



## HOW DOES ADVANCED METERING INFRASTRUCTURE WORK?

Advanced metering infrastructure (AMI) is an integrated system of smart meters, communications networks and data management that opens doors to many new capabilities. For example, older electric meter technology would track the amount of electricity a home used, and then a co-op representative would either walk by the meter to read and record its output or drive by it to download usage data. With AMI and smart meters, co-ops can avoid this step and complete meter-reading and service orders remotely; the meters are able to transmit the relevant data directly to them.

Here's how it works. A smart meter is installed at a home or business. This meter can measure electricity usage, encrypt it and communicate it wirelessly through a transmitter. Communications equipment, such as a device on a utility pole, receives the data and sends it along to the co-op, who collects it, analyzes it and uses it to improve their service and inform their offerings.

The primary difference between a smart meter and older meter technology – and the key benefit of AMI – is the former's ability to engage in two-way communication between the co-op and member. This feature provides more detailed and frequent information to both parties, allows for better outage detection and recovery, can integrate novel electricity pricing models, supports renewable energy and enables new energy efficiency and demand response programs. In other words, AMI affords numerous advantages for both member service and grid operation.

Transitioning to AMI will likely require changes to a co-op's organizational structure, processes and skillsets, as well as integration with existing systems. These modifications take time and can prove challenging. For example, data centers and management systems will be needed to collect, store and analyze meter data; smart meters (and possibly new substation equipment) must be installed at member homes and facilities; and upgraded communications devices will likely be required to transmit the data between the meters and data centers. Navigating these steps entails detailed organization and coordination across departments, but the result brings numerous benefits and opportunities.

*This article was provided by Advanced Energy, a nonprofit energy consulting firm.  
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