

Energy Metering (eMetering)

Making Sense of Smart Meter Data

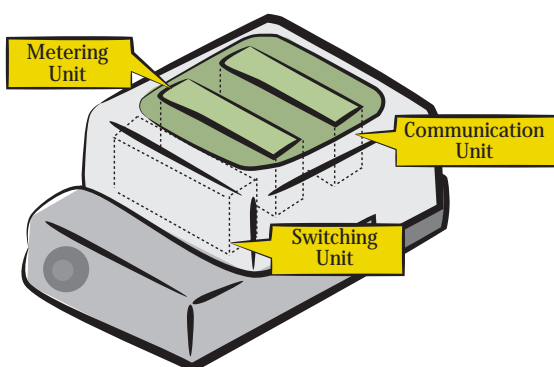
What is eMetering? NEC eMetering solution amalgamates Advanced Metering Infrastructure (AMI) together with a Meter Data Management System (MDMS) to seamlessly measure, collect and analyze energy usage for long term data storage, and then integrating to existing enterprise applications to help streamline utility business processes.

NEC eMetering - AMI component enables the deployment of smart meters over various communication means via a multi-hop data routing system. The plug-in communication unit provides flexibility to cope with changes in communication media.

NEC eMetering - MDMS component enables meter data management for massive numbers of smart meters to support billing, customer service, outage management and analysis of utility operations.

What will NEC eMetering mean to you? It will mean greater business integration and the streamlining of utility business processes. This will enable consumers to make more informed choices on energy use, participate in energy supply contracts and leverage innovative new energy services for a **Smarter City**, and a **Greener Earth**.

NEC's Modular Smart Meter



Features for Modular Smart Meter

- Flexibility to cope with a change in the communication media.
- Power off/on of Switching unit is made selectable.
- The communication unit can be removed and inserted seamlessly without disrupting the metering process.



Key Features

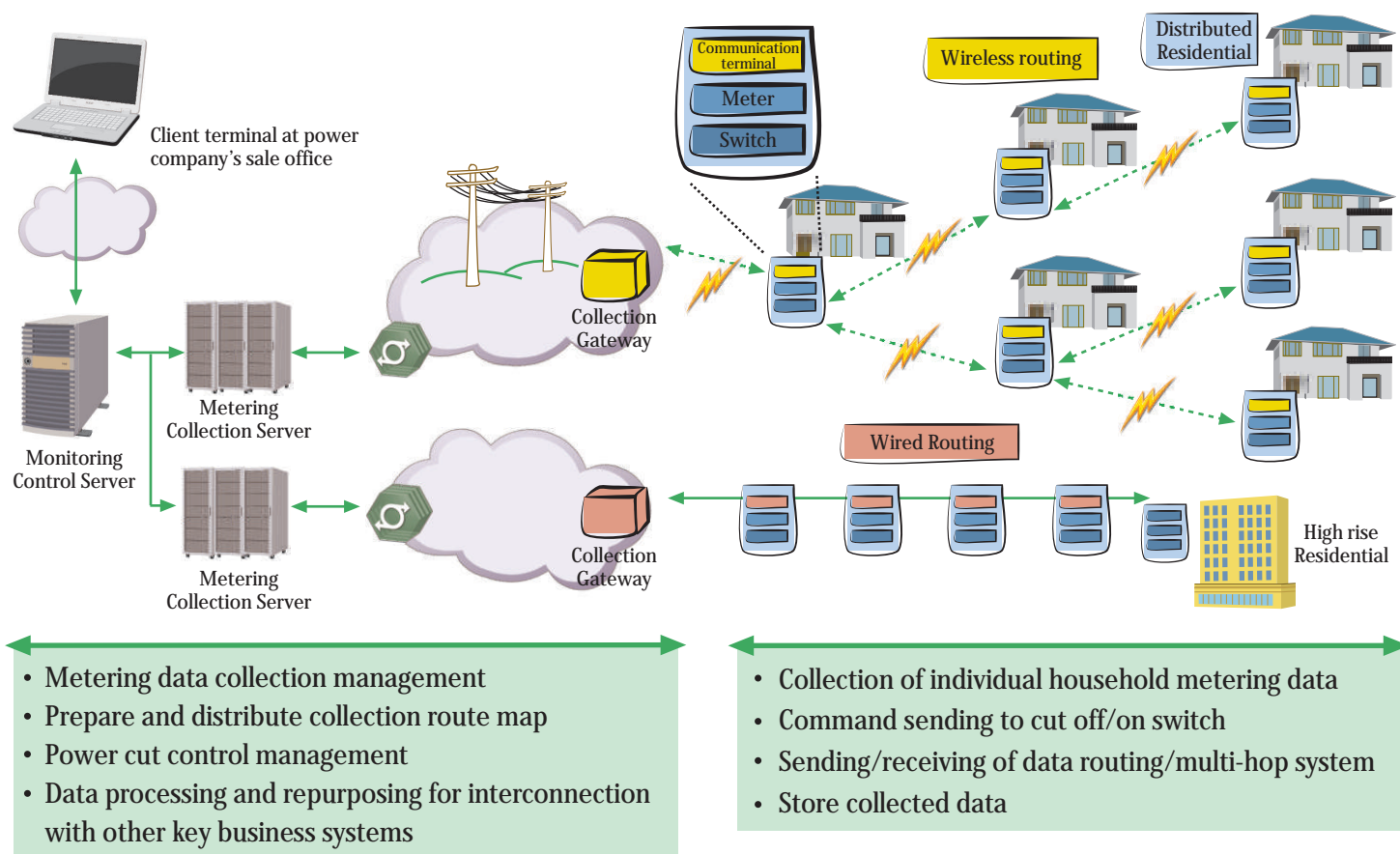
Smart Meter Deployment Planning and Management - NEC eMetering solution enables smart meter deployment and management and automated meter provisioning and many other functions such as:

- Meter and network asset monitoring and management
- Automated Smart Meter Positioning
- Automated validation, editing and estimation (VEE) of meter data
- Revenue protection business processes automation and reporting
- Customer information portal, use and billing analysis information

eMetering Platform - NEC eMetering solution interfaces with other systems such as utility billing, outage management, workforce management and asset management. NEC eMetering also provides remote connect / disconnect of meters as well as other advanced features.

NEC eMetering Ecosystem

NEC eMetering architecture encompasses high-level security that includes physical, network, and cyber security, as well as access authentication. This brings about minimal risk to grid security and minimal chance of grid failure.



eMetering Case Studies

The Japan-U.S. Smart Grid Collaborative Demostration Project

The New Energy and Industrial Technology Development Organization (NEDO) selected 19 participants, including NEC, for the Japan-U.S. Smart Grid Collaborative Demostration Project to be conducted in the State of New Mexico of the United States after carefully evaluating the results of a feasibility study that was started in January 2010.

The project is being carried out by NEDO, Los Alamos National Laboratory and Sandia National Laboratories of the U.S. Department of Energy. The total budget for the project is \$3 billion yen.

NEC's involvement include:

- Power Line Communication (PLC) between smart grid and houses for the Microgrid Project in Los Alamos
- Technology capability to stabilize electricity supply and for Smart House Project in Los Alamos
- Information and communication technology and cyber security for the Smart Grid as part of the collective research on the overall New Mexico project

Central Japan Electric Power Smart Grid Project

NEC was awarded a multi-billion investment project by an electric power company to design and implement NEC's eMetering solution for a total of 12 million households in the southern - central Japan. This involves deployment of an Advanced Metering Infrastructure (AMI) consisting of 3,000,000 smart meters connected by Power-Line-Communications (PLC) in high-rise residential buildings, and another 9,000,000 smart meters connected by Personal Handy-phone System (PHS) routing method in distributed residential housing.

The AMI is supported by a robust Meter Data Management System (MDMS) that will offer remote reading and improved energy consumption feedback to its customers, as well as enhancing the utility's service platform.

For more information, visit www.nec.com.sg or contact us at energy@nec.com.sg