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Press Release
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HK Electric Builds New Gas-fired Generation Unit while Exploring Hydrogen Energy

HK Electric has entered into a contract to construct a new gas-fired generation unit manufactured by Mitsubishi Heavy Industries, Ltd. (MHI), at Lamma Power Station (LPS). This new project is an integral part of the Company's 2024 - 2028 Development Plan instrumental to the phasing out of coal-fired generation by 2035.

HK Electric Managing Director, Mr. Francis C.Y. Cheng, recently led a delegation to Tokyo, Japan to attend the contract-signing ceremony. "HK Electric fully supports the Hong Kong Special Administrative Region Government's decarbonisation targets and is committed to further reducing emissions through replacement of coal-fired generation units with gas-fired units," Mr. Cheng said. The new unit L13 is expected to be commissioned in 2029 as the fifth gas-fired combined-cycle generation unit at LPS.

L13 shares the same design with other gas-fired generation units now operating at LPS and the unit will be instrumental in further reducing carbon emission in the energy-transition period. With proper modifications and repurposing, all these units can use both natural gas and hydrogen as fuels in future. In support of the Government's goal of achieving carbon neutrality by 2050, HK Electric has been studying the use and introduction of green hydrogen as one of the zero-carbon energy alternatives in Hong Kong.

Mr. Cheng and the delegation visited Takasago Hydrogen Park, a technical centre under Mitsubishi Power which is a subsidiary of MHI, in Hyogo Prefecture. The Park utilises hydrogen produced by electrolysis and generates electricity either by hydrogen co-firing or 100% hydrogen firing. It is the world's first integrated complex that validates the full value chain of hydrogen production, storage, and power generation.

Apart from visits to the hydrogen power-generation facilities including T-Point 2 combined cycle power plant, the HK Electric delegation also shared experience

with the Japanese team and discussed the development of hydrogen-based power generation.

Mr. Cheng said, “HK Electric and Mitsubishi have had a journey together for decades. Our prolonged and close partnership began from the oil-firing era, then transitioned to coal, and now from coal to gas. We will continue to work together to advance energy transition, develop zero-carbon energy and help build a greener Hong Kong.”

Under HK Electric’s 2024 - 2028 Development Plan, unit L13 is scheduled for commissioning in 2029 and will replace an old coal-fired generation unit to maintain the generation capacity. The remaining two coal-fired units will stop using coal for daily electricity generation in 2035 or earlier.

Meanwhile, gas-fired generation unit L12 began commercial operation in end March 2024 after rounds of thorough testing and commissioning activities, marking the completion of constructing three new gas-fired generation units under HK Electric’s 2019 - 2023 Development Plan. The proportion of gas-fired generation by the Company is set to increase from around 56% in 2023 to around 70% in 2024. This proportion will go up further when L13 is commissioned.

Both units L12 and L13 have a capacity of 380 MW each comprising a gas turbine, a steam turbine, a generator, a heat recovery steam generator, auxiliary equipment, and an air quality control system. All the main components are manufactured and supplied by MHI. The high efficiency of over 58% of the units greatly surpasses that of the existing coal-fired generation units at LPS. With the same amount of fuel, the new units can generate more power and with less emissions.

The “combined-cycle generation technology” adopted by the new units is one of the cleanest, most popular and efficient ways to generate electricity with fossil fuels in the world. During their entire life cycle, each unit can achieve a lifelong carbon emission reduction of 35 million metric tonnes, equivalent to the carbon dioxide (CO_2) emitted by about 450,000 petrol cars every year, or the CO_2 intake of about 50 million trees every year.

To prepare for extreme weather caused by global warming, the ground level of L12 and future L13 has been raised by one metre to further enhance their resilience against sea-level rise.

HK Electric's "coal-to-gas" energy transition began with the construction of the first gas-fired combined cycle generation unit L9 at LPS in 2006. Last year, the opening of the Hong Kong Offshore Liquefied Natural Gas (LNG) Terminal, jointly constructed by HK Electric and CLP Power Hong Kong Limited, allows for direct access to international LNG markets as well as safeguards our natural gas supply and enhances our bargaining power.

Furthermore, in anticipation of the Government's plan to import more zero-carbon electricity from the Mainland, HK Electric is preparing and studying on how to safely import such power to our grid while maintaining network stability. The Company will also continue to actively explore innovative and sustainable solutions, including the application of green hydrogen energy, which would help accelerate the energy transition to achieve the net-zero target.

See video on L12's Synchronisation Ceremony and HK Electric's Coal-to-Gas Transition under the 2019 - 2023 Development Plan:
https://youtu.be/z0-bksAyGHY

Photos Captions:

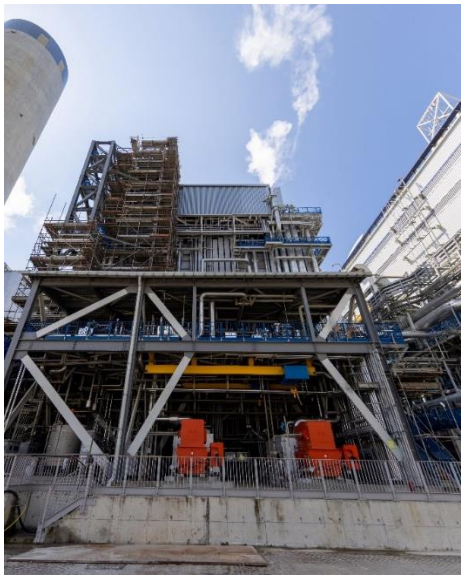
HK Electric Managing Director, Mr. Francis C.Y. Cheng (3rd from left) signs the construction contract at Tokyo, Japan, for building gas-fired unit L13 at LPS.

Mr. Cheng says that the new gas-fired unit L13 can contribute to Hong Kong's long-term emission-reduction target and provide highly reliable and stable power supply.

Mr. Cheng (4th from right) and HK Electric team visit MHI's Takasago Works in Hyogo Prefecture, Japan. They have a tour to the Takasago Hydrogen Park followed by a discussion session with the Japanese team on the development of hydrogen-based power generation.

Mr. Cheng (middle) and HK Electric team learn about the manufacturing processes of the new gas-fired generation unit at MHI's Takasago Works in Hyogo Prefecture, Japan.

Unit L12 at LPS began commercial operation in end March 2024.



The ground level of L12 is raised by one metre to enhance its resilience against sea-level rise.

There are currently 4 gas-fired combined cycle generation units at LPS, including L9 in operation since 2006 and L10, L11 and L12 constructed under the 2019 - 2023 Development Plan.

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