

Integrated environmental management system (IEMS)

<http://www.kncpc.re.kr>

Korea National Cleaner Production Center, Korea

The IEMS project is designed to support industries in order to implement environmental management systems within companies, by integrating process assessment, technology provision and environmental management into one programme. The IEMS programme consists of two categories - an integrated environmental management system for SMEs, and a supply chain environmental management system for large companies and their suppliers.

SCEM Project at Hyundai Motor Company

Since July 2003, Hyundai Motor Company (HMC) has been participating in this project sponsored by Korean National Cleaner Production Center (KNCPC). The SCEM project's goal is to establish an environmentally-friendly supply chain management system by supporting its suppliers in establishing their environmental management strategy.

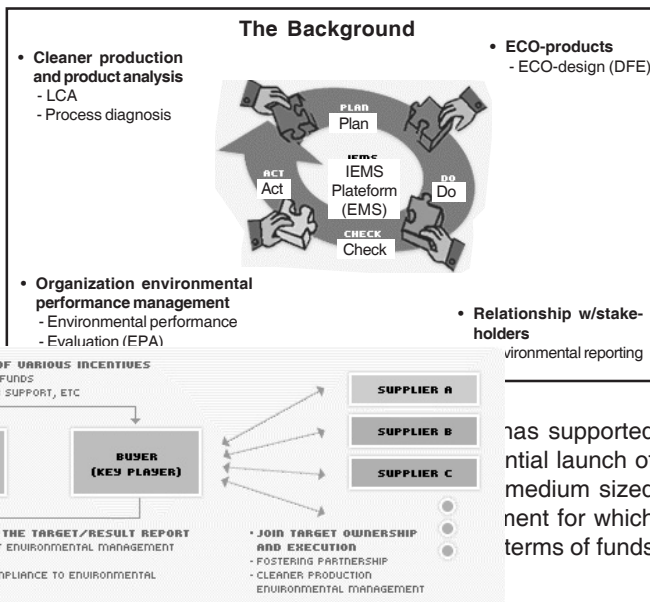
Period: July 2003-June 2006

Amount: US\$ 2,500,000

The Background

Supply chain management in terms of environment is regarded crucial, especially in the automotive industry, due to its intricate structure and stringent regulations. HMC intends to support its suppliers to establish an environmental management strategy, a cleaner production system and design for environment (DfE) by transferring its know-hows.

Ten domestic suppliers successfully completed the first year phase (July 2003-June 2004) of this project. Five more companies will be selected and included in this programme in the second year phase.

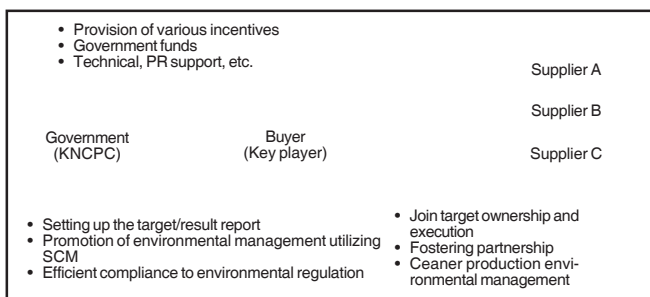


Supply chain management (SCM)

Definition

SCM is a business strategy that combines supply chain management and prevention-based environmental management to enhance the competitive position of suppliers and their customers.

Strategy



SCEM project at Yuhan Kimberly Company

- Seeks to engage other stakeholders through the various levels of supply chain.
- Out of more than thirty contract manufacturers, and other raw material suppliers to Yuhan-Kimberly, 10 manufacturers have been selected as demo companies, which later will be deployed to other companies.
- The current environmental status of the manufacturers is analyzed and solutions to problems are recommended.
- Professional training on environmental management tools suitable for their levels is also provided, as well as support to implement some of the management tools.
- The tools include ISO14000, cleaner production, eco-design, life cycle assessment, eco-labelling, and environmental reporting.
- At the final stage, the technology transfer model will be employed throughout the rest of the supply chains, ultimately connecting all suppliers electronically. □

Reducing environmental impacts in Holcim Philippines, Inc.

<http://www.holcim.com>

Holcim Philippines, Inc. is the leading cement manufacturer in the Philippines. Reducing environmental impacts is a focus of our environmental policy. We are committed to measuring our performance, continuous improvement and promoting best practice in our industry.

Atmospheric emissions

Monitoring and decreasing atmospheric emissions remain Group priorities. Continuous investment to upgrade plant equipment as well as ongoing maintenance and training are required by our emissions monitoring and reporting (EMR) standard. At the end of 2005, the EMR standard was implemented at 89.2 per cent of kiln stacks for an investment, to date, of more than CHF 36 million. Future investments are expected to total an additional CHF 14 million. We make knowledge gained through this work available to local test houses and regulators.

The EMR standard is designed to assure high quality emissions monitoring and reporting at all facilities. We are conducting a detailed review of our SO₂, NO_x and dust emissions data to help refine and improve global data collection processes during 2006.

To encourage continuous improvement, we have set a global emissions reduction target. Review of the data confirms that implementation of our EMR standard enables better tracking of the sources of poor performance and improves data quality and monitoring.

Since 2003 net specific emissions for NO_x, SO₂, organics and mercury have decreased. The increase in dust is likely to be due to a measurement error and a technical problem which resulted in an underestimation in the previous year. Investigations into likely causes for the increase in dioxins and furans (D/F) are underway.

Quarry management and rehabilitation

Holcim plans its raw materials extraction and management carefully.

Water

Cement production requires water for cooling heavy equipment and exhaust gases and for preparing slurry in wet process kilns, which consume more water than modern dry cement plants. In 2005, the average water consumption was 430 litres per tonne of cement - for a total of 50 million cubic meters of water consumed.

Most water evaporates during the process. Any that remains is emitted as process effluent, and can be affected by the presence of solids, altered pH, or high temperatures. Installa-

Holcim Philippines, Inc., The Philippines

tion of closed loop water cycles or settling ponds helps us use water resources more efficiently. Group companies invest in improved water management practices and are installing water meters to monitor water use and improve water efficiency.

Transport

Given that cement is a heavy, low-price, bulk product, transport choices are controlled primarily by cost considerations. Most of our products are transported by road (76 per cent) and by rail (16 per cent), and water (8 per cent) transport shares the remainder.

Solid by-products

The main solid by-product of cement manufacture is cement kiln dust (CKD), a powder captured from kiln exhaust gases. Most CKD is returned to the kiln system, thus improving our eco-efficiency. CKD which cannot be returned to the kiln system can be recycled into the finished cement, sold, or land-filled. In 2005, 20 Holcim cement plants generated CKD that was not returned to the process (2004: 22 plants). A total of 0.68 million tonnes of dust were disposed (2004: 0.79 million tonnes), representing 7.3 kg/t clinker (2004: 8.8 kg/t clinker). We are pleased with this continuing downward trend, mainly due to process modifications and new product formulations to increase its re-use.

Environmental compliance

Cement plants report regulatory non-compliance in cases that threaten air, water or soil quality; that can directly or indirectly endanger human, animal or plant health; could affect the company's reputation; or may result in a significant fine or penalty.

Holcim seeks to ensure that all its operations are fully environmentally compliant. In 2005, 24 non-compliance cases were reported by 18 cement plants (2004: 40 cases by 22 plants). The majority of cases related to permit limits being exceeded, in amounts which did not threaten the environment or health. The associated fines and penalties paid totaled CHF 165,000 (2004: CHF 158,500), with two major cases contributing CHF 137,500.

Environmental investments

The Group is committed to ongoing investment to ensure that our operations are as environmentally sound as possible. In 2005, the Group invested CHF 104 million (2004: 78) to improve the environmental sustainability of production facilities in all areas. We maintain appropriate provisions with respect to environmental liabilities, based on legal and contractual obligations. Provisions for site restoration and other environmental liabilities amounted to CHF 388 million (2004: 249). □