

# Smart Metering: The Foundation for Smart Grid

**A smart meter provides detailed data about energy consumption that is useful to both energy providers and energy users.**

With more people in our world than ever before—more cars, more factories, more expectations and more demands on energy resources—the world seems to be getting smaller, yet we all seem to want more from it: more choice, control, and convenience; more secure sources of energy; and more high-quality, reliable power. Utilities want to profitably manage supply and demand, while customers want uninterrupted service, with lower carbon emissions and greater control over usage and costs. One way of providing that greater degree of control is through information.

Capgemini understands that selling more power is no longer the key objective of energy providers. Managing supply and demand with less carbon impact is the new target (while still turning a profit). Large centralized power plants are no longer the only source of electricity. Smart grids must now support the monitoring and management of renewable energy systems through two-way energy flow and distributed generation—and the foundation for the smart grid is the smart meter.

With a system of smart meters in place, utility companies are poised to deliver the reliable energy and new high-efficiency products that customers demand.



**Smart meters support a better customer experience for consumers through in-home displays, time-of-use pricing, and smart information systems.**



### **The Traditional Electric Meter: Moving into History**

With traditional electric meters, it was all about manual operations: meters were read monthly by service technicians at the customer's location. All disconnects and reconnects were performed by hand, which decreased the speed of response and the overall level of customer service and satisfaction.

Moreover, information flow from the traditional systems was one-way only; there was no feedback loop to return actionable information to customers to help them make timely decisions about how they were using energy.

### **The Smart Meter: a Better Choice for Energy Providers**

With smart meters, a Meter Data Management System monitors and analyzes the data that flows to and from customer locations. Smart meters enable regular updates and remote monitoring as well as remote disconnect/reconnect and alerts.

- **The Meter Data Management System** uses information gathered through the smart meter to monitor and analyze data that flows to and from customer locations. This information includes usage and event-related data.
- **Regular updates** are automatically transmitted from the smart meter hourly for residential customers and every 5 to 15 minutes for certain commercial and industrial customers. They support on-demand and they support on-demand meter reads for customer service support as well as remote alerts.
- **Remote monitoring** of the whole service area through smart meters enables service providers to determine when a customer is out of power and when power has been restored.
- **Remote disconnect and reconnect** services make it possible for faster, more certain customer service, providing both the utility and the consumer with enhanced access to information.

- **Alerts** inform utilities when a customer deviates from his or her base profile. This information can help with identification of trends that may lead to higher bills or instances where users may be diverting power.
  - **Reduced operating costs** can be achieved by minimizing the expense related to meter reading, as well as losses due to tampering and theft.
  - **Time-of-use**—or TOU—pricing enables customers who plan ahead to save on energy bills. With TOU pricing, customers can use more energy during off-peak hours when it is more abundant and thus less expensive.
  - **Smart information systems** provide updates when energy flows back onto the grid through distributed generation. With this system in place, customers can make smarter decisions about the way they use energy.
- Smart Metering: a Better Way for Consumers**
- Smart meters support a better customer experience for consumers through in-home displays, time-of-use pricing, and smart information systems.
- **In-home displays** enable customers to manage energy usage by delivering updated information about energy consumption.
- The smart meter is the fundamental building block of the smart grid. With a system of smart meters in place, a utility company is poised to deliver the reliable energy and new efficiency products demanded by customers.



### Why are Capgemini's Smart Energy Services Unique?

Capgemini's Smart Energy Services are real, in the market now, and already making a difference for utilities around the world. We support utilities and their customers by delivering sustainable energy efficiency and environmental solutions—transforming utility operations and customer fulfillment. Our commitment is strong with more than 7,000 professionals dedicated to the utility sector.

Capgemini's Smart Energy Services:

- Have extensive utilities industry experience with an unequaled track record for successful innovation and delivery. We offer our clients lessons learned and a growing knowledge base
- Lead the industry in the delivery of smart energy solutions in mass deployment and production

- Offer a unique, turn-key solution called Managed Business Services, which has a usage-based pricing model
- Offer strategic relationships and delivery experience from an ecosystem of long-standing global technology partners

For more information about Smart Energy Services, please visit [www.capgemini.com/smartenergy](http://www.capgemini.com/smartenergy).

### Smart Energy Services—Experience Reduces Risk

Capgemini's Smart Energy Services (SES) provides the full spectrum of smart metering, smart grid, smart home and smart analytics solutions through leveraging best practices developed over the last 10 years working alongside the world's leading utilities. Our team has extensive utilities industry experience with an unequaled track record for successful innovation and delivery. We are helping over 43 million utility customers by delivering sustainable energy efficiency and environmental solutions—transforming utility operations and the customer experience. Our commitment is strong with more than 8,400 professionals dedicated to the utility sector. More information is available at [www.capgemini.com/smartenergy](http://www.capgemini.com/smartenergy)



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With EUR 670 million revenue in 2011 and 8,400 dedicated consultants engaged in Utilities projects across Europe, North & South America and Asia Pacific, Capgemini's Global Utilities Sector serves the business consulting and information technology needs of many of the world's largest players of this industry.

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