

PROJECT CLEAN AIR

Certification Scheme for Clean Air Charter

Final Report

For

The Hongkong Electric Company Limited



Prepared by



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1. INTRODUCTION

Founded in 1889, HK Electric (HEC) is one of the world's longest established power companies. HEC has a strong commitment to environmental protection while providing a safe and reliable electricity supply to the community. HEC is responsible for the generation, transmission and distribution of power to Hong Kong Island, Ap Lei Chau and Lamma Island.

HEC continuously invests in best practicable technologies to minimize environmental impact and sustain a higher level of environmental performance. A number of measures are in place to address the concerns about environmental challenges associated with the provision of electricity. These include increasing the use of natural gas, retrofitting more FGDs, developing wind farm in Hong Kong, introducing solar energy and support for electric vehicles. HEC is committed to meeting the HKSAR Government's target set on the reduction of SO₂, NO_x and RSP emissions. Also, effective environmental management systems, certified to the standards of ISO 14001, are implemented to attain continual improvement.

This report outlines the findings of the Business Environment Council (BEC) from a walk through audit and interview with Mr. TY Ip – Environmental Affairs Manager and Mr. Kenneth Fung – Environmental Engineer.

From the pre-audit questionnaire completed by HEC, it was determined that HEC fits into Group C category of the certification scheme, showing that the organization has comprehensive management systems and means in place to identify and verify the implementation of energy efficiency / emission reduction programmes that are in compliance with the Clean Air Charter.

The site visit was conducted at the Hongkong Electric Centre and led by Ms Konnie Yu on 23rd Jul 2010. The purpose of this audit was to verify HEC commitments to the Clean Air Charter.

2. OBSERVATIONS AND COMPLIANCE

Based on the site meeting, HEC's programmes and practices on reducing air emission were reviewed. In general, a systematic approach on addressing the Clean Air Charter's commitments has been implemented as follows:

- A corporate environmental policy endorsed by Managing Director is established and implemented. Under the directive of the Managing Director, HEC is committed to protecting the environment and supporting sustainable development.
- Assigned by senior management, a task force from various Divisions of HK Electric is responsible to monitor air emissions and energy / performance for the operation of power facilities.
- Intensive environmental monitoring and audit programmes (EM&A) are conducted in accordance with EM&A manuals and conditions of relevant environmental licences / permits.
- Environmental performances on air emissions as well as energy and waste reduction programmes are reviewed under the environmental management systems for continuous improvement.
- Environment Committee coordinates and monitors the implementation of overall corporate energy saving initiatives.
- The directions of top management on air emission / energy reduction, which are set in form of environmental objectives and targets for implementation by improvement programmes in the Environmental Management Systems.
- Improvement programmes for air emission / energy reduction under the Environmental Management Systems are implemented in design, construction and operational stages to sustain a higher level of environmental performance.

Regarding the six commitments of the Clean Air Charter, the table below summarizes the achievements of the Hongkong Electric Company Limited:

Commitment	Action done
<p>1) Operate to a recognized world class standard, or the standards established by the Hong Kong / Guangdong governments on emissions of air pollutants, even if it is not a requirement to do so here. (Relevant to industrial operations, power plants and business with direct emissions)</p>	<ul style="list-style-type: none"> ◆ In view of the main activities of HEC, the direct emission is mainly from power plants. ◆ Ways of meeting the Government's emission caps for Lamma Power Station have been identified and vigorously followed. ◆ HEC's power facilities are operated according to world-class environmental management systems, certified to the standards of ISO 14001.
<p>2) Use continuous emissions monitors (CEMs) at significant sources, e.g. large and medium plants. (Relevant to large / medium industrial operations and power plants)</p>	<ul style="list-style-type: none"> ◆ Lamma Power Station is equipped with CEMS to monitor their emissions. CEMS data is continuously fed directly to the Environmental Protection Department of HKSAR to monitor compliance with stack emissions limits in their licenses. ◆ Intensive environmental monitoring and audit (EM&A) programmes are conducted by an in-house environmental team and results are verified by an independent environmental checker in accordance with EM&A manuals and conditions of environmental permits / licenses.
<p>3) Publish information on energy and fuel use, as well as total emissions of air pollutants annually and timely, if emissions are significant.</p>	<ul style="list-style-type: none"> ◆ HEC's energy and fuel data is detailed in the annual Social and Environmental Report, which is distributed to their stakeholder and the report is available to the public in the corporate website. ◆ Quarterly emissions data for power generating facilities are published in HEC's corporate website.

4) Undertake to adopt energy-efficient measures in their operations.

HEC continuously invests in practicable technologies to minimize environmental impact on air emissions to sustain a higher level of environmental performance, including:

Energy saving

- ◆ The overall thermal efficiency of Lamma Power Station has been increased sufficiently in recent years attributed largely to the operation of the new highly efficient Unit L9.
- ◆ Switching to the use of energy-saving light bulbs and T5 fluorescent tubes, de-lamping where suitable.
- ◆ The 2009 energy saving targets for Head Office, Electric Tower and Electric Centre were achieved.



Reduce Air Pollution

- ◆ HEC has gradually increased the use of natural gas and significantly reduced coal consumption for power generation.
- ◆ HEC established Hong Kong's first commercial-scale wind power station, Lamma Winds - a pioneer in the use of renewable energy in the territory.



Wind power station

- ◆ HEC has completed the largest solar power system in Hong Kong which comprises 5,500 photovoltaic (PV) modules applying amorphous silicon thin film technology in end June 2010. The PV modules were installed on rooftops of the Main Station Buildings in

	<p>Lamma Power Station.</p>  <p><i>Solar power system</i></p> <ul style="list-style-type: none"> ◆ Two hybrid electric vehicles (HEVs) were successfully converted to plug-in hybrid vehicles (PHEVs) with license issued by the Transport Department of the HKSAR Government in 2009. ◆ Ten Mitsubishi i MiEV battery electric vehicles were introduced to the company fleet in early 2010.  <ul style="list-style-type: none"> ◆ HEC has cut down the consumption of diesel by the ferry and vehicle fleets of Lamma Power Station and initiate a trial on the use of bio-diesel in the station.
<p>5) Identify and encourage business-relevant measures to be taken on days when air pollution is high.</p>	<ul style="list-style-type: none"> ◆ When air pollution level is high in Hong Kong, HEC will advise staff to reschedule / rearrange the outdoor activities during the induction and refresher course training. ◆ While it is constantly to encourage staff to use electricity/energy efficiently both at home and at work, HK Electric would consider posting additional message in intranet to remind our staff to minimize outdoor activities which generate emissions.”

6) Share air quality expertise in business with others.	<ul style="list-style-type: none">◆ Annual Social and Environmental Reports are published to demonstrate HEC's environmental experience, efforts and performance to their stakeholders.◆ HEC maintain a close partnership with their stakeholders by reaching out to them, engaging with them, and promoting an exchange of views through meetings, enquiry services, visits, seminars, community activities, reports and websites.

3. CONCLUSION

The Hongkong Electric Company Limited has demonstrated their commitments towards the Clean Air Charter's commitments and is recommended to be certified under the Clean Air Charter.