CLP's Reply to Legislative Council Panel on Economic Development regarding the request for monthly consumption information

Question: The two power companies were requested to provide graphs plotting the annual trend of electricity consumption on a monthly basis, showing the monthly average, the monthly high and the monthly low consumption, so as to enable members to ascertain whether the two companies' calculation of reserve margins was reasonable.

Reply: As electricity cannot be efficiently stored, electricity demand from customers needs to be met at all times by our supply. In a power system, imbalance in supply and demand, even only for a fraction of second, may lead to system instability or even large scale blackout. Therefore maximum demand (instead of electricity consumption which is represented by electricity demand over a period of time) is one of the most important indicators for planning and operation. For this reason, in the electricity industry all over the world the calculation of reserve margin is based the maximum demand instead of average or minimum demand.

In Hong Kong, electricity demand in summer is higher than in winter, and daytime is higher than night-time. As shown in Chart 1, high demand maintains for roughly 10 hours during the daytime and extends to the evening.

Reserve margin is required to cater for the loss of generation units on the system due to a forced outage. While the relatively large size of our generators provides better economies of scale (e.g. our Castle Peak B units and CLP's portion of the Daya Bay nuclear units are close to 700MW for each unit), if we lose any of our largest units, we will have lost quite a lot of our available capacity. Sufficient reserve requirement is therefore set to ensure system reliability.

Generating plants require planned maintenance, refurbishment, upgrade and improvement in order to ensure safe, adequate and reliable electricity supply and minimise emissions in an efficient manner. Given that the electricity demand is generally higher in summer months and lower in winter, we are able to schedule long outages for machine overhaul in the non-peak seasons. As shown in Chart 2, the system demand would reduce significantly in winter months, which is sometimes referred in the industry as the "winter outage window" to allow major overhaul of generation units.

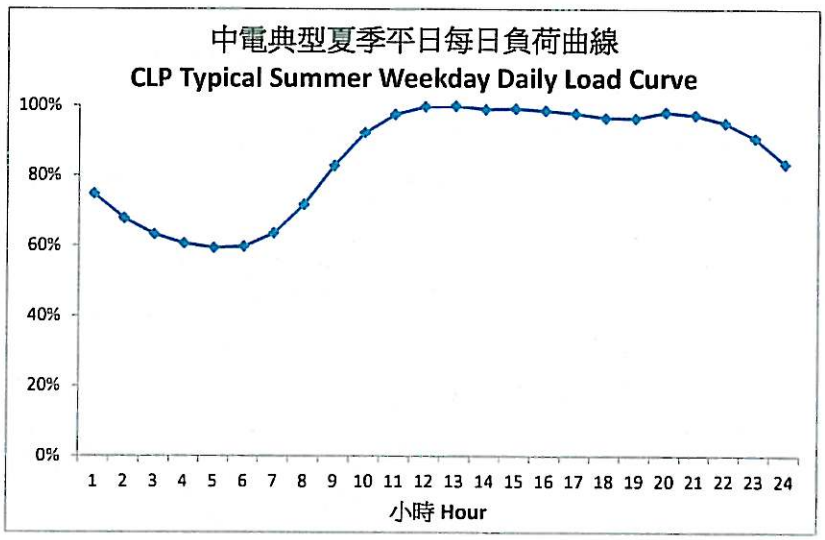

Chart 1 – CLP Typical Load Curve

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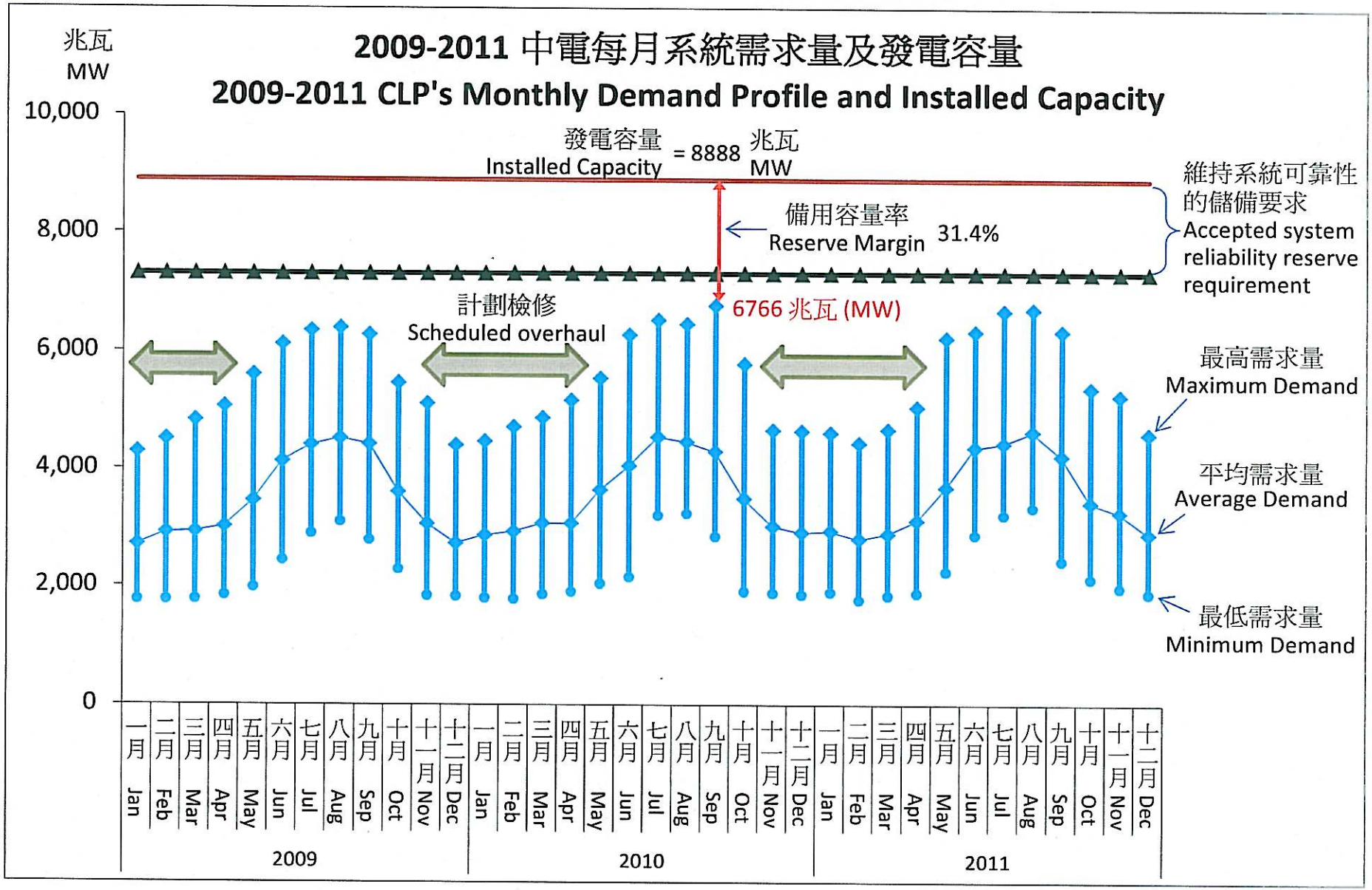

Chart 2 – CLP's Demand Profile and Installed Capacity