

One producer seems to have covered all angles – minimising feedstock price volatility, using non food-based crops and reducing greenhouse gas emissions

An ethanol project to rival Brazil



A computer generated schematic of the sugarcane plantation and distillery in Peru

Emerging energy company Stratos Renewables is set to become one of Latin America's key ethanol producers, and the lowest cost sugarcane-based ethanol producer in the world.

The company plans to use the under-developed coastal region of Peru to cultivate and produce 90% of its sugarcane in order to minimise commodity price volatility.

Stratos Renewables will then benefit from tariff-free

exports to the US and Peru's free trade agreement with the US, Canada and the EU. Its location in Peru also has the advantage of close proximity to the Pan-American highway.

The company already owns a sugarcane production facility in Peru and is proceeding with the facility's relocation and expansion to a combined sugar mill and ethanol distillery capable of producing 1,100 tonnes of sugarcane per day and up to 5 million gallons of ethanol.

It will build a 12,000 tonnes of cane per day facility to be supplied by 24,000 hectares of newly planted sugarcane. This vertically integrated operations strategy is designed to eliminate price volatility and produce competitively high sugarcane yields.

The perfect location?

Similarly to other strong players in Peru, Stratos' choice of location was no accident.

There is currently no mass production of ethanol in Peru, based largely on the difficulty involved with securing the appropriate local land, but Stratos Renewables plans to change this. Stratos is creating a long-term sustainable growth opportunity with a business model designed to stimulate the local economy with operations that could create more than 2,000 jobs.

Over the last five years Peru has demonstrated significant exponential



Stratos Renewables' chairman of the board, Steve Magami, meets with Peruvian Minister of Agriculture, Ismael Benavides

foreign direct investment and gross domestic product growth adding to its promise as an attractive location for the cultivation, processing, distribution and use of alternative fuels.

The country is one of the highest yield sugarcane providers in the world, based on average yield per hectare. Although lacking any significant rainfall, the availability of water, sunshine and ideal temperatures create favourable conditions for year-round sugarcane harvesting and high yields as water and fertilization can be managed using modern irrigation technology. These conditions are advantageous when compared to other countries where sugarcane is also cultivated.

Brazil is currently the world's largest sugarcane ethanol producer, but Stratos Renewables believes it can produce at least 145 tonnes

of sugarcane per hectare per year, approximately twice the average production per hectare in Brazil.

Importantly Peruvian ethanol also enjoys a tax free entry into the US, compared with a \$0.54 (€0.42) per gallon tariff from Brazil.

The US Renewable Fuel Standard has mandated the use of 36 billion gallons of renewable fuel a year by 2022 and because production is currently insufficient to meet these targets, there is plenty of potential for outside producers.

Given Peru's low cost of production, free trade agreement with the US and Canada, climatic advantages and year round production, (versus about six months per year production in Brazil), ethanol manufacture in Peru could well displace portions of Brazil's ethanol export market.

Peru also has a constructive tax, regulatory and alternative energy-friendly legislative environment. Most notably the government has mandated that petrol include 7.8% ethanol by 2010.

A feedstock that ticks all the boxes

Stratos Renewables has chosen to use only sugarcane as it is a clean burning high octane fuel, and is less

expensive to produce than its corn-based counterpart.

It contains the highest sugar content of any plant stock, enabling sugarcane ethanol yields nearly three times that of US corn. The energy balance i.e. the energy consumed to produce the ethanol compared to the energy contained in the ethanol produced, of sugarcane ethanol is far superior to the energy balance from corn based ethanol.

Cane can also be grown and harvested year-round at Stratos Renewables' site, making it exempt from the seasonality constraints of other producing nations such as Brazil, and thus allowing production to continue regardless of time of year.

Not only that but it is also said to be one of the only biofuels that creates no net carbon dioxide emissions.

Stratos Renewables certainly seems to have an answer to all the usual complaints surrounding biofuels. And as Brazil is always hailed as the example to which others should follow, a project which has the potential to rival this success is certainly likely to spark a great deal of interest. ●

Stratos Renewables' plans

Phase 1: Expand and operate ethanol production facilities and develop infrastructure:

- **Modernise and expand mill and acquire distillery:** Stratos acquired its first mill in September 2007. The company is in the process of relocating and expanding this mill to increase its milling capacity to 360,000 tonnes of sugarcane annually to produce 20 million litres of ethanol a year
- **Establish seedling nursery:** Stratos will establish a seedling nursery. The seedling programme is being conducted at a pilot laboratory to evaluate various breeds of sugarcane plantlets to secure the highest yields with optimal soil conditions and improved sugarcane harvest
- **Land acquisition:** Stratos has acquired initial plots of land (through long-term leases) and plans to acquire additional land to total at least 48,000 hectares to fulfil the needs of phase II operations

Phase II: Expand development and operations in strategic locations:

- **Develop sugarcane farms:** Stratos plans to construct a large greenfield sugar mill and distillery to mill sugarcane from 24,000 hectares of its own land – secured during phase I
- **Develop and expand sugarcane plantations:** On an additional 24,000 hectares Stratos plans to construct another mill and distillery. During this phase Stratos intends to grow and cultivate over 90% of its own sugarcane needed for production. Stratos expects the operation of its mills and distilleries to produce 180 million gallons of ethanol a year by Q4 2014.