

State Leadership in Clean Energy

CESA SLICE Award Webinar #1

NYSERDA

**On-Site Wind Market Development Program
and
Clean Energy Business Incubator Program**

hosted by

Todd Olinsky-Paul
CESA Project Director
November 15, 2012



Housekeeping

- All participants will be in listen-only mode throughout the broadcast.
- You can connect to the audio portion of the webinar using your computer's speakers or a headset. You can also connect by telephone. If by phone, please expand the Audio section of the webinar console to select "Telephone" to see and enter the PIN number shown on there onto your telephone keypad.
- You can enter questions for today's event by typing them into the "Question Box" on the webinar console. We will pose your questions, as time allows, following the presentations.
- This webinar is being recorded and will be made available after the call on the CESA website at

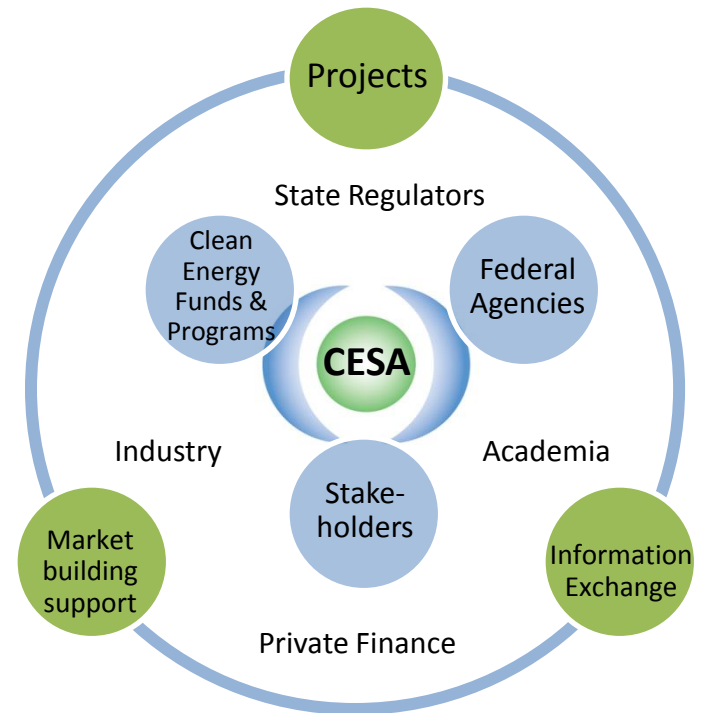
www.cleanenergystates.org/events/

About CESA

Clean Energy States Alliance (CESA) is a national nonprofit organization dedicated to advancing state and local efforts to implement smart clean energy policies, programs, technology innovation, and financing tools to drive increased investment and market making for clean energy technologies.

What We Do

- Multi-state coalition of clean energy programs cooperating and learning from each other, leveraging federal resources
- CESA state members have nearly \$6 billion to invest in next 10 years
- Members have supported nearly 130,000 renewable energy projects from 1998-2011 with state-based dollars
- Nonpartisan, experimental, collaborative network
 - Information exchange & analysis
 - Partnership development
 - CESA projects: solar, wind, RPS, fuel cells, energy storage, program evaluation, national database



SLICE: State Leadership In Clean Energy

CESA's SLICE Awards recognize state programs that are most effectively accelerating adoption of clean energy technologies.

SLICE Award winners have:

State Leadership
in Clean Energy

- Funded and supported innovative programs
- Established funds that provide critical capital investment for clean energy projects
- Collaborated effectively with industry partners, utility commissions, and local governments

How Winners Are Chosen

Projects are nominated for SLICE awards by CESA member organizations from across the U.S.

2012 winners were chosen by a panel of six distinguished judges, including representatives of the U.S. Department of Energy, the National Renewable Energy Lab, the National Conference of State Legislatures Energy Program, DSIRE, the American Wind Energy Association, and the Solar Energy Industries Association.

The 2012 SLICE Award Winners and Webinar Schedule:

- NYSERDA's Clean Energy Business Incubator and On-Site Wind Market Development Programs (**today**)
- The New Hampshire Public Utilities Commission's Residential Wood-Pellet Boiler Rebate Program: **November 19, 2 p.m. Eastern**
- The California Energy Commission's University of CA, San Diego Microgrid and Synchrophasor Research and Development Programs: **November 27, 2 p.m. Eastern**
- Connecticut's Clean Energy Finance and Investment Authority's (CEFIA) CT Solar Lease Program: **November 29, 2 p.m. Eastern**
- The Massachusetts Clean Energy Center's Commonwealth Solar Hot Water Pilot Program: **November 29, 2 p.m. Eastern**

A briefing report on the winning programs and links to sign up for webinars are available at

<http://www.cleanenergystates.org/projects/state-leadership-in-clean-energy>

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Building an Entrepreneurial Climate for Business Creation and Growth

Jeff Peterson
Mike Shimazu

NYSERDA Overview

Promise

- New Yorkers can count on NYSERDA for objective, reliable, energy-related solutions delivered by accessible, dedicated professionals.

Mission

- Advance innovative energy solutions in ways that improve New York's economy and environment.

Vision

- Serve as a catalyst—advancing energy innovation and technology, transforming New York's economy, and empowering people to choose clean and efficient energy as part of their everyday lives.

Core Values

- Objectivity, integrity, public service, and innovation.

Innovation and Business Development Program

the path to COMMERCIALIZATION



Innovation and Business Development Program

Catalyze innovation and the entrepreneurial climate for business creation and the growth of early-stage companies

- **Innovation/Entrepreneurial Capacity Building**
 - Proof of Concept Centers
 - Clean Energy Technology Business Incubators
 - Emerging Clean Energy Business Investment
 - Clean Energy Cluster Development
- **Market Intelligence**
 - Network Platform and Operation
 - Benchmark and Feedback
 - Market Gaps and Opportunities
- **Business Acceleration**
 - Manufacturing Readiness Program
 - Entrepreneurs-in-Residence
 - Clean Tech Executive Transition

SBC Annual Budget: \$8.4 million

Proof-of-Concept Center Initiative

3 Teams; \$5 million each; 5 years

Awards are expected to be announced in the near future.

Up to 3 teams will be selected to design and implement sustainable programs that:

- Accelerate the commercialization of innovations out of research institutions and into the marketplace, particularly through startups;
- Match emerging clean energy technologies that have scalable commercialization potential, based on real market need, with the investment community; and,
- Establish sustainable regional innovation ecosystems of potential investors and entrepreneurs in clean energy technologies and solidify the research institution linkages to them.



A dedicated online environment to bring together the entire NYS clean energy technology ecosystem: incubators, partners, government organizations, investors, universities, individual members and companies and other stakeholders.

Enable interactions and collaboration / knowledge sharing within the network, as well as between other similar type organizations nationally and internationally

Provide an environment to engage participants to stimulate and foster environmental innovation both in terms of innovative ideas as well as innovative products and services.

Clean Energy Business Incubators

Directed Energy
University at Buffalo

www.nydirectedenergy.org

Clean Energy Incubator
RIT Venture Creations

www.rit.edu/vc

The Cleantech Center
Centerstate CEO

www.thecleantechcenter.com

iCLEAN
E2TAC / CNSE

www.e2tac.org

NYC-ACRE
NYU-Poly

www.nycacre.com

Clean Energy Business
Incubator

LIHTI

www.lihti.org

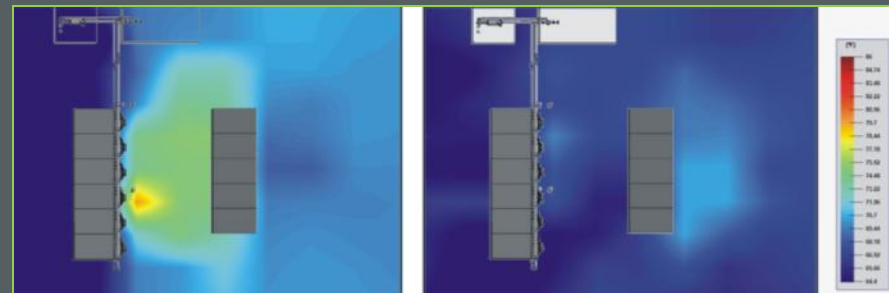


Exemplar Clients

- ThinkEco, Inc. (NYC)
 - Plug-load monitoring/control
 - 10,000 unit residential A/C DR demo with ConEdison & Best Buy



- OptiCool Technologies (Rochester)
 - Refrigerant-based data center cooling offering >90% energy reduction
 - Demonstration at RIT's HPC laboratory



Cumulative Results for 6 Incubators

	NYSERDA Expenditures	Clients	Capital Raised	Non-State Gov. Funding	New Products	Jobs Created	Jobs Retained
1Q11	\$(2,700,000)	64	\$22,400,000	\$6,800,000	26	94	165
2Q11	\$(3,432,000)	67	\$35,699,000	\$10,566,000	30	114	186
3Q11	\$(3,869,500)	77	\$40,962,000	\$11,753,000	33	132	196
4Q11	\$(4,389,500)	78	\$48,131,000	\$14,177,364	37	150	198
1Q12	\$(4,882,000)	80	\$63,627,400	\$17,542,364	38	169	224
2Q12	\$(5,358,500)	94	\$74,062,400	\$19,894,398	48	193	262

Results are not additive – they represent the cumulative results at the end of the calendar quarter.



Green Capital Empire puts the world of green tech investors, acquirers, startups and trends at your fingertips. It provides amazing, real-time data and information on the world of green tech to make the participants in the green tech economy smarter, better connected and hyper-efficient.

www.greencapitalempire.com

Entrepreneur-in-Residence Program

The EIR program, operated by High Tech Rochester, provides entrepreneurial coaching, support, business expertise and insight to New York State entrepreneurs in the energy-related space that has NYSERDA funding or is participating in a NYSERDA program.

Results from 50 projects (3/2010 – 5/2012), as reported by the companies and EIRs (the other projects are still in process and/or do not yet have impact to report):

- Revenue generated: \$4,080,523
- Capital raised: \$5,618,000
- SBIR Grants: \$746,000
- Jobs created/retained: 76
- Business, marketing, sales, financial, manufacturing plans created: 26
- Strategic partnerships negotiated: 14
- Companies acquired: 1

htr.org/nysesda_entrepreneurs_in_residence_program.asp



Energy InfotechNYC is a new group composed of leading technologists, developers, entrepreneurs, and investors working to bring together the community participating in the Energy Infotech arena.

We foster the growth of a leading innovation ecosystem, centered in New York City, to leverage the unique capabilities in information technology, internet applications, media, and finance found here in the City.

The group endeavors to link entrepreneurs to investors and pilot customers to tackle and probe critical issues, challenges, and opportunities in the Energy Infotech space. The goal is to position NYC as the global leader at the intersection of IT and cleantech.

Innovation and Business Development Program

Catalyze innovation and the entrepreneurial climate for business creation and the growth of early-stage companies

- Establish a sustainable, long-lasting initiative to translate clean energy technology research into a pipeline of clean energy technology company deal flow.
- Form a network of business mentoring incubators and initiatives that increase the probability that innovative technologies will achieve commercial success and serve the needs of New York's market.
- Create a risk capital climate that increases the availability early stage investment for clean-energy technology start-up companies.
- Facilitate the formation of research and business clusters around areas of energy technology research where New York State holds a competitive advantage in the region.
- Build a network that links the dispersed components of the innovation ecosystem together.

Thank you for your attention

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NYSERDA's On-Site Wind Market Development Program

CESA – SLICE Award



November 15, 2012

NYSERDA's Mission

**Advance innovative energy solutions in ways
that improve New York's economy and
environment.**

On-Site Wind

Quality Turbines
Installed in the Right Location
by Knowledgeable Installers

Knowledgeable Installers

NABCEP™

Raising Standards. Promoting Confidence.

NYSERDA provided funding to help create:

- Learning Objectives and Task Analysis
- Small Wind Installer Certification Exam
- Entry Level Exam

FALL 2012
SUNY Ulster

845.339.2025

sunyulster.edu/ce

- **Introduction to Small Wind Energy (online)**
- **Small Wind Energy Workshop**
- **Residential Wind Site Assessor Training**





Customer Report

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Land Owner: NYSERDA
Location: 17 Columbia Circle Albany, NY

Wind Energy Potential

Very Poor

Below Average

Average

Above Average

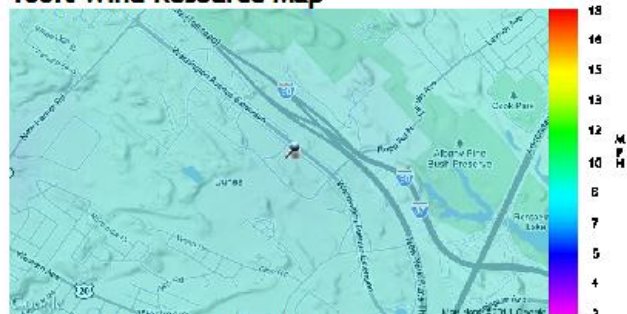
High

Recommendation is based on atmospheric models and historical weather data; actual speeds and system productions will vary with terrain, local obstacles, and turbine selection. For more information on the Wind Energy Potential categories, please see the FAQ page (nyswe.awstruepower.com/SWFrequentlyAskedQuestions.pdf). Contact a NYSERDA eligible installer with this wind resource report for further consultation (http://www.powernaturally.org/Programs/Wind/Installers_bycounty.asp?i=8)

Estimated Wind Resource and Annual Net Energy

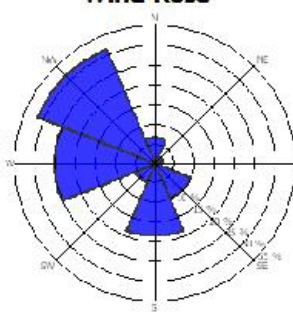
Wind Resource	80 ft (24.4 m)	100 ft (30.5 m)	120 ft (36.6 m)
Average Annual Wind Speed	6.89 mph	7.47 mph	7.96 mph
Annual Net Energy	80 ft (24.4 m)	100 ft (30.5 m)	120 ft (36.6 m)
Rotor Diameter 5-10 ft	100 kwh - 200 kwh	100 kwh - 300 kwh	100 kwh - 400 kwh
Rotor Diameter 10-20 ft	200 kwh - 900 kwh	300 kwh - 1200 kwh	400 kwh - 1600 kwh
Rotor Diameter 20-30 ft	900 kwh - 1900 kwh	1200 kwh - 2700 kwh	1600 kwh - 3600 kwh
Rotor Diameter 30-40 ft	1900 kwh - 3400 kwh	2700 kwh - 4900 kwh	3600 kwh - 6400 kwh

100ft Wind Resource Map



Latitude = 42.70242°, Longitude = -73.85769°, Elevation = 309.06ft (94 m)

Wind Rose



IMPORTANT NOTICE AND DISCLAIMER: The wind map and wind rose were created by **AWS Truepower, LLC** using the **MesoMap®** system and historical weather data. Annual energy estimates were calculated using the local wind resource, estimated loss factors, and a generic power curve. For more information on the program's methodology, please refer to the **Help** page. AWS Truepower and NYSERDA do not guarantee the above estimates and are not responsible for the contents of this report. For applications requiring greater accuracy, the wind resource estimates should be confirmed by measurement. For more information on NYSERDA wind incentives, please refer to **NYSERDA's webpage**.

New York State
Small windExplorer

Developed by
AWS Truepower

<http://nyswe.awstruewind.com>



- In 2008, our company was awarded a grant from the New York State Renewable Energy Research and Development Authority (NYSERDA) to develop an accurate yet affordable wind resource assessment tool for distributed wind turbines.
- The result was Wind Analytics™, a patent-pending, web-based software tool, designed to quickly, accurately, and cost effectively assess a property's wind resource for optimal distributed wind turbine siting.

Wind Turbine Testing



- Intertek
 - Small Wind Turbine Test Facility
 - Blade Test Facility at Clarkson University

NYSERDA's On-Site Wind Incentive Program



What is ITAC?

- A collaborative group of state wind incentive programs and utility incentive providers working to create a national unified list of small and mid-sized wind turbines who would be eligible for program funding.
- ITAC evaluates the tech. specifications, design, performance characteristics, operational history, and customer support of these turbines.
- ITAC pools resources to engage experts in technical review.

What is the Unified List?

- A list of small and mid-sized wind turbines that fit the performance, durability, and customer experience expectations of incentive providers

Unified List

Currently engaged funds

- Energy Trust of Oregon
- New Jersey Board of Public Utilities Office of Clean Energy
- Massachusetts Clean Energy Center
- Maryland
- NV Energy
- California Energy Commission
- Minnesota Office of Energy Security
- Wisconsin
- NYSERDA

ITAC

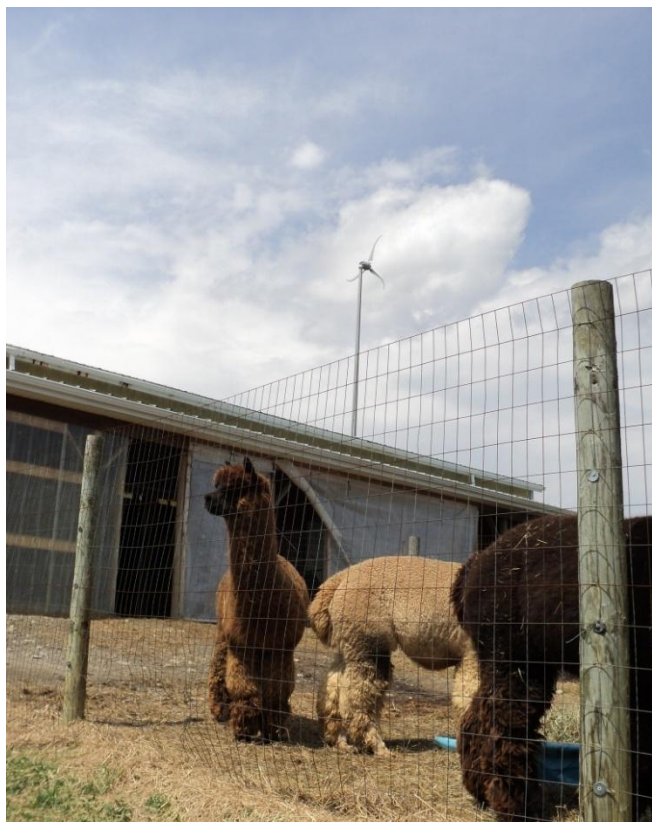
Wind Turbine Incentive Program (PON 2439)

- The program offers incentives for qualified equipment installed by eligible installers.
- The list of Eligible Installers can be found at:
<http://www.nyserda.ny.gov/Contractors/Find-a-Contractor/Wind-Installers.aspx>
- The list of Qualified Turbines can be found at:
<http://www.nyserda.ny.gov/Page-Sections/Renewables/Small-Wind/Eligible-Wind-Turbines.aspx>
- No Paperwork for Customers
- Program set to expire on December 31, 2015

Wind Incentive Program

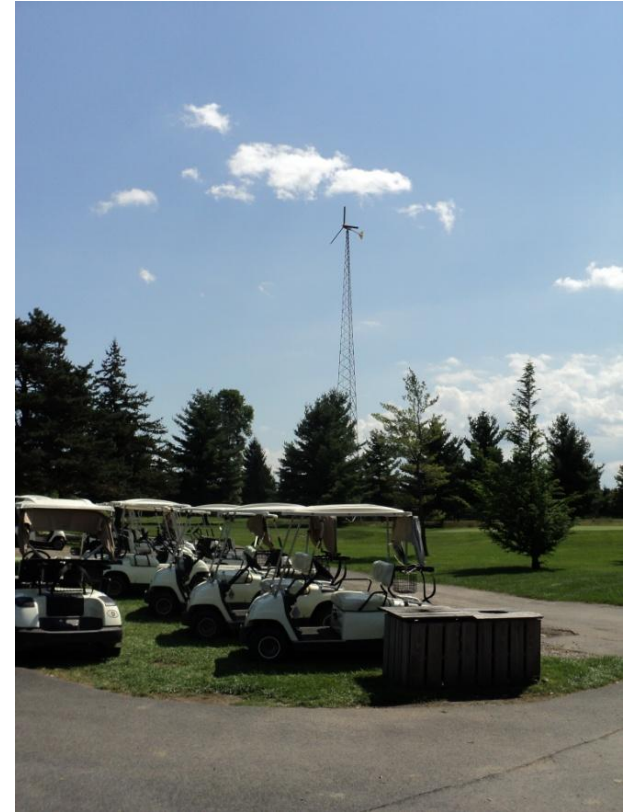
- Incentive based on estimated on-site production based on NYS Small windExplorer.
 - <http://nyswe.awstruepower.com/>
- \$3.50/ kWh up to 10,000 kWh;
 - \$1.00/kWh after the first 10,000, up to 125,000.
 - \$.30/kWh over 125,000 kWh.
- Incentive cap of 50% of cost and \$400,000
- Need local approval
- “Wind Energy and Cell Towers are part of our fabric now.”

Southwest Skystream on 60' Tower



2.1 kW - Production: 2,800 kWh – Cost: \$30,000

Bergey Excel on 120' Tower



10 kW - Produces 8 to 16,000 kWh - Cost \$70,000

Gaia on 120' Tower



11 kW – Produces 16 to 30,000 kWh - Cost: \$125,000

Endurance E-3120 on 140' Tower



50 kW

Produces 100 to 160,000 kWh

Cost \$350,000

Northwind 100 on 121' Tower



Where Do We Go From Here?



Join CESA-ITAC!
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