

9 August 2021

## **CLP Power Applies Smart Technology to Save Energy and Reduce Carbon Emissions at Hong Kong International Airport**

CLP Power Hong Kong Limited (CLP Power) and the Airport Authority Hong Kong (AA) have jointly designed and developed the city's largest battery energy storage system (BESS) along with a predictive control system for air conditioning, using advanced smart technology to enhance the airport's energy efficiency, and form a part of the wider objective to reduce the carbon emissions in Hong Kong.

To ensure stable round-the-clock airport operations, Hong Kong International Airport (HKIA) requires reliable electricity supply and installs backup system for emergency purpose. In view of the latest development of the airport, an additional backup supply is needed for the Terminal 1 extension and other facilities.

CLP Power and the AA have teamed up to design BESS, the largest emergency backup power supply system in Hong Kong with a maximum power output of 4 megawatts (MW). Its capacity is equivalent to more than 55,000 pieces of 10,000 milliamp hours (mAh) portable power banks. BESS can store electricity produced by the existing generators during routine testing.

The BESS, which operates without fuel and is more environmentally friendly than existing backup generators, was constructed, installed and commissioned by CLPe Solutions Limited and went into service in June this year.

To help create a smarter and energy efficient airport, CLP Power also worked with the AA to develop a predictive control system for air conditioning in Terminal 1. The system automatically collects data hour by hour, including flight schedule, along with meteorological data such as temperature, humidity, solar radiation, cloud amount and wind speed. It predicts the cooling demand for the passenger terminal building over the next 24 hours in real time with the help of big data analytics, and then automatically adjusts the central air conditioning system to provide the right amount of cooling, eliminating unnecessary energy consumption.

The predictive control system for air conditioning went into operation in January 2021. While the passenger traffic was hard hit by COVID-19, the accuracy of the system could still be enhanced to nearly 90% with the use of machine learning, together with the upgraded chiller system, it will save an estimated 5.1 gigawatt hours (GWh) of electricity a year. The saving is equivalent to the annual energy consumption of nearly 1,200 CLP Power residential customers - and reduce carbon emissions by around 1,900 tonnes. The reduction is equal to the planting of some 80,000 trees.

CLP Power Deputy Director of Corporate Customer Experience Mr Lo Kwok Yau said, “CLP Power is committed to helping its customers use trending technologies to enhance energy efficiency. By working with the AA, we have successfully applied innovative energy management solutions at the airport and set an example for the industry.”

Mr Amen Tong, General Manager, Technical Services Infrastructure of the AA said, “HKIA is the first airport in the world to adopt a predictive control system for its air conditioning. The system could pre-adjust and output the most comfortable cooling volume and temperature to achieve energy saving, while maintaining the comfort of passengers in the terminal and enhancing passengers’ airport experience. We will continue to enhance the system through machine learning and adopt BESS to maximise our energy efficiency. We look forward to continuing to work closely with CLP Power to introduce more innovative energy-saving technologies to the airport.”

Mr Lo said CLP Power would actively promote the two systems to other business partners, such as those shopping malls using large central air conditioning systems, buildings and sites using generators for backup power. CLP Power has also developed a general guideline to encourage the construction sector on wider adoption of the BESS.

CLP Power is committed to helping industrial and commercial customers improve their energy efficiency and provides them with tailor-made energy management solutions, drawing on innovative technology to encourage carbon reduction with an aim to help the Government achieve its goal of carbon neutrality by 2050.

#### **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 six million people in its supply area. In 2021, CLP celebrates the 120th anniversary of its founding in Hong Kong with a commitment to continue to move forward with the community based on a shared vision of a better tomorrow.

## Photo Captions:

Photo 1



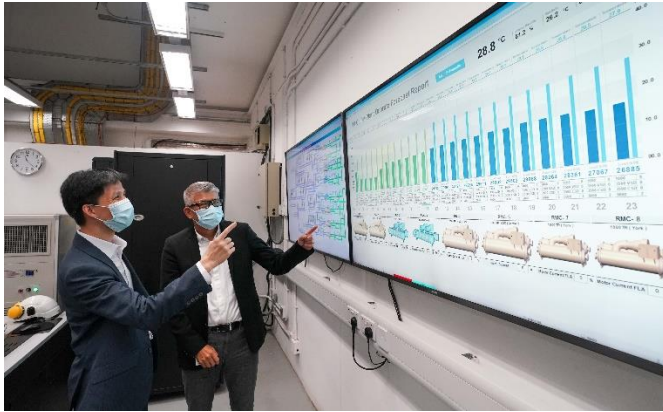
CLP Power Deputy Director of Corporate Customer Experience Mr Lo Kwok Yau (right) and Airport Authority Hong Kong General Manager of Technical Services Infrastructure Mr Amen Tong standing in front of the battery energy storage system (BESS) at Hong Kong International Airport. It is the largest BESS in Hong Kong, with a maximum power output of 4 megawatts. It is the size of around three 40-foot containers, weighs 75 tonnes, and is on wheels so it can be flexibly used at different locations in the airport.

Photo 2



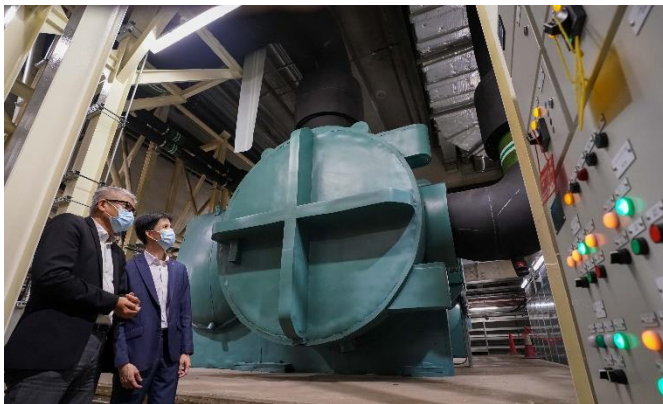
The battery energy storage system is equipped with different systems to monitor and control its operation status. Cooling facilities, lighting system, heat and smoke detectors, and automatic fire fighting system are also installed to ensure its safe operation.

Photo 3



The predictive control system for the airport’s air conditioning uses big data analytics tools to anticipate the cooling capacity needs of the passenger terminal building for the next 24 hours, then automatically regulates the air conditioning to provide the right amount of cooling, eliminating unnecessary energy consumption.

Photo 4



CLP Power Deputy Director of Corporate Customer Experience Mr Lo Kwok Yau (right) and Airport Authority Hong Kong General Manager of Technical Services Infrastructure Mr Amen Tong with the chiller system at HKIA’s Terminal 1.

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