

15 June 2017

CLP launches Smart Energy Programme to help turn Hong Kong into a Smart City

To combat climate change and support the government's vision to develop Hong Kong into a smart city, CLP Power Hong Kong Limited (CLP Power) today announced the launch of a one-year Smart Energy Programme, for which smart meters have been installed for 26,000 selected residential customers. With the Advanced Metering Infrastructure (AMI) system, customers are given timely access to data on their electricity consumption, and are encouraged to lower their energy use at peak times and save on electricity bills through a change in their consumption habits.

The programme provides CLP Power with a better understanding of customers' feedback towards a variety of demand response measures, enabling the company to explore how to effectively implement AMI in the future, and offer a service that can better cater to customers' future needs.

The programme covers residential customers who live in private and public housing, Home Ownership Scheme flats, and village houses in 14 districts of Kowloon and the New Territories, which cover customers of varying characteristics and ensure a representative result. Traditional mechanical meters can only record electricity consumption data, while residential customers receive their consumption information through electricity bills on a bi-monthly basis. With the AMI system, customers can get timely access to detailed information about their home energy use through a web portal and a mobile app, making it easier for them to monitor and manage their electricity consumption behaviour.

The AMI system also enables the power company to timely monitor the performance of the power grid, and automatically notifies the control centre about any abnormalities. This helps speed up power restoration and further enhances supply reliability.

CLP Power Deputy Director - Smart Grid Dr Anthony Lo said: "Smart city development is a global trend, and the government is formulating a smart city blueprint that uses innovation and technology to improve our quality of life. The AMI system not only helps customers manage their electricity consumption but also further enhances supply reliability, safety, and operational efficiency. The system is a critical element of infrastructure to facilitate the development of a smart grid and support the government's vision of creating a smart city."

Dr Lo said CLP Power had introduced specific tariff schemes for the Smart Energy Programme, namely a Time-of-Use (ToU) Tariff and a Summer Saver Rebate (SSR), drawing on best practices from the global trends towards AMI development and application, and the experience of demand side management implementation in different countries and regions. The ToU Tariff applies different rates for electricity at different times of the day, divided into a peak period, a shoulder period, and an off-peak period. Customers are encouraged to reduce their peak period consumption and transfer their energy use to off-peak periods at a lower tariff. The SSR encourages customers to reduce their consumption on the hottest days of summer. A special rebate will be credited to customers if they reduce their consumption on specific days during the peak period in summer.

As a further incentive for customers to save energy, people who meet weekly energy-saving targets will have the chance to earn eco points through the Eco Rewards Scheme, which can be used to claim fabulous gifts from CLP Power's online platform Eco Power 360. To help customers achieve energy saving targets effectively, customers will be offered a pre-set personal consumption alert service including projected consumption and tariff alerts. Energy saving tips will also be provided to raise customers' conservation awareness and allow them to make informed choices about energy use. Alerts will be sent to customers if abnormal consumption is recorded.

Dr Lo said he believed that the Smart Energy Programme would be an effective way to encourage customers to save energy, reduce power demand at peak times, and evaluate the outcome of demand response measures. Representative results will be drawn from this year-long programme, allowing the company to optimise the implementation of AMI system in future, and enhance its customer experience by providing customers with the opportunity to work towards a smarter and greener Hong Kong.

Attachment: Smart Energy Programme fact sheet

About CLP Power Hong Kong Limited

CLP Power Hong Kong Limited ("CLP Power") is the Hong Kong utility subsidiary wholly owned by CLP Holdings Limited, a company listed on the Hong Kong Stock Exchange and one of the largest investor-owned power businesses in Asia. CLP Power operates a vertically integrated electricity supply business in Hong Kong, and provides a highly reliable supply of electricity and excellent customer services to 6 million people in its supply area.

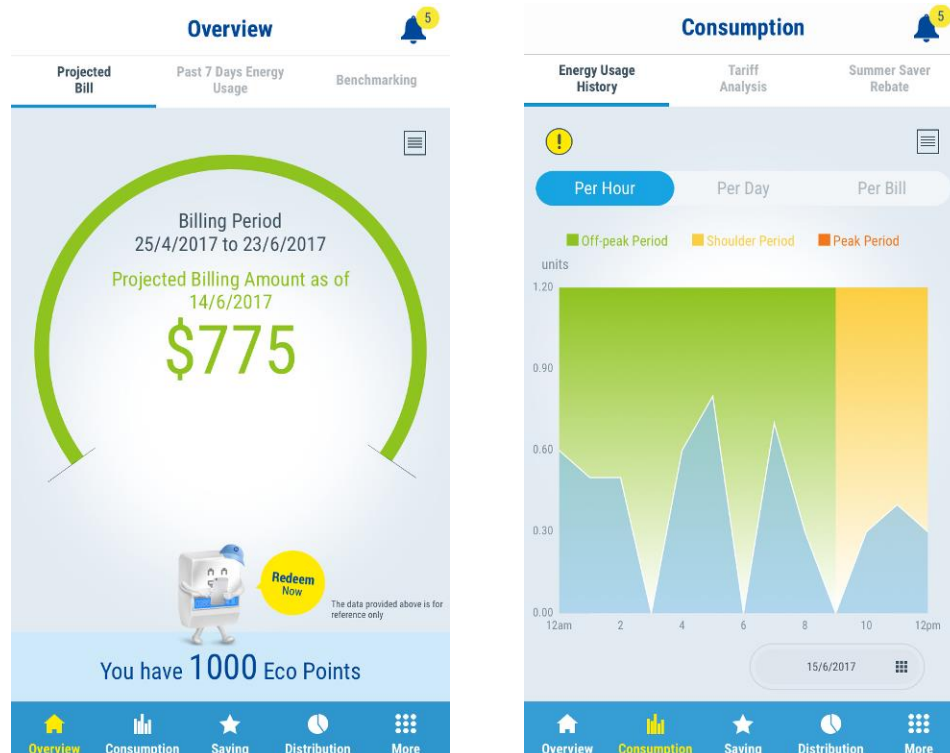
Photo Captions:

Photo 1 & 2



CLP Power Deputy Director - Smart Grid Dr Anthony Lo says the Smart Energy Programme aims to encourage customers to lower their energy use at peak times by changing their consumption habits, and to better understand customers' feedback to various demand response measures.

Photo 3 & 4



With the AMI system, customers can get timely access to detailed information about their home energy use through a web portal and a mobile app, making it easier for them to monitor and manage their electricity consumption.

Photo 5



Smart meter (right) offers intelligent features that are not available in traditional electromechanical meter. It enables a two-way communication between power company and the customers, and is a key enabler in promoting energy saving and demand side management.

- End -

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Smart Energy Programme fact sheet

Objectives:

- To combat climate change and support the government's vision to develop Hong Kong into a smart city, CLP Power launches a Smart Energy Programme. With the Advanced Metering Infrastructure (AMI) system, customers are encouraged to lower their energy use at peak times and save electricity through a change in their consumption habits.
- Having drawn on the best practices from the global trends towards AMI development and application, and the experience of demand side management implementation in different countries and regions, specific tariff schemes and a reward scheme are introduced to motivate customers to adjust their electricity consumption behavior. Smart technology is applied to enhance customer experience, and customers are provided with the opportunity to work towards a smarter and greener Hong Kong.
- With the AMI system, customers can get timely access to detailed information about their home energy use through a web portal and a mobile app, making it easier for them to monitor and manage their electricity consumption behaviour.
- The AMI system also enables the power company to timely monitor the performance of the power grid, and automatically notifies the control centre about any abnormalities. This helps speed up power restoration and further enhances supply reliability.

Participating customers:

- The programme covers around 26,000 residential customers who live in private and public housing, Home Ownership Scheme flats, and village houses in 14 districts of Kowloon and the New Territories. This will allow the programme to cover customers of varying characteristics and ensure a representative result.

Programme period:

- The programme runs from June 2017 for one year.

Programme details:

- Customers who enroll in the programme can get timely access to detailed information about their home energy use through a web portal and a mobile app. The data will include customers' up-to-the-hour consumption data, bill

projections, comparisons with similar households, and consumption patterns over the past year. Customers will also be offered a pre-set personal consumption alert service including projected consumption and tariff alerts. Alerts will be sent to customers if abnormal consumption is recorded. Energy saving tips will also be provided to raise customers' conservation awareness and allow them to make informed choices about energy use.

- CLP Power offers new tariff schemes to different groups of participating customers, including a Time-of-Use (ToU) Tariff and a Summer Saver Rebate (SSR), and through Eco Rewards Scheme to further encourage customers to save energy:

1) Time-of-use Tariff

- The Time-of-Use Tariff applies different rates for electricity at different times of the day. Customers are encouraged to reduce their peak period consumption and transfer their energy use to off-peak periods at a lower tariff.
- The Time-of-Use Tariff has set three time periods as follows:
 - Peak Period (Monday to Saturday 6pm – 10pm, excluding Public Holidays)
 - Shoulder Period (Monday to Saturday 9am – 6pm, excluding Public Holidays)
 - Off-peak Period (Anytime except the above mentioned periods)
- Customers will pay a higher tariff in Peak Period (+ \$ 0.6 per unit of electricity used) and enjoy a lower tariff rate in Off-peak Period (- \$ 0.18 per unit of electricity used). Charges in the Shoulder Period are the same as current charges.
- The programme encourages customers to adjust their electricity use by referencing the electricity charges in different time periods. This will enable them to reduce electricity consumption and save on their electricity bills.

2) Summer Saver Rebate

- Summer Saver Rebate will be offered during the hot summer months, from 6pm to 10pm on selective days set by CLP Power.
- For every unit of electricity saved during the selective day, a rebate of \$15/unit will be offered.
- Reminders will be sent to participating customers at around noon time of the selective days to remind them about the rebates if they save electricity in the selective days. The reminders will be sent through mobile app push notification, SMS, emails and public notices to be posted by the building management offices.
- The rebate will offset electricity charges in the electricity bill.

3) Eco Rewards Scheme

- Participating customers will have chances to earn Eco points through the Eco Rewards Scheme if they meet the weekly energy-saving targets. With their Eco points, customers can claim fabulous gifts from an online platform.

- Participating customers are free to opt-out from the programme anytime and have the service terminated.

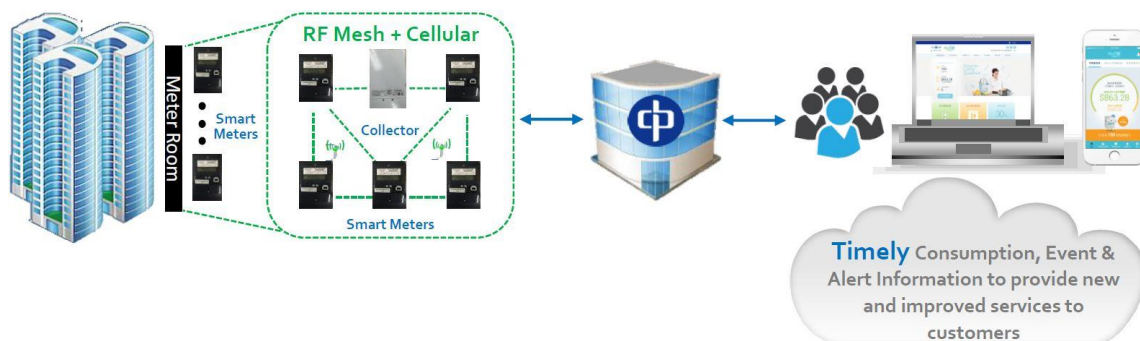
Advanced Metering Infrastructure (AMI) system

What is smart grid?

- Smart Grid integrates advanced information and communications technology with the traditional power grid. It enhances the reliability of the power grid, and raises efficiency and improves safety of the energy supply chain. It also further enhances supply reliability, efficiency, and safety, as well as the quality of power supply.
- The development of smart grid is a global trend. CLP Power has begun to develop smart grid since 2011.
- With the AMI system, small-scale distributed renewable energy systems can be connected to CLP Power's power grid. In addition, it can help promote the development of electric vehicles. Through AMI, customers can exercise timely monitoring and management of their electricity use. This will mark a new chapter in demand side management and lay a solid foundation for the development of smart city in Hong Kong.

What is AMI?

- AMI is a core component of smart grid enabling two-way communication between power companies and the customers. Through data collection devices, power companies collect electricity consumption data of the customers. After analysis and processing, power companies can provide customers with detailed information of their electricity consumption and new services to encourage them to adjust their consumption habits, reduce electricity demand at peak times. AMI is an important instrument in promoting demand side management.



- AMI enables power companies to accurately monitor the performance of the power grid, and identify the locations of power outage. This helps speed up power restoration, and ensures supply reliability and power safety.

Smart meter offers intelligent features that are not available in traditional meter:



Traditional meter

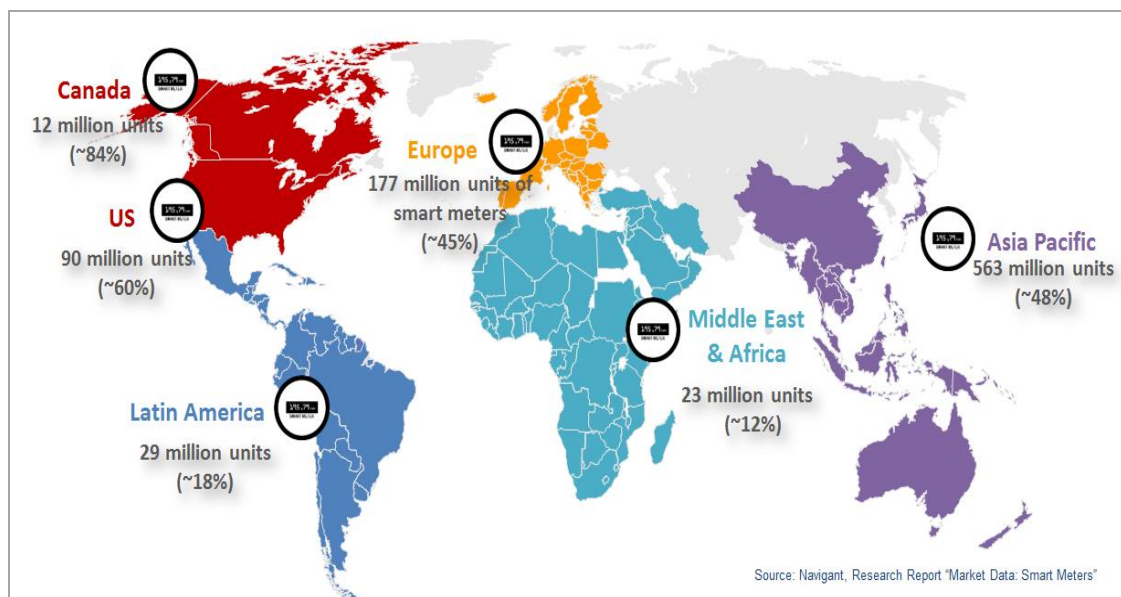
- ✓ Record electricity consumption only



New Smart meter

- ✓ Support two-way communication
- ✓ Collect near real-time electricity usage information
- ✓ Timely notification of loss of power
- ✓ Power quality monitoring
- ✓ Tamper and energy theft detection
- ✓ Remote power connection or disconnection

Global Trends and Development of AMI:



- CLP Power has studied the development of AMI with an aim to further strengthen supply reliability and facilitate our customers to achieve a smarter and greener lifestyle.
- Globally, over 150 AMI programmes involving smart meters have been put into place. Millions of smart meters are being installed in countries such as the United States, members of the European Union and cities across the Mainland.
- Utilities in these countries are evaluating the effectiveness of their AMI programmes in helping customers better manage energy consumption and promote energy efficiency.
- CLP Power will continue to keep a close watch of the development of AMI worldwide and explore how to effectively implement AMI in Hong Kong in future.