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Vale invests in biodiesel production

Vale has just taken another step towards more sustainable energy use. Today (24 June), the mining giant announces a partnership with Biopalma da Amazônia S.A. to produce palm oil, which from 2014 onwards will be used to make biodiesel, in the northern-central region of Pará State, Brazil.

The consortium will be the biggest producer of palm oil in the Americas, involving total investment of around US\$500 million in the project. Vale's investment will be US\$305 million, encompassing the company's participation in the consortium as well as the cost of building and operating the biodiesel plant, which will be 100% owned by Vale.

Vale will use a share of the palm oil output to make biodiesel to power the entire fleet of 216 locomotives of the company's North System rail network, as well as heavy-duty machines and equipment in the Carajás mines. It is estimated that annual output of the oil will be 500,000 tons. A part of this output will be transformed into 160,000 tons of biodiesel for use by Vale itself. The rest of the palm oil will be sold by Biopalma.

Vale's use of this quantity of biodiesel will reduce the company's CO2 output by the equivalent of around 12 million tons over the course of the project, when compared to emissions from regular diesel, but not including those produced within the biodiesel production chain. This quantity corresponds to emissions from more than 200,000 cars in use over the period.

The consortium, in which Vale has a 41% stake, will generate around 6,000 direct jobs and provide revenue for 2,000 families of small rural producers. The project is located in an area of approximately 130,000 hectares, in a region with one of the lowest Human Development Index scores in the country. Of the total area, 60,000 hectares will be used for palm tree plantations, with a total of 9.3 million trees planted by 2013.

This area is equivalent to approximately 49,000 football fields the size of the Maracanã. The remaining 70,000 hectares of degraded Amazon forest will be restored and protected by the consortium. Vale will thereby be helping to recover and conserve Amazon biome ecosystems, establishing a model for such practices in the region.

As of 2014, Vale will use the B20 blend (20% biodiesel and 80% regular diesel) on the Carajás Railway and in some mining operations in the company's North System. The partnership with Biopalma will enable Vale to become self-sufficient in B20 production. At the same time, the company will be able to comply, well in advance, with a regulation that mandates the use of B20 by 2020.

In 2008, Vale consumed 940 million liters of pure diesel oil in Brazil, 336 million in the company's North System units. The volume of pure biodiesel (B100 - unblended with diesel) consumed in 2008 was 19 million liters, seven million in the North System. In 2008, Vale consumed 940 million liters of pure diesel oil in Brazil, 336 million in the company's North System units. The volume of pure biodiesel (B100 - unblended with diesel) consumed in 2008 was 19 million liters, seven million in the North System.

Biodiesel

Over time, Vale is using progressively higher concentrations of biodiesel in its operations, as shown in the following timeline.

- 2007 - Vale complies with federal law 11,907 of 2005 in advance, by using B2 (2% biodiesel and 98% regular diesel) in its locomotives, off-road trucks and electricity generation. It also makes a partnership with Petrobras to use B20 (20% biodiesel and 80% regular diesel) in trains on the Vitória-Minas and Carajás railways. Vale begins using B20 in December;
- 2008 - B2 is replaced with B3 (3% biodiesel and 97% regular diesel);
- 2009 - Vale and Biopalma sign a contract to produce palm oil and later to transform it into biodiesel. Eight hundred thousand trees have already been planted on 5,000 hectares, and a further 2.3 million palm tree saplings are being grown to plant on 12,500 hectares in early 2010;
- 2011 - Harvest of first crop and beginning of oil production;
- 2014 - Biodiesel production begins. Vale becomes self-sufficient in production of the fuel, and will use B20 well in advance of the schedule established in legislation.

"Flex fuel" train

In 2009, Vale launched its Biofuel Project, which entails using a mixture of natural gas and diesel in the company's locomotives, with gas concentrations varying between 50% and 70%. Tests have begun on the Vitória-Minas Railway, one of the most productive and efficient railroads in the world.

It is estimated that using natural gas to power locomotives on the Vitória-Minas and Carajás railways will cut CO₂-equivalent emissions by 73,000 tons per year.

By using natural gas in its locomotives, Vale will make even bigger cuts in CO₂-equivalent emissions than the 71,000-ton reduction already achieved in 2008 by the company using B2 and B3 biodiesel blends in all its locomotives, off-road trucks and electricity generators.

Social and environmental investments

Socially and environmentally responsible management is a core part of Vale's strategy. In 2009, the company will invest US\$900 million in this area - the same value that was invested in 2008. Today, Vale and its subsidiaries and other companies in which it owns significant interests protect, alone or with partners, almost two million hectares. This equates to nearly three billion trees protected around the world, the equivalent of 13 times the area of the municipality of São Paulo or 14 trees for every Brazilian.

Over the past two years Vale has planted 15.5 million trees. In 2009 alone, at least five million trees are being planted and another six million are growing naturally in areas that the company is protecting or restoring. In all, there will be 11 million new trees this year.

Vale is also the first mining company in the world to have completely offset its geographical footprint. In other words, the area being planted or restored by the company is equal or greater to that used in its mining activities. In Brazil, Vale is restoring or planting 1.4 hectares for every one affected by its mining operations, and by the end of 2009, this ratio will be one to one for all of the company's operations across the world.

Biopalma

Headquartered in Belém, Pará State, the company was established in 2007 to produce palm oil and derivatives to supply a range of industries, in particular the food, personal care and hygiene sectors, as well as to allocate a part of output for biodiesel production.

Key figures about the consortium

By 2010

US\$500 million project, more than US\$120 million already invested by April 2009

Around 130,000 hectares acquired, 60,000 for plantations (5,000 already planted) and 70,000 for conservation

12,500 saplings being grown in nursery to be planted in 2010

One cluster already operating - Moju

By 2022 (maturity)

Six clusters and six plants

36 MW of electricity co-generation in the six plants

Annual output of around 500,000 tons of palm oil

More than 6,000 direct jobs created

15,000 hectares of family farms involving up to 2,000 families

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