# PROJECT CLEAN AIR

## Certification Scheme for Clean Air Charter

## Final Report

## For

## Swire Coca-Cola Hong Kong Limited (SCCHK)

**Prepared by**

BUSINESS ENVIRONMENT COUNCIL 商界環保協會

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## 1. INTRODUCTION

Swire Coca-Cola HK Ltd. is a bottling factory that manufactures well-known beverage brands including Coca-Cola, Sprite, Fanta, Nestea, Schweppes, Qoo, Bonaqua and etc. SCCHK is located in Shatin at the world's tallest bottling plant which was officially opened on 17th May 1991. The 19-storey, 147 meters high facility provides more than 70,000 square meters of usable space. The SCCHK plant includes production facilities, warehouse, materials storage, a complete floor dedicated to wastewater treatment, loading and parking areas and office space.

With approximate 1400 employees and 250 vehicles in Hong Kong, SCCHK is a joint venture between Swire Pacific (87.5%) and The Coca-Cola Co. (12.5%) and is under the management of Swire.

This report outlines the findings of the Business Environment Council (BEC) from a walk through audit and interview with Mr Joseph Chan, Assistant Manager – Quality Management (Environmental) of SCCHK.

From the pre-audit questionnaire completed by SCCHK, it was determined that SCCHK 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 SCCHK production plant in Shatin and led by Ms Dorothy Lam and Ms Brenda Fung on 24th November 2008. The purpose of this audit was to verify SCCHK's commitments to the Clean Air Charter.

## 2. OBSERVATIONS AND COMPLIANCE

Based on the site meeting, SCCHK 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:

- As part of The Coca-Cola Management System (TCCMS), SCCHK has environmental management system in place to clearly define the responsibilities from top management to front-line staff on environmental issues.
- Vehicle Maintenance Manager is responsible for ensuring preventive maintenances are done properly for all vehicles on regular basis, especially to monitor the smoke emission level from vehicle exhausts.
- Plant Engineering & Building Services Manager is responsible for the operations of gas fired boilers, the emission of which is monitored by a qualified contractor annually.
- Quality Management Manager is responsible for monitoring energy consumption and implementing energy efficiency measures. While Production Department is responsible for recording energy consumption figures i.e. gas, electricity and oil.
- SCCHK's Environment, Health and Safety (EHS) committee, chaired by the Director and General Manager, is responsible for the overall management of all environmental issues of the company including energy and emission management.
- SCCHK has identified several Key Performance Indices (KPI) on various aspects of energy utilization rate e.g. electricity usage ratio, total energy usage ratio, fuel consumption ratio etc.

Regarding the six commitments of the Clean Air Charter, the table below summarizes the achievements of SCCHK:

| **Commitment** | **Action done** |
|---|---|
| 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) | ♦ SCCHK strictly follows the high standards stipulated in The Coca-Cola Management System (TCCMS) which is an integrated management programme encompassing product quality, the environment, and health and safety throughout the Coca-Cola system worldwide. TCCMS incorporates a number of stringent standards and guidelines compliant to ISO 9001, ISO 14001 and ISO 22000. |
| 2) Use continuous emissions monitors (CEMs) at significant sources, e.g. large and medium plants. (Relevant to large / medium industrial operations and power plants) | ♦ SCCHK's major emission sources are towngas boilers and vehicles exhaust. Regular monitoring of smoke level of vehicle fleet as well as $CO_2$ content from boiler stack.<br>♦ Significant emissions are identified mainly as carbon dioxide, particulate matters, trace amount of nitrogen |

<table>
<tr><th>Commitment</th><th>Action done</th></tr>
<tr><td></td><td>oxides, sulfur oxides and unburned hydrocarbon.<br>♦ As indicated by SCCHK, no continuous emissions monitor is required under the Air Pollution Control Ordinance, and therefore continuous emission monitoring is not applicable to the scope of SCCHK operation as far as the Charter commitments concerned.</td></tr>
<tr><td>3) Publish information on energy and fuel use, as well as total emissions of air pollutants annually and timely, if emissions are significant.</td><td>♦ SCCHK publishes energy consumption and greenhouse gases emission data in Swire Beverages Environmental Report annually.<br>♦ SCCHK benchmarks energy consumption data with companies within the Coca-Cola system and across the beverages industry.<br>♦ As provided by SCCHK, the overall energy use for production in 2007 is 1,085 million MJ which is similar to 2006's figure (1,093 million MJ) despite an 18% increase in production volume.<br>♦ Data comparison on Energy Usage Ratio and Greenhouse Gases Intensity is shown below<br><br>
<table>
<tr><th>Indicator</th><th>2006</th><th>2007</th><th>Reduction (2006 vs 2007)</th></tr>
<tr><td>Energy Usage Ratio<br>(MJ / litre product)</td><td>0.46</td><td>0.39</td><td>15.2%</td></tr>
<tr><td>Greenhouse Gases Intensity<br>($CO_2$e g / litre product)</td><td>74</td><td>66</td><td>10.8%</td></tr>
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</td></tr>
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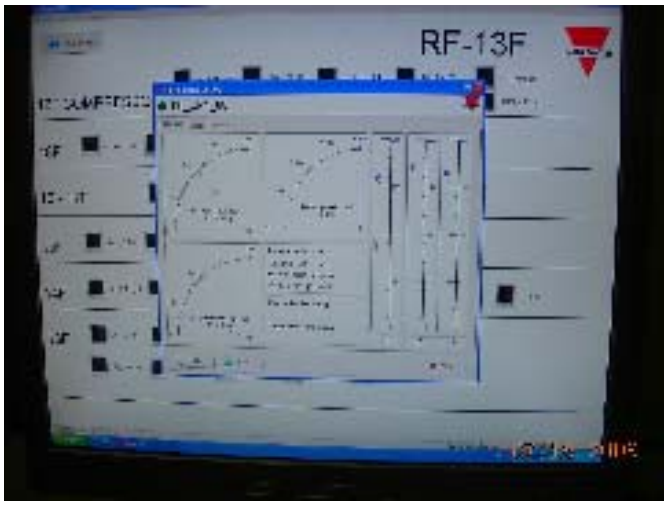
| Commitment | Action done |
|---|---|
| 4) Undertake to adopt energy-efficient measures in their operations. | There are a number of energy saving measures applied in SCCHK after signing Clean Air Charter in 2006, including:<br>♦ In Oct 2007, one of the gas-fired boilers was changed to electric steam boiler which has higher energy efficiency and thus less energy consumption was resulted.<br>♦ Replacement of all 120 EXIT signs with LED type was completed by April 2007, with estimated annual energy saving of 2,018,304 kW.<br>  <br>♦ Since 2007, SCCHK started vehicle fleet modernization programme by replacing pre-Euro trucks with diesel trucks meeting Euro-5 standard which use 0.001 sulfur content diesel.<br>  <br><br>♦ Digital metering system for real-time online monitoring of electricity usage was installed in May 2008, to identify abnormal usage occurrence so that remedial measure could be carried out timely. |

| Commitment | Action done |
|---|---|
| |  <br>♦ Automatic tube cleaning system for chillers was installed in May 2008 to reduce the amount of deposits during chilling process so as to enhance heat transfer efficiency and reduce energy consumption.<br>♦ In May 2007, a variable speed drive was installed to ventilation fans in compressor room to achieve significant energy savings by controlling the operating speed of the fans, depending on peak load or reduced load of compressor. An annual energy saving of 128,246 kW was estimated.<br>  <br>♦ By February 2009, 1000 light fittings equipped with 3-piece T8 tubes were replaced with 625 light fittings with 2-piece T5 tubes, with $98,975 annual saving in electricity cost. |

| Commitment | Action done |
|---|---|
| |   |
| 5) Identify and encourage business-relevant measures to be taken on days when air pollution is high. | ♦ SCCHK installed a LED sign at the operation plant entrance to notify drivers the API level of the day as well as to remind staff to use less electricity at home and at work. Also, SCCHK have notified the building service department not to run gen set testing on high API days. |
| 6) Share air quality expertise in business with others. | ♦ Periodic meetings are held with other bottling plants within the Coca-Cola system and other companies within Swire group to share best practices.<br>♦ Environmental achievements and best practices have been reported in quarterly newsletter and annual report.<br>♦ SCCHK has been participating in Cathay Pacific's Fly Greener Programme since 2008 to offset the carbon emission resulted from staff overseas business travel.<br>♦ SCCHK has received eKO certificate, the Coca-Cola environmental management system that incorporated ISO 14001 standards and included reporting environmental performance. |

## 3. CONCLUSION

The Swire Coca-Cola Hong Kong Limited has demonstrated their commitments towards the Clean Air Charter's commitments and is recommended to be certified under the Clean Air Charter.