



## 2007 New Jersey Clean Energy Leader

# EPV Solar Clean Energy Manufacturer

### PROJECT INFORMATION

#### Organization

- EPV Solar, Inc.

#### Locations

- Lawrenceville and Robbinsville, NJ

#### Project Name

- Thin-film, dual junction amorphous silicon ("a-Si") solar modules

#### Project Contact

- Ren Jenkins, Vice President of Marketing

#### Technologies

- a-Si thin-film photovoltaic (PV) solar modules; Building-Integrated Photovoltaic (BIPV) development

### PROJECT SAVINGS

#### Energy Benefits

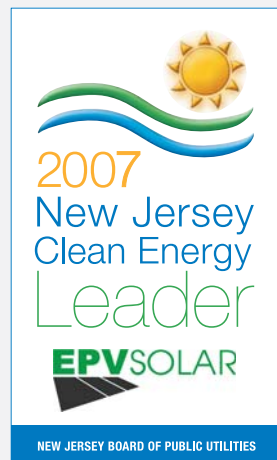
- a-Si PV modules can produce 30% more electricity than mono crystalline silicon modules

*Project information, savings, and environmental benefits were provided by the project manager.*



“This award demonstrates that clean energy manufacturing will be a driving force toward economic growth and green jobs in New Jersey.”

*Scott T. Massie  
Chief Executive Officer  
EPV Solar*



### Background

EPV Solar, Inc., based in Lawrenceville and Robbinsville, NJ, is a solar energy company that designs, develops, manufactures, and markets low-cost amorphous silicon (a-Si) thin-film photovoltaic solar modules. It uses proprietary manufacturing equipment – the EPV Solar Integrated Manufacturing System – which is based on its commercially proven batch manufacturing process. Founded in 1991, EPV Solar has grown from an R&D company to become a leading global PV manufacturer.

### Challenge

As the solar energy market grows in New Jersey, the nation, and the world, EPV Solar recognizes the increased interest in, and importance of, the cost of energy per kilowatt hour of production. The company concentrates research efforts on a-Si technology, or thin-film solar technology, which produces solar electricity at the lowest price per kilowatt hour. EPV Solar modules present near-term potential for reaching grid parity, where the price per watt of electricity from PV is competitive with the price of electricity from a local utility grid without the use of incentives or subsidies. This is in sync with New Jersey's goal of increasing the solar energy production in the state through a performance-based system rather than a rebate-based system.

The a-Si thin-film modules offer other benefits:

- a-Si modules provide more electricity per rated watt than single crystalline silicon modules in diffuse light conditions and in higher temperatures
- the manufacturing process is among the least expensive of commercially demonstrated PV processes and is environmentally benign and has no raw material shortages



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EPV Solar offers aesthetically appealing PV modules, which can easily be integrated and replace standard architectural materials for cost benefits.

- modules are frameless, which eliminates the cost of individual grounding and results in quicker energy payback

### Solution

EPV received a grant of \$500,000 from New Jersey's Clean Energy Program in 2003 to apply to R&D on its a-Si technology and Building-Integrated PV (BIPV) product development.

In January of 2007, EPV moved its headquarters to a 63,500 sq. ft. manufacturing facility in Robbinsville (Hamilton Twp.), NJ, to quadruple its manufacturing capacity. They will retain both manufacturing facilities with the goal of expanding production to 25 MW or more in New Jersey. A new BIPV development and manufacturing operation will be located in the Lawrenceville facility. One major advantage of BIPV is that it can be used as building material, allowing architects to blend clean energy into their designs. EPV's 2008 business plan calls for significant resources to be dedicated to making a BIPV product that will be readily available to builders, particularly for balconies and office building windows.

### Benefits

For its efforts in showing New Jersey businesses that clean energy really is smart business, the New Jersey Board of Public Utilities named EPV Solar its 2007 Clean Energy Manufacturer. EPV Solar's unique position in the marketplace and pioneering manufacturing process could substantially increase the market in New Jersey. EPV Solar is a great example of the economic impact clean energy can have in the state. And, as New Jersey's only photovoltaic manufacturer, EPV Solar is a magnet for students, scientists, citizens, and others wanting to learn about solar energy. The company has provided hundreds of tours of its manufacturing facility. It's easy to see why it was recognized as a Clean Energy Leader.

The U.S. Department of Energy's Energy Efficiency and Renewable Energy Division has reported that thin-film solar module manufacturing has the best energy payback time. Because of their low process temperatures and frameless design, EPV Solar's amorphous silicon modules provide an energy payback that occurs 30% faster than competitors' crystalline silicon modules: a 2.5-year payback versus crystalline silicon's average 3.7-year payback. With improvements in manufacturing and volume, payback periods could be reduced to one year.

EPV is also committed to making modifications in its operations to reduce its carbon footprint. The company intends to offset grid-supplied kWh with PV installations on its own buildings.

Media Contact

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To learn more about New Jersey's Clean Energy Program, and to find out why **clean energy is smart business**, go to [NJCleanEnergy.com](http://NJCleanEnergy.com).

