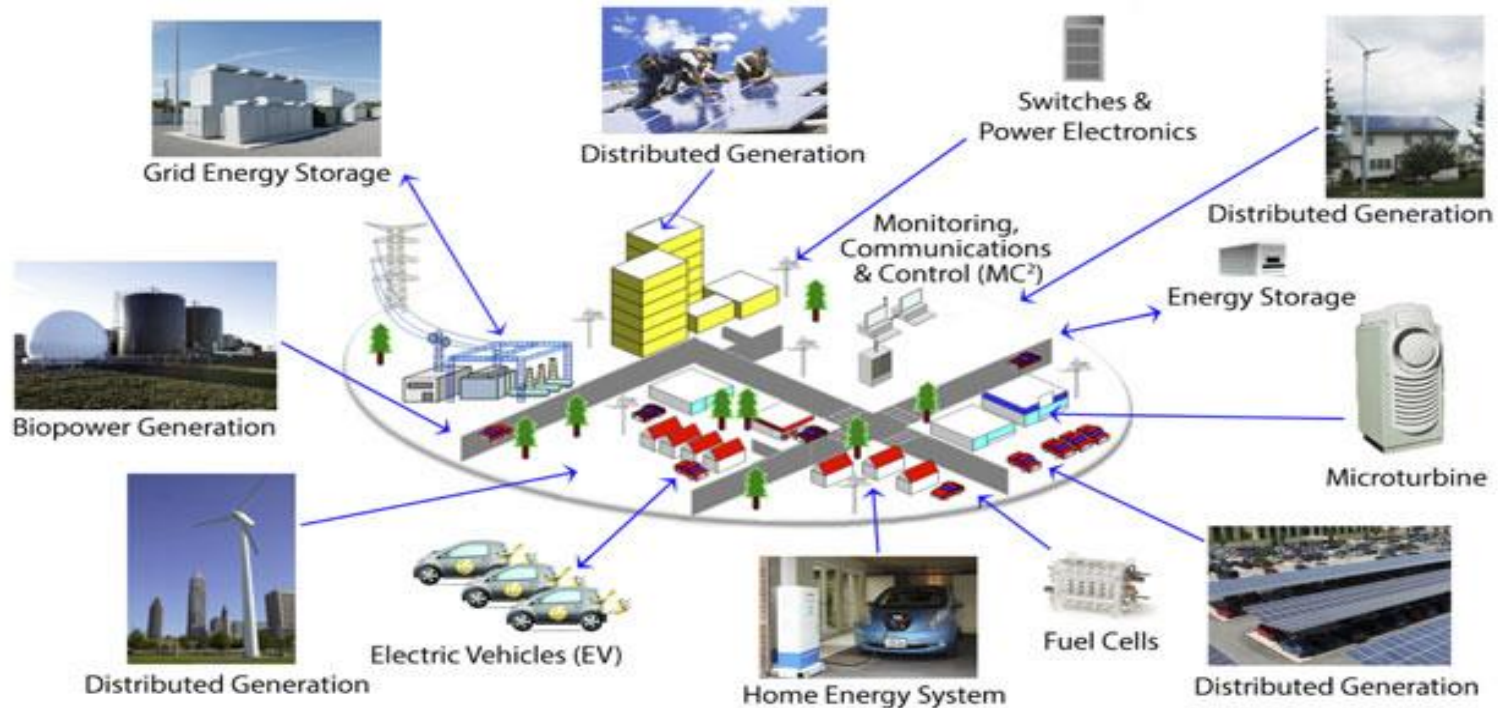


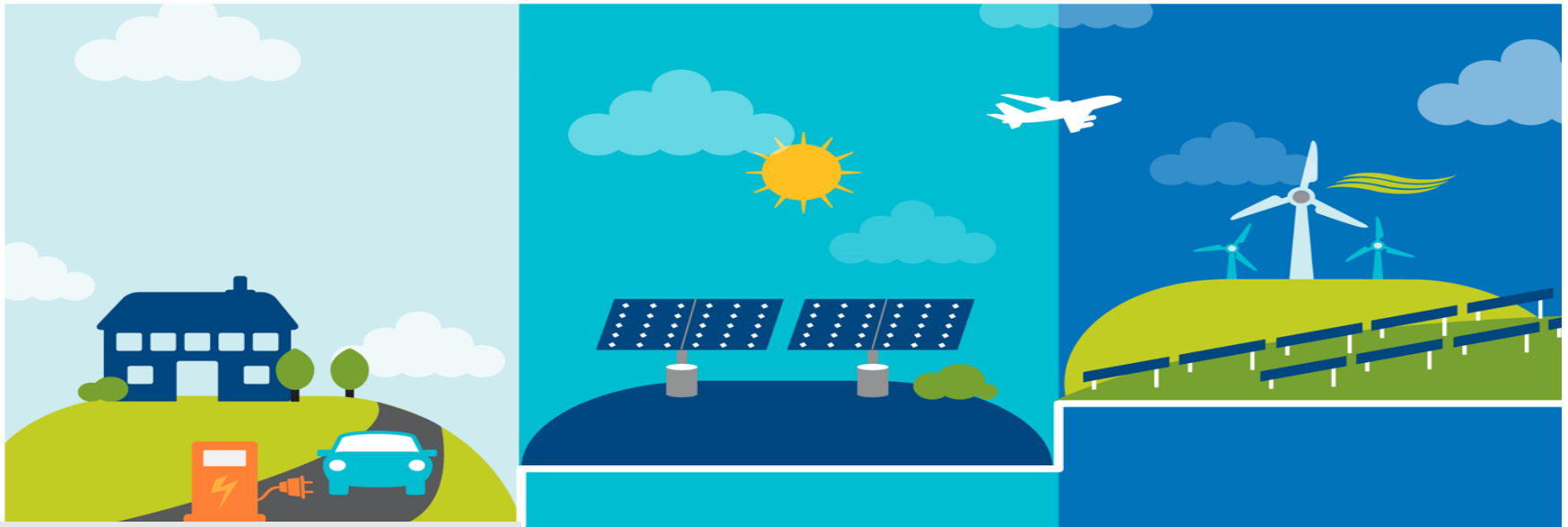
Image Courtesy of [Clean Coalition](#)



## MicroGrid Competition

- Public/private partnerships
- 8 NY Prize Microgrid recipients in NYS

# How we get there



## The Near Term:

**Influence, develop and implement policies that support an integrated clean energy strategy which maximizes the potential of renewables, energy efficiency solutions and natural gas as a transition resource to prepare for clean energy economy of tomorrow.**

## The Mid Term:

**Achieve 50% renewables by 2030 by executing on clean energy policies that allow for a fair and cost effective process to connect renewables to our energy networks.**

## The Long Term:

**A future economy that is powered by an affordable integrated decarbonized energy system.**