BIOENERGY NEWS

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FEATURE ARTICLE:

The Best Idea I've Heard in a Long Time

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Climate change, as Tony Blair says, is "a challenge so far-reaching in its impact and irreversible in its destructive power, that it alters radically human existence". The future gets even gloomier, as there are a range of nasty mechanisms that could lead to abrupt climate changes. We don't yet know what the triggers for these are, but even with the most optimistic projections for the uptake of zero-emissions technologies, we may still be in danger.

So how can we do better than zero-emissions technology? Peter Read, from Massey University, organised a colloquium in August to discuss his idea of holistic greenhouse gas management, or Bio-Energy to Carbon Sequestration (BECS). It is simple to outline. Firstly, grow lots of biomass, probably trees for NZ conditions. This sucks carbon out of the atmosphere. Secondly, use the trees as fuel for electricity or feedstock for biofuels. This pays you money. Thirdly, separate out the carbon from the waste streams and store it. This storage, or sequestration, is being developed and the likely destinations for carbon are the deep ocean, underground or in minerals. We won't need to begin sequestration until our trees are mature, so there's a chance the technology will exist by then. Alternatively, we could burn the biomass to char and use that as a soil conditioner as was done in the Amazon in the terra preta regions.

This approach is entirely complementary to the usual approaches suggested as nations try to meet their Kyoto commitments and further targets. More renewable energy and more efficient energy use will still play a role. But BECS offers at least a technically feasible way to reduce carbon dioxide levels on a decadal time span.

Obviously, this kind of biological and technical fix will require vast land use changes and these will have vast social and environmental impacts. But then again, so will climate change, abrupt or not. We could wait for further discussion on a global level about how to solve climate change, or New Zealand could just get on with it. BECS seems an effective form of mitigation, gains us international mana and could be a sustainable use of our natural resources. Why should we wait for everyone else?

NEWS BRIEFS:

NZ Biofuels Sales Targets

The Government is considering regulating the sale of biofuels, or fuel made from renewable sources such as food crops and animal waste, as part of its response to climate change. According to a government discussion document released this month, oil companies may be required to sell a minimum of 0.25 per cent of transport fuel as biofuels in 2008, rising to 2.25 per cent by 2012.

New Zealand had enough domestic feedstock within the agricultural sector to produce the amount of biofuels needed to meet the minimum obligation, although imported biofuels could be used. Meeting the proposed sales obligation would save the Government more than $16 million under the first phase of its Kyoto Protocol commitments, between 2008-2012.

The Government expected biofuels to account for a larger proportion of transport fuel than the minimum levels, once the legislative framework and infrastructure is in place. Shell New Zealand has welcomed the discussion paper, but said it supported incentives rather than mandated sales targets which it believed would distort markets and increase fuel costs. Shell NZ was working with local and regional manufacturers to meet the Government's

proposed sales targets. Shell believed New Zealand would need to import biofuels or rely on a small domestic manufacturing base.

Britain has ordered oil companies to make biofuels at least 5 per cent of the petrol and diesel sold on service station forecourts by 2010.

Submissions close on October 20.

Christchurch Buses to use Biodiesel

Four Christchurch buses will run on biodiesel, made from vegetable oil and animal fats, as part of a one-year trial. Two combinations of fuel will be used on four Metro route buses, one using a vegetable oil blend, the other animal fats. Initially, the buses will run on a 5 per cent blend with diesel, moving to 20 per cent during the trial.

The buses will travel the Redwood-Hoon Hay, Ilam-Mount Pleasant and Hyde Park-Bromley routes at peak times and be available off-peak to schools as part of a transport education programme.

Biodiesel from Algae

Biodiesel can be made from plants, vegetable oils and tallow. But the most intriguing feedstock may be algae, and New Zealand may be the first to get this green fuel method off the ground commercially.

A company called Aqua Bionomic claims it's been the world's first to create biodiesel from sewage algae under real world conditions. The company plans to expand in the next year into commercial production. Algae are traditionally used to purge sewage of chemicals so the water can be recycled for non-potable uses such as stock-feeding or irrigation. To make biodiesel, the algae is then processed into a pulp before lipid oils are extracted and refined into a fuel.

Biofuels Environmental Impact

Biofuel production has a substantial environmental impact that will limit growth in the sector, according to a recent Swiss bank report.

The current methods of producing bioethanol and biodiesel are not as environmentally friendly and socially compatible as their "bio" label suggests, says the report* from Basel-based Bank Sarasin.

“The sharp rises in the share price of companies in the biofuels business clearly reflect investors' high expectations. The bank is less excited about the future of this industry, because its expansion will quickly come up against certain natural constraints," says the bank's sustainability analyst.

Large-scale biofuel production could require vast tracts of monoculture plantations that reduce biodiversity and take up agricultural land that could be used for food or animal feed crops, the bank argues. There are also negative implications for agricultural workers in terms of exposure to agrochemicals.

The bank gives bioethanol a better sustainability rating than biodiesel, as there are more raw materials to source it from, a higher yield per hectare and superior performance in terms of reducing carbon dioxide emissions.

But unless there are technological advances in turning plant material into transport fuel – so that not just the edible parts of plants are used – the bank estimated the limit for socially-responsible use of biofuels at 5% of current petrol and diesel consumption in the EU and US. This is less than the EU's target of 5.75% by 2010.

However, of the 16 companies analysed in the report, 10 qualify for inclusion in Sarasin's sustainable investment universe, although for some of them biofuels are a small part of their business.

The 10 qualifying companies are: Abengoa, Biofuels Corp, D1 Oils, EOP Biodiesel, Pacific Ethanol, Renova Energy, Xethanol, Neste Oil, Novozymes, and Sunopta. The six rated as ineligible for inclusion are: Biopetrol Industries, Cosan, Archer Daniels Midland, Agrana, Bunge, and Südzucker.

Biodiesel Changing Vegetable Oil Industry Dynamics

A new study by Rabobank's Food and Agribusiness Research group finds that the increasing global appetite for biodiesel and other biofuels is driving demand for vegetable oils to historic levels in world markets, leading to higher prices for vegetable oils relative to meals and causing soybean crushers to re-evaluate their business models. The confluence of environmental concerns, high energy prices and government incentives which is fueling demand growth is also driving expansion on the supply side, leading to significant increases in oilseed processing capacity.

Worldwide use of vegetable oils is expected to post growth of approximately 5.5% between 2005 and 2010, a significant departure from

historical rates, reflecting the newly expanded biodiesel application.

Canada is expected to capture at least half of the anticipated 300% increase in production and crushing of canola, with Southeast Asian countries expected to reap the rewards of the more than 500% expansion of palm oil processing which is forecast for that region.

The variance between lower prices for vegetable meals and higher prices for vegetable oils was causing many soybean crushers to rethink their traditional business models.

Several factors are driving both supply and demand growth of biodiesel, notably the Kyoto protocols, the U.S. ban on MTBEs and requirement for ultra-low sulphur diesel, and increasing international government interventions in the areas of mandatory contents, tax credits, and differential taxes.

Additionally, continued instability in oil-producing regions and the resulting higher oil prices have prompted policymakers and industry to pursue alternative fuels which are cleaner and often produced from locally-grown and renewable commodities such as vegetable oils, which appeal to Western consumers.

Many biodiesel manufacturers are locking in solutions such as supply agreements and off-take contracts to mitigate their long-term risk. Automakers and agricultural machinery manufacturers, with an eye toward the future, are extending their warranties to allow for biodiesels use.

SOURCE: Rabobank

Will Biodiesel Have Its Day?

Soaring crude oil prices and continued unrest in the Middle East have thrust biodiesel fuel into the limelight for its cleaner burn and homegrown production, gaining it praise from both environmentalists and governments looking to reduce dependence on foreign oil. A new study by Kline & Company is set to examine the global market potential for this emerging alternative fuel.

GLOBAL BUSINESS OPPORTUNITIES IN BIODIESEL FUELS, 2006- 2016, aims to explore this question, with a comprehensive analysis of the global market for biodiesel, including supply and demand, forecasts for feedstock and additives, manufacturing cost economics, price forecasts, and economic viability assessments. In addition to offering important market insights for producers of feedstock, additives, and manufacturing technologies, the study also examines the potential demand for off-highway applications, an area in which the U.S. government has shown a keen interest.

EU Directive 2003/30 mandates that at least 2% of all diesel consumed in Europe must be bio-based by 2008, and by 2010, this number must grow to 5.75%. U.S. legislators are also pushing for a 2% mandate, and biodiesel suppliers are reacting by adding production capacity, which has grown by 200% in the U.S. over the last year alone, according to the National Biodiesel Board.

Because Brazil has come to the forefront as a major supplier of soy and other biodiesel feedstocks, Kline's study will examine the Brazilian marketplace, where there has already been a significant move toward biodiesel.

Big agribusiness firms are now going to Brazil and buying farms and food crops, specifically to produce feedstock for biodiesel.

This concept -- food producers stepping into the fuel game -- brings with it a whole new set of players that may challenge traditional petroleum giants like Chevron and ExxonMobil.

SOURCE: Kline & Company

India sees 15 GW waste to energy

India's Minister of Non-Conventional Energy Sources, Vilas Muttemwar, wants industry to use waste-to-energy technologies to both generate electricity and help address waste disposal challenges. Releasing the National Master Plan for Development of Waste-to-Energy, prepared by MWH under a Global Environment Facility assisted project, Muttemwar said financial assistance would encourage projects, particularly in the paper sector.

"The paper industry is eminently suited for power co-generation as 75-85% of energy is required for process heat and 15-25% as electrical power," he said. "The large quantity of wastewater generated in pulp and paper industry can be used for generating biogas through bio-methanation of the effluents, which in turn can be utilised for production of thermal energy electricity."

German Bioenergy Progress

In 2006, German farmers had dedicated 13% of total farmland to the harvesting of sustainable

raw materials, amounting to more than 1.5 million hectares. This provides the relatively young industry with important structural support.

Aside from raw materials for industry, such products constitute by far the largest portion of renewable energy in the form of bioenergy. In terms of quantity, the most important product is rapeseed, followed by corn and other energy-producing grains.

Aside from this, **wood for construction and energy purposes** is produced on over 11 million hectares. In addition, the German Agency for Renewable Resources points out that four million hectares of farmland in Germany will be freed for industry and energy plants without limiting food production and conservation efforts. Further increases would proceed from this point.

EVENTS CALENDAR:

2006

Biomass-derived Pentoses, 22-25 October, Reims

Website www.inra.fr/pentoses2006

Biogas Markets, 30-31 October, Vienna

Waste-to-Energy, 1 November, Vienna

Ethanol & Biofuels Asia 2006, Suntec, Singapore, 1-3 November
Website www.terrapinn.com/2006/eba/

Biofuels Markets Africa, 30 November-1 December, Cape Town
General Enquiries: annie.ellis@greenpowerconferences.com

2007

World Biofuels Markets Congress, Brussels, 6-9 March

15th European Biomass Conference & Exhibition, Berlin, 7-11 May 2007
Theme “Biomass for Energy, Industry and Climate Protection - From Research to Market Deployment.”

Website www.conference-biomass.com

International Bioenergy, Jyväskylä, Finland, 3-6 September 2007
The main organizer is FINBIO - The Bioenergy Association of Finland.

Website: http://seminaarit.ohoi.fi/default.asp?seminarID=6

20th World Energy Congress, Rome, 11-15 November, 2007
Theme "Energy Future in an Interdependent World"

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