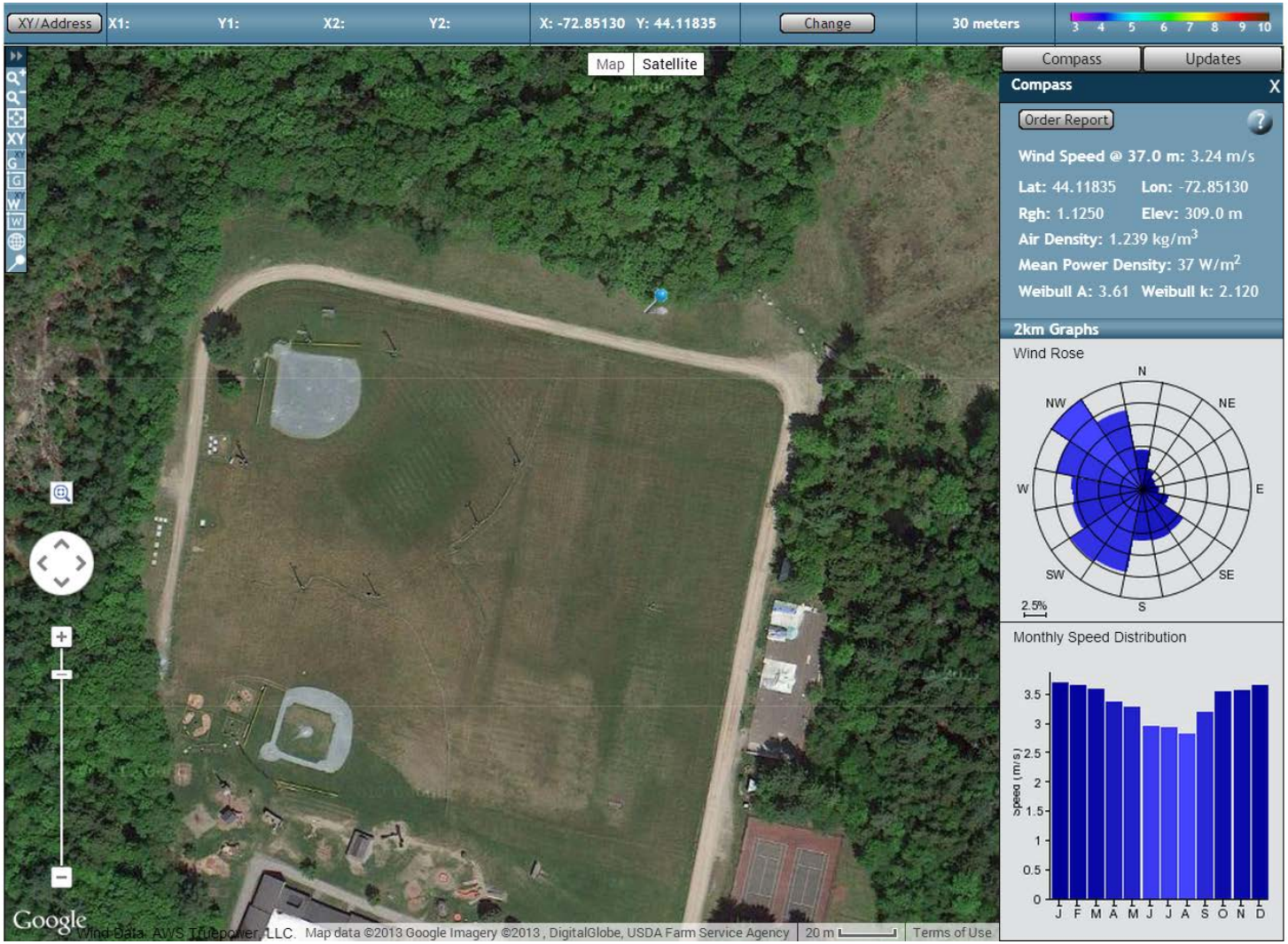

aegis
RENEWABLE ENERGY
Town of Warren
100kW PV Array
August 26th, 2013

Who is Aegis Renewable Energy?

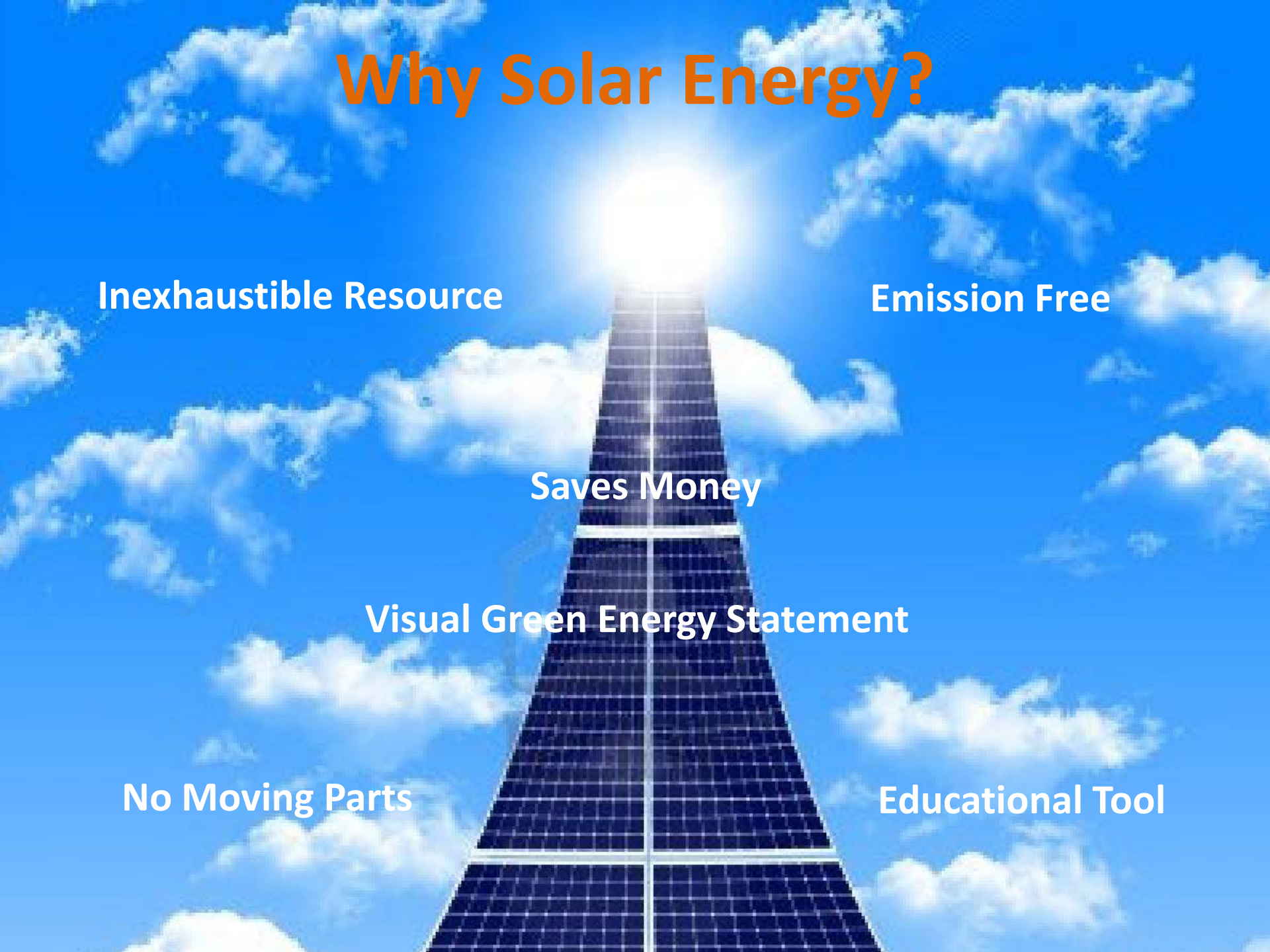
- The Aegis Wind Team is the most experienced community scale wind integrator in the Northeast and has years of experience in the solar industry.
- We focus on three core technologies:
  - Wind
  - Solar
  - Cow Power
- Our full range of services consists of permitting, industry-leading system design, project financing options, on-time and on-budget installation, ongoing maintenance contracts.
- Based in Waitsfield VT

Wind Analysis



Approx. – 3.24 m/s @ 37 Meter Hub Height, 200M Res.

Why Solar Energy?



Inexhaustible Resource

Emission Free

Saves Money

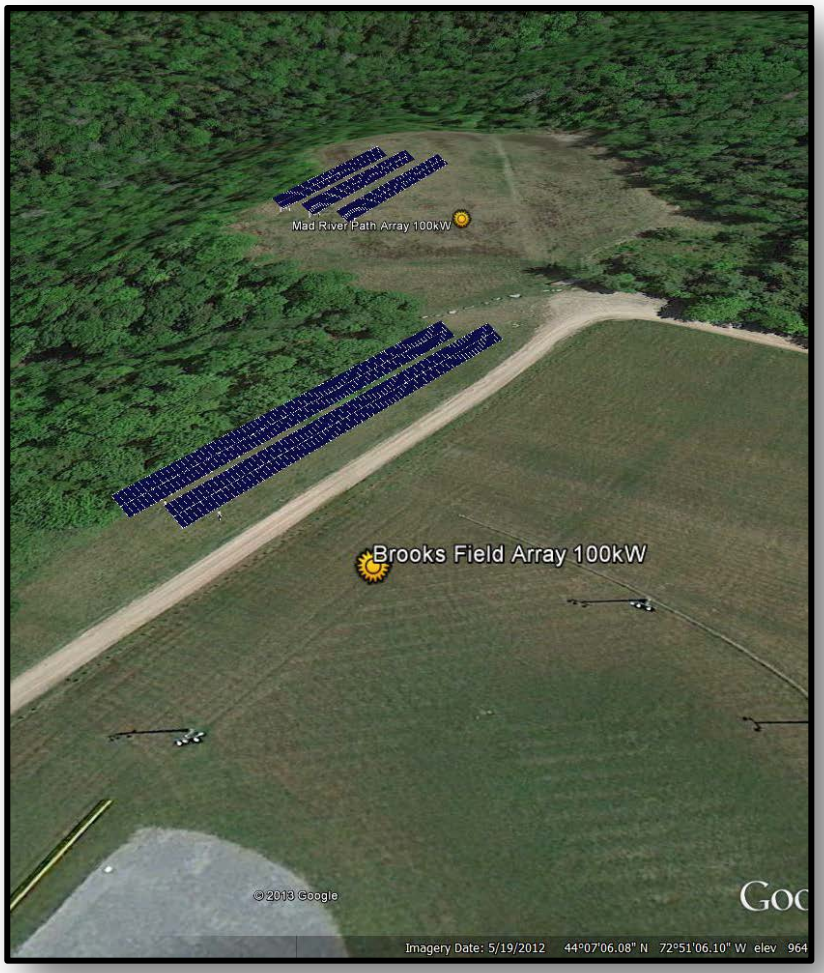
Visual Green Energy Statement

No Moving Parts

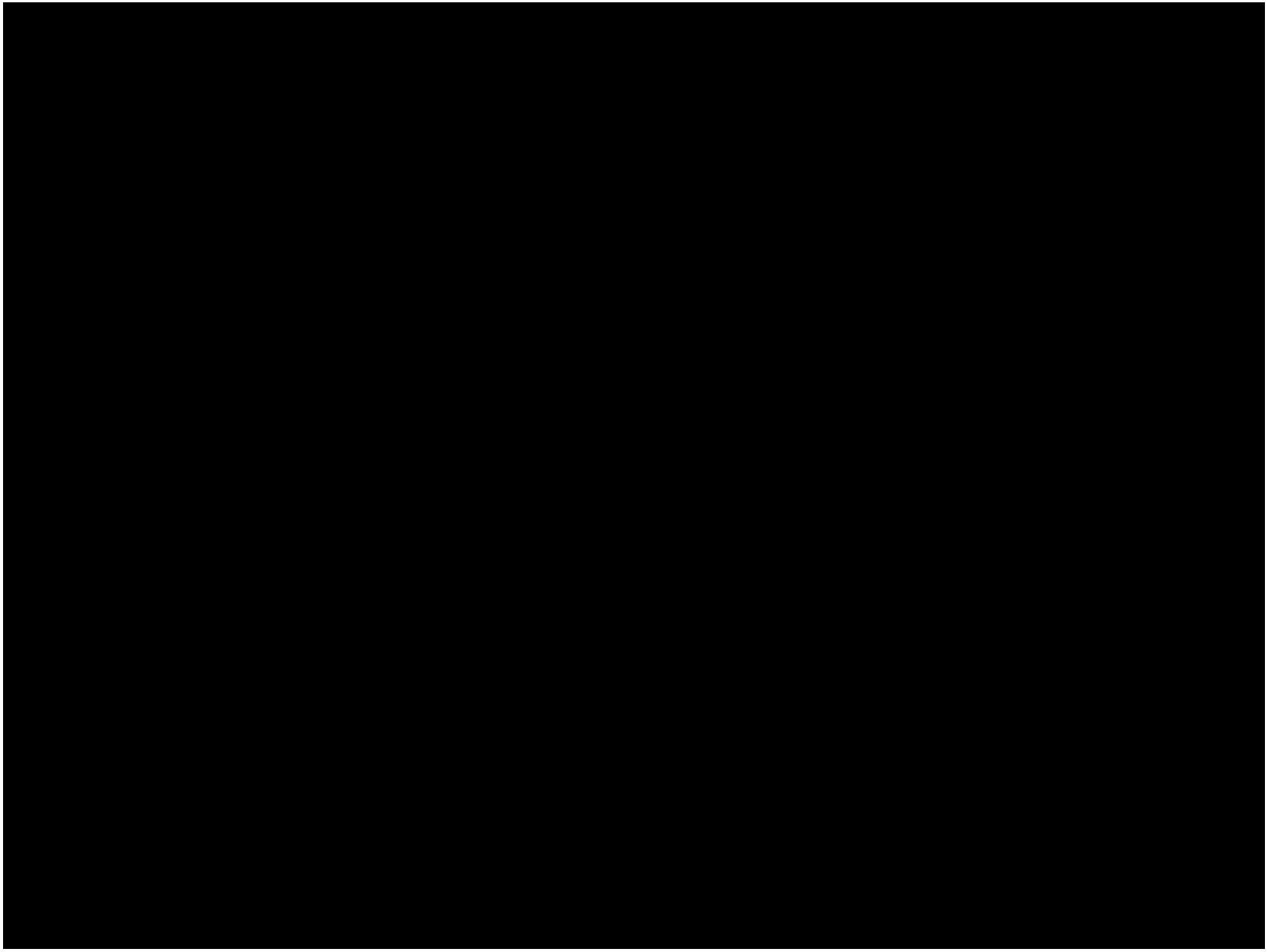
Educational Tool

Proposed Project - Summary

- Project Location:
  - Brooks Field
- System Size:
  - 97,295 Watts DC
- Number of Solar Panels:
  - 319 - 330
- Estimated Production:
  - 95,344 Watts DC
- Percentage of Town Load
  - 42%
- Area Required:
  - 40’ x 300’

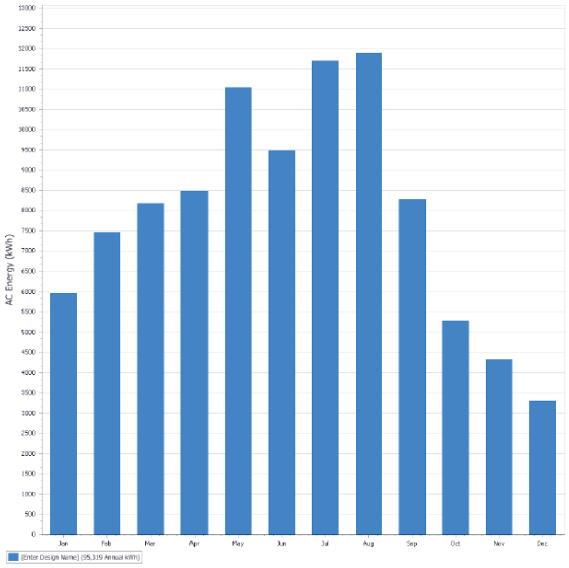


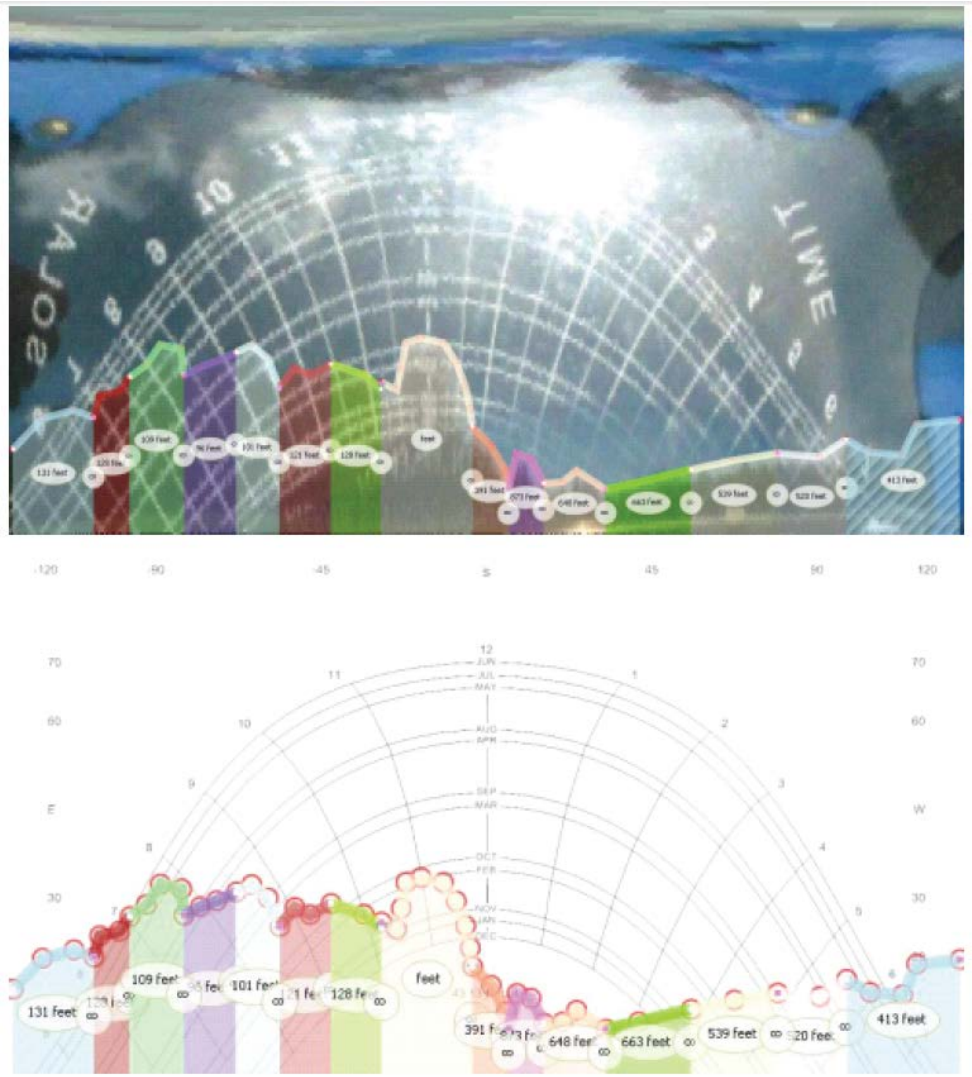
PV Arrays at Brooks Field



Solar Analysis

Aegis Wind LLC
Summary Production Graph



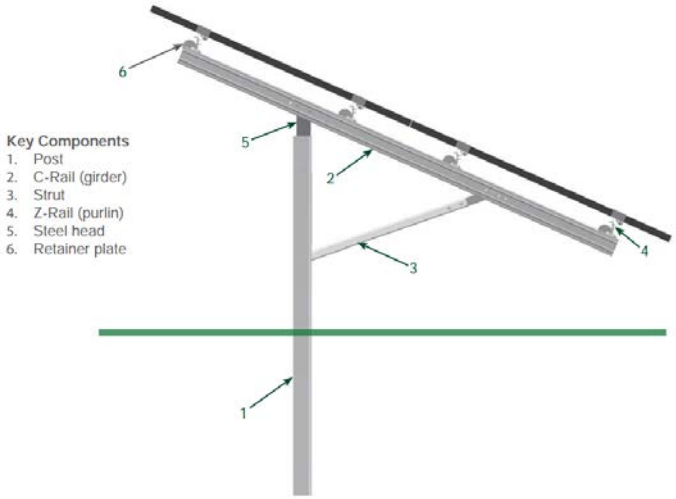


Major Equipment

ReneSola
156 Series Polycrystalline
Solar Module
300W, 305W, 310W

SOLECTRIA RENEWABLES

SCHLETTER Inc.



System Monitoring – 24/7

Aegis maintains an in house system monitoring team to maximize the return on your Investment.

SOLRENVIEW

SOLECTRIA RENEWABLES

Public Sites | Not logged in

Cummings Properties - TradeCenter 128

Switch to New Look

[Refresh in 13...

System Info

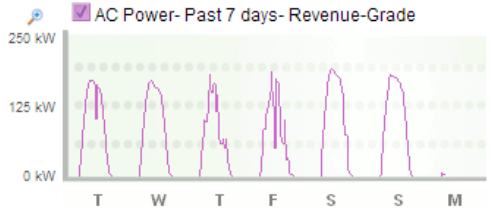
REPORT

Location 250 Trade Center 128. Woburn, MA 01801

Monitoring Started Fri Jan 23, 2009

Installer Cummings Properties

Inverter Models	Inverter WAC	Qty.	Total Capacity (WAC)
Solectria PVI 95KW-480VAC	95000	2	190000
Solectria PVI 60KW-208VAC	60000	1	60000
Solar Modules	**Module WDC**	**Qty.**	**Total Capacity (WDC)**
Schuco 225	225	234	52650
CanadianSolar 190	190	518	98420
CanadianSolar 200	200	504	100800



System Status Now [Mon Aug 26, 2013 8:43 am EDT]

Online [last update: Mon Aug 26, 2013 8:41 am EDT]

System Status, Revenue-Grade :	Active
Energy Generated Today:	9 kWh
Lifetime Energy Generated:	1170508 kWh
Lifetime CO_2 Emission Offset:	732 tons
System AC Power Now (Est.):	9365 W

View Revenue-Grade | View Inverter-Direct

Financing Option 1

Third Party Ownership – GLC Solar Fund

- Pros
  - No Out of Pocket Expense
  - No Maintenance Risk
  - Offset Power Consumption at a Lower Utility Rate
  - Offset Power With Clean Renewable Energy
- Cons
  - Commit to 20 Year Lease
  - Fairly Small Financial Gain
  - Not available until 2014

Annual Financial Benefit: **$ 1,974.00**

Financing Option 2

Town Ownership – Finance or Low Interest Bond

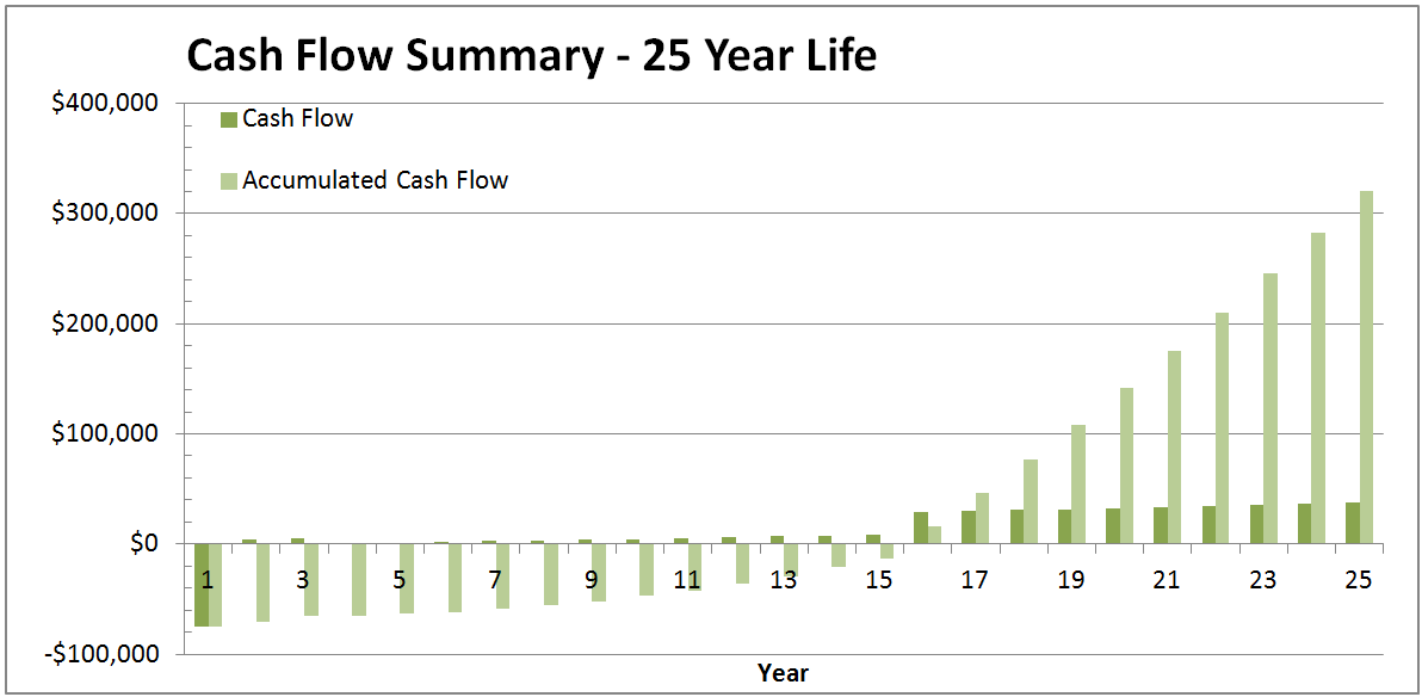
- Pros
  - Realize Full Economic Value of Project
  - Town Retains Control of Asset
  - More Options for Integration Into School Curriculum
  - Offset Power With Clean Renewable Energy
- Cons
  - Out of Pocket Expense
  - Can't Utilize the Tax Benefits
  - Ongoing Maintenance
  - Long Payback Period

Est. Savings Over Life of System: **$ 320,094**

Financing Option 2 - Continued

Town Ownership – Finance or Low Interest Bond

Results	
Internal Rate of Return	10.6%
Payback (years) - After Tax	15.44
NPV at 8%	$30,009
Lifetime Savings	$320,094
Lifetime Energy Output (25 yrs, kWh)	2,383,600 kWh
Average Lifetime Savings/kWh	$0.13



Financing Option 3

Town Lease / Ownership

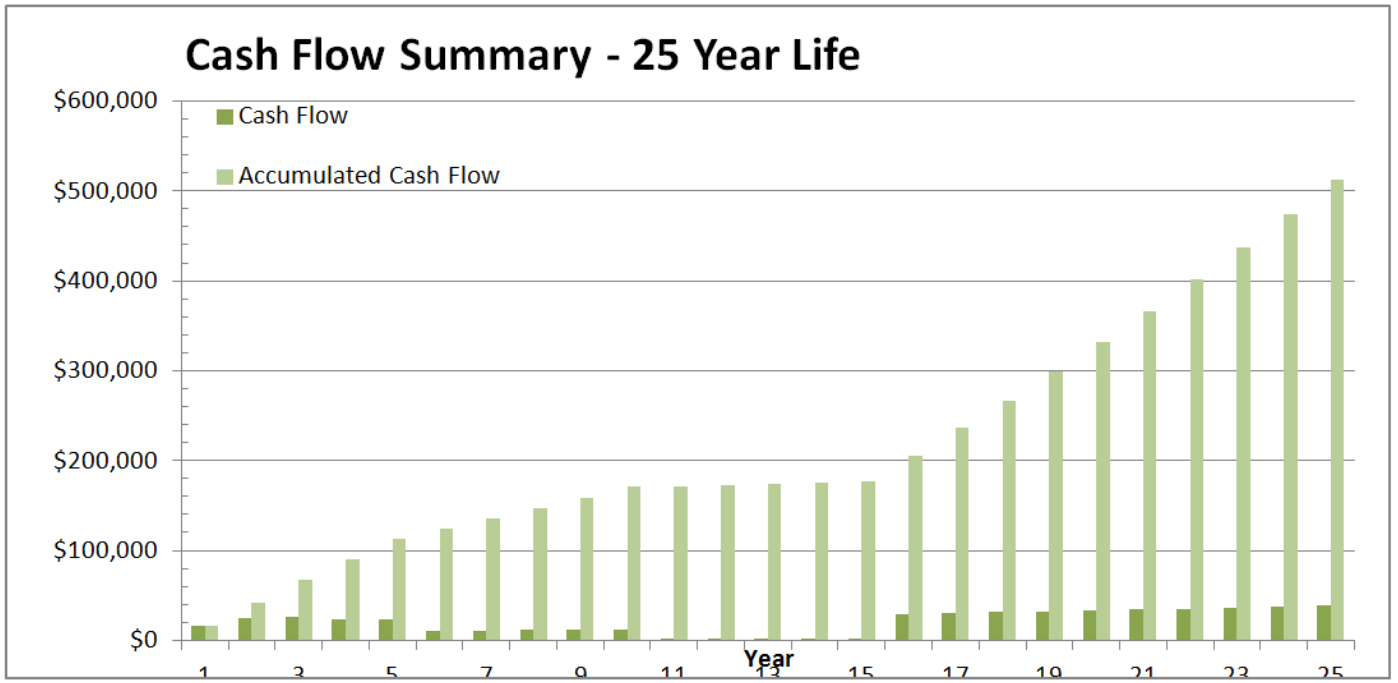
- Pros
  - Realize Full Economic Value of Project
  - Can Utilize the Tax Benefits through Lessor
  - Town Retains Control of Asset
  - More Options for Integration Into School Curriculum
  - Offset Power With Clean Renewable Energy
  - Buyout options
- Cons
  - Down Payment Expense
  - Ongoing Maintenance
  - Higher Finance Rate

Est. Savings Over Life of System: **$ 512,511**

Financing Option 3

Town Lease / Ownership

Results	
Internal Rate of Return	100.0%
Payback (years) - After Tax	0.00
NPV at 8%	$192,697
Lifetime Savings	$512,511
Lifetime Energy Output (25 yrs, kWh)	2,383,600 kWh
Average Lifetime Savings/kWh	$0.22



Environmental Benefits

Emmissions

Annual CO^2 emissions avoided:	**114,890 lbs**
Lifetime CO^2 emissions avoided:	**2,872,250 lbs**

Which is equivalent to any of the following:

- 10.2 cars per year, or 254.97 cars over system lifetime.
- 5842 gallons of gasoline per year, or 146052 gallons over system lifetime.
- 121.4 barrels of oil consumed per year, or 3035 barrels over system lifetime.
- 0.28 railcars of coal per year, or 7.09 railcars over system lifetime
- 2171 propane barbeque cylinders per year, or 54286 cylinders over system lifetime.
- 16.1 New England Households per year, or 402 Households over system lifetime.

Key Project Milestones

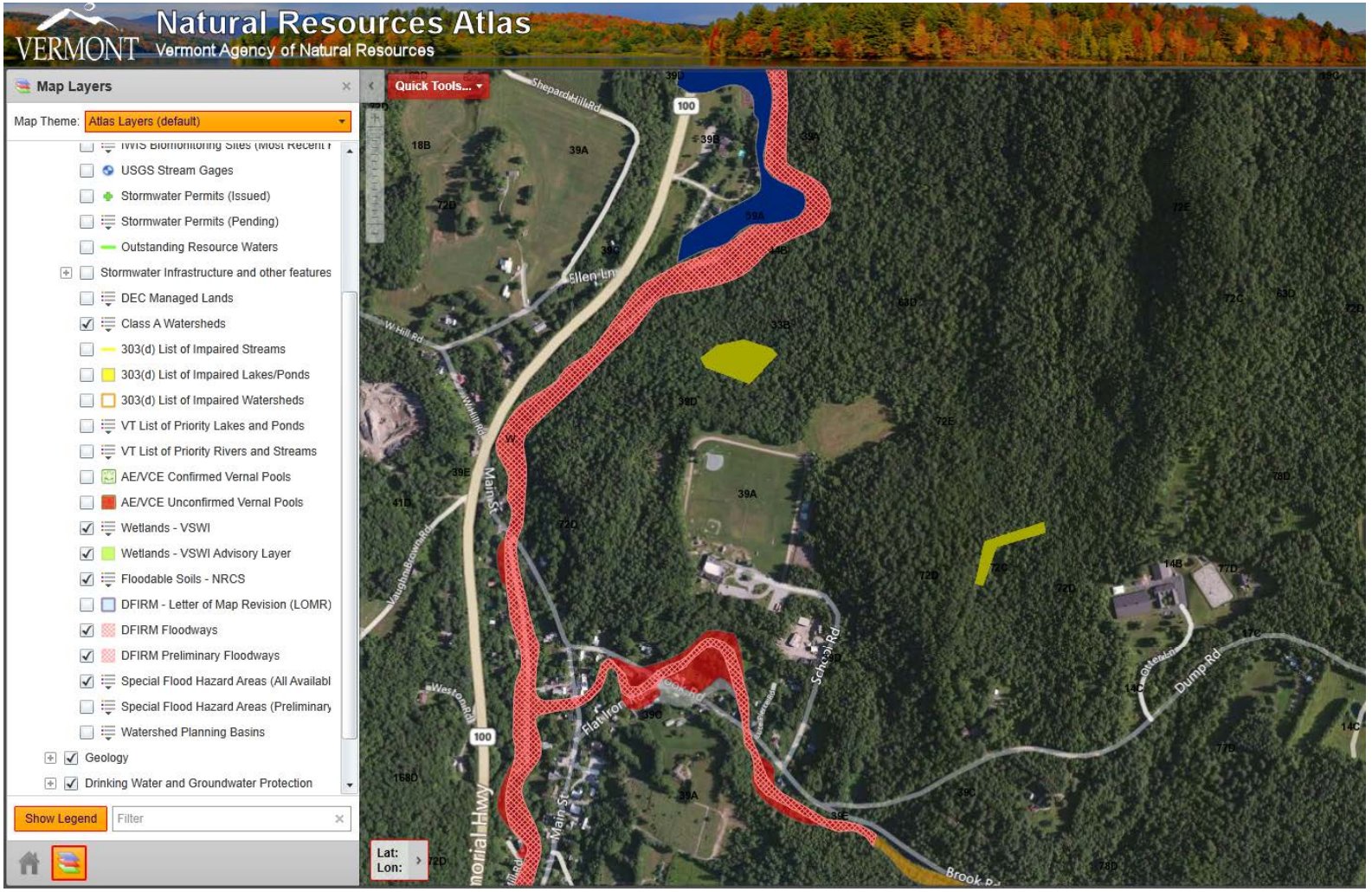
- Site Assessment
- Proposal
- Contract
- Engineering/Design
- Permitting
- Materials Procurement
- Construction/Installation
- Commissioning

Permitting / CPG

These are typically required as part of the permitting process

- Proximity to Wetlands or other Sensitive Areas
- Electrical One-Line Showing System Design
- Visual Representation / Impact
- Manufacturer's Cut Sheets
- Accurate Site Map
- List of Abutters
- The Towns Renewable Energy Goals
- Complete CPG Application

Environmental Assessment



Project Timing

Project Schedules are created in MS Project

- Permitting: 1-2 Months
- Engineering and Order Long leads: 1 Month
- Construction: 1Month
- Commissioning: 2 Days

Total Time 3 – 4 Months

Next Steps

1. Preliminary Proposal and Feasibility
2. Finalize and Sign Contract
3. Engineering & Design, Permitting, Interconnect Approval
4. Equipment and Material Procurement
5. Project Installation
6. Commissioning and Customer Training

For more information, please contact:

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Coming Sept. 8th