



Newsletter

Bioenergy Australia is an alliance of organisations
fostering biomass for energy and products

July 2006

Bioenergy Australia 2006 Conference

The *Bioenergy Australia 2006 – A Growth Opportunity for Energy and the Environment* Conference, will held at the Esplanade Hotel, Fremantle from 6-7 December with a conference tour on 8 December. This conference follows last year's very successful annual conference held in Melbourne which attracted close on 200 delegates. The keynote speaker for this year will be Professor Jack Saddler from the University of British Columbia, Canada, who is the Task Leader for the International Energy Agency's Bioenergy Task on Liquid Biofuels, and who is set to lead the successor Task on Commercialising First and Second Generation Biofuels from January 2007. Professor David Panell of UWA has agreed to be the conference dinner speaker.

At this stage the conference program is being developed, with several presentations across the spectrum of bioenergy having been confirmed at this point. Expressions of interest are still being sought for potential presentations and posters, sponsors, and trade exhibitors for the Conference. If interested, please contact Stephen Schuck, Bioenergy Australia Manager Tel/Fax: (02) 9416 9246 Email: sschuck@bigpond.net.au to express your interest. It is expected that the preliminary program will be available in about a month's time, when registrations will open. Please diarise this event and watch the Bioenergy Australia (<http://www.bioenergyaustralia.org>) and the Conference Action (<http://www.conferenceaction.com.au>) web pages for updates.

Bioenergy Australia Membership

Bioenergy Australia has for the past nine years engaged its membership on a three year cycle. This is mainly to underpin Australia's participation in IEA Bioenergy, which is similarly a three year rolling commitment. Memberships for the period July 2006-June 2009 are currently being confirmed. Bioenergy Australia wishes to further expand its membership and invites interested organisations to contact the Bioenergy Australia Manager, Dr Stephen Schuck on tel/fax (02) 9416 9246 or email: sschuck@bigpond.net.au if your organisation is interested in joining this bioenergy forum. Bioenergy Australia has specifically set up a membership tier to cater for universities and for organisations with an annual turnover of less than \$2 million per annum.

IEA Bioenergy Participation by Australia

Bioenergy Australia is the vehicle for Australia's participation in the International Energy Agency's (IEA) Bioenergy program. Bioenergy Australia is providing Australia's annual membership fees and other support for five Tasks, in which it is participating:

- Task 30 - *Short Rotation Crops for Bioenergy Systems*
- Task 31 - *Biomass Production for Energy from Sustainable Forestry*
- Task 32 - *Biomass Combustion & Co-firing*

- Task 36 - *Energy from Integrated Solid Waste Management Systems*
- Task 38 - *Greenhouse Gas Balances of Biomass & Bioenergy Systems*

Subgroups from the Bioenergy Australia membership have formed to participate in these Tasks, with each Task selecting a National Team Leader (NTL) to co-ordinate involvement.

Should you or your organisation wish to obtain information on IEA Bioenergy or on participation in IEA Bioenergy Tasks, please contact Steve Schuck, the Bioenergy Australia Manager and Australia's representative on the Executive Committee of IEA Bioenergy. Tel/Fax: 02 9416 9246, or email: sschuck@bigpond.net.au. IEA Bioenergy Task information and the latest IEA Bioenergy newsletter are available from <http://www.ieabioenergy.com>.

IEA Bioenergy Meetings

Task 30 – *Short Rotation crops for Bioenergy Systems* is to hold its next workshop in Oxford, UK during the week commencing 18 September 2006. Brendan George, the Task 30 National Team Leader is planning to attend this meeting. The Web site for Task 30 is <http://www.shortrotationcrops.com>.

Task 31 – *Biomass Production for Energy from Sustainable Forestry* will be holding its next workshop *Biofuels and Bioenergy: Challenges and Opportunities*, in Vancouver, Canada, 28 August to 1 September 2006. This will be organised jointly by Tasks 29, 31 and 39 of the IEA Bioenergy program, with the workshop co-hosted by the University of British Columbia's Faculty of Forestry. Task 31 is planning an optional 2-3 day field study tour immediately prior to the start of the workshop to enable participants to visit the mountain pine beetle outbreak area and to view the diverse range of landscapes and ecosystems between the central interior and the coast of British Columbia. This tour is planned to start in Prince George in central British Columbia and end in Vancouver. The new URL for Task 31 is: <http://www.ieabioenergytask31.org>.

Task 32 – *Biomass Combustion and Co-firing* – held its most recent meeting in conjunction with the World Bioenergy Conference and Exhibition in Jönköping, Sweden on 30 May to 1 June 2006. Steve Schuck attended this meeting. Further information is available from <http://www.ieabcc.nl/>. The next Task 32 meeting with the theme 'Corrosion and Deposit Formation' and will be held in Glasgow, Scotland from 18-21 September 2006.

Task 36 – *Energy from Integrated Solid Waste Management Systems* held its most recent half yearly meeting in Amsterdam in June 2006. This was attended by Mark Glover, the National Task Leader for Task 36. The Task 36, Topic 1, Stage 1&2 report on linking extended producer responsibility to energy-from-waste is now on the Web at: <http://www.wmaa.asn.au/efw/task36.pdf>.

Task 38 – *Greenhouse Gas Balances of Biomass and Bioenergy Systems* held a combined workshop entitled *Greenhouse Gas Credits Trade Versus Biomass Trade – Weighing the Benefits* with IEA Bioenergy Task 40 (International Trade in Biomass), 5-6 April 2006 in Trondheim, Norway. This was attended by Annette Cowie, National Team Leader for this Task.

ExCo 56 (Executive Committee meeting) was held in Paris, France from 17-19 May, attended by Steve Schuck. Much of the agenda related to the Tasks on offer from January 2007 till December 2009. The next ExCo meeting is scheduled to be held in Stockholm, Sweden from 3-5 October, where Task participation for the next triennium will be confirmed.

Renewable Energy Development Initiative: Round Three Opens

The *Renewable Energy Development Initiative* (REDI) is a \$100 million, competitive merit-based grants program supporting renewable energy innovation and related early stage commercialisation. Grant offers range between \$50,000 and \$5 million for research and development, proof-of-concept, and early-stage commercialisation projects with high commercial and greenhouse gas abatement potential. Projects applications are invited from the biomass, solar, wind, geothermal, hydro and ocean energy sectors.

The *Renewable Energy Development Initiative* has to date delivered grants in excess of \$33 million to 16 Australian companies nationwide. AusIndustry, the Australian Government's business program delivery division in the Department of Industry, Tourism and Resources, delivers the program.

Applications for Round Three of REDI close on 13 September 2006 at 5pm (Australian Eastern Standard Time). For further information about the Renewable Energy Development Initiative see: <http://www.ausindustry.gov.au>.

House of Representatives Inquiry into Geosequestration of Greenhouse Gases

The House of Representatives Science and Innovation Committee has announced a new inquiry into the potential management of greenhouse gases using the process of geosequestration, which is the capturing of carbon dioxide emissions and storing them underground.

Geosequestration involves the injection of compressed CO₂ underground into geological formations including oil and gas fields and deep saline formations. The Minister for Education, Science and Training, Julie Bishop, has requested that the Committee inquire into and report on the science and application of geosequestration technology in Australia, with particular reference to:

- The science underpinning geosequestration technology
- The potential environmental and economic benefits and risks of such technology
- The skill base in Australia to advance the science of geosequestration technology
- Regulatory and approval issues governing geosequestration technology and trials; and
- How to best position Australian industry to capture possible market applications.

Interested persons and organisations are invited to make written submissions to the inquiry by **Friday 18 August 2006**, after which the Committee will hold public hearings. Further details, including the terms of reference, membership of the Committee and advice on making submissions can be obtained on the Committee's website at <http://www.aph.gov.au/house/committee/scin/index.htm> or by contacting the committee secretariat on (02) 6277 4150, Email: scin.reps@aph.gov.au.

APEC Biofuels Task Force

The Asia-Pacific Economic Cooperation (APEC) Energy Ministers have created a Biofuels Task Force to enable APEC member economies to better understand the potential for biofuels to displace oil in transport. The work of the task force will focus on key issues affecting the potential of biofuels, including biofuels economics, distribution infrastructure, market penetration of flex-fuel vehicles, and available biofuel resources and trade.

A set of task groups are being established to address each of these issues in more depth. The objective of each task group will be to produce an analysis covering the following specific key topics:

- Economics: the costs of producing transport fuels from different forms of biomass, in comparison to the projected costs of automotive fuels from oil;
- Infrastructure: infrastructure requirements for adapting fuelling stations to biofuels, the cost of meeting such requirements, and how fast adaptations should be made;
- Vehicles: practical measures for promoting flexible fuel vehicles that are biofuel capable, and how fast such vehicles can be expected to penetrate the market;
- Resources: the likely extent of biofuel resources in terms of land that might be available to cultivate crops for biofuel production and associated biofuel output; and
- Trade: the potential benefits of trade in biofuels, in view of the fact that biofuels can be produced from a variety of crops at different costs across the APEC region.

The Task Force will formulate conclusions and policy responses to be put to the APEC Energy Working Group for appropriate consideration by APEC Energy Ministers at the next APEC Energy Ministers Meeting in May 2007.

WA Rural Renewable Energy Program

The Western Australian government recently announced the introduction of the Rural Renewable Energy Program. The program provides rebates for renewable energy power systems in specific rural areas on the fringes of the South West electricity grid. The objectives of the Rural Renewable Energy Program are to:

- Reduce greenhouse gas emissions
- Help provide more effective electricity supplies for people in rural areas
- Assist in developing the Australian renewable energy industry
- Assist development in regional areas
- Raise awareness of renewable energy and the value of distributed generation.

The program will support distributed, small-scale renewable energy systems that generate electricity close to where it is needed, rather than transmitting electricity over long distances from centralized power generation sources. Rebates of up to 50 percent of the capital cost of eligible renewable energy systems are available through the program, which is divided into two components: one targeting small systems (500W to 30kW) and another targeting medium sized systems (30kW to 2MW). Rebates applications for small systems will be made on a first in, first served basis, while medium sized applications will be assessed through competitive funding rounds.

Applications will soon be requested for the first funding round for medium projects. Parties interested in making an application are asked to please provide their name and email address to sedo@energy.wa.gov.au or contact Rebecca Driscoll on (08) 9420 5606.

SA Climate Change and Greenhouse Emissions Reduction Bill

The South Australian government has launched legislation to enforce reduction targets to greenhouse gas emissions, with the legislation proposing to commit the state to reducing emissions by over 60 percent of the 1990s level by 2050. The *Climate Change and Greenhouse Emissions Reduction Bill* has been released for public consultation. The bill will commit South Australia to increasing the use of green power to 20 percent by 2014, which is five percent higher than the voluntary target set down in South Australia's Strategic Plan.

The legislation, the first of its kind in Australia, commits the government to develop policy initiatives and interim targets to reach the 60 percent emissions target, and the draft bill has been released for three months of public consultation before its parliamentary introduction.

The full text of the bill is available from

http://www.climatechange.sa.gov.au/PDFs/FINAL_Bill.pdf.

Biofuels Development in the Red Meat Industry

Meat & Livestock Australia, Midfield Meat International, Australian Meat Processors' Corporation and Sustainability Victoria have launched an initiative designed to produce biodiesel from tallow (animal fat). The project, being developed at Midfield Meats in Warnambool, Victoria, is funded by the red meat industry and has the potential to produce over 10 million litres of biodiesel from animal fat every year. This biodiesel will be sold on the open market as well as being used to fuel Midfield's own transport fleet.

Meat & Livestock Australia's Environment Manager, Dr Stewart McGlashan, said that biodiesel had been established as a proven fuel with a favourable emission profile. He also stated that not only is it becoming increasingly important to manage natural resources, but to build the environmentally friendly, but still competitive, red meat industry. Meat and Livestock Australia view this initiative as a significant step towards achieving these environmental goals within a globally competitive framework.

The Victorian government, through Sustainability Victoria's *Business Energy Efficiency Initiative*, provided a \$66,000 partner grant for the project. The Midfield Meat Group operates one of the largest red meat processing plants in Australia as well as a rendering plant, a pastoral company and a transport business. The Midfield Meat Group is also reviewing the viability of developing a cogeneration plant to power the abattoir.

BP Australia Embraces Biofuels

BP Australia has announced a boost to biofuels, announcing it will invest in refining and distribution infrastructure and secure product to enable biofuels to play a role in future Australian petroleum supplies.

BP's initiatives include investment to allow production, at Brisbane's Bulwer Refinery, of 110 million litres per annum of a biomass based synthetic diesel, through new technology, with fuel coming to market from 2007. Biomass feedstock for this process has been secured through a tallow supply contract from Colyer Fehr Tallow.

BP has also signed a memorandum of understanding with Primary Energy to purchase the entire output from a new ethanol plant to be constructed by Primary Energy in Kwinana, Western Australia, which will be sold as E10. The E10 fuel blended in Western Australia will be sold in Perth and to other suppliers in Western Australia from 2008. The Kwinana plant will also generate renewable electricity from biomass as an integral part of its process. Together, the renewable fuel and electricity will result in a reduction in greenhouse gases to the order of 200,000 tonnes per annum. BP has now sold more than 20 million litres of E10 in Australia.

For further information see: <http://www.bp.com.au>.

Queensland Biodiesel Production Facilities

Eco Tech Holdings Australia, a joint venture between Bioenergy Australia member Gull Petroleum and a group of investors has constructed a 75 million litres per annum biodiesel facility at Narangba, 38 km north of Brisbane. More recently Gull Petroleum has acquired full ownership of the plant. Production of biodiesel has commenced, with a significant amount of product already forward sold. The plant is based on proven European technology. The facility uses tallow as the main feedstock. However the plant has the ability to use a wide range of feedstocks, including vegetable oils, used cooking oils and fats, and tallow. The Queensland government's *Investment Action Unit* has provided assistance to this project.

Coincidentally, the Australian Biodiesel Group has also established a 160 million litres per annum biodiesel plant at Narangba. This plant is currently ramping up production, using mainly canola oil.

Queensland Company Announces China Energy Deal

In a deal reported to be worth over \$500 million, Brisbane-based company, Pulse Energy, has signed an agreement to invest \$160 million to build 11 biomass power stations in China, starting mid 2006. Pulse has also secured fuel supply contracts that will facilitate at least 30 more power stations, at an investment of \$420 million, over the next three to five years. The project, which uses CSIRO technology, utilises sugar cane biomass to efficiently produce power. Pulse views the project as a platform for future growth in the region and is actively seeking new projects worldwide. Pulse is currently working on projects in Cuba, Mexico, the Caribbean, the Pacific and China.

Biofuels in Western Australia

Two new biodiesel plants, an ethanol plant and a multi-million dollar contract for a Western Australian engineering firm to fabricate a transportable biofuels plant have recently contributed to Western Australia's emerging biofuels industry.

Gull Petroleum is to construct a biodiesel plant at its existing Kwinana facility. The plant, expected to be completed in November 2007, will produce 38 million litres of biodiesel per annum, and will be sold as B20 blended product at Gull service stations. In addition to the new plant, Gull recently became the first fuel retailer in Western Australia to offer biodiesel at the bowser.

Australian Renewable Fuels' 44 million litre per annum biodiesel plant at Picton, WA is also nearing completion. BP recently announced that it will join forces with Primary Energy Pty Ltd to establish Australia's first wheat-based ethanol plant at Kwinana. The \$100 million project will result in the production of 80 million litres of ethanol a year which is enough to potentially blend as 10 percent ethanol in all the petrol used by WA motorists each year.

Western Australian engineering firm, AGC, recently won an \$11 million contract to fabricate a mobile biofuels plant for Natural Fuel Australia's biodiesel facility in Darwin. The plant, which should be completed by September this year, will produce approximately 105,000 tonnes of biodiesel per annum.

Enecon Enters into Licence Agreement with Dynamotive for Bio-Oil

Bioenergy Australia member, Enecon, has entered into a licence agreement with the Canadian Dynamotive Energy Systems Corporation, forming a company Enecon Pyrolysis Pty Ltd (EPPL) to commercialise bio-oil production and use in Australia. Enecon Pyrolysis Pty Ltd has been established to take on a dedicated role in the commercialisation of biomass pyrolysis in Australia. EPPL will market Dynamotive's technology and develop and operate facilities in Australia. Dynamotive will receive a fee for the master license, and license fees for each plant developed, as well as output royalties. See <http://www.dynamotive.com>.

For further information contact Colin Stucley, Tel (03) 9817 6255.

Biofacts

- According to US Agriculture Department projections, the amount of United States' corn used for ethanol, estimated at 2.15 billion bushels this year, will amount to approximately 20 percent of the nation's entire crop.
 - Biomethane powers more than 8,000 transit buses, garbage trucks, and 10 different models of passenger cars in Sweden. Sweden has more than 25 biomethane production facilities and 65 biomethane filling stations.
 - In the EU, biodiesel production increased from 1.9 Mt in 2002 to 3.8 Mt in 2005. Production capacity is expected to continue to increase to 4.5 Mt in 2006 and 5.3 Mt in 2007.
 - Life Cycle Analyses (LCAs) that have been carried out for biodiesel indicate that its use in road transport can achieve a considerable reduction in CO₂ emissions. Most scenarios predict a reduction of 3.24 kg CO₂/litre of biodiesel.
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Biomass on the Internet

The Internet provides a valuable source of information on biomass and allied topics. Below are some Internet addresses to supplement the 1,300 odd addresses given in the previous 26 issues of the Bioenergy Australia newsletters. These lists are consolidated as electronic links on Bioenergy Australia's web page at <http://www.bioenergyaustralia.org>. Recently these links have been converted into an Excel file to allow interested persons to download the file and work with it off-line.

Biodiesel Magazine (BBI International Media)

<http://www.BiodieselMagazine.com>

EU Bio-based economy

<http://www.bio-economy.net/>

Bioenergy lists

<http://bioenergylists.org/en>

Biofuels for Transportation: Selected Trends and Facts, World Watch Institute

<http://www.worldwatch.org/node/4081>

Ethanol Technologies Ltd (Russell Reeves)

<http://www.ethtec.com.au>

Sustainable Palm Oil program

<http://www.sustainable-palmoil.org/>

BioPact (Pact between EU and African countries on bioenergy)

<http://www.biopact.com/>

Bioenergy Atlas

http://www.brs.gov.au/bioenergy_atlas
Oregon Department of Energy, "Biomass Energy: Cost of Production"
<http://www.energy.state.or.us/biomass/Cost.htm>
Environmental Network (UNSW)
<http://www.en.unsw.edu.au/>
Heuristic Engineering
<http://www.heuristicengineering.com/>
Fischer Tropsch Synthetic Fuels
<http://www.fischer-tropsch.org/>
The Use of Biomass for Power Generation in the U.S. (Report)
http://www.researchreportsintl.com/products/product.cfm?report_ID=89
Bio-Mass to Bio-Gas
http://www.clean-air.org/Ed%20Burton%20Story/wood_chips_to_bio.htm
Construction of a Simplified Wood Gas
<http://www.gengas.nu/byggbes/index.shtml>
Southern Cross Agricultural Developments (AD and gasification project in China)
<http://www.scadev.net>
Biomass Development (Florida, USA)
<http://www.biomassdev.com>
Dyadic International (biotech for ethanol production)
<http://www.dyadic-group.com>
ECN Tar Dewpoint site
<http://www.thersites.nl/completemodel.aspx>
JF Waste Energy Systems
<http://www.jfwasteenergysystems.com>
Syntec Biofuel
<http://www.syntecbiofuel.com>
Koolfuel (John Strawson: presenter at 2003 conference)
<http://www.koolfuel.co.uk>
Bocchino Technologies (Biogas)
<http://www.bocchtech.com/>
Chiptec Wood Energy Systems
<http://www.chiptec.com>
European Waste Gasification presentation
http://www.gasification.org/Docs/2002_Papers/GTC02020.pdf
Mother Earth News Gasifier
<http://www.velocity.net/~jeff0124>
Ethanol Boost
<http://www.ethanolboost.com>
GreenFuel Technologies Corporation
<http://www.greenfuelonline.com>
CNIM (waste to energy plants in Europe)
<http://www.cnim.com>
Encyclopedia for Life Systems (UNESCO)
<http://www.eolss.net>
Ethanol Producer Magazine
<http://www.ethanolproducer.com>
Energy Power Resources (UK bioenergy company)
<http://www.eprl.co.uk/index.html>
US Bioenergy
<http://www.usbioenergy.net>
GreatPoint Energy (Methanol)
<http://www.greatpointenergy.com/>
Is Ethanol Sustainable?
<http://www.green-trust.org/2005/07/is-ethanol-sustainable.html>

Biomass gasifier power motor car
<http://freeweb.deltha.hu/zastava.in.hu/wood-gas.htm>

Australian Environmental Industry Directory
<http://www.aeid.com.au>

Dimethyl Ether (liquid biofuel)
<http://www.aboutdme.org>

GasNet Newsletter
<http://www.gasnet.uk.net>

Mission Biofuels
<http://www.missionbiofuels.com.au>

Biodiesel motorbikes
http://journeytoforever.org/biodiesel_bikes.html

Bioenergy Stoves list
<http://www.bioenergylists.org>

Low-cost Wood-gas stove
<http://e-woodgasstove.blogspot.com/>

Renewable Energy Source
<http://renewable-energy-source.info/biofuel.htm>

Alpha Type Stirling Engine
<http://mitglied.lycos.de/PeterFette/english.htm>

Biomass Initiative website and newsletter (US)
<http://www.biomass.govtools.us>

Biomass co-firing at a pulverized coal power plant in Florida
<http://www.treepower.org/cofiring/LakelandElectricCofiring.pdf>

Biomass co-firing at an IGCC plant
<http://www.treepower.org/TECO/polk-cofiring-testburn.pdf>

Wood Pellet Energy
<http://www.coedcymru.org.uk/woodpelletenergy.html>

Advanced Biorefinery Inc.
<http://www.advancedbiorefinery.ca>

Biofuels Initiative
<http://www.unctad.org>

Power Energy Fuels
<http://www.powerenergy.com>

Power Technology
<http://www.power-technology.com>

Pure Vision Technology
<http://www.PureVisionTechnology.com>

ThermalNet (Europe)
<http://thermalnet.co.uk>

Biomass Initiative website (US)
<http://www.biomass.govtools.us>

Organic Resource Technology Ltd (DiCom)
<http://www.bioconversion.com.au/>

Algae for transportation fuel
<http://changethis.com/9.biodiesel>

Renewable Energy Development Initiative
http://www.fims.com.au/sb/bulletins/REDI_July_Web.htm

Pellet screw press
<http://www.heatloginc.com/>

Adsorption Refrigeration
<http://www.dyrefrigeration.com>

Biodiesel and your vehicle
http://journeytoforever.org/biodiesel_vehicle.html

International Developments

Crisis Distillation of Wine to Ethanol in Europe

After approval from the European Commission's Wine Management Committee, France, Italy, Greece and Spain have been given permission to convert 6.4 million hectolitres of wine into industrial alcohol or biofuel. The conversion plans are in response to Europe's growing 'wine lake', as Europeans are drinking more wine from non-European countries, such as Chile and Australia.

The Wine Management Committee has agreed to pay €1.914 (\$3.22) per % vol per hl for table wine and €3.00 (\$5.04) per % vol per hl for quality wine. The raw alcohol resulting from the distillation can only be used for industrial purposes or as biofuel in order not to disturb the market for potable alcohol. The total distillation process will cost the EC up to €153.2 (\$257.5) million.

Lancashire Waste Partnership Announced with Australian Company

GRD Limited, an Australian engineering and development company, has announced that its subsidiary, Global Renewables, has moved towards financial closure of £340 (\$837.3) million of direct capital investment and a total contract value of over £2 (\$5) billion between itself and the Lancashire County Council and Blackpool Council. The contract specifies that Global Renewables will design, install and operate an integrated network of waste management facilities for sorting, recycling, mechanical and biological treatment, and composting of household waste. The network will be for 765,000 tonnes capacity (600,000 tonnes per year processing capacity). This contract represents one of the largest and most significant public finance initiatives (PFI) contracts to be awarded in the United Kingdom. Global Renewables has been behind a plant using similar technology at Eastern Creek, on Sydney's western outskirts.

A European Road Map for Biofuels

Seven European institutes, cooperating in a project named 'REFUEL' have developed an integral strategy for biofuels in Europe until 2030. The project, which has a duration of two years, is financed by the European Commission's Intelligent Energy Europe program and is managed by ECN Policy Studies. The project consortium consists of the ECN Energy Research Institute (The Netherlands), the Copernicus Institute (The Netherlands), International Institute of Applied Systems Analysis (Austria), Chalmers University of Technology (Sweden), COWI (Denmark), Instytut Energetyki Odnawialnej (Poland) and Joanneum Research (Austria).

The developing biofuels market is currently experiencing a boom, however longer-term uncertainties remain. The uncertainties include: what can be expected from the current generation of biofuels? When and under what conditions will the second generation of biofuels make its breakthrough? Further, which policy measures can be applied to start the desired developments, what are their consequences and what is the desired time frame?

Refuel hopes to provide a plan for these questions by focusing on:

- The biomass potential in the EU, given the developments in agricultural productivity and developments in other land-consuming sectors such as food production, forestry and environment conservation.
- The cost developments in various biofuel chains and the biofuel mix with the lowest

- cost, given a significant but achievable long-term target level for biofuels.
- The impact of the implementation of these fuels on the net emission of greenhouse gases, the European energy supply security, shifts in overall energy management, effects on the costs of feedstock, socio-economic effects and other environmental effects.
- The conditions under which market parties will develop the desired fuel chains, possible implementation barriers and solutions.
- An accompanying trajectory of European and national policy to support these developments.

The biofuels roadmap focuses on the variety of complementary techno-economic market models that will be applied that will generate the following, more detailed direct outcomes:

- A spatially detailed REFUEL land resources database for EU25+ (EU25 plus Romania, Bulgaria, Croatia, Ukraine, Norway and Switzerland)
- A detailed long-term assessment of technical and economic biomass production potentials for the EU25+, incorporating economic factors, land-use, energy and agricultural policy in a coherent manner
- An analysis of key drivers and barriers for developing and exploiting biomass production potentials for biofuels
- An assessment of the impact of the biofuels target on biomass production schemes
- Costs and potentials for conventional and advanced biofuels and the required market structure and supply chain
- A socio-economic cost-benefit analysis for biofuels and a corresponding methodology
- A review of current EU25 biofuels policies, their drivers and effectiveness
- Dissemination, closely focused on relevant policy makers and market actors, and differentiated for various target audiences. For example: a website and REFUEL project folders.

Similar to the VIEWLS (<http://www.viewls.org/>) project, which is the predecessor of the REFUEL project, the consortium wishes to exchange information with market parties and other stakeholders. For this purpose, <http://www.refuel.eu/> has been launched, where parties can register and provide feedback on used methods and data and on concept results of the project.

Source: GAVEmail newsletter

Biofuels for Transportation Report

A new report, *Biofuels for Transportation: Global Potential and Implications for Sustainable Agriculture and Energy in the 21st Century*, sponsored by the German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) and prepared by the World Watch Institute (<http://www.worldwatch.org>) provides a comprehensive assessment of the opportunities and risks associated with the large-scale international development of biofuels.

Figures cited in the report reveal that biofuels could provide 37 percent of U.S. transport fuel within the next 25 years, and up to 75 percent if automobile fuel economy doubles. Biofuels could replace 20–30 percent of the oil used in European Union countries during the same time frame. The report includes information from existing country studies on biofuel use in Brazil, China, Germany, India, and Tanzania. The 37 page extended summary of the report is at: <http://www.worldwatch.org/node/4078>

Biodiesel from Algae

Aquaflow Bionomic Corporation, based in Marlborough, New Zealand, has produced its first sample of biodiesel fuel using algae sourced from sewerage ponds. In what is believed to be the first such biodiesel sample in the world, the breakthrough came after Aquaflow conducted a pilot project to extract algae from its excess pond discharge.

By using the waste product, Aquaflow process can create biodiesel and remove a problem for sewage treatment bodies. While the technology has not been made public, the process involves processing the algae pulp before extracting lipid oil, which is then turned into biodiesel.

When blended with conventional mineral diesel, the biodiesel can run vehicles without the need for vehicle modifications. The biodiesel should also help meet the New Zealand government's 5 percent blended fuels target by 2008, moving to a 20 percent as biofuel production increases.

Aquaflow's next step is to increase the production from its new technology and test the product in a range of diesel engines. It has applied for funding for further R&D from the NZ Foundation for Research, Science and Technology.

For further information contact Barrie Leay, Email: barrie@actrix.co.nz of Aquaflow Bionomic Corporation Ltd.

Forthcoming Events

- *International Workshop on Biomass Gasification Principle and Its Application*, 1-20 August 2006. Yingkou, China Ministry of Science and Technology and Liaoning Institute of Energy Resources(LIER), Liaoning Province, Peoples Republic of China. http://www.repp.org/discussiongroups/resources/gasification/China/Workshop_2006.pdf
- UNSW Centre for Energy and Environmental Markets is presenting three 1-day short courses on *Emissions Trading and the Clean Development Mechanism*, 14-16 August 2006, UNSW, Sydney. For more information please contact Dr Rob Passey on 02 9385 4061 or r.passey@unsw.edu.au.
- *Tropical Crop Biotechnology Conference 2006*: 16-19 August 2006, Cairns International Hotel, Cairns, Queensland. Web: <http://www.tcbc2006.com.au>.
- *World Renewable Energy Congress*, 19-26 August 2006. Florence, Italy. Web: <http://www.wrenuk.co.uk/downloads/WRECix1stcall.pdf>.
- *International Alternative Transport Energies Conference*, 10-13 September 2006, Perth, Western Australia. Web: <http://www.dpi.wa.gov.au/STEPconference>.
- *Ethanol: Finance and Investment*, 11-13 September 2006, New York, USA. Web: <http://www.infocastinc.com/ethanol.html>.
- *International Distillers Grain Conference and Trade Show, Educating and Empowering End Users*, 12-14 September 2006, Minneapolis, USA. Web: <http://www.distillersgrainsconference.com>.
- *2006 World Biofuels Symposium*, 13-15 September 2006, Beijing, China. Web: <http://www.worldbiofuelssymposium.com>.
- *44th Annual Australian New Zealand Solar Energy Society Conference*, September 13-15 2006, Canberra, Australia. Web: <http://www.anzsos.org/Conf-generic/Confnce/Solar06/conferenceindex.htm>.
- "Biological Waste Management: From Local to Global" *5th International Conference ORBIT 2006*, in Weimar, Germany. 15-17 September 2006. Call for papers and other details at <http://www.orbit2006.de>.

- *Third International Conference on Biomass for Energy*, September 18-20 2006, Kiev, Ukraine. Web: <http://www.biomass.kiev.ua/conf2006>.
- *Renewable Power Project Finance: The Tutorial*, 18-20 September 2006, San Diego, USA. Web: <http://www.infocastinc.com>.
- *RecAsh 2nd International Seminar*, from 26-28 September 2006, Karlstad, Sweden. Web: <http://www.recash.info>.
- *4th i-CIPEC Conference* (International Conference on Combustion, Incineration/Pyrolysis and Emission Control), 26-29 September 2006, Kyoto, Japan. Web sites: <http://icipec.com/index/html> and <http://www.kyoto-u.ac.jp/index-e.html>.
- *26th Energy Conservation Exhibition 2006*, 26-30 September 2006, Seoul, Korea. Web: <http://www.kemco.or.kr/energyexpo>.
- *Workshop on Sustainable Use, Supply and Production of Biomass in Africa*, 4-6 October 2006, Nairobi, Kenya. Web: http://www.iea.org/Textbase/work/workshopdetail.asp?WS_ID=253.
- *Renewable Energy 2006*, 9-13 October 2006, Makuhari Messe, Japan. Web: <http://www.re2006.org>.
- *Asia Biofuels and Expo IV*, 10-12 October 2006, Beijing, China. Tel: +01 605-323-0119 Web: <http://www.asiabiofuels.com>.
- *Energy Perspectives 2006*, Energy Supply Association conference, 10 October 2006, Canberra, Australia. Web: <http://www.esaa.com.au/>.
- *Asia Biofuels Conference & Expo IV*, 10-12 October 2006, Great Wall Sheraton Hotel, Beijing, China. Web: <http://www.asiabiofuels.com>.
- *Biodiesel Finance and Investment*, 11-13 October 2006, Millennium Hotel, Minneapolis, MN, USA, Web: <http://www.infocastinc.com/biodiesel.html>
- *International Biennial Australian Forest Growers Conference*, 22-25 October 2006, Launceston, Tasmania. Web: <http://www.conferenceplus.com.au/afg/>.
- “Climate Change and Business”, *Second International Conference on JI Projects in Ukraine*, 23-25 October 2006, Kiev, Ukraine. Web: <http://www.biomass.kiev.ua/conf2006>.
- *1st European Bioplastics Conference 2006*. 21-22 November 2006. Brussels, Belgium. Web: <http://www.european-bioplastics.org>.
- China Eco Expo, 28-30 November, Beijing, China. Web <http://www.ecoexpo.com/>.
- ‘Fuels of the Future 2006’, *4th International Conference on BioFuels*, 27-28 November 2006, Berlin, Germany. Web: http://www.bioenergie.de/BKK/2006/KdZ06_titel_engl.htm.
- *ISAF XVI*, International Symposium on Alcohol Fuels, 27-29 November 2006, Rio de Janeiro, Brazil. Web: <http://www.isaf2006.org>.
- *Bioenergy Australia 2006 Conference*, 6-7 December with conference tour on 8 December. Fremantle (Perth), Western Australia. Web sites: <http://www.bioenergyaustralia.org> and <http://www.conferenceaction.com.au>. Contacts: Dr Stephen Schuck, email: sschuck@bigpond.net.au and Emma Waygood, email: emma@conferenceaction.com.au.
- *3rd International Conference on Environmental, Cultural, Economic and Social Sustainability*, from 4-7 January 2007 at the University of Madras, Chennai, India. Web: <http://www.SustainabilityConference.com>.
- *European Pellets Conference*, 28 February 2007, Wels, Austria. Web: <http://www.wsed.at/wsed/index.php?id=1662&L=1>.
- *Wood Energy Exhibition 2007*, Orléans, France, 19-22 April 2007, Web: <http://www.boisenergie.com/>.
- ‘Biomass for Energy, Industry and Climate Protection: From Research to Market Deployment’, *15th European Biomass Conference & Exhibition*, 7-11 May 2007, Berlin, Germany. Web: www.conference-biomass.com.
- *10th International Congress on Biotechnology in the Pulp and Paper Industry*, 10-14 June 2007. Madison Wisconsin, USA. Web: http://www.bact.wisc.edu/ICBPPI_2007/
- *Bioenergy 2007*, 3-6 September 2007, Jyväskylä, Finland.

Residues

- Dr Stephen Schuck, the Bioenergy Australia Manager gave a presentation on bioenergy and opportunities for the forestry industry to the University of Sydney's Warren Centre's Manufacturing Committee on 19 July.
- Steve Schuck has provided a paper, and will be giving a presentation at the Australian Forest Growers biennial conference to be held in Tasmania, 22-25 October 2006. The presentation will cover bioenergy and opportunities for the forest industry.
- Steve Schuck attended the World Bioenergy Conference, held in Jönköping, Sweden, 20 May – 1 June. This conference was held in conjunction with the World Pellets Conference. Feedback on these events was provided at the 29 June Bioenergy Australia quarterly meeting. The Proceedings from both these World Conferences are available to members of Bioenergy Australia in electronic form.
- Steve Schuck was interviewed on the ABC TV Landline program on 19 Feb 2006. The ABC showed an 11 minute video on biogas production and use as a transport fuel, and use of other biofuels in Sweden, that was acquired from the BBC. The interview with the Bioenergy Australia Manager related to how such technologies could be deployed in Australia. A supporting article is on the ABC web site at: <http://www.abc.net.au/landline/content/2006/s1570537.htm>.
- Steve Schuck has been nominated to be on the World Renewable Energy Congress' Bioenergy Steering Committee. The conference will be held 19-25 August 2006 in Florence, Italy. See Forthcoming Events above.
- Bioenergy Australia has made a submission to the Senate's Regional and Rural Affairs and Transport Committee, which has been investigating Australia's Future Oil Supply and Alternative Transport Fuels. On 9 June the Bioenergy Australia Manager, Dr Stephen Schuck gave evidence to the Committee. This was in the form of re-inforcing the submission via a presentation and then answering questions. The Hansard from the evidence is on the Senate Web site.
- Steve Schuck is representing Bioenergy Australia on the REEEP (Renewable Energy and Energy Efficiency Program) Oceania's Interim Steering Committee. See <http://www.reeep.org>.
- Bioenergy Australia has been invited to participate on the APEC Biofuels Task Force working groups. See article above. Dr Les Edye, Dr Phil Hobson, both of Sugar Innovation and Research at QUT, and Dr Stephen Schuck have indicated they wish to be involved in the activities of the Task Force.
- The Australian Government's Low Emissions Technology Demonstration Fund's policy framework is at: <http://www.greenhouse.gov.au/demonstrationfund/framework.html>. LETDF supports the commercial demonstration of technologies that have the potential to deliver large-scale greenhouse gas emission reductions from energy use, and is designed to leverage \$1 billion in additional private sector investment.
- The State of Victoria is moving to mandate for 10 percent of the state's power to come from renewable sources by 2016. See *Our Environment, Our Future* action statement at: <http://www.dse.vic.gov.au/ourevironment-ourfuture/>.
- Bimonthly issues of the Australian Emission Trading Forum Review are available for downloading. See http://aetf.emcc.net.au/HTML/aetf_review.html.
- Brisbane based ethanol company, Global Ethanol Holdings has lodged a prospectus for an ASX float expected to occur on 21 August. The IPO is seeking \$467.3 million from institutional and professional investors. This will bring its market capitalisation to between \$890 and \$1 billion. The company forecasts net profits of \$31.6 million for 2006-07 on total revenues of \$332 million. Global Ethanol is active in the USA and announced in May plans to build a \$214 million ethanol plant in Iowa. The company owns the Lakota and Riga ethanol plants in the USA.

- Axiom Energy is set to re-issue its prospectus for Victoria's largest biodiesel plant to be located at Geelong, Victoria. An earlier prospectus which involved both a biodiesel plant and a fuels-from-waste-plastic business was withdrawn in August, following lodgement with ASIC, due to issues with excise on the latter mentioned fuel. See <http://www.axiomenergyltd.com.au>.
- It is the International Energy Agency's practice to offer free PDF downloads of IEA publications two calendar years after issue. A new batch has just been added to the free publications list. See http://www.iea.org/Textbase/publications/free_all.asp.
- The Ausclad group of companies has built a transportable \$11 million biodiesel plant at the Australian Marine Complex (AMC) at Henderson, WA, for the Natural Fuels Australia Limited's \$48million biodiesel facility being established in Darwin. It has been fabricated and assembled as a standalone module and will be transported to the East Arm site in Darwin.
- Global Renewables Development (GRD) announced that production at its Eastern Creek, NSW UR-3R Facility recommenced on 17 July 2006, following a fire in the composting hall in May.
- *Progress towards commercialising waste gasification: A Worldwide Status Report*, is available from http://www.gasification.org/Docs/2003_Papers/22SCHW.pdf.
- A discussion paper commissioned by the National Farmers Federation (NFF) in Australia, *Emissions Trading and the Land*, states that farmers should push to have trees on their properties in carbon trading schemes. The paper looks at the potential commercial opportunities that may be gained from such a system. The full report can be seen at <http://www.nff.org.au>.
- The Western Australia Agriculture and Food Minister, Mr Kim Chance has opened the BlueDiesel pilot plant in Welshpool in Perth. The plant uses locally developed technology and is aimed at production in regional and remote communities. It uses modular components and is claimed to have a throughput in excess of double that of a conventional biodiesel plant.
- Malaysia, the world's top producer of palm oil, plans to sell biodiesel at domestic pumps and also export it by October. It is expected to produce 120,000 tonnes of biodiesel in 2006 and 500,000 tonnes in 2007.
- The European Environment Agency has released a report on biomass, entitled *How Much Biomass Can Europe Use Without Harming the Environment*. The report is available from http://reports.eea.eu.int/briefing_2005_2/en/briefing_2_2005.pdf.
- *Outreach Support for Biomass Project Development in Florida: Value Added Metrics*, is available from <http://www.treepower.org/papers/SERBEPFinalReport2005.doc>.
- The Climate Institute has issued a report, *Top Ten Tipping Points on Climate Change*, which outlines global changes in climate change perception. The report states that Australia is lagging behind the rest of the world in such perception. The report is available from http://www.climateinstitute.org.au/cia/downloads/Tipping_Pts_Introduction.pdf.
- The first car rental company to rent out biofuel cars has opened in Los Angeles. The cars can drive between 600 and 1200 kilometers on a full tank of pure plant oil (PPO). More information on the Bio Beetle Rental Cars is available from <http://www.bio-beetle.com/>.
- The Biofuels Research Advisory Council (BIOFRAC), a high-level group on biofuels established by the European Commission, has released its draft vision report, *Biofuels in the European Union: A Vision for 2030 and Beyond*. The report outlines the current situation of biofuels and presents a long-term view on how to overcome the technical and non-technical barriers for biofuel deployment in the EU and worldwide. The report is available from http://ec.europa.eu/research/energy/pdf/biofuels_vision_2030_en.pdf.
- A report by Farrell, A.E., Plevin, R.J., Turner, B.T., Jones, A.D., O'Hare, M., & Kammen, D.M. (2006) entitled *Ethanol Can Contribute to Energy and Environmental Goals*, from Science, 311, pp506-508 is available from the Web site: <http://rael.berkeley.edu/ebamm/FarrellEthanolScience012706.pdf>.

- At its AGM on 30 June, Dynamotive announced that it had undertaken significant project development, including advancing negotiations on master licenses, plant license sales, and commercial contracts for fuel sales, in 11 countries, including Australia, Canada (British Columbia, Ontario, Nova Scotia, Saskatchewan), Ukraine, Latvia, Thailand, Switzerland, Brazil, Argentina and China.
- The Australian government has published its 2005 report, *Tracking to the Kyoto Target*, which shows 'with measures' its best estimate of meeting its Kyoto Target of 108% of 1990 emission levels by 2010. The report projects stationary energy emissions to rise to 146% from 195-285 Mt CO₂-eq, and transport emissions to rise from 62 to 94 Mt CO₂-eq or 153% of the 1990 level in 2010. The greatest contributor to Australia being able to meet its target in 2010 is due to Land Use Change that would result in the level being 34% of the 1990 figure. Total growth in emissions is projected to be 42 Mt CO₂-eq from 1990 to 2010. Electricity contributes 70% of the stationary energy emissions. Further details are at <http://www.greenhouse.gov.au/projections>.
- Carmine Bocchino of Australian Biomass is now offering free modeling for estimating projections of landfill gas production from landfills. For more information, visit: <http://www.bocchtech.com/biomass/freemodelling.html>.
- Ahouissoussi N and Wetzstein M (2002), *Life-Cycle Costs of Alternative Fuels: Is Biodiesel Cost Competitive for Urban Buses?*, US National Biodiesel Board, is available from <http://www.biodiesel.org/resources/reportsdatabase/reports/tra/tra-049.pdf>.
- Novozymes, a Danish biotech company, has announced plans to collaborate with the China Resources Alcohol Corporation (CRAC) in developing cellulose ethanol. Both parties have signed a three-year development agreement, and as an extension of this agreement, the CRAC plans to build a pilot plant for cellulose ethanol in Zhaodong, China.
- National Tree Day is 30 July 2006.
- Research Reports International has released the first edition of *The Use of Biomass for Power Generation in the US*. The report is a 90-page overview of the renewed US market interest in biomass-fueled power generation. The report provides a concise look at what is driving interest in biomass-fueled generation, the challenges faced in implementing such generation, and the current and future state of biomass-fueled generation. The full report is available from http://www.researchreportsintl.com/products/product.cfm?report_ID=89.
- The New Jersey-based NRG Energy Inc. formed a joint initiative with GreenFuel Technologies to test GreenFuel's algae bioreactor technology on NRG's coal-fueled power plant in Dunkirk, New York. Early tests suggest the process yields about 38,000 litres annually of bioethanol and a comparable amount of biodiesel per acre.
- Dyadic International reported at the *Third Annual World Congress on Industrial Biotechnology and Bioprocessing* in Toronto, Canada, that it has identified and tested highly effective enzyme mixtures for the efficient conversion of renewable cellulose biomass to ethanol. More information is available from <http://www.dyadic.com>.
- A report, *Thermodynamics of the Corn-Ethanol Biofuel Cycle* by Tad W. Patzek, is available from <http://petroleum.berkeley.edu/papers/patzek/CRPS416-Patzek-Web.pdf>.
- Friends of the Earth have produced a report, *The Oil for Ape Scandal: How Palm Oil is threatening Orang-utan survival*. The report is available from http://www.foe.co.uk/resource/reports/oil_for_ape_full.pdf.
- Germany has joined the United States and 16 other countries in the Methane to Markets Partnership, an international climate-change initiative to recover and use methane as a clean energy source. The program was launched in November 2004 as a public-private effort to encourage methane recovery projects in agriculture, coalmines, landfills and oil and gas systems. The United States will commit up to US\$53 (\$70.7) million over five years to the initiative. Australia is a participant in this program. More information is available from <http://www.epa.gov/methanetomarkets/>.
- A report on biofuels production in the European Union is at: http://www.energies-renouvelables.org/observ-er/stat_baro/observ/baro173b.pdf

- *BIOMASS: Green Energy for Europe*, a highly commended 46-page report on biomass in Europe is available from http://ec.europa.eu/research/energy/pdf/biomass_en.pdf.
- On 27 June, the US Senate Energy and Water Appropriations Subcommittee funded the Bioenergy Program (Sec. 931(c)) at its full authorisation of US\$213 (\$284) million for FY07. This is a US\$63 (\$84) million increase over the President's request and the House appropriation level, and represents a US\$123 (\$164) million increase over the FY06 funding.
- The EU Parliament has assigned two-thirds of the next seven years' energy research funding to renewables and energy efficiency. An amendment to the 7th Framework Programme as proposed by the European Council will ensure that €1.6 (\$2.69) billion out of the €2.4 (\$4) billion energy R&D funding goes to clean energies and minimizing energy use.
- The first comprehensive US analysis of the life cycles of soybean biodiesel and corn grain ethanol shows biodiesel performs better than corn ethanol. The study, conducted by the University of Minnesota, suggests soybean biodiesel has much less of an impact on the environment and a much higher net energy benefit than does corn ethanol. However, neither can do much to meet US energy demand. The study is detailed in the proceedings of the National Academy of Sciences website and is available at: <http://www.nasonline.org/>.
- Goldman Sachs, an American investment company, has announced it would invest C\$30 (\$35.3) million in Iogen, a Canadian company that produces cellulose ethanol. Iogen runs the only plant in Ottawa to manufacture cellulose ethanol, though currently this is only a demonstration project.
- The Australian Labor Party (ALP) announced that it would commit to a reduction in greenhouse gas emissions of 60 percent by 2050, should it win government at the 2007 election. The *Climate Change Blueprint* outlines the establishment of a national emissions trading system and increasing the Mandatory Renewable Energy Target to above 5 percent. The ALP has rejected nuclear power as economically inappropriate for Australia. The *Blueprint* can be downloaded from http://www.labor.com.au/download/now/climate_change_blueprint_no_6.pdf.
- The discussion paper, *Impediments to the Uptake of Renewable and Distributed Energy*, from the Federal Government's Ministerial Council on Energy is available for download from <http://www.mce.gov.au/assets/documents/mceinternet/DiscussionPaperImpedimentstoUptakeRDG20060222140112%2Epdf>.
- The British energy department has approved an energy-from-waste power station in southeast London. Riverside Resource Recovery will proceed with its 72 MW EfW facility at Belvedere, following two public inquiries that examined the application in 2003 and 2005. The station will be fueled by waste that would otherwise have to go to landfill.
- Andrew Lang of SMARTimber had an article published in the 2 July 2006 edition of *The Age*. The article was entitled *Seeing the wood from the trees*, and advocates use of forestry wastes for renewable energy. The article is available from: <http://www.theage.com.au/news/business/seeing-the-wood-waste-from-the-trees/2006/07/02/1151778811377.html>.
- *Genesis and Development of the Pilot Plant Project*, an analysis of a development of Australian ethanol from ligocellulosics is available from: <http://www.ethtec.com.au/images/genesisanddevelopmentofthepilotplantproject.pdf>.
- The Offer Information Statement from Australian Ethanol, which relates to producing ethanol from bagasse and cellulosic biomass, is available from http://www.ethtec.com.au/index.php?option=com_content&task=view&id=15&Itemid=28.
- The US Department of Agriculture (USDA) awarded US\$4.2 (\$5.6) million to 18 small enterprises that will use the grants to develop innovative products and renewable energy

from woody biomass from national forests. While many of the recipients are forest products company, grants were made to:

- The Cawaco Resource Conservation and Development Council, which is planning a project to co-fire biomass with coal in the Gadsden Steam Plant in Alabama
- Big Valley Power, a biomass power plant in Redding, California
- The Montana Community Development Corporation, which has been experimenting with using wood waste from logging operation to fuel a boiler at a paper mill
- Nevada's Lake Tahoe Unified School District, which plans to fuel a cogeneration system with biomass fuel
- Mount Taylor Machine, a New Mexico company that makes fuel for pellet stoves
- The town of Red River, New Mexico, which plans to ship wood chips from forest thinning to a biomass power plant.

According to the USDA the grant program improves forest health, and reduces the risk of fires, by removing built-up fuel hazards.

- Arnold Schwarzenegger, the Governor of California, released an Executive Order (S-06-06), setting targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources. The Order requires that the state produces a minimum 20% of its biofuels within California by 2010, 40% by 2020, and 75% by 2050, and that in electricity generation, the state meet a 20% target within the currently established state goals for renewable generation for 2010 and 2020. The full text of the order is available from <http://gov.ca.gov/index.php/executive-order/183/>.
- The International Energy Agency (IEA) has released *Renewables in Global Energy Supply*. The fact sheet provides data that show of the 13.3% of energy from renewable sources, combustible and waste provide 10.6% and hydro is 2.2% TPES. Renewables are the third largest contributor to global electricity production and accounted for 18% of production in 2003, after coal (40%) and natural gas (19%); the energy output from combustible renewables was 6%. The IEA's latest *World Energy Outlook* states that the supply of renewables will increase by 1.8% per annum from 1,400 Mtoe (million tonnes oil equivalent) in 2003 to 2,300 Mtoe in 2030, an increase of more than 60%. The fact sheet is available from http://iea.org/Textbase/Papers/2006/renewable_factsheet.pdf.
- Scottish renewable energy venture, Eco2, has received £100 (\$246) million to develop a portfolio of projects from renewable energy investor, Englefield Capital. The initial phase will involve financing of the 12.3 MW Dummie wind farm in Aberdeenshire and a 13.8 MW biomass power plant in Port Talbot. Scottish Power has signed a 15-year power purchase agreement for the output.
- Leading automobile manufacturers and fuel suppliers have laid out their vision of sustainable mobility in Europe, and have launched the Alliance for Synthetic Fuels in Europe (ASFE) at a recent conference in Brussels. Those present were DaimlerChrysler, Renault, Royal Dutch Shell, Sasol Chevron and the Volkswagen group, and they addressed the strategic role of synthetic fuels in tackling today's energy challenges. Synthetic fuels are a new generation of near zero sulfur and aromatics transport fuels made with the Fischer Tropsch process from natural gas (GTL), coal (CTL) or biomass (BTL). Of the three processes, GTL is the most commercially advanced and offers practical alternative fuel today. BTL needs further R&D investment but has the potential to use domestic resources in Europe.
- Based on recent results in Germany, there seems to be an enormous opportunity to develop biogas for centralized heat and power in the temperate world using energy crops. The Ontario Ministry for Agriculture, Food and Rural Affairs has an 81-slide presentation available from http://www.omafra.gov.on.ca/english/engineer/facts/bg_pres4.pdf.
- The South African government is considering introducing biodiesel as a separate grade of fuel. Currently, South Africa has a policy that allows a 5% voluntary blending of biofuels into the fuel mix, but supply constraints hamper this policy. Muzi Mkhize, the Department of Minerals and Energy (DME) director for petroleum and gas industry, has

stated that the government might assess it on a regional supply basis. In addition to this, the DME is currently reviewing the 2003 *Petroleum Products Amendment Act*, which would influence the industry's specification and standards.

- The Renewable Fuels Association (RFA) announced that the US ethanol industry set annual production records in 2005, producing just less than 14.78 billion litres and averaging 255,000 barrels of ethanol per day (b/d). December, 2005 also set production and demand records, with production reaching 280,000 b/d, and demand skyrocketed to 310,000 b/d. Currently 95 ethanol plants have a combined production capacity of more than 16.28 billion litres a year. There are 34 ethanol plants and nine expansions under construction with a combined capacity of more than 7.95 million litres.
- The US Department of Agriculture (USDA) will provide US\$176.5 (\$234.9) in loan guarantees and US\$11.4 (\$15.2) million in grants to support investments in renewable energies and energy efficiency by agricultural producers and small businesses. The grants come as part of the Biofuels Initiative announced by George W Bush, which will promote the use of non-food-based biomass such as agricultural waste, trees, forest residues and perennial grasses to meet green fuel, green power and green heat applications. (Source: Refocus Weekly)
- Chevron will invest US\$12 (\$16) million dollars over the next five years in researching biofuels based on cellulose and hydrogen. The company will work together with the Georgia Institute of Technology, and the collective research program will focus on commercially interesting production methods for cellulose-based biofuels. More information is available from <http://www.chevron.com/news/press/2006/2006-06-15.asp>.
- BP has announced an investment of US\$500 (\$665.9) million over the next ten years in a research centre, the Energy Bioscience Institute. The Institute will concentrate on developing new biofuels and improving the efficiency and flexibility of ethanol and biodiesel. Researchers are also working on converting a greater percentage of the biomass in fuel, and on developing crops that supply more energy and grow on land that is not suitable for food production.
- The German Agency of Renewable Resources is currently involved in a €8 (\$13.5) million dollar promotional campaign specifically devoted for the cultivation of energy plants for biogas production facilities.
- *Energy for Sustainable Development (ESD)* has just published two special issues in 2006. The March issue, edited by Andre Faaij, concentrated on bioenergy trade, and the June issue, edited by Eric Larson, Anjali Shanker and Thomas B. Johansson, concentrates on biofuels for transport. More information can be found at the *ESD* website: <http://www.ieiglobal.org/esd.html>.
- The Asian Institute of Technology in Bangkok, Thailand recently completed a review on biomass gasification. The review also contains a directory of gasification research projects. A hard copy of the review is available from the publisher, Regional Energy Resources Information Center (RERIC), Bangkok, by paying postage and handling costs. Interested parties should contact RERIC on: enreric@ait.ac.th.
- The Ontario Ministry for Agriculture, Food and Rural Affairs has a fact sheet, *Biogas Opportunities Pathways and Wrong Tracks to Success*, on integrating biogas systems based on manure and energy crops to integrate with corn ethanol plants. The fact sheet is available from http://www.omafra.gov.on.ca/english/engineer/facts/bg_pres4.pdf.
- BP recently became the first fully integrated energy company to join the Biotechnology Industry Organisation (BIO). As a member, BP will become an active participant in BIO's renewable energy and sustainable industry projects.
- BP and DuPont have announced their partnership to develop, produce and market a next generation of biofuels to help meet increasing global demand for renewable transport fuels. Both companies plan to address increased market penetration, which involves compatibility with existing fuel supply and distribution systems, the ability to blend in higher concentrations without requiring vehicle modifications, and fuel economy.

The first product to market will be biobutanol, which will be introduced in 2007 as a gasoline bio-component in the UK, where BP and DuPont are working with British Sugar to convert the country's first ethanol fermentation facility.

- Kwikpower International has acquired Advanced Biofuel Technologies, a wholly owned subsidiary of UTEK Corporation. Advance Biofuel Technologies holds the license to oil-producing micro algae developed at the US Department of Energy's National Renewable Energy Laboratory (NREL). The licensed technology, which is exclusive in the European Union and non-exclusive in the United States, may provide the enhanced production of biodiesel feedstocks.
- Presentations from *Climate Change, Carbon and Plants* are now available online. The briefings were conducted by the Cooperative Research Centre for Greenhouse Accounting in Melbourne and Sydney in May and June 2006. The presentations are available from <http://www.greenhouse.crc.org.au/briefings/>.
- The Australian Securities and Investments Commission (ASIC) filed applications with the Federal Court to wind-up listed Sydney-based energy provider, Green Pacific Energy Ltd. (GPE) and Green Pacific Energy Stapylton No. 1 Pty. Ltd. (GPE Stapylton No. 1). These applications follow a formal investigation into the affairs of GPE after a surveillance review, undertaken as part of ASIC's National Insolvent Trading Program, identified concerns that the company was continuing to trade and incur debt while insolvent. Source: ASIC
- Algae BioFuels, a wholly owned subsidiary of the recently formed PetroSun Drilling, will be engaged in research and development of algae cultivation as an energy source in the production of biodiesel. The R&D and production facilities for Algae BioFuels will be based in Arizona and Australia. Extensive research is currently being conducted to determine the utilization of microalgae as an energy source, with applications being developed for biodiesel, ethanol, methanol, methane and also hydrogen. Independent studies have demonstrated that algae is capable of producing 30 times more oil per hectare than the current crops now utilized for the production of biofuels. Algae biofuel contains no sulfur, is non-toxic and highly biodegradable.
- Bev France and John K Gilbert have released a book, *A Model for Communication About Biotechnology*, which incorporates two major themes into a model for communication about biotechnology. The first is that of a communicating community, defined as a relatively coherent social group engaging in communication within itself. As biotechnologists do not constitute a unitary group, this book refers to biotechnology communities. Similarly, the broad notion of 'the public' is considered to be inadequate, and the notion of distinct public communities is used. A free PDF version of the book is available for download from <http://www.sensepublishers.com/books/btls/btls.htm#90-77874-75-5>.
- A joint venture between the Spanish company Ingemas and Agroforestal, Colombian agro-industrial company, has made a €180 (\$303) million investment in Columbia to produce biodiesel feedstock for export to Europe. The joint venture is for 90,000 hectares of land and will use local oils crops, such as Inchi, Jatropha and Sacha-Inchi. Sacha-Inchi, a native Amazonian plant, is a small, hardy bush which produces edible seeds with contain up to 55% oil, making it an excellent biodiesel feedstock crop. The project will produce up to 300,000 tons of oil, which will be exported to Europe. Ingemas and Agroforestal are currently negotiating with Manuel Del Lago, another firm, to create a "bio-terminal" on the Río Orinoco in Venezuela, from which the biodiesel feedstock can be shipped to Europe.
- Volvo has developed a prototype V70 that can run on five different fuels. The car, to be launched at the Michelin Challenge Bibendum 2006, is optimised to run on five different fuels: bioethanol, natural gas, biogas, petrol, and Hythane (a mixture of 10% hydrogen and 90% natural gas). The engine used is a modified 2.5 litre five-cylinder turbo-charged motor with a capacity of around 200hp.

- Birdlife International, in *BirdLife urges caution in biofuel drive*, addresses the destruction of biodiversity to export biofuels. The article is available from <http://www.birdlife.org/news/news/2006/02/biofuels.html>.
- Dynamotive Energy Systems Corporation has established a European joint venture with Consensus Business Group. The venture aims at accelerating development, European rollout and better servicing of the European operations of Dynamotive. Dynamotive has several projects in development in Europe, including in Latvia, Ukraine, Bulgaria, Switzerland and Germany; projects include the development of energy crops, electricity generation, bio fuel production and development of second generation fuels from biomass through reforming of bio-oil to syngas and synthetic fuels. The joint venture will be headquartered in London.
- The *BBC* reported that Brazil is scaling up their sugar cane ethanol production. Oil has to fall to US\$35 per barrel to compete with Brazilian ethanol. The article is available from <http://news.bbc.co.uk/1/hi/business/4715332.stm>.
- Peer Steinbrück, the German Finance Minister, plans to introduce new taxes on biodiesel fuel. The taxes includes a new €0.10 (\$0.17) per litre tax on biodiesel fuel, a €0.15 (\$0.25) per litre tax on biodiesel blended with conventional diesel at oil refineries, and €0.15 (\$0.25) per litre tax on other unrefined vegetable oils which vehicles use as fuel.
- A \$7 million research project, funded by the Murray-Darling Basin Commission, the Victorian Department of Sustainability and Environment, the Australian Greenhouse Office within the Department of the Environment and Heritage and Australia's Managing Climate Variability program, will investigate the impact of climate change in southeast Australia. The project will focus on the Murray-Darling Basin in particular and assess how climate change will affect the region's water supply. CSIRO and the Bureau of Meteorology, who are the other partners in the initiative, will undertake the project.

Opportunities Corner

The Bioenergy Australia Manager would like to assist and facilitate biomass and bioenergy projects and businesses by providing information and industry contacts to link project developers, resources, energy companies, sources of finance and other opportunities. If you or your organisation are interested in such assistance, please contact Steve Schuck for a free listing.

- Boiswiss, a Swiss company, is seeking Australian wood pellet producers who would like to sell their product into the European market. For more information, please contact Jamil Boukarabila, tel: +41 79 332 06 80 or email: jamil127@hotmail.com.
- Ramit Biocoal of Gujarat, India is able to offer bioenergy briquettes for sale in Australia. For more information, please contact Raxesh Chhatbar, tel: +91 2823 220 944, email: ptp@bom5.vsnl.net.in.
- The Korea Trade Centre (KOTRA), a non-profit Korean government agency, is able to offer incentives to foreign renewable energy investors, including low-interest loans, price subsidies and tax breaks. For more information, please contact Woon-Hee Cho, tel: (03) 9699 3833, email: woon.cho@bigpond.net.au.
- The China Renewable Energy Scale-up Program (CRESP), an initiative of the Chinese Government, the World Bank and the Global Environment Facility (GEF), provides assistance with the implementation of a renewable energy policy development and investment program. In Phase 1, the GEF Council has provided a US\$40.22 million grant to enable up-scale energy investments and to support provincial demonstrations. To implement, an international expert on biomass resource assessment or related fields will be employed. For more information, please contact Han Cuili, tel: +81 010 63906505, email: hancuili@cresp.org.cn.
- Sumatro Suria is seeking opportunities to export Palm Kernel Shell from Indonesia to Australia. For more information, please contact Sumatro Suria on +62-61-77813233. Email: presenting_the_futures@yahoo.com.

- Nachi Nachiappan, a Horticulture graduate from the University of Western Sydney is seeking employment in biodiesel production. Please contact Nachiappan on tel: +91 9380 574 901, email: nachi_n@hotmail.com.

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Joining this list is purely to facilitate management of the distribution of Bioenergy Australia newsletters and the annual conference notices. It will only be used for this purpose and you will not receive other emails through this list. It is intended that over time, this will be the primary way of distributing the Bioenergy Australia newsletters and conference notices. Self-subscribing will require you to take on a list password. It would be much appreciated if you would join this group! If you have any queries, please contact Steve Schuck.

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The Bioenergy Australia Newsletter is a complimentary service provided by Bioenergy Australia to stimulate interest and involvement in biomass and bioenergy in Australia. Email is the preferred way of distributing these newsletters. If you do not wish to receive future newsletters, please advise Steve Schuck.

<p>Bioenergy Australia Newsletter is interested in your organisation's bioenergy related activities. Please send all press releases, article leads, and conference announcements to Steve Schuck. Fax: (02) 9416 9246 Email: sschuck@bigpond.net.au.</p>
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<p>Editor: Dr. Stephen Schuck, Bioenergy Australia Manager</p>
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<p>Any comments, suggestions, articles and feedback are welcome. The views expressed in this newsletter are not necessarily those of the member organisations. Bioenergy Australia may be contacted at:</p>

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