Focus area Environment

Conserving energy to reduce our impact on the environment

We share one planet, and need to make wise use of natural resources. Processing cocoa and making chocolate are energy-intensive activities, and transportation requirements – from the sourcing of raw materials to the delivery of finished products – are significant. As a responsible company, we want to contribute our part to reduce our impact on the environment.

Our commitment

Our Global Environmental Policy, launched in June 2008, focuses on managing the use of energy and reducing carbon emissions. Further, we are looking at ways to improve utilization of lighting, water and other resources at our facilities worldwide. Beyond complying with all relevant laws, rules and regulations in the countries where we operate, we continuously work to improve the energy performance in every plant. We create awareness and promote the active involvement and accountability of employees in our environmental footprint. We are investing in more energy-efficient equipment for chocolate production and, where possible, we are modifying our processes to become cleaner in energy.

In fiscal year 2008/09, we set a five-year target to reduce our overall energy consumption in our factories and facilities by 20%, reduce our carbon emissions by 20%, and increase our use of "green" energy by 20%. We also set goals to optimize the use of raw materials to reduce waste. In fiscal year 2010/11, we initiated additional energy management activities in all regions, and we are on track to achieve the targets as planned by 2014.

Key challenges

- Reducing carbon footprint in light of climate change
- Shrinking reserves and increasing fossil energy prices
- Adverse and extreme local weather conditions such as drought, flooding and wind in cocoa producing countries can temporarily disrupt operations in affected areas
- Speed of market development is determined by the price of energy, technological developments and legal/political target settings. Not all improvements are currently mature or economically viable.

Reducing energy consumption

We aim to reduce our overall energy consumption by 20% per tonne of production by 2014. We are working to reduce the use of electricity, gas and other energy through active management of continuous improvement processes in all sites; the identification, testing and rollout of best practices within the Group; and through the development of more mature energy management practices. With common processes and technology in place across the world, we can exchange and potentially implement innovative new ideas at all our sites. In 2010/11, our energy consumption per tonne went down by 11.8%, versus the 2008/09 baseline target of 10%.

Reducing CO_2 emissions

We aim to reduce the CO_2 emissions from our factories by 20% per tonne of production by 2014. Both the reduction of energy and the increase of renewable energy lead to an improvement in our carbon emission level. In addition, we strive to reduce carbon emissions from transport by optimizing the flow of raw materials and finished goods, the loads per truck, and similar measures. We are working to reduce emissions by such actions as performing the first product transformation in the origin countries, producing chocolate as geographically close as possible to the customer, and optimizing the transport of liquid chocolate deliveries. Increasing production in origin countries of cocoa liquor (55% of total production) resulted in an 18–20% reduction in transport weight (beans compared to liquor). In addition, liquid chocolate deliveries reduce the use of packaging materials.

Barry Callebaut participates in the Carbon Disclosure project to measure emissions using the Greenhouse Gas Protocol methodology. Results for fiscal year 2010/11 revealed a 9.8% decrease in emissions from 67 tonnes of CO_2/1,000 tonnes of production output in 2009/10 to 61 tonnes of CO_2/1,000 tonnes of production output in 2010/11.

Increasing the use of "green" energy

By 2014, we will ensure that 20% of the energy we consume is from renewable energy sources. This includes optimization of the use of cocoa shells as bio mass, investigation of production of green energy on our sites, and monitoring the share of renewable energy in the energy we buy.

Cocoa shell burning at factories in Ghana, Côte d'Ivoire, Cameroon and Brazil has reduced the gas or fuel consumption at those sites. We optimize the efficiency of existing shell burners to produce steam, and, in San Pedro, Côte d'Ivoire, we are working on the production of bio gas through the fermentation of cocoa shells. In addition, we are investigating the use of solar panels and wind turbines at selected sites.

Energy-saving benefits of burning cocoa shells

Barry Callebaut factory locations	Shells burned per year in tonnes	% factory steam requirements fulfilled from cocoa shell burning
Côte d'Ivoire	7,000	60–70%
Ghana	8,000	100%
Cameroon	5,000	70–80%
Brazil	5,000	90%

Our approach

In 2010/11, our approach to energy management comprised three integrated work streams and related activities. We conducted workshops with operations managers in all regions worldwide to identify energy-saving opportunities and to define immediate action steps and due dates. We named a coordinator to oversee the implementation of defined action steps and to measure the impact of these steps on our energy consumption.

Creating awareness across the company

- Target setting and incorporation into bonus targets
- Introduction of Key Performance Indicators (KPIs) with monthly reporting
- Implementation of energy management system
- Designation of energy management as one of the key areas in the Group's continuous improvement program
- Communication in the company news magazine distributed to employees worldwide
- Follow-up on the action plans at each site
- Identification and sharing of best practices
- Defined process for leak detection and repair

Optimization of processes

- Testing on the main energy consuming processing steps (e.g., conching, pressing, roasting) and defining more energy-efficient ways of working
- Improving output on existing equipment and lines
- Optimization of shut-down procedures
- Proper sizing of equipment
- Free cooling
- Improved insulation

Selective implementation of technology

- Installation of new breakers on roasting lines to reduce gas consumption by 25%
- Installation of new hydraulic groups on presses
- Installation of high-yield motors
- Economizers on boilers and roasters
- Heat recuperation on air compressors
- Fermentation of shells and waste to produce gas
- Use of solar panels for electricity and warm water

Energy management targets

- 20% reduction in energy consumed per tonne of product by 2014
- 20% reduction in carbon emissions per tonne of product by 2014
- 20% of energy consumed will be "green" by 2014

We expect to achieve our target goals through the following measures:

- We actively manage continuous improvement plans per site. Best practices are validated and roll-out plans are stimulated by regional and corporate management
- Energy reduction targets have been defined per site and have been included in the bonus objectives of all plant managers and regional operation directors
- New technologies such as new bean breakers or high-speed refining as well as optimized processes have been introduced in order to reduce the consumption of electricity and gas
- We installed an energy management system that allows us to monitor consumption closer to the cost drivers and to benchmark the different plants on a more detailed level