

ADVANCED ENERGY INDUSTRIES INC  
Form 424B3  
November 23, 2010

Filed Pursuant to Rule 424(b)(3)  
File No. 333-167027

**PROSPECTUS SUPPLEMENT NO. 1**  
**(To prospectus dated May 28, 2010)**

**ADVANCED ENERGY INDUSTRIES, INC.**  
**997,966 Shares of Common Stock**

This prospectus supplement relates to the sale of up to 997,966 shares of our common stock and supplements and amends the prospectus dated May 28, 2010. This prospectus supplement, together with the prospectus described above, may be used by selling stockholders we identify in this prospectus, and their respective transferees, pledges, donees or successors-in-interest, to resell shares of our common stock issued to such stockholders under the terms of the Agreement and Plan of Merger, dated March 24, 2010, as amended on April 21, 2010, by and among Advanced Energy, PV Powered, Inc., an Oregon corporation, and Neptune Acquisition Sub, Inc., an Oregon corporation and wholly-owned subsidiary of Advanced Energy. We will not receive any proceeds from the sale of these shares by the selling stockholders.

The table appearing under the caption entitled *Selling Stockholders* in the prospectus is hereby amended by the addition of the information below. The information below was furnished to us by the selling stockholders listed below and reflects their holdings as of November 22, 2010.

Name of Selling Stockholder	Beneficial Ownership		Shares of Common Stock That May Be Offered (1)	Beneficial Ownership After this Offering (2):	
	Before this Offering: Number of Shares	Percentage		Number of Shares	Percentage
Carl Haefling and Pamela Johnson	7	*	7		*
Brian Dupin	11	*	11		*

\* Indicates less than 1%.

- (1) There are currently no agreements, arrangements or understandings with respect to the resale of any of the shares covered by this prospectus. We do not know when or in what amounts the selling stockholders may offer shares of our common stock for sale. The selling stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale and might not sell any or all of the shares offered by this prospectus.
- (2) Assumes all of the shares of common stock registered by this prospectus are sold and that any future transferees, pledgees, donees or successors of or from any holder of common stock listed above do not beneficially own any shares of our common stock other than common stock issued under the Agreement and Plan of Merger.

**INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. SEE  
RISK FACTORS BEGINNING ON PAGE 6 OF THE PROSPECTUS.**

**NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR STATE SECURITIES  
REGULATORS HAVE APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF  
THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS  
A CRIMINAL OFFENSE.**

**The date of this Prospectus Supplement is November 23, 2010**