

Massachusetts' 100 Mw Photo Voltaic (PV) Power Program Ansar Energy, LLC

Program Overview

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Q3, 2009

Ansar Development team approach to utility scale PV solar projects (ground mounted Solar)-5 acres/MW



Ansar Energy 100 MW PV Solar Program

Ansar Energy 50 MW PV project Progress Overview

Approximately 10 sites required for 50 Mws identified, and site agreements being negotiated (mix of private and public sites)

Site specific designs and site permitting efforts well underway

Interconnection applications to National Grid being submitted

Engineering, Procurement and Construction contract negotiations well underway

Total Project cost and Financing structure well developed

Discussions well underway with debt and equity sources with a draft PPA (letters of interest received from major banks)

Tariff designed to achieve grid parity in less than 10 years

Tariff also designed to impact rate payer average monthly bill by less than 2% prior to grid parity

\$350 million first project being developed to close in Q1 2010

Ansar Energy 100 MW PV solar power program presentation outline

- **Plan over view**

- Plan and Economic Impact
- Team
- Sites under evaluation
- Development Schedule

- **Engineering, Procurement and Construction, approach/plan/schedule**
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- **Conclusion and next steps**

Ansar Energy continuing to develop \$700 million, 100 Mw PV solar program (2 projects), over three years with focus on two major utilities in Massachusetts

- Size of each Project 50 Mw (100 Mw total)
- Number of Projects 2 (over three years)
- Investment per Project \$ 350 million (\$700 million total)
- Schedule Can start site work in 2010
- Long term contracts with National Grid, & NSTAR;
- Project Locations Capped landfills, virgin lands and brownfields, with approx 10 sites (20+/- acres average/site) for each Project
- PV Plant configuration type Fixed, ground mounted,
- Massachusetts jobs created per Project 1,000 (2,000 total)
Construction -- 50%
Services -- 50%
- Community annual lease and tax payments \$3+ million/project (\$6+ million total)

Ansar Energy's 100 MW program provides a cost effective and timely approach to meeting the objectives of the Green Communities Act

- Located within the Commonwealth
- Improved electric system reliability within the Commonwealth
- Moderates system peak load: system generation is maximum during hot summer afternoons
- Cost effective over life of Long term contracts
- Creates jobs within the Commonwealth

100MW Solar Program Job Creation, 3MW per Month

• Logistics	10
• Trucking 60 truckloads (plus any earthwork trucking)	10
• Mechanical installation	130
• DC Electrical installation	30
• AC Electrical installation	10
• Project Management, Engineering Design	10
• Finance, Project Development	10
• Inverter Pre-assembly	10
• Monitoring system	
• Subtotal, Direct Jobs	220
• Additional non-direct jobs	330
• Total, Direct + Indirect	550
• These jobs would be stable for over 4 years.	
• Total jobs estimated with multiplier effect per project	1,000

All of the above are highly skilled and well paying jobs.

If project starts to roll along such that we keep crews busy full time (so they roll from 3 MW to 3 MW), these jobs all occur simultaneously. If we accelerate the project so that we're constructing more than 3 MW / Month, then the jobs are additive

Ansar energy development team consists of leading international and local industry experts and consultants

Overall Developer/Owner

Ansar Energy in conjunction with Partners (initial understanding in place with a Fortune 200 company, in discussion with other potential partners)

EPC Contractor

J F White, an experienced and leading Mass. construction company capable of executing multi-hundred million dollar construction projects

PV technology sub-contractor

Using multiple leading PV system integrators in the country

Counsel

Goodwin Procter, leading national law firm based in Boston

Permitting/Specialty Consultants

ERM for permitting. R W Beck for Independent Engineer. Others as required;

Financial Advisor

Smart Energy Capital, and/or others in conjunction with leading banks

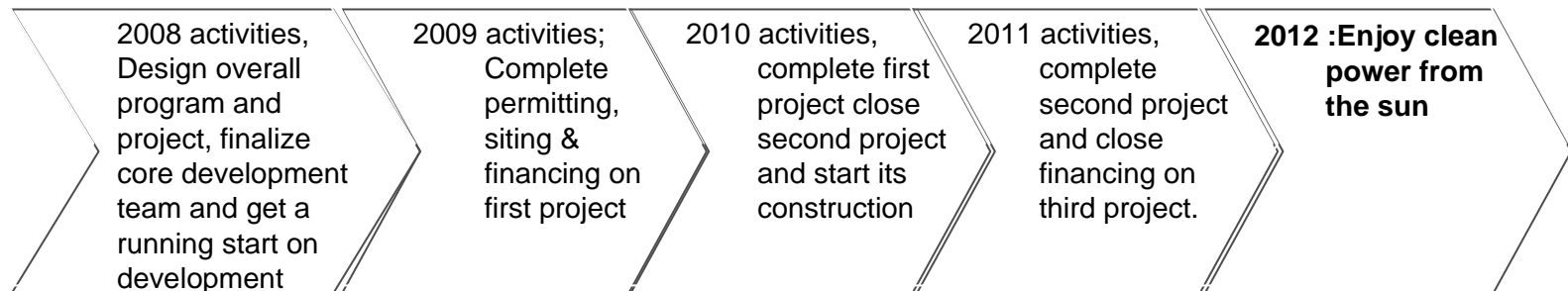
PV Solar Projects to be distributed across a number of sites to facilitate grid stability and expedite permitting. Sites under development include:

- Westminster (Letter of Intent in place)
- Sturbridge (Letter of Intent (LOI) in place)
- Worcester (multiple sites)
- Attleboro (LOI in place)
- Leominster/Fitchburg (LOI in place)
- Norton (LOI under negotiation)
- Hubbardston (LOI in place)
- Spencer (LOI in place)
- Holbrook (LOI under consideration)
- Multiple other sites under various stages of consideration
- Note: In discussion with sites capable of accommodating well over 100 MWs.

Development schedule targets financial closing and start of construction in Q1 2010 and completion of first project by 2011

Development Progress is proceeding as scheduled,

Schedule likely to be set by Utilities and Regulatory deliberations



- Establish program approach and size
 - Choose core development team
 - Establish Technology
 - Short list sites
 - Establish project structure
 - Draft initial PPA (Power Purchase Agreement)
- Finalize all sites
 - Finalize EPC Contract
 - Permit sites
 - Execute PPAs
 - Obtain DPU approvals
- Close financing
 - Start construction & commissioning first project
- Close financing on second project
 - Start construction on second project
- Finish construction on 100 mw program
 - Develop additional PV projects
 - Expected life of over 25 yrs
 - Use operating data to develop next generation of lower cost PV power plants

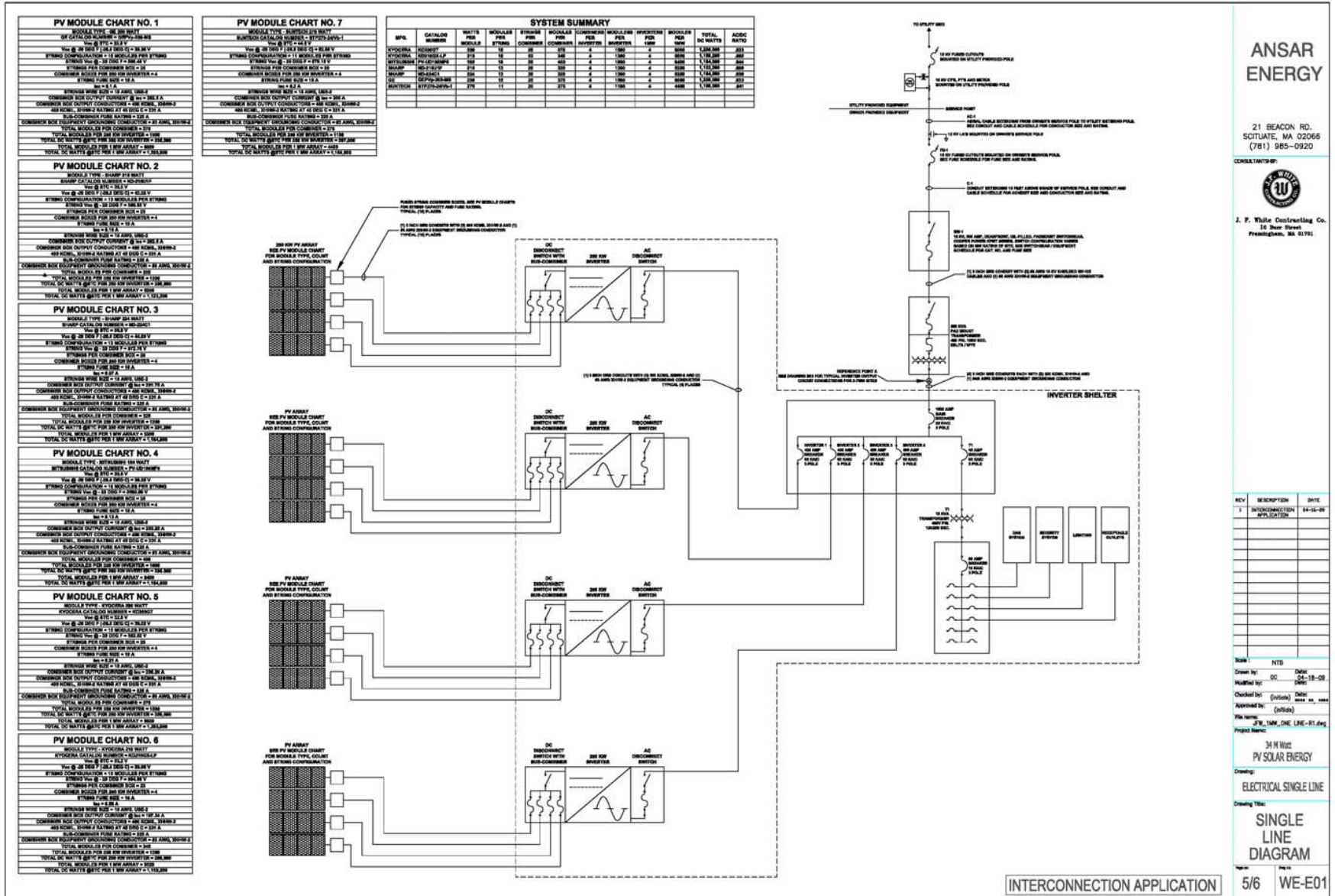
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PV equipment pricing source & suppliers under consideration

- PV Module Suppliers
 - Sharp
 - Kyocera
 - Evergreen
 - Other leading Suppliers
- Inverter manufacturers
 - Solectria
 - SMA
 - Satcon
 - Advanced Energy
- Mounting System Suppliers
 - Iron Ridge
 - Panel Claw
- Others

Modular Electrical Design in Progress



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Site Interconnection applications for PV Solar Facilities distributed across utility service territories to moderate peak load locally, facilitate grid stability and expedite implementation

- Reviewed potential sites with utilities (ongoing)
- Established preferred voltage level for interconnections
- Established preferred PV facility capacity per site
- Submitted interconnection applications for multiple sites
- Selected interconnection consultants
- First project to be ready is likely to be for National Grid

Permitting perspective For PV Projects

- **Technical Issues: None discovered to date**
- **Commercial issues: Fees for local permits- undefined**
- **State and Federal Permitting – Simple and “Portable”**
 - No Controversial Impacts, e.g., No air emissions, waste generation, wastewater, trucks, noise
 - General Environmental Review Under MEPA Not expected
 - Only One Significant Permit Likely: DEP Permit for Post-Closure Use of a Landfill
 - Core content of permit application carries from site/landfill to site/landfill
 - Storm Water Strategy – Manage run off within the landfill’s existing storm water management system, under the existing closure permit
 - Federal (EPA) Storm Water Construction Permit – Simple notification process
- **Local (municipal) Permits and Approvals**
 - The required local permits and approvals vary with the municipality
 - Examples: Zoning Compliance, Special Use Permits, Building Permit

Ansar Energy 100 MW PV Solar Program

Expected Schedule for Permitting-4 to 6 months

Permitting Milestone

- Site LOI in place (site selection criteria include being able to permit site within 6 months)
- Site conceptual Engineering Design and Electrical Interconnection application submitted
- DEP – Post-Closure Use Permit Application (Required)
 - Prepare and File the Application
 - Agency Review & Approval (2-4 months)
- EPA – Storm Water Construction Permit, Notice-of-Intent
- Municipal Permits and Approvals (e.g., Zoning, Special Permits)
 - Identify Requirements
 - Prepare and File Applications
 - Municipal Review and Approval (*Timeframe Can Vary*)
- Site Lease with Host Community Executed (Attaches to DEP Post-Closure Use Permit)

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Power Purchase Agreement (PPA) Requirements for Financeability

- Term of PPA- 15 years
- Capacity Payments (sculpted)
- Energy payments (Average Retail rate)
- REC payments (market price)
- Grid parity in less than ten (10) years
- Draft PPA reviewed by financing entities

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Comparative PV Tariff Analysis

Host	State	Size (kW DC)	PPA Rate	Escalation	PPA Term	Local Incentives and RECs	Unadjusted Levelized Tariff	Adjusted Levelized Tariff*	Adjusted Levelized 15yr Tariff
Municipal Property	CO	1,300	0.070	3.00%	20 yrs	\$0.16 x 20yrs esc 1%	0.26	0.45	0.50
Private Company	CA	1,132	0.127	4.95%	20 yrs	\$0.456/kWh x 5yrs	0.37	0.45	0.50
Private Company	NJ	1,000	0.180	2.50%	20 yrs	\$0.40 x 8yrs	0.45	0.42	0.47
Public School	CT	500	0.135	5.00%	20 yrs	\$1,714,253 rebate	0.44	0.47	0.53
Private University	MA	400	0.200**	4.60%	25 yrs	\$843,750 rebate (\$2.1/watt)	0.47	0.44	0.55

*Adjusted for differences in insolation

**Inclusive of purchase of RECs by Host

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Illustrative 15-Year Tariff Structures on 34 MW project
Objective – Less Than 2% Impact on Average Ratepayer

	Energy Tariff (per kwh)	Annual Escalation	REC Payment (per kwh)	Years to Grid Parity	Monthly Capacity Charge (per KW)	Estimated Impact on Average Bill
Basic Tariff	\$0.48	1.0%	\$0.05	N/A	N/A	N/A
Energy & Capacity Scenario 1	\$0.15	1.0%	\$0.05	3	\$133.8	2.8%
Energy & Capacity Scenario 2	\$0.15	1.0%	\$0.05	8	\$55.1	1.2%
Energy & Capacity Scenario 3	\$0.15	1.0%	\$0.05	10	\$45.3	0.9%

Note- Impact on average bill estimate applicable to National Grid and NSTAR

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On going Development activities

- Evaluating sites and negotiating site LOIs for two 50 MW projects distributed on 10 sites per project.
- Preparing and submitting interconnection applications to utilities for the sites.
- Initiated detailed Permitting efforts for sites
- Negotiating EPC contract
- Reviewing and refining financing structure with debt and equity sources.
- Letters of interest received from major financing sources
- Preparing security package for review with financing institutions.
- Security package includes
 - › **Power Purchase Agreement**
 - › **EPC agreement**
 - › **Site Agreements**
- Ongoing discussions with various stakeholders
- Independent Engineers review shows financeable project with competitive cost structure
- Development targeted towards a Q1 2010 financial closing for first project