

Saint John's Solar Farm

Best Power Int'l, LLC



Renewable Development Fund Project: EP3-3

5/11/10

Project Objectives

- Familiarize Minnesotans with solar PV and educated the public on Minnesota's excellent solar resource.
- Provide a full-scale demonstration of utility solar power in Minnesota.
- Create a foundation of project management experience and knowledge regarding installations of this size.
- Generate renewable energy during peak periods and serve as a test case to analyze the effects of solar energy generation on load management.

Government Approvals

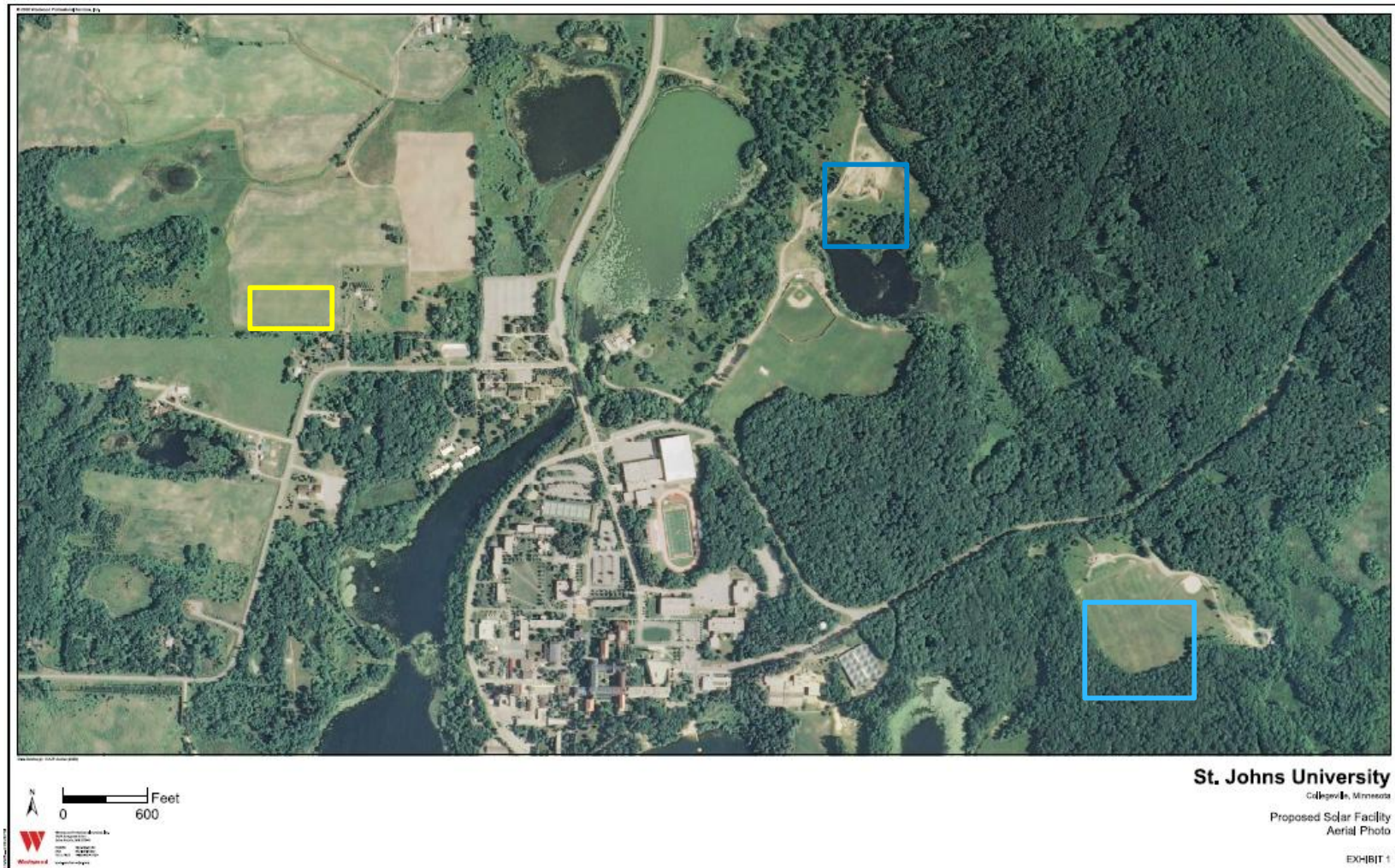
- **Landuse Approvals/Permits:**

- | | |
|---|--------------------|
| • Zoning Code text change (to allow solar): | Stearns County |
| • Rezoning to District that allowed solar: | Stearns County |
| • Conditional Use Permit: | Avon Township |
| • Site Permit: | Stearns County |
| • NPDES (Stormwater): | State of Minnesota |
| • State Building Permit (Electrical) | State of Minnesota |
| • Decommission Plan: | Avon Township |

- **Legal Agreements:**

- | | |
|------------------------------|------------------------|
| • Interconnection Agreement: | Xcel Energy |
| • Land & Solar Lease: | Saint John's Abbey |
| • Construction Agreements: | Mortenson, etc. |
| • Vendor Supply Agreements: | Modules, Tracker, etc. |

Site Selection



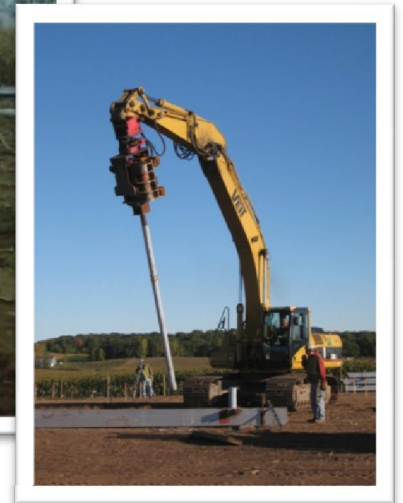
Site Plan



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Installation – Foundation

- **Driven Pole Foundation**
 - No concrete
 - Cost reduction
 - Minimal Site Disturbance



Installation – Wire & Trench



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Installation – Tracker Frame & Motor

- Two 1.5 HP motors



Installation - Modules

- 1820 Modules
- 4 Containers



Installation – Commissioning

- Calibrate Systems
- Baseline System Performance
- Anti-Island Verification
- Meter Installation



Project Timeline (2009)

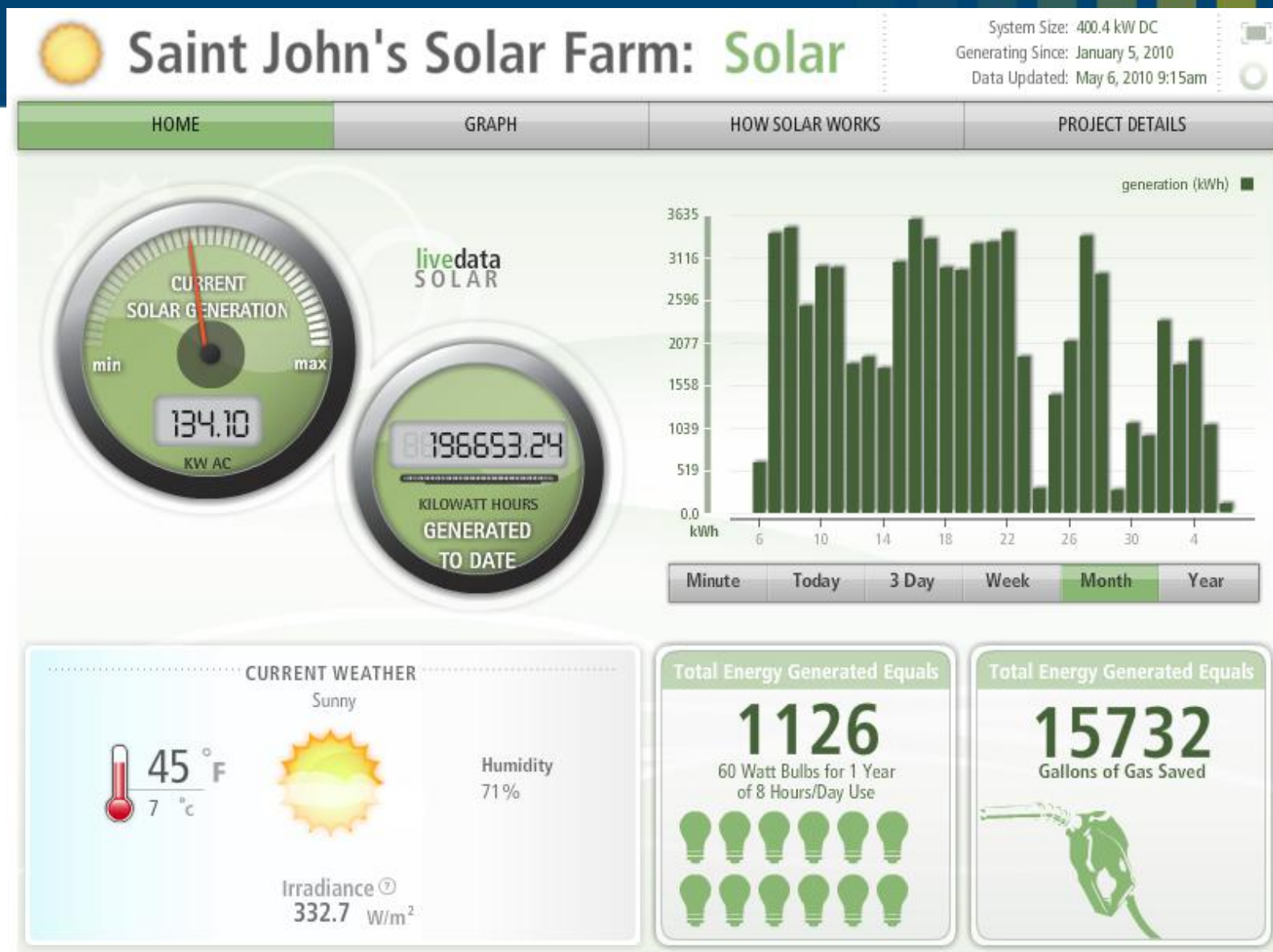
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|---------------------------|--------------------|
| 1. Sign Agreement w/ Host | <i>May</i> |
| 2. Design | <i>June</i> |
| 3. Zoning/Permitting | <i>June-August</i> |
| 4. Equipment Procurement | <i>Aug-Sept</i> |
| 5. Site Work | <i>September</i> |
| 6. Foundations | <i>Sept-Oct</i> |
| 7. Tracker Assembly | <i>October</i> |
| 8. Module Installation | <i>November</i> |
| 9. Commissioning | <i>December</i> |



Project Objectives – Results

- ***Familiarize Minnesotans with solar PV and educated the public on Minnesota's excellent solar resource:***
 - Site Tours (Over 500 visitors to date)
 - Media Coverage (Print & Television Coverage)
 - Award (MRES Commercial Project of the Year)
 - Educational Seminars
 - Live Project Website
- ***Provide a full-scale demonstration of utility solar power in Minnesota:***
 - Industry Groups
 - Project Investors & Developers
 - Elected Officials, Government Staff and Utility Representatives

Live - Website



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Project Objectives – Results Cont

- ***Create a foundation of project management experience and knowledge regarding installations of this size.***
 - Contractors, Electricians, Metal Works etc.
 - Engineers, (Electrical, Structural and Civil)
 - Program Managers & Integrators
- ***Generate renewable energy during peak periods and serve as a test case to analyze the effects of solar energy generation on load management.***
 - Data Acquisition System (Actively Monitors System Performance)
 - Ion – Internet Connected Utility Meter
 - 195MWh of Renewable Energy Generated to Date
 - Exceeding Energy Production Estimates