

VOICES of Experience

Leveraging AMI Networks and Data



Advanced Grid
Research

OFFICE OF ELECTRICITY
US DEPARTMENT OF ENERGY

At a Glance: How Utilities are Using AMI Beyond Meter Reading*

Activity	Uses
Monitoring and managing operating conditions	<ul style="list-style-type: none"> Improved power quality Validation of voltage compliance Visualizing the data/Increased system visibility Volt/VAr optimization (VVO) and conservation voltage reduction (CVR) Switching analysis
Capacity planning	<ul style="list-style-type: none"> Load forecasting and projected growth Equipment investments and upgrades (e.g. distribution transformers, substation transformers, etc.) Line loss studies Circuit phase load balancing
Model validation	<ul style="list-style-type: none"> Validation of the primary circuit model GIS and network connectivity corrections Meter to transformer mapping/transformer load management (TLM) Phase identification and mapping
Distributed energy resource management	<ul style="list-style-type: none"> Identifying unregistered customer-owned systems Understanding the impacts of customer-owned systems Determining DER capacity Informing policy
Asset Monitoring and Diagnostics	<ul style="list-style-type: none"> Proactive maintenance Identifying over and underloaded transformers Identifying bad distribution voltage regulators and distribution capacitors Identifying hot sockets
Outage management	<ul style="list-style-type: none"> Verifying outages through meter pings Estimating restoration times Service order automation through remote connect/disconnect Identifying outage locations Determining cause of outage Customer communications Determine fire-caused outage using temperature data Identifying which phase of wires are down
Measuring and verification	<ul style="list-style-type: none"> Reduce/eliminate estimated reads Revenue protection Reliability metrics Demand response verification/thermostat programs Demand response and load shifting for EV charging Enables new rate options (e.g., time of use and prepay)
Identifying unsafe working conditions	<ul style="list-style-type: none"> Identifying unregistered PV installations Identifying downed live conductors

***Note:** The benefits or uses of AMI listed in this table cannot be achieved by merely installing the network and meters. Many will require integration with ADMS or other software solutions that allow the data to be analyzed, visualized and paired with other data.