



## POTENTIAL IMPACTS OF ADVANCED METERING INFRASTRUCTURE ON RENEWABLE ENERGY POLICY

A Solar ABCs White Paper  
April 2010

### Potential Impacts of Advanced Metering Infrastructure on Renewable Energy Policy

#### Overview

This fact sheet summarizes the findings and recommendations of a white paper from the Solar America Board for Codes and Standards (Solar ABCs), Potential Impacts of Advanced Metering Infrastructure on Renewable Energy Policy. Advanced Metering Infrastructure (AMI) allows the utility to communicate with the customer, the customer to communicate with the utility and, in many cases, allows the utility to gain rapid feedback on the condition of and events occurring on its electric grid.

This white paper is a primer that gives the reader an overview of AMI and also identifies possible impacts on renewable energy policy and the integration of renewable energy generation into the electric utility grid.

#### Key Findings

Renewable and distributed generation will be integral parts of the future grid. As AMI is adopted, regulator decisions on AMI adoption will impact renewable energy policy and utility integration. The following list presents some of the areas that will be most affected.

#### *Utility Rate Structure*

AMI has the potential to bring time-of-use and real time pricing to the mass-market and, in many cases, to provide utilities with a strong business case for doing so. Renewable energy advocates must educate themselves about the proposed rates to ensure that they do not adversely affect the market for solar PV or other renewable technologies.

#### *Incentives*

The meter data management system must be able to incorporate the calculation of both the net energy generation and incentives, and communicate these derivations to the customer. Additionally, the speed of detection and response of all communications must be assessed and determined compatible with other levels of communications. It is likely that some utilities will not consider these issues on their own and could resist incorporating these calculations into an AMI project because the additional costs do not appear to have a cost benefit for operation. However, as more renewable energy is integrated into the electric grid these features will be needed and would most likely force a costly modification to any existing AMI application.

#### *Data*

AMI technologies will often allow access to real-time data about the conditions of the utility grid as well as the manner in which individual consumers use electricity. These data will be valuable to many parties, but customer privacy must be observed. Utilities may be reluctant to share the information. One solution that has been used is that regulators not allow utilities to have control of the data; instead, third-party vendors should be engaged to manage the data and assure neutrality.

#### *Interconnection*

The control functionality and the capabilities of AMI may reduce the barriers to interconnection of distributed renewable energy technol-



ogies. For example, the current practice of limiting distributed generation (DG) penetration to 10% of local distribution rating may be eased as the utilities can be assured of knowing the conditions on its grid at all times and controlling DG device interaction. Thus, AMI technologies may allow greater penetration of distributed generation and reduce the barriers to interconnection.

### ***Engaging Policy Makers***

As AMI projects are designed, it is likely that their implementation may affect current policies. Due consideration to the impact of any plan that may restrict existing, successful policies should be given to ensure that the recognized societal benefits are maintained.

### ***Standardization of AMI Requirements***

Those reviewing any plans for the implementation of AMI projects must consider the ability of the proposed technology to communicate with other technologies. The renewable energy community should be aware of new standards and ensure that devices such as inverters meet the standards necessary to be integrated into the future grid.

### ***Work with Utilities***

The renewable energy community should seek out opportunities to work with electric utilities and technology manufacturers. Many of the existing business models governing investor-owned utilities would need revision under the new paradigm that adoption of AMI will introduce. These new paradigms offer an opportunity for the renewable energy community to have input into new methods of transacting business in the energy sector.

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### **Download the Full Report:**

[www.solarabcs.org/advancedmetering](http://www.solarabcs.org/advancedmetering)

### **For more information, visit the Solar ABCs**

**Web site:** [www.solarabcs.org](http://www.solarabcs.org)

### **Solar America Board for Codes and Standards**

The Solar America Board for Codes and Standards (Solar ABCs) is a collaborative effort among experts to formally gather and prioritize input from the broad spectrum of solar photovoltaic stakeholders including policy makers, manufacturers, installers, and consumers resulting in coordinated recommendations to codes and standards making bodies for existing and new solar technologies. The U.S. Department of Energy funds Solar ABCs as part of its commitment to facilitate wide-spread adoption of safe, reliable, and cost-effective solar technologies.

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