

Cementa makes cement from slag on Gotland

Cementa has started using blast-furnace slag and other waste products as a raw material for the cement factory in Slite. Together with measures to save energy, this has lowered carbon dioxide emissions by 50 000–100 000 tonnes/year and reduced the use of fossil fuels by 10 000 tonnes/year.

Cementa AB in 1999–2001 carried out a project in which the company replaced limestone, gypsum and natural sand cement production in the factory in Slite on Gotland with blast-furnace slag and other industrial waste products. The aim was to reduce the extraction of natural material. As a consequence, emissions of carbon dioxide per tonne of cement were also reduced. Cementa applied for and received grants from the Local Investment Programme (LIP) for the project.

The switch has gone well. The LIP project in Slite is a good example of how a large and energy-demanding industrial site with high carbon dioxide emissions can reduce its environmental and climate impact. The Cementa plant in Slite is one of the largest cement factories in northern Europe.

POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS

- The need for limestone has decreased by 50 000–100 000 tonnes/year. This also means that a similar quantity of waste products no longer needs to be landfilled.
- Carbon dioxide emissions have decreased by around 50 000–100 000 tonnes per year.
- Truck transport has decreased by 6 000–12 000 kilometres/year.
- The use of fossil fuels has decreased by 10 000 tonnes/year.

Photograph: Cementa



IMPLEMENTATION

The project was part of an effort to reduce the use of finite natural resources, in Cementa's case limestone, gypsum and natural sand. Cementa saw the opportunity to use blast-furnace slag as a raw material instead.

As part of the switch, Cementa rebuilt the warehousing and transport systems at the factory in Slite. It was possible to replace a large number of truck journeys with conveyor belts. Materials handling was built in to prevent the dust and leachate formed in handling from becoming a working environment problem.

Cementa also developed a new more environmentally friendly recipe for the cement. The switch has led to a better product than previously, but handling has become more laborious.

The price of the waste products is lower than for the materials used previously. However, handling costs are higher, and Cementa consequently does not consider that there has been any financial gain from the switch at present.

POTENTIAL AND FUTURE BENEFIT

Developing system solutions that mean that a waste fraction is transformed from waste to a resource can yield both environmental and economic benefits. It also reduces the extraction of virgin raw materials and minimises waste production. Activities that create such industrial collaboration are strategically important.

WHY BEST PRACTICE

The project meant new cooperation for Cementa where the waste products of another industry could be used as a raw material.

The project meant that an industrial firm with very great needs for finite raw materials and very high carbon dioxide emissions could lower both these substantially.

The method is of interest for other cement factories, which are a large source of carbon dioxide emissions. Cementa has itself subsequently used the technique at another factory in the group, and in doing so was able to benefit from the experience gained at the factory in Slite.

FOR FURTHER INFORMATION

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Contractors/providers
Conveyors and steel structures:
ASM i Askersund AB
Many other contractors were involved and did standard jobs.

The project on the Internet:
www.cementa.se
www.gotland.se/imcms/2080

Further information on Best Practice
www.swedishepa.se/bestpractice
www.naturvardsverket.se/mir

FACTS
LIP Gotland 1999
Action 7
Environmental investment: SEK 10m
Grant: SEK 3m

