Company: Cemex Alicante (Spain)

Industrial sector: Manufacture of cement, lime and plaster
ISIC Rev. 4 no. 2394 (International Standard Industrial Classification of All Economic Activities)

Environmental considerations: Cemex’s policy in recent years is in line with the criteria set out in Corporate Social Responsibility report. This policy goes beyond compliance with labour laws and regulations related to the environment, since it encompasses a range of practices, strategies and business management systems that seek to find a balance between the three pillars of sustainable development: economy, society and the environment. This strategy of sustainable development is reflected in concrete actions that Cemex has undertaken in the different areas in which such activity is carried out. Some of these actions are:
- Reduced consumption of non-renewable resources.
- Reduction of the environmental impact of activities.
- Involvement in the neighbouring community.

Background: Since the beginning of its industrial activity, the Alicante factory has always been concerned about the impact its facilities could have on the environment. For this reason, and to continuously improve environmental performance, since December 2000 the plant has implemented an environmental management system that complies with the requirements of standard UNE-EN ISO 14001:1996. In 2005 it was certified under the new standard UNE-EN-ISO 14001:2004.

Summary of actions: The project consists in using the excess heat from the clinker furnace and cooler to dry sewage sludge originating from wastewater treatment facilities. Since this energy is provided at no cost, there are economic benefits (cost savings) along with the environmental benefits, as waste is treated. It is an environmentally friendly and effective procedure that yields the following benefits:
1. Reduction in the consumption of fossil fuels through harnessing the residual heat from the furnace and the cooler, avoiding the use of other sludge-drying means that have a greater potential for environmental impact (electricity, fuel, etc.).
2. Removal of sewage sludge, reducing transport distance in comparison to the previous agricultural use (approximately 5 km of transport needed instead of 70 km).

Diagram:

- Wet sludge (57,000 t, 20-25%) is treated with water (43,588 t) and hot air, resulting in dry sludge (13,412 t, 85%).
- Air is used as a medium for drying.

Generalitat de Catalunya Government of Catalonia Ministry of Territory and Sustainability
The sewage sludge drying plant at the Cemex España S.A. clinker production facility in Alicante allows 57,000 t/year of waste to be treated using the hot gases exuded by the furnace, which otherwise would be wasted energy.

This project is a good example of the cement industry’s great potential for solving the waste management problems of governments. In addition, the reduction of CO₂ emissions is estimated to be 130,000 t/year, taking into consideration the energy consumed in sludge drying (if not used for this process), fuel consumption reduction and the lack of a need for landfill disposal.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.