

Sustainable Commerce: Science Is On Our Side, Time Is Not

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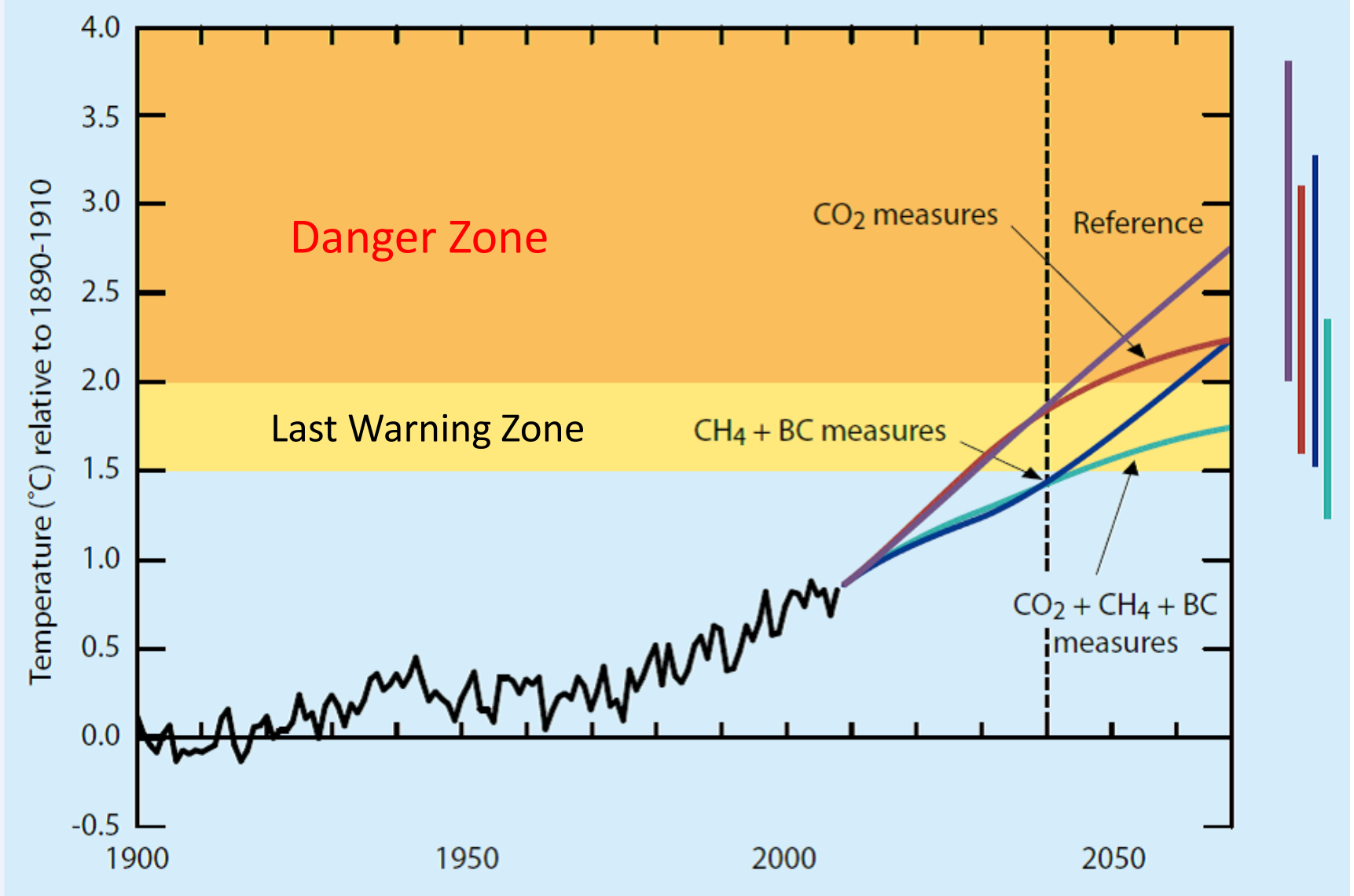
Energy Infrastructure and Economy Summit

The Otesaga Resort Hotel

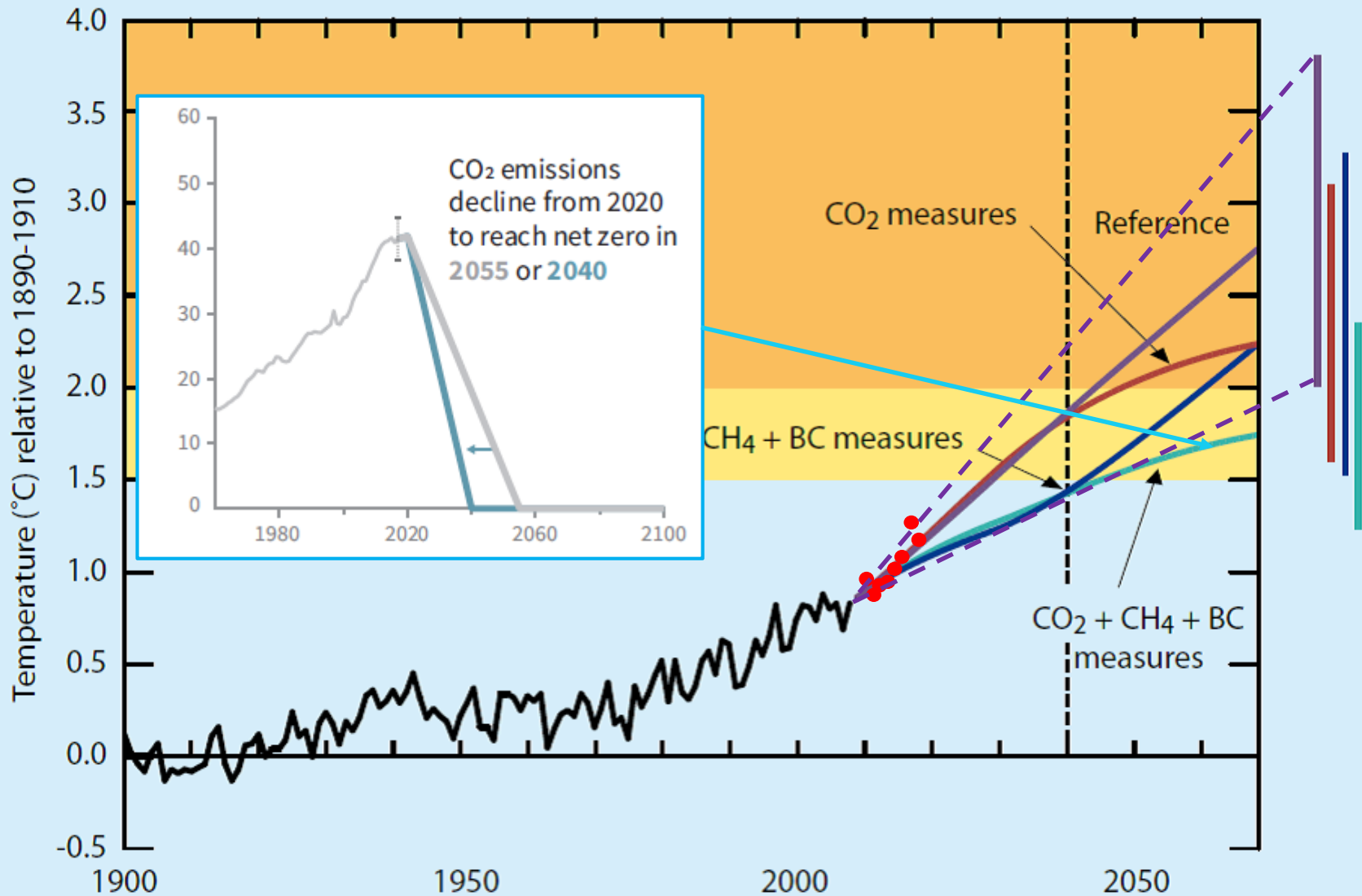
Cooperstown, NY

January 31, 2019

Time Is Not on Our Side



Time Is Not on Our Side



Con Ed Has Declared a Gas Moratorium in Westchester County

However, look at these comments from the Public Service Commission (PSC) on Jan 18, 2019

In the words of our '60s bard:
“We better start swimming,
Or we’ll sink like a stone,
‘Cuz the times they are a-changing”

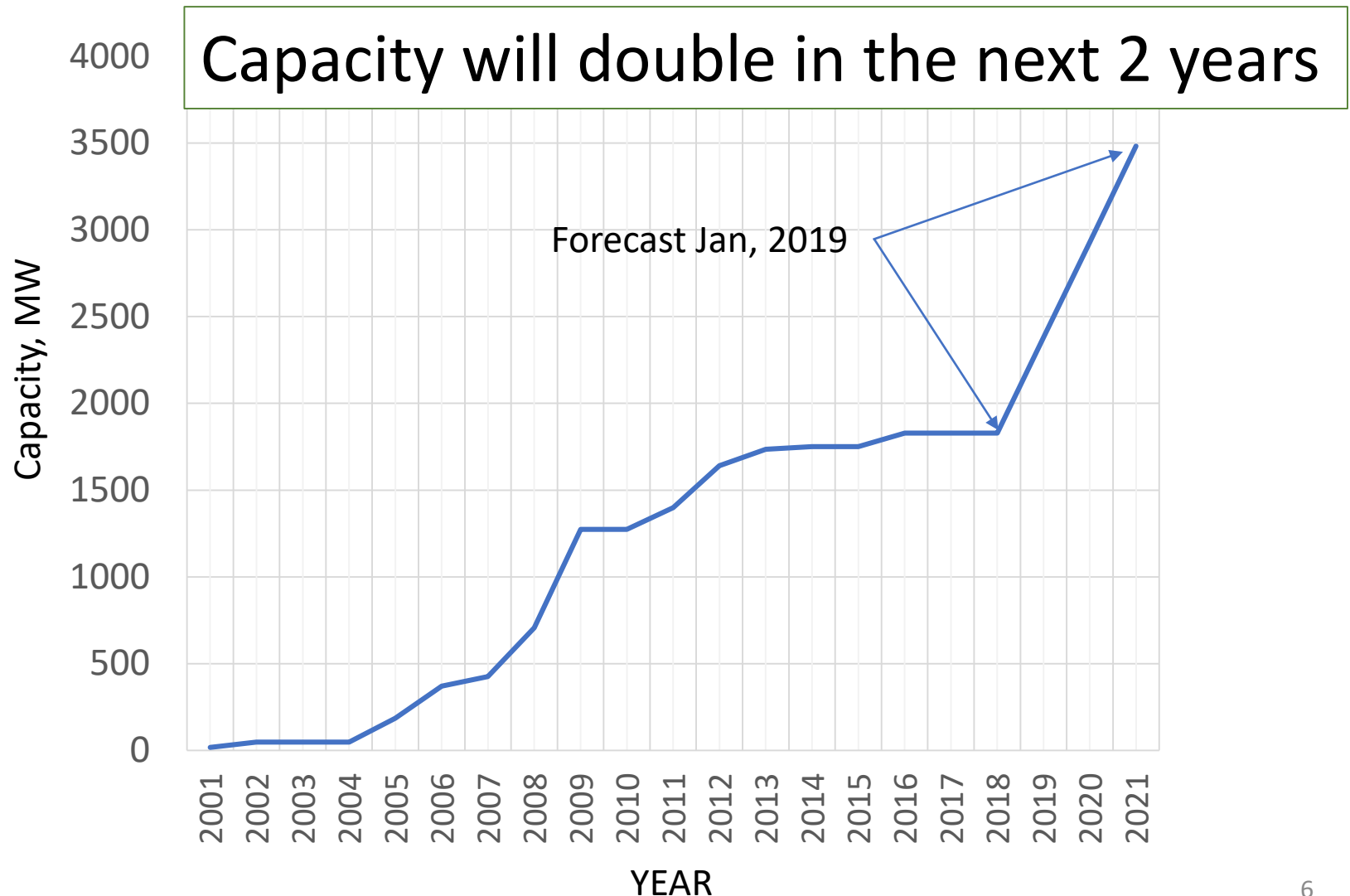
engagement with customers to explore options to reduce their energy needs or meet their needs through non-natural gas energy sources"

James Denn
Public Information Officer
New York State Public Service Commission

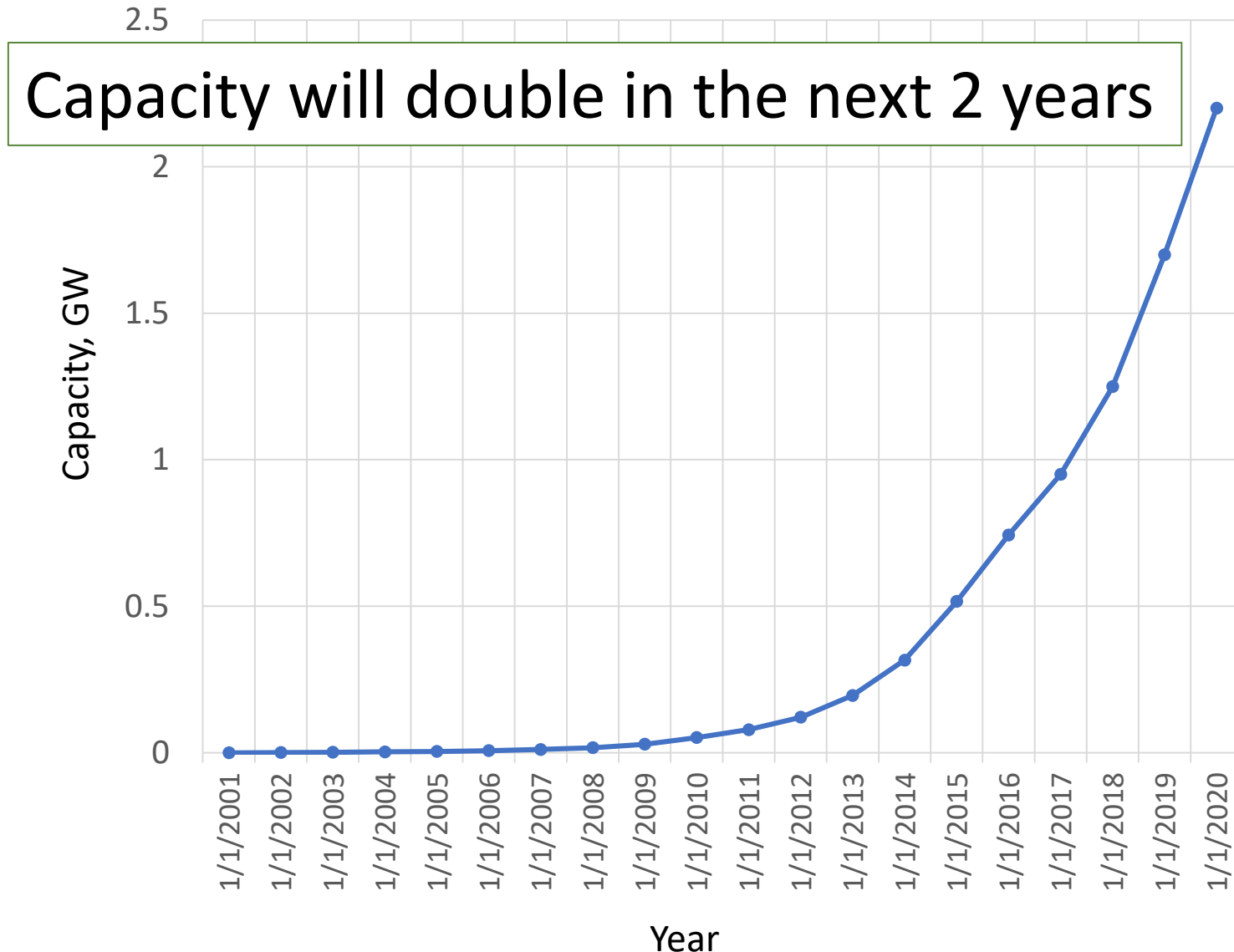
Science Is On Our Side

- Ever-improving efficiencies of solar panels, wind turbines, and batteries at lower costs.
- Ever-improving efficiencies of air-source and ground-source heat pumps, at lower costs.
- Rapid expansion of battery-electric vehicle choices, at lower costs.

History and Forecast of Onshore Wind Capacity in NYS



History and Forecast of Residential/Commercial PV Capacity in NYS



SOLAR POWERED BEER IN THE HEART OF THE FINGER LAKES

PROJECT SUMMARY



SYSTEM SIZE

200 kW



TYPE OF SOLAR SYSTEM

On-site Roof-Mounted



COMPLETED IN

2018

PROJECT SUMMARY

Ithaca Beer Co. came to Renovus in 2017 with a mission, to offset as much of their production costs using solar. The brewery's rapid expansion over the past five years had increased both the electrical demand of the facility and the overall cost of operations as a result. Ithaca Beer's expansion also had an unintended consequence, creating a series of roofs that would support a large solar system, capable of achieving their cost cutting goals.

Renovus worked with the Ithaca Beer team and local financiers to help get clearance for the brewery to purchase a 200kw system installed entirely on their roof. This system, consisting of nearly 700 American made solar panels will offset 25% of their total energy needs during peak seasons.



Courtesy RENOVUS, Inc.

A COOPERATIVE MARKET ON THE CUTTING EDGE



PROJECT SUMMARY

Greenstar Cooperative market is a growing food coop in Ithaca, NY. With 3 locations serving everything from bulk to prepared foods, their energy demands raised substantially over the past 5 years.

Greenstar came to Renovus hoping to realize a new dream, offsetting their energy cost with a green, offsite solar array that could supply energy to their largest production and packaging location on the west end of Ithaca. Renovus designed, permitted and built their custom project in 2016, helping to make Greenstar the first coop in the United States to be powered by a community solar farm.

Now, in 2018 Greenstar is preparing to expand to a new, larger facility on the North End of Ithaca, NY. Due to the off-site location of their array, they can net meter their power to their new building, and enjoy all the benefits of their solar investment at their new location.

PROJECT SUMMARY



SYSTEM SIZE

130 kW



TYPE OF ARRAY

Off-Site Community Solar





COMPLETED IN


2016

A PROPERTY MANAGER DOUBLES DOWN ON INVESTING IN NET-ZERO HOMES AND APARTMENTS

PROJECT SUMMARY

 **SYSTEM SIZE**
210 kW

 **TYPE OF SOLAR SYSTEM**
Off-Site Community Solar

 **COMPLETED IN**
2015

PROJECT SUMMARY

PPM Homes, an Ithaca, NY based property manager owns and manages over 40 properties throughout Tompkins County. Their owner recognized a unique opportunity to further leverage his owned properties through the utilization of a remote ground-mounted array.




By installing a 210 kw system offsite and using that system to power homes in which the tenants utilities were includes, PPM homes was able to significantly offset the environmental impact of it's properties and their tenants. Additionally, the solar-powered home narrative was warmly received by both current and potential tenants, acting as a product differential in the crowded and competitive rental market in Ithaca.



Courtesy RENOVUS, Inc.

HIGH TECH INDUSTRY POWERED BY HIGH TECH RENEWABLES

PROJECT SUMMARY

-  **SYSTEM SIZE**
140 kW
-  **TYPE OF SOLAR SYSTEM**
Off-Site Ground Mounted
-  **COMPLETED IN**
2016

PROJECT SUMMARY

Vector Magnetix is a small, private industrial company specializing in the design and manufacturing of imaging equipment for the drilling industry. They were interested in a solar investment for both financial, and environmental reasons, and subsequently became one of the first commercial off-site solar owners in NYS.

Vector Magnetix has been the proud owner of a Renovus Commercial solar system consisting of over 450 Tier 1 solar panels for more than 3 years. This system has enabled significant cost savings for the company, resulting in reinvestment of revenue and steady growth over the past few years.



Smart Battery Storage Systems (BSS)



630 kWh of storage

Peak Shaving

Discharge at times of peak demand to avoid or reduce demand charges.

Load Shifting

Shift energy consumption from one point in time to another to avoid paying high energy prices. Where applicable, this price optimization accounts for solar or other on-site generation.

Emergency Backup

Provide intermediate backup power to your business in the event of a grid interruption. This function can be standalone or tied to solar.

Demand Response

Discharge instantly in response to signals from a demand response administrator to alleviate peaks in system load.

Agricultural Research Facility, Tompkins County



WHAT is the intent of this program?

The program assists business owners and facility managers in setting energy goals and understanding energy options during the earliest stages of project design and conceptualization, when it is the easiest and most cost-effective to incorporate energy efficiency improvements.

WHY participate in this program? What's in it for me?

- Receive advice from energy experts
 - up to \$1,500 in energy consulting for buildings ≤ 10,000 sq. ft.
 - up to \$3,000 in energy consulting for buildings > 10,000 sq. ft.
- Understand options to save energy and operational costs
- Obtain advice on incentives, financing, and application processes
- Receive assistance with setting and reaching your energy goals
- Gain recognition for your participation and commitment, if desired
- Contribute to the environmental and energy goals of our community

WHO can participate in this program?

- Businesses considering new construction, major renovation, or expansion
- Eligible sectors: commercial, retail, multifamily (5+ units), manufacturing, R&D, non-profit, government
- Building must be located in Tompkins County

HOW can I participate? What does this program require of me?

- Participate in an energy charrette (brainstorming meeting)
- Set practical and aspirational energy goals for the project
- Identify a staff person as the energy point contact for the building
- Participate in a program close-out meeting
- Share building energy consumption data for a year after project completion

Interested in participating?

Contact:

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We Need a MANAGED Energy Transition

- Decrease the demand for, and supply of, fossil energy
- Increase the demand for, and supply of, renewable energy
- Synchronously and...
- On time

We Need to Do This at
ALL Scales and in ALL Sectors:

National, State, County, City, Personal

Commercial, Industrial, Residential,
Power, Transportation

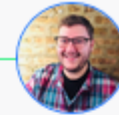
I Am Not Asking You to Do
Something I Have Not Done

Our Net-Zero Home in Ithaca



Do You Want Green Electricity for Your Residence?

Common Energy



Great news! We've got a project in your area. We can lower your costs and emissions! Here's what we can offer:

-  **Clean energy credits each month**
-  **\$2,276 estimated total savings***
-  **72,000 pounds of CO2 prevented**
-  **One unified monthly statement**
-  **No cancelation fees**
-  **Free signup**

☐ I accept the [terms](#) and [conditions](#).

*Based on a 10% contracted discount to your utility over twenty years

Let's do this!

Our Battery Electric Vehicle (BEV)





Our Family Carbon Capture and Sequestration Unit:

~1000 Norway Spruce trees
planted with my students
on our land, McLean, NY
in 1988-1990

SUMMARY

- Whether you believe climate change is a real threat or not, the energy transition is occurring.
- Commerce does not have to be hampered by the transition.
- New energy technologies actually improve the bottom line.
- Think globally, act locally, now.