

The Road to Personal Energy Management

The vision for a smart grid is becoming better defined, and the components for making it a reality are rapidly being implemented at utilities across America and around the world.

In fact, the two-way advanced metering networks that are a key component of a smart distribution grid are being installed at hundreds of utilities, with more than 40 million smart meters under contract in North America alone. Yet one aspect of the smart grid has only recently begun to emerge: using home area networks to engage the energy consumer more directly in the energy management process. Today's advanced metering technology provides a ready communication gateway into the residence or business that didn't exist before.

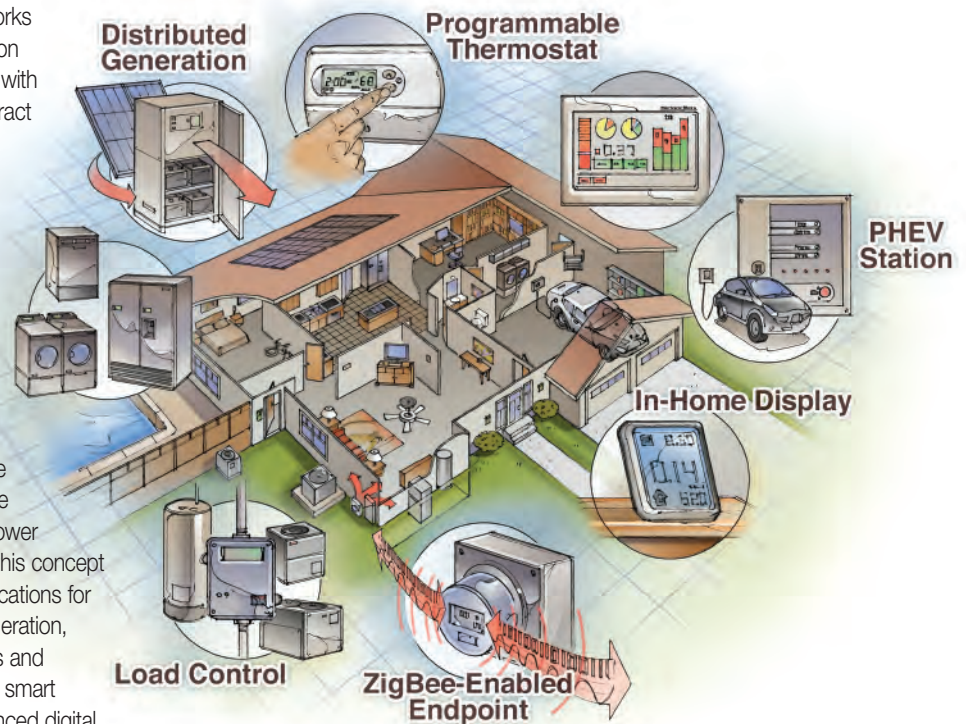
A smart distribution grid requires the means to remotely, securely and automatically capture information, monitor performance, and execute commands that enable efficient and reliable power delivery. Personal Energy Management takes this concept directly to the consumer with a variety of applications for reducing peak load, monitoring alternative generation, managing recharging of plug-in hybrid vehicles and prepayment of electric service. The Gridstream smart grid solution from Landis+Gyr utilizes an advanced digital meter with built-in load limiting, remote service switch and secure ZigBee® communications to support a variety of personal energy management features, including:

Variable pricing — using an in-home display, such as the ecoMeter, consumers are notified of peak pricing and time-of-use rates. In addition, consumers are able to monitor and track kWh consumption over time. Alerts can warn customers of unexpected or high consumption, leading to better efficiency and reduced costs.

Load management — two-way, verifiable load control for appliances and commercial/agricultural equipment provides reliable information and control for load reduction programs.

Programmable HVAC controls — programmable, communicating thermostats provide another option for control of air conditioners and heating systems during peak periods.

Distributed generation — integrated communications provide opportunities to track net generation and transition customers from site-generated or stored power back to the utility's distribution system during optimal times.



Numerous studies have shown quantifiable benefits from providing more information and control to consumers, with efficiency improvements ranging from 5 to 15 percent. Personal energy management utilizes a combination of local area network and short-range radio communications to send information between the utility, meter and residence. Currently, Landis+Gyr has confirmed interoperability with a variety of device manufacturers using the ZigBee Smart Energy Profile. The company is also supporting efforts of ZigBee, Homeplug and the IEC to enable IP in the home for energy management applications supporting the industry's need for versatility and standards as technology evolves.

As the vision for a smart grid continues to take shape, the process for bringing information and control to the end-use consumer has already begun.

To learn how Landis+Gyr is making personal energy management a reality, visit www.landisgyr.com/PEM today.

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manage energy better