



NYSERDA

Renewable Energy Project Siting

May 3, 2017

NYSERDA

- A nationally recognized leader in the development, commercialization, and implementation of advanced energy technologies
- A public benefit corporation helping New York State meet its goals to:
 - Reduce energy consumption and increase energy efficiency
 - Create a clean energy economy
 - Grow diverse, renewable energy supplies
 - Protect the environment
 - Provide experienced leadership in planning and policy

New York's Energy Policy

- Reforming the Energy Vision (REV) Governor Cuomo's strategy to build a clean, resilient, and affordable energy system for all New Yorkers.
- NY Sun Initiative
 - \$1 Billion initiative to achieve over 3GW of distributed solar by 2023
- Clean Energy Fund (CEF)
 - 10-year, \$5 billion funding commitment
 - Reshapes New York's energy efficiency, renewable energy, and energy innovation programs
- Clean Energy Standard (CES)
 - Goal of 50% of New York's Electricity from renewable sources by 2030

NY State Energy Plan - 2030 Clean Energy Goals

40%

Reduction

in GHG emissions
from 1990 levels

Reducing greenhouse gas (GHG) emissions from the energy sector—power generation, industry, buildings, and transportation—is critical to protecting the health and welfare of New Yorkers and reaching the longer term goal of decreasing total carbon emissions 80% by 2050.

50%

Generation

of electricity from
renewable energy sources

Renewable resources, including solar, wind, hydropower, and biomass, will play a vital role in reducing electricity price volatility and curbing carbon emissions.

600

 TBTU

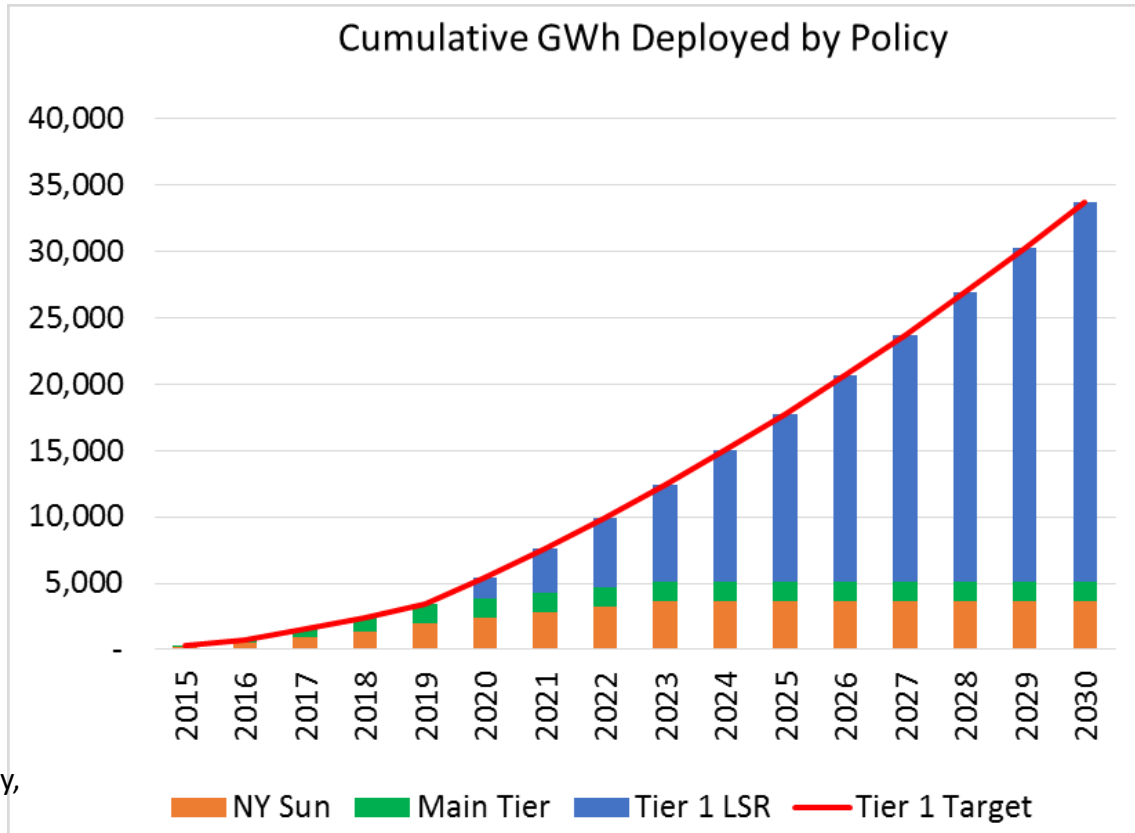
Increase

in statewide energy
efficiency

Energy efficiency results in lower energy bills and is the single most cost effective tool in achieving clean energy objectives. 600 trillion British thermal units in energy efficiency gains equates to a 23% reduction from 2012 in energy consumption in buildings.



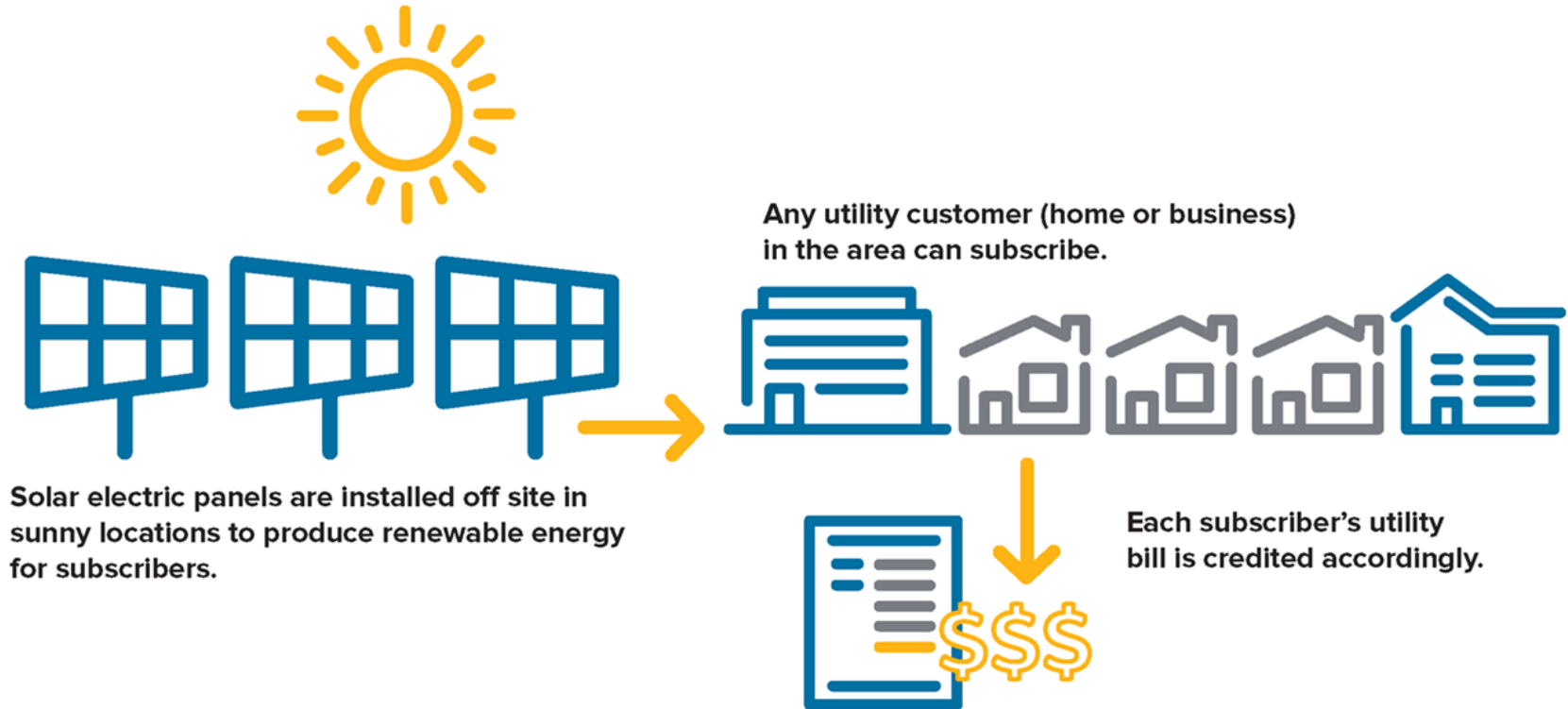
Projected Growth in New Renewables

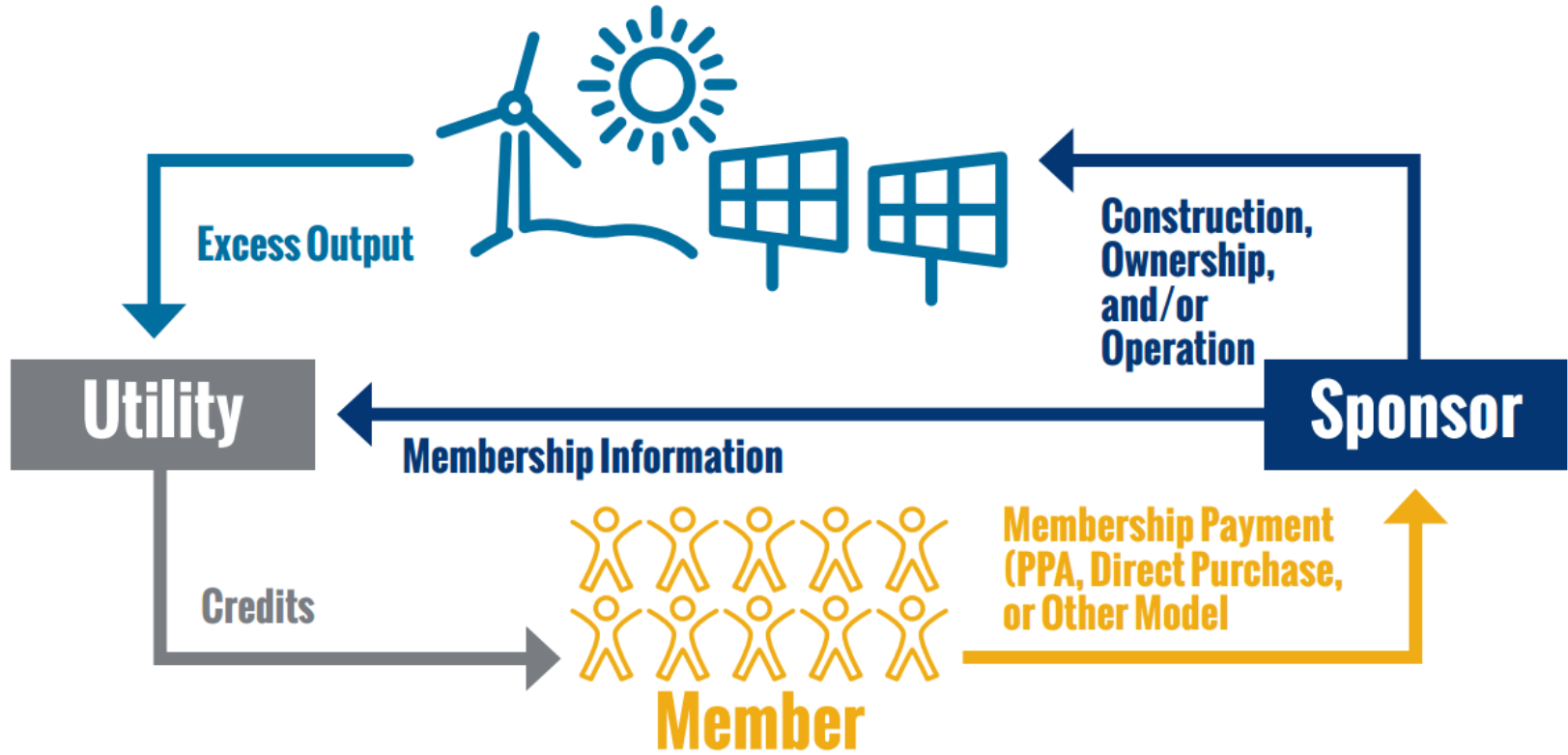


Source: CES Cost Study,
April 18, 2016

Community Solar (Community Distributed Generation)

- July 2015 Public Service Commission Order
- Projects can interconnect statewide starting May 2016
- Makes solar accessible to many more New Yorkers





Size, Location & Cost of Community Solar

How large is a Community Solar project?

- Limited to 2 megawatts (MW)
- 2 MW project serves 200-400 households

Where can a project be located?

- Ground mounted (on land)
- Rooftops
- Same utility and NYISO zone as subscribers

What is estimated cost?

- 2 MW project: \$4-6 million for project development (before incentives and tax credits)



Large Scale PV in New York State

Typical project is 2MW
and growing

1 MW = appx 6 acres

1 MW project serves
150-200 households



Site preparation involves clearing,
grubbing, grading, soil compaction

Siting Considerations

- Local Planning and Zoning
- Article 10 or SEQRA
- Conservation Easements
- Agricultural Districts
- Open Space



Integrated Planning of PV and Vegetation



Testing height and spacing variations for growing pasture crops
UMASS Amherst & NREL



Typical PV array configuration

Smart siting strategies – Low-Impact PV

**Minimize site disturbance,
encourage compatible
vegetation**



<http://www.theecologist.org/siteimage/scale/0/0/387348.jpg>



Sunflowers for Oil production in Wisconsin; Milwaukee Journal Sentinel, 2011

Co-locating PV with Agricultural activities

Smart siting strategies – Low-Impact PV

Potential for joint support for a Low-Impact PV Pilot project in NYS

- Energy Siting Coordination Task Force Member Agencies
 - DEC, Agriculture and Markets, NYSERDA, DPS
- NREL and DoE InSPIRE



Connexus and Fresh Energy pollinator friendly PV project, Minnesota

**Co-locating PV with
pollinator habitat, native
flora and fauna**

Thank You

