

Holcim US cuts CO₂ emissions of distribution – the smart way

Reducing the carbon footprint

Holcim US has begun measuring the carbon footprint of its distribution activities in order to find effective ways of reducing CO₂ emissions. The company's studies confirm great potential for increasing the efficiency of distribution while reducing the environmental impact. Holcim US has developed a practical tool and cost-efficient methods for realizing this potential, becoming a leader in the USA.

- Define CO₂ emission rates for each mode of transport
- Measure total emissions of the company's distribution activities
- Develop and implement actions and assess the environmental impact
- Recommend steps to further cut CO₂ emissions

A method of measuring CO₂ emissions

The team needed a way to measure CO₂ emissions of product transport between plants and terminals. Emissions had to be calculated for each of the three primary modes of inter-company transport – truck, rail, and barge. Studying a method developed by the US Environmental Protection Agency (EPA) for its SmartWaySM Transport Partnership program, the

As part of its environmental commitment, Holcim US decided to measure, monitor, and reduce the company's carbon footprint caused by distribution. A team from Supply Chain Management and Transportation was formed to conduct the project. After determining a credible baseline and defining the project scope, the team organized the project into four stages:

team learned that CO₂ emissions can be calculated per mile for truck transport and per gallon of fuel for rail and barge transport. The team determined that using standard values of the unit "tonne-mile per gallon" would be the most accurate way to calculate CO₂ emissions. A standard emission rate per tonne-mile per gallon for road equipment was provided by the EPA; the data for rail transport was provided by a large rail carrier, and for barge transport by two large inland marine companies.

A new calculation tool

The next step was to calculate current CO₂ emissions, which required determining the actual tonne-miles of transport for each mode in the distribution network. For

this the team developed a CO₂ emissions monitoring tool (CEMT). It uses Excel to extract data on past shipments from the SAP Business Warehouse and analyze shipments projected in Holcim's physical distribution plan (PDP). Using this tool, Holcim US can easily monitor and project CO₂ emissions for inter-company freight. The team used it to calculate CO₂ emissions of distribution for 2006 (the most recent full year for which complete data was available during the project) and to project 2007 emissions. The tool is flexible enough to analyze any shipping pattern over any period. The project team recommends using CEMT at least quarterly to monitor and project the company's carbon footprint for the current year.

Smart ways to reduce the carbon footprint

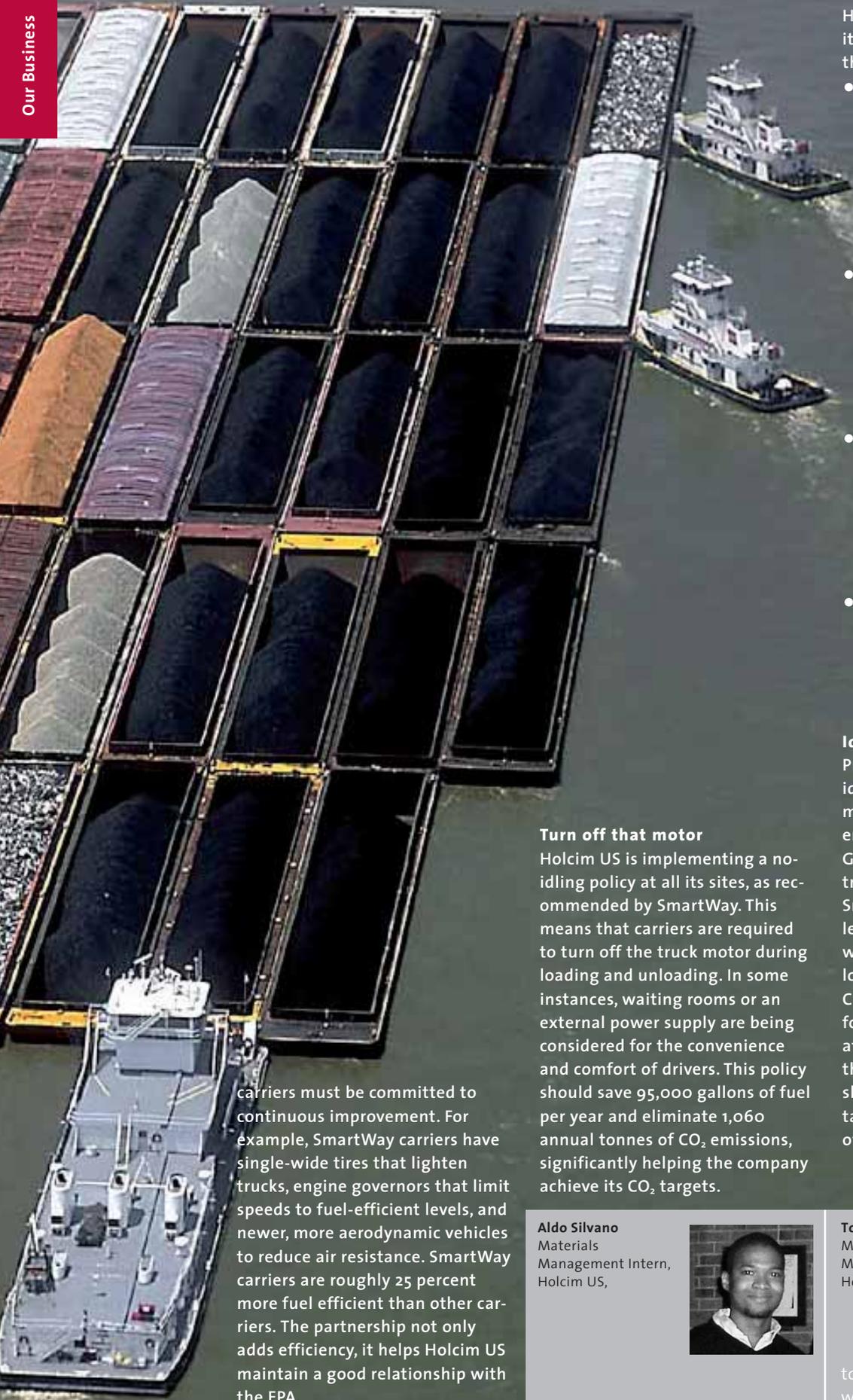
Holcim US has taken three key actions to reduce its distribution carbon footprint: product exchanges, charter membership in

the SmartWay Transport Partnership, and to adopt a no-idling policy at all sites.

Product exchange between Holcim US and a local competitor eliminates much long-distance transport of materials. How it works is simple – Holcim US looks for opportunities to purchase product from a competitor closer to Holcim's distribution point and in return to supply an equal amount of product to the competitor's distribution point, reducing tonne-miles and the carbon footprint for both companies. Through product exchange, Holcim US cut CO₂ emissions of inter-company distribution by 15 percent and inter-company freight costs by 12 percent in 2007. It is presumed that a CO₂ reduction is also realized by the exchange partner, which overall significantly reduces the cement industry's environmental impact.

Holcim US leads the way

The SmartWay Transport Partnership is an innovative collaboration between the EPA and the freight industry, with the aim to reduce greenhouse gases. It brings together EPA-recognized transportation industry leaders who focus on efficiency. Holcim US is the only cement producer to be certified as a SmartWay shipper. Certification requires of at least 50 percent of all road transport to be by SmartWay carriers. To be deemed SmartWay compliant,



carriers must be committed to continuous improvement. For example, SmartWay carriers have single-wide tires that lighten trucks, engine governors that limit speeds to fuel-efficient levels, and newer, more aerodynamic vehicles to reduce air resistance. SmartWay carriers are roughly 25 percent more fuel efficient than other carriers. The partnership not only adds efficiency, it helps Holcim US maintain a good relationship with the EPA.

Turn off that motor

Holcim US is implementing a no-idling policy at all its sites, as recommended by SmartWay. This means that carriers are required to turn off the truck motor during loading and unloading. In some instances, waiting rooms or an external power supply are being considered for the convenience and comfort of drivers. This policy should save 95,000 gallons of fuel per year and eliminate 1,060 annual tonnes of CO₂ emissions, significantly helping the company achieve its CO₂ targets.

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Further reductions

Holcim US plans to further reduce its distribution CO₂ footprint in the following ways:

- Using CEMT to measure CO₂ emissions of the distribution network each quarter, and sharing the results with the EPA and other external and internal customers. This will help maintain good relations with all stakeholders.
- Collaborating with SmartWay members to participate in the dialog concerning forthcoming federal legislation on CO₂ emissions, and continuing to use the SmartWay selection criteria to choose approved carriers.
- Switching from truck transport to barge or rail wherever possible. CO₂ emissions of barge transport are 70 percent lower than by truck, and rail 64 percent lower, calculated by standard tonne-miles per gallon.
- Further promoting and enforcing the no-idling policy, which will further cut emissions and improve the work environment for employees and carriers.

Ideal practices for copying

Product exchange and the no-idling policy are two effective measures that can be easily employed by any Holcim company. Group companies in other countries cannot participate in the SmartWay program, but they can learn from it and choose to work with environmentally responsible local carriers. To learn more about CEMT and measuring the carbon footprint, contact Terese Hunwick at Holcim US. To learn more about the SmartWay Transport Partnership or the no-idling policy, contact Sebastian Seifarth, Manager of Transportation at Holcim US.

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www.epa.gov/smartway/swplan.htm