Zero Emission Energy for Urbanisation

Case Study: Powering Two Tower Cranes

Introduction & Project Information

- **Main Contractor**: Hip Hing Construction Company Limited
- **Project location:** North Point, Hong Kong
- **Project type**: Superstructure of a 2 million sq. ft., 45 floor building
- **Delivery date**: 7 February 2020
- **Loads**: 2 Tower Cranes
  - 1 x Liebherr 357HC-L 12/24
  - 1 x Liebherr 357HC-L 18/32
- **Enertainer Model**: 1 x 400 kVA
- **Maximum input current to the Enertainer**: 30 amps

Site Setup

Figure 1. 'Block' diagram of the connection between the utility, Enertainer and the loads.

Results

- 85% lower fuel cost[1] (vs. 2 x 400 kVA generators)
- 81% CO_2 reduction[2] (vs. 2 x 400 kVA generators)
- Highest current measured: 424 amps
- Battery capacity remained above 90% at all times

"I've been looking for a way to reduce our reliance on diesel for a while. So when the chance to use the Ampd Enertainer came along, I was excited. The result delivered beyond the original idea. Not only did it reduce our emissions but also our operational costs and noise. It also proved extremely easy to use so the project team was very pleased. In addition, we conducted some trials to test the recharging efficiency and the energy storage capacity of the Enertainer. The results exceeded our expectations."

Herman Lee, Senior Manager, Plant and Logistics, Hip Hing

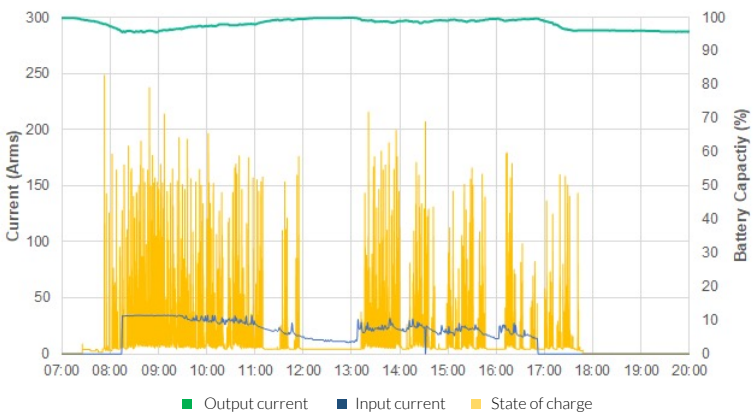

Figure 2. Performance metrics for the Enertainer on 4 March 2020

[1] Assuming a diesel price of HK$5 (US$0.64 per litre).

[2] Assuming an energy intensity of 0.8 kg_{CO2} per kWh (Source: Hong Kong Electric https://www.hkelectric.com/en/customer-services/carbon-calculator).

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