



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

Newsletter

June 2010

Bioenergy Australia 2010 Conference

Australia's premier bioenergy conference, Bioenergy Australia 2010, will be held at the Novotel Manly Pacific, Sydney from 9 - 10 December, with a technical tour on 8 December.

The program will cover policies and programs, projects and project development case studies and emerging opportunities. It will consider many facets of bioenergy, including some 80+ presentations on:

- Biomass sources and supply aspects
- First and second generation liquid biofuels
- Algae and other future feedstocks
- Pyrolysis bio-oil and bio-char
- Anaerobic digestion and livestock wastes
- Energy-from-waste
- Heat and power
- Overarching aspects of bioenergy, such as life cycle emissions and sustainability.

Professor Jack Saddler from the University of British Columbia, Vancouver, Canada, Leader of IEA Bioenergy Task 39 'Commercialising Liquid Biofuels from Biomass' will provide a keynote address. Professor Saddler will also head a stream by international participants in Task 39. The conference will again this year have sessions on micro-algae co-convened with Professor Michael Borowizka of the Algae R&D Centre, Murdoch University, Western Australia.

Last year this conference was attended by 344 delegates and we expect a similar good attendance this year. The program will include a trade exhibition and technical posters and a tour to bioenergy facilities in the region.

Expressions of Interest to give presentations, posters, exhibit or sponsor are currently being sought. Please contact: Stephen Schuck, Bioenergy Australia Manager, email: sschuck@bigpond.net.au in the first instance if you are interested. Sponsorship and exhibition inquiries can also be directed to Conference Action at (02) 9431 8699. Event details will be made available at: <http://www.bioenergyaustralia.org>.

Bioenergy Australia Membership Update

The Bioenergy Australia membership now includes 86 organisations. The most recent members are Central West Catchment Management Authority, AnthroTerra Pty Ltd, E3 International Pty Ltd, Andrew Parratt and Associates, Queensland Office of Clean Energy (DEEDI), Renewdunder Pty Ltd and the Manildra Group. Bioenergy Australia wishes to further expand its membership and invites interested organisations to contact the Bioenergy Australia Manager, Dr Stephen Schuck on tel: (02) 9416 9246 or email: sschuck@bigpond.net.au if your organisation is interested in joining this government-industry bioenergy forum. Bioenergy Australia has a specific membership tier to cater for universities and for organisations with an annual turnover of less than \$2 million per annum.

Bioenergy Australia Quarterly Meeting

Bioenergy Australia holds a series of day-long meetings which have evolved into a symposium format, with invited speakers, workshops and reports on Australia's participation in IEA Bioenergy. Our most quarterly meeting was held on 23 June in Canberra with the theme of *Biorefineries*. The meeting was attended by 76 members and invitees. The presentations from this meeting are available to Members and can be downloaded from <http://www.bioenergyaustralia.org/memberslogin.html>. Topics covered at this meeting were:

- Biorefineries: Co-production of Fuels, Chemicals, Power and Materials from Biomass (Gil Garnier, APPI and Monash University)
- The Development of Biomass-based Value Chains in Australia: Scoping studies to inform future policy development. (Gillian Gregory, Department of Innovation)
- Algal Fuels Consortium Microalgal Biorefinery (Prof. Chris Franco, and Assoc Prof Wei Zhang, Flinders University)
- Biorefineries in the Sugar Industry (Les Edye, BioIndustry Partners, and QUT)
- Biorefineries Research for Australian Biomass (Peter East, CSIRO)
- Update on Federal Government Policy and Program Development (Richard Niven – Department of Resources, Energy and Tourism)
- Biomass Harvesting as an Alternative to Prescribed Burning for Fire Hazard Reduction (Liz Hamilton, Vic DPI)
- Racecourse Sugar Mill Bioenergy Project (Graham Lowry, AE&E Australia)
- The Clean Energy Council's Bioenergy Industry Report (Steve Schuck)
- IEA Bioenergy Updates on Task Participation:
 - Reports on ExCo 65 meeting, Japan, 12-14 May - Steve Schuck
 - Task 38 Greenhouse Gas Balances of Biomass and Bioenergy Systems - Annette Cowie
 - Task 39 Commercialising Liquid Biofuels - Les Edye
 - Task 42 Biorefineries: Co-production of Fuels, Chemicals, Power and Materials from Biomass - Gil Garnier
 - Task 43 Short Rotation Crops for Bioenergy - Brendan George
- Bioenergy Australia 2010 annual conference (Steve Schuck)
- Report on Bioenergy Industry Developments (Steve Schuck's report plus open discussion)
- Administration of Bioenergy Australia Membership status and Financial Report

The next Bioenergy Australia quarterly meeting will be held on 21 September, probably in Canberra.

Renewable Energy Future Fund

The Australian Government has announced that it will commit a further \$652.5 million over four years to establish a 'Renewable Energy Future Fund' to support Australia's response to climate change.

The Fund will provide additional support:

- for the development and deployment of large and small scale renewable energy projects
- to enhance take-up of industrial, commercial and residential energy efficiency, helping Australian businesses and households reduce their energy consumption.

The Fund will include partnerships between the Government and the private sector to make critical early stage investments to leverage private funds to support the commercialisation of renewable technologies.

This Fund will form part of the Government's expanded \$5.1 billion Clean Energy Initiative, which includes the \$2 billion Carbon Capture and Storage Flagships Program and the \$1.5 billion Solar Flagships Program announced in last year's budget.

It will also complement the existing support provided through the Government's expanded Renewable Energy Target of 20 per cent by 2020.

This additional funding brings the Government's total investments in renewable and clean energy and energy efficiency to over \$10 billion.

The Renewable Energy Future Fund will be delivered through a number of departments and agencies, with the Department of Climate Change and Energy Efficiency coordinating Fund priorities and progress.

Details of the specific commitments under the Fund will be announced shortly.

All funding resulting from the deferral of the Carbon Pollution Reduction Scheme, as well as some existing departmental funding from within the Climate Change and Energy Efficiency portfolio, will be used to offset the cost of this Fund.

Board of the Australian Centre for Renewable Energy (ACRE) Announced

The Federal Government has announced the appointment of the Board of the Australian Centre for Renewable Energy (ACRE). The Members are:

- Chair - Professor Mary O'Kane. Professor O'Kane is the NSW Chief Scientist and Scientific Engineer;
- Dr Bruce Godfrey, Chair of the Australian Solar Institute Research Advisory Committee and a member of the AusIndustry Climate Ready Committee;
- Mr Steve MacDonald, CEO of Transfield Services Infrastructure Fund and a member of the Clean Energy Council Board;
- Ms Amanda Heyworth, CEO of the Playford Capital technology seed fund;
- Dr Brian Spalding, a Commissioner of the Australian Energy Market Commission;
- Dr Beverley Ronalds, Group Executive, Energy, at the Commonwealth Scientific and Research Organisation (CSIRO) and a member of the Board of Innovation Australia; and
- Mr Richard Bolt, Secretary of the Victorian Government Department of Primary Industries.

ACRE was legislated in March 2010 to be the Australian Government's central agency for renewable energy technology research, development and demonstration programs.

Australian Energy Resource Assessment

As part of the Australian Government's Energy White Paper process, ABARE, the Department of Resources, Energy and Tourism, and Geoscience Australia have mapped and compiled a comprehensive assessment of the nation's energy resources including both renewables and non-renewables. Chapter 12 provides a substantial bioenergy contribution to the report. The full report is available for download, free of charge, at www.ga.gov.au and colour printed copies can be purchased from Geoscience Australia. The direct link to the bioenergy section, Chapter 12, is https://www.ga.gov.au/image_cache/GA16706.pdf

Support for International Renewable Energy and Energy Efficiency Initiatives

Australia is participating in international efforts to accelerate the development and deployment of both renewable energy and energy efficiency technologies to support the global response to climate change. Australia joined the International Renewable Energy Agency (IRENA) in June 2009 and has committed \$5.6 million over 4 years to support this forum.

AusBiotech to Manage Major National Biofuels Project

AusBiotech has been appointed to manage a new Federal Government project to boost research into second generation biofuels, with a \$3 million investment as part of the Super Science Education Investment Fund (EIF).

The ‘Sustainable Energy – Second Generation Biofuels Research Infrastructure EIF Project’ will be undertaken at two pilot-scale production facilities established under the National Collaborative Infrastructure Strategy (NCRIS) program, which AusBiotech also manages. AusBiotech will support the efforts of the two project participants - The Queensland University of Technology (QUT) and the South Australian Research and Development Institute (SARDI) - in the development of the facilities and be responsible for the overall management of the project.

QUT’s Mackay Renewable Biocommodities Pilot Plant (MRBPP) Facility will receive \$1.765 million to purchase infrastructure to increase the range of capabilities they are able to offer researchers developing processes for the conversion of cellulosic biomass into renewable transport fuels (bioethanol) and high-value biocommodities.

MRBPP also received \$6.8 million in funding via the NCRIS program from the Federal and Queensland governments in 2007 toward building the facility. The facility is hosted by Mackay Sugar Limited on the site of the Racecourse Mill in Mackay. In addition to sugarcane bagasse and trash which is readily available from the sugar factory, the facility will be capable of processing a wide range of biomass feedstock, sourced from partners throughout Australia.

SARDI will receive \$1.235 million to expand their NCRIS Photobioreactor Facility to include additional photobioreactors, raceway ponds and a biodiesel plant for larger scale experiments into the production of biodiesel and other high value algae-derived products. This is in addition to a \$5 million fund provided through the NCRIS Program in 2007 by the Federal and South Australian governments to establish the facility. Both facilities aim to link innovations in product and process development with the assessment of commercial viability to enhance the uptake of these technologies in Australia. The infrastructure will be available to Australian and international researchers, but Australian public-sector researchers and small companies will receive substantial discounts to access these facilities.

The management agreement between AusBiotech and the Department of Innovation, Industry, Science and Research (DIISR) will extend to 31 Dec 2011. See <http://www.ncrisbiofuels.org>.

Enhanced Renewable Energy Target Legislation Passed

The Australian Parliament passed legislation on 24 June to segregate small-scale renewable energy systems such as photovoltaic cells and domestic solar hot water systems from larger, renewable electricity systems such as wind farms and bioenergy power plants within the prevailing legislative framework. The legislation will from 1 January 2011 provide for two complementary schemes, the LRET (large-scale renewable energy target) and the SRES (small-scale renewable energy scheme) within the overall Enhanced RET. The LRET is designed to bring forward 41,000 GWh of electrical energy generation from

compliant renewable by 2020, within an overall target of 45,000 GWh per year by 2020. The overall Enhanced RET is designed to ensure that 20 percent of Australia's electricity is obtained from renewable energy sources by 2020. The media release on the passing of the legislation is at: <http://www.climatechange.gov.au/en/minister/wong/2010/media-releases/June/mr20100625.aspx>

Expanded RET modelling shows increased investment

Modelling of *Impacts of Changes to the Design of the Expanded Renewable Energy Target*, has been released by the Federal Government which shows the enhanced [Renewable Energy Target](#) (RET) is expected to drive up to \$19 billion in total investment in large-scale renewable energy generation in the period to 2030.

The Government engaged McLennan Magasanik Associates to conduct economic and electricity market modelling of the changes to the expanded Renewable Energy Target which involve splitting the RET into a Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). The modelling and analysis is designed to provide information on national and state impacts of the changes, including:

- Investment profile
- Investment cost
- Technology mix
- Electricity prices.

The full report is available at:

<http://www.climatechange.gov.au/~media/publications/renewable-energy/mma-modelling-report.ashx>

Appointment to Productivity Commission Review of Research and Development Corporations

On 12 March, Assistant Treasurer, Senator Nick Sherry, and Minister for Agriculture, Fisheries and Forestry, Tony Burke, announced the appointment of Dr Cliff Samson as Associate Commissioner to the Productivity Commission review of Rural Research and Development Corporations. The Commission will look at the way Rural Research and Development Corporations are funded and managed and examine potential overlaps and inefficiencies to ensure Australia's investment in rural research and development delivers maximum benefits for primary producers.

The Commission will hold public hearings and release a draft report for public comment, before delivering a final report to the Government in February 2011. More information is available at <http://www.pc.gov.au>.

Source: DAFF

Government to Implement 50 Percent Excise Tax Discount for Biofuels

The Australian Government has confirmed that it will progress with the long-standing plan to phase in effective excise on alternative fuels, including biofuels. This will result in biofuels receiving a 50 percent discount on excise compared to a fossil fuel with similar energy content. Effective excise will be phased in over the period beginning 1 July 2011 and ending 1 July 2015.

As part of the implementation of the energy content based taxation of all fuels originally announced in the 2003-04 Budget, the Government has announced a new staged phasing in of the regime to address the sudden loss in the relative tax advantage of domestic ethanol compared to imported ethanol that would have occurred under the policy of the previous Government. Imported ethanol will now face a more

gradual decline in excise equivalent customs duty over the transition period compared to the previously announced measure.

As a result of the 2004-05 reforms, alternative fuels, namely the biofuels, ethanol and biodiesel, and the gaseous fuels including liquefied petroleum gas, liquefied natural gas and compressed natural gas, will be brought fully into the tax system by being placed into one of the following three energy content bands:

- high (energy content greater than 30 Mega joules per litre, or per cubic metre in the case of compressed natural gas);
- medium (between 20 and 30 MJ per litre), or
- low (less than 20 MJ per litre).

At the end of the transition period, alternative fuels will benefit from a 50 percent reduction of their full energy content tax rate.

The Government has indicated that it will consult extensively with key stakeholders on the implementation details. This consultation will cover the implementation of support for the domestic ethanol industry, whether offsetting grants are the best mechanism to phase in effective excise over the transitional period for the biofuels and the gaseous fuels, and how to determine the appropriate taxation point for the gaseous fuels. The first step of this consultation is to be via a discussion paper.

Victorian Government Lends Support to Coskata Ethanol Proposal

The Victorian Government has signed a Memorandum of Understanding with a consortium consisting of Holden, Caltex Australia, Veolia, Mitsui and Coskata to investigate building a 200 million litre per year ethanol plant in Victoria based on Coskata's second generation ethanol technology. The feedstock for the plant would be household and building waste. The study is to develop the business case for the establishment of a \$400 million ethanol plant. The Victorian Government anticipates that the plant would provide a significant contribution to that state's fuel requirements, foreshadowing high levels of blending of ethanol with petrol. This was linked in the Government's announcement to Holden developing E85 flex-fuel versions of its Commodore capable of using the high-percentage ethanol fuel.

See the full media release at: <http://www.premier.vic.gov.au/newsroom/9865.html>

Victorian Funding Support for Biomass Boiler

The Victorian Government has announced \$1.8 million grant funding from the Regional Infrastructure Development Fund (RIDF) for Australian Tartaric Products in Mildura in support of a \$7.5 million waste-to-energy biomass boiler project. The project opportunity was identified using funding from the Ai Group/EPA Sustainability Covenant with Parsons Brinkerhoff undertaking an Energy/Waste Water Recovery Options Study.

The investment will see the installation of an 8MW biomass grate boiler to meet the company's their steam needs. The biomass fuel will be spent grape marc. The project will also provide electricity through the installation of two 300 kW Spilling steam engines, the same technology installed at Big River Timbers, Grafton, NSW. Australian Tartaric Products processes approximately 90,000 tonnes of waste from the region's wine industry to produce tartaric acid, with the resultant waste being the spent grape marc which is currently either sent to landfill and/or use as stock feed.

The projected outcomes from the investment are:

- Savings in energy costs of \$1.52 million per annum

- 72% (9,813 tonnes CO₂e) reduction in the company's greenhouse gas emissions
- 100% (1.85 million litres or 73,445 GJ) reduction in the use of Fuel Oils
- 69% (830 tonnes or 40,759 GJ) reduction in the use of LPG
- 43% (1,656 MWh) reduction in electricity drawn from the grid; and
- Closing of the loop on the disposal of 90,000 tonnes of waste from the region's wineries

See: <http://www.premier.vic.gov.au/newsroom/10772.html>

Queensland QSEIF Funding to Develop Sustainable Energy and Water Technologies

Project proposals are invited from Queensland organisations seeking to develop innovative technologies that reduce environmental impacts resulting from energy and water consumption.

Funding will be provided through the Queensland Sustainable Energy Innovation Fund (QSEIF), operated by the Department of Environment and Resource Management. Funding proposals will be evaluated on a competitive basis against the program guidelines.

Draft applications for QSEIF Round 14 must be received by **23rd July 2009**, with projects expected to be announced by the end of the year.

To be eligible for QSEIF funding:

- Applicants must be Queensland-based organisations.
- The main activities of the project must be undertaken within Queensland.
- Intellectual property developed in the project must belong to a Queensland-based organisation.

QSEIF funding offsets external project costs, of which a minimum 20 percent must be contributed by the applicant. Funding for any one project will generally be limited to \$200,000. Funding is not available for internal staff and overhead costs.

Payment of QSEIF funding is contingent upon achievement of project milestones.

Funding is NOT available to State or Federal government departments or to government-owned corporations.

Guidelines and further information can be obtained at <http://www.derm.qld.gov.au/qseif>, or by contacting Dr Martin Gellender Tel: 07 3330 5430.

Queensland Government Funds Biofuels Research

The Queensland Government has invested a total of \$3.6 billion in research and development and innovation, with that state having more than 30 new research institutes and more than 300 research-related projects, research scholarships and fellowships.

The Queensland Government National and International Research Alliances Program (NIRAP) and Research-Industry Partnerships Program (RIPP) has recently announced awards of:

- \$2 million to the Queensland Sustainable Aviation Fuel Initiative, to source aviation biofuel from three types of processed feedstock; sugarcane juice and bagasse; oilseed trees such as Pongamia; and algae.
 - Almost \$1.5 million to the High Efficiency Microalgal Biofuel System Project. This is to develop low-cost, high productivity photo-bioreactors which can produce green algae for use in a range of biofuels.
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Australian Pulp and Paper Strategy

The Pulp and Paper Industry Strategy Group's report, undertaken for the Federal Department of Innovation, Industry, Science and Research was launched by the Government in April. The report's authors include chief executives of the major Australian pulp and paper companies, union leaders and government agencies. The Strategy report found that the industry in Australia is significant, generating around \$12.6 billion in domestic demand through its more than 440 enterprises. The industry value adds some \$2 billion each year and earns more than \$1 billion through exports.

The paper includes many recommendations regarding investment in bioenergy such as the establishment of a Biorefinery Research Group. Of note is Recommendation 4, which recommends that, in view of the continuing uncertainty surrounding the introduction of an emissions trading law, the Australian Government take specific action to assist the pulp and paper industry to meet its emissions challenges and further encourage its climate change mitigation opportunities, including:

- 4a) the provision of incentives to assist industry adopt advanced heat capture and transfer technologies
- 4b) the removal of the proposed 100 percent cap on emissions-intensive, trade-exposed permits under the Carbon Pollution Reduction Scheme
- 4c) encouragement of greater investment in embedded renewable energy generation at pulp and paper facilities, including establishing a Council of Australian Governments (COAG) working group to review incentives that influence investment in site based electricity and steam generation, with the intent of increasing the uptake of these energy generation options; and
- 4d) ensuring that the Climate Change Action Fund provides assistance to larger firms that are investing in innovative projects and activities that would make a significant contribution to the reduction of greenhouse gas emissions.

Further detail is available in the main Strategy report at:

<http://www.innovation.gov.au/Section/Industry/Pages/PulpandPaperIndustryStrategyGroupFinalReportMarch2010.aspx>

The Clean Energy Innovation Centre (CEIC)

CEIC, a Federal Government Initiative, assists small and medium size businesses in the clean energy industry to improve their productivity and competitiveness by providing professional business advisory and development services.

The CEIC provides a Business Adviser to conduct a comprehensive Business Review of an eligible clean energy firm that identifies its strengths and weaknesses, strategic business issues, potential areas for business improvement and potential areas for growth. This review is conducted without charge. For business improvement or change recommendations from the business review which require the assistance of an external service provider, the CEIC will reimburse the firm for 50% of the costs of engaging the service provider to a maximum reimbursement of \$20,000.

Clean energy companies include those involved in the production of energy from renewable or low carbon sources includes solar, wind, wave, tidal, low-emission coal, biofuels, and geothermal as well as in the supply chains of the production process. In addition companies which facilitate the reduction of energy consumption such as those involved in energy or water efficiency may also be considered.

Eligible companies must:

- operate in the clean energy sector
- have an Australian Company Number (ACN)

- have turnover or expenditure of between \$1.5 million and \$100 million in the current or previous two financial years
- be solvent
- have been trading for the past three years (i.e. . have filed Business Activity Statements for the last three consecutive years)
- have not received similar assistance from other Government (Australian, State or Territory) programs within the past three years.

To lodge an application for the Business Review go to

<http://www.enterprisecconnect.gov.au/Pages/AlternateHome.aspx>. For further information contact : Ken Long, Tel: 0449 901 600 or Email: ken.long@innovation.gov.au. Also see: <http://www.enterprisecconnect.gov.au/Innovation/CleanEnergy/> and Clean energy resources: <http://cleanenergyinnovation.net.au/>

Delta Electricity Reduces Carbon Emissions with Renewable Biomass Energy

New South Wales power generator, Delta Electricity has launched the first stage of its proposed \$250 million Biomass Co-firing Project which could see up to 20 percent of coal usage at Wallerawang Power Station (2 x 500 MW) replaced with carbon-neutral renewable biomass.

During the trial project, over 200,000 native Mallee Eucalypt trees will be grown across ten participating farms around Forbes, in Central Western New South Wales. The trees will be harvested and processed into renewable fuel pellets that can readily substitute for coal in the existing base-load coal fired power station.

The trial is designed to provide information about seedling survival and growth rates for the trees, ensure the concept is right for farming practices in the Forbes area and to prove the capacity of Mallee trees to provide for co-firing Wallerawang power station with 20 percent biomass.

In New South Wales, over 85% per cent of electricity is generated in coal fired stations so if the trial demonstrates the potential for expansion, the environmental potential of this project could be significant. Wallerawang Power Station would require more than 1.2 million tonnes of raw biomass per annum and its use as fuel would reduce carbon dioxide emissions by one million tonnes per year.

The Co-Firing Project would comprise three significant stages:

- Fuel generation – Mallee trees reach maturity at 5 years. The foliage is harvested every 3 years.
- Fuel Production – Aggregated farmers to supply chipped biomass from designated plantations.
- Fuel Processing – Locally established facility to condition and pelletise the fuel for transport and biomass processing facilities to be built at power stations with modifications to the boiler to fire the biomass.

Mallee Harvester Launch

Celebrating a significant milestone for the Future Farm Industries CRC, the Mallee Harvester prototype was officially launched by the Western Australian Minister for Environment, The Hon. Donna Faragher, MLC, in the WA wheatbelt town of Narrogin on 13 April.

The launch is the culmination of more than a decade of research and development by the WA Department of Environment and Conservation, the Oil Mallee Association and Future Farm Industries CRC. Knowledge gained from the visionary engineer, Harley Pederick, who designed the first two mallee harvester prototypes more than a decade ago has also contributed to the latest prototype design. The new harvester prototype was designed with assistance from the Western Australian Government's Low

Emission Energy Development (LEED) Initiative. That funding helped Future Farm Industries CRC engage engineering company Biosystems Engineering. Led by Richard Sulman, Biosystems Engineering has worked over the past year to build a new, more efficient mallee harvester prototype.

Since the launch, the *Woody Crop Harvester System* project has begun evaluations in the field to find out what the harvester's capabilities are. The data collected during this process will then be used to determine what design changes are needed to make it commercially viable.

Overview of Bioenergy in Australia Report Launched

A new report, *Overview of Bioenergy in Australia* by Colin Stucley of Enecon Pty Ltd, funded by Bioenergy Australia, was launched by the Chairperson of Bioenergy Australia, RIRDC's Dr Roslyn Prinsley at its quarterly meeting, held in Canberra on 23 June. The 38 page report was subject to substantial review by several key stakeholders. The report provides a comprehensive overview of the \$400 million a year bioenergy industry, and addresses how bioenergy can help contribute to Australia's low carbon future.

The report examines current Australian bioenergy, the industry structure, status of technologies, research, development and extension activities, sustainability and life cycle assessment, provides a discussion on risks and challenges for bioenergy, examines the potential scale of the industry and looks at the way ahead for bioenergy in Australia.

The report is aimed to serve as a valuable tool for policy makers, industry participants and potential investors in the industry. It addresses some fundamental questions critical to the future of bioenergy in Australia and explores what will help bioenergy reach its full potential, how R&D investments into bioenergy can be maximised, and what risks could potentially limit the industry's future growth.

The report notes that bioenergy currently provides less than 1 percent of Australia's electricity generation, but this figure could potentially grow to between 20 and 30 percent by the year 2050.

Overview of Bioenergy in Australia is available on the RIRDC website <http://www.rirdc.gov.au>.

Biodiesel Alleged Dumping and Subsidisation Investigation

The Australian Customs and Border Protection Services has initiated investigations into the alleged dumping and subsidisation of biodiesel exported to Australia from the USA, a move which could see Canberra follow Europe in imposing anti-dumping duties. The application for a dumping duty notice and a countervailing duty notice in respect of exports from the USA was lodged by Biodiesel Producers Limited, an Australian manufacturer of biodiesel.

The application alleges that the goods have been exported to Australia from the USA at prices less than their normal value, that countervailable subsidies have been received in respect of the goods and that the dumping and subsidisation has caused material injury to the Australian industry through lost sales volume; lost market share; price undercutting; and reduced profits and profitability. Biofuels currently obtain Australia's cleaner-fuels grant, a tax break worth 38 c/litre which is available to makers and importers of biodiesel until 30 June 2011.

Interested parties are invited to lodge submissions no later than the close of business on 2 August 2010, addressed to:

Director Operations 3
Trade Measures Branch
Australian Customs and Border Protection Service
Customs House

5 Constitution Avenue
Canberra ACT 2601
or by email: tmop3@customs.gov.au

Ignite Energy Signs Technology Agreement with Solid Energy

Solid Energy of New Zealand has signed an agreement with the parent company of Bioenergy Australia member, Licella, Ignite Energy Resources Pty Ltd (IER) securing the exclusive New Zealand rights to a technology which converts low energy feedstocks, such as lignite and biomass, to high-grade coal and synthetic crude oils which have the potential to be upgraded to transport fuel.

The binding heads of agreement will lead to a licence agreement, worth up to A\$15 million, plus royalties. Solid Energy and IER will work together to further develop and commercialise the technology and will construct and commission a pilot plant able to process lignite and biomass in New Zealand. The commercial pilot plant, in a yet to be determined location, will be capable of expansion to a 1 million tonnes per annum facility.

Headquartered in Melbourne, Australia with operations in Sydney, Australia, and in the United States, IER aims to build commercial-scale supercritical water reactors throughout the world.

Gottstein Fellowship Report: ‘Developments in the Use of Woody Biomass for Bioenergy in Canada and Western USA’

Liz Hamilton, Senior Bioenergy Industry Officer with Department of Primary Industries, Victoria recently undertook a study tour of parts of North America to investigate bioenergy from woody biomass. Her fellowship report describes how and why the use of woody biomass for bioenergy is strongly supported by the Canadian and United States governments at the state/provincial and federal levels, with a focus on the utilisation of woody biomass from forests. It discusses the key drivers for the development of bioenergy from woody biomass in North America and the policies and projects that have evolved from these drivers. Key drivers include the need to: reduce the severity of wildfires, improve forest and catchment health, provide a stimulus for revitalising rural economies, reduce air pollution and greenhouse gas emissions from open burning and energy security. Many of the issues involving the use of biomass for bioenergy in North America are also reported to be valid for Australia. The report also includes eight case studies. Liz Hamilton gave a presentation on biomass collection as a fire hazard reduction measure at the 23 June Bioenergy Australia meeting. This presentation is available to financial Members of Bioenergy Australia from its web page.

The Gottstein fellowship report can be downloaded from the Gottstein Trust's website:
<http://www.gottsteintrust.org>.

Biofacts

- While the United States, with over 300 million people, has only 87 trash-burning power plants, most of which were built over 15 years ago, Denmark has 29 plants which meet the needs of 5.5 million people and 98 municipalities. Altogether, Denmark, Germany and the Netherlands have such 400 plants.
- Brazil crushed 542 million tonnes of sugar cane last season.
- The total energy consumption generated from biomass in Sweden grew from 88 terra watt hours (TWh) to 115 TWh between 2000 and 2009, while the usage of oil-based products (all imported) declined from 142 TWh to 112 TWh during the same period,

according to the Swedish Bioenergy Association Svebio. Biomass surpassed oil to become the number one source for energy generation in 2009, accounting for 32% of the total energy consumption in the country. It is projected that biomass consumption will continue to increase by another 10% in 2011.

- Pulp and paper manufacturers worldwide consumed 75 million tons of woody biomass for energy in 2009. Since 2006, energy generated from biomass has gone up over 50%, last year accounting for 18% of the total energy consumption by the Pulp and Paper industry sector.
- US Ethanol production set a record in March by averaging more than 847,000 barrels per day, or an increase of 207,000 barrels daily from the comparable period last year.

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 1,600 odd addresses given in the previous 37 issues of the Bioenergy Australia newsletters. These lists are consolidated as electronic links on Bioenergy Australia's web page at <http://www.bioenergyaustralia.org>. These links are available within an Excel file to allow interested persons to download the file and work with them off-line.

Drying and Torrefying

<http://www.wyssmont.com>

Pritchard Power (small steam engines)

<http://www.pritchardpower.com>

Opinion Pieces on native forestry bioenergy SMH – Paddy Manning

<http://www.smh.com.au/business/the-burning-question-of-renewable-energy-20100618-ymyt.html>

'Biomass: carbon sink or carbon sinner?' report

http://www.environment-agency.gov.uk/static/documents/Leisure/Biomass_carbon_sink_or_carbon_sinner_summary_report.pdf

Queensland Water and Energy Sustainable Technologies Network

http://www.derm.qld.gov.au/environmental_management/sustainability/industry/qwestnet_queensland_water_and_energy_sustainable_technologies_network/index.html

Gem BioFuels (Jatropha in Madagascar)

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

Energy pellets firing Stirling Engine

http://www.sunmachine.com/english/produkte_aktuelleprodukte.htm

BigChar

<http://www.bigchar.com.au/index.htm>

A3 Energy Partners (Viessman-Kob biomass boilers and briquetting)

<http://www.a3energypartners.com/>

Anaerobic Digestion of Organic Solid Waste – case studies in Africa, India and Nepal

http://www.eawag.ch/organisation/abteilungen/sandec/schwerpunkte/swm/projects/anaerobic_digestion

Green Collar Economy Web page

<http://www.greencollareconomy.com>

Net energy of ethanol with switchgrass information

<http://www.eri.ucr.edu/ISAFXVCD/ISAFXVPP/NEEWT.pdf>

Gasification and Electricity Production paper

<http://www.netl.doe.gov/publications/proceedings/05/carbon-seq/Tech%20Session%20Paper%2080.pdf>

Biomass for Small Scale Heat and Power (BioMax 15)

<http://www.fpl.fs.fed.us/documnts/techline/biomass-for-small-scale-heat-and-power.pdf>

Metso Power
http://www.metso.com/corporation/home_eng.nsf/WebWID/WTB-090522-2256F-E7210?OpenDocument

Powerhearth gasifiers
<http://www.3iAlternativePower.com>

Low cost biodigesters
<http://www.lrrd.org/lrrd11/2/inno112.htm>

Renewable Energy from Kitchen Waste
http://www.eawag.ch/organisation/abteilungen/sandec/publikationen/publications_swm/downloads_swm/energy_kitchen.pdf>

Study - Life Cycle Assessment of Renewable Fuel Production from Canadian Biofuel Plants for 2008-2009
<http://greenfuels.org/files/Cheminfo%20Biofuel%20Production%20LCA%20Report%202009.pdf>

IHT Biomass Boilers (to 300 kW)
<http://www.iht-feuerungen.de>

CEC Bioenergy Roadmap
<http://cleanenergycouncil.org.au/cec/technologies/bioenergy.html>

HydroMax® advanced gasification technology
<http://www.green-world-online.com/biomass-n-biofuels.html>

Simgae™ Algal Biomass Production System
http://www.diversified-energy.com/index.cfm?s_webAction=simgae

Assessing Biofuels presentation UNEP
http://www.unep.fr/scp/rpanel/pdf/Assessing_Biofuels_Presentation.pdf

Vidir straw gasifier - Canada
<http://www.vidirbiomass.com/>

Biomass Case Studies
<http://www.dairyenergy.eu/index.php>
http://www.esru.strath.ac.uk/EandE/Web_sites/01-02/RE_info/biomasscase.htm

Western Bioenergy Project (UK)
<http://www.power-technology.com/projects/western-wood-energy/>

EU ecosolid fuel web page
<http://www.ecosolidfuel.org>

Energy Quest, Inc.
<http://www.nrgqst.com/>

Green World Online – biofuels resources
http://www.diversified-energy.com/index.cfm?s_webAction=hydromax

KIV EfW demonstration in Slovakia
http://www.kiv-uk.com/energy_from_waste.html

Longannet plant (cofiring wood and biosolids)
http://www.scottishpower.com/Casestudies_806.asp

Tianren Environment Co., Ltd (biogas)
<http://www.tianren.com/en/>

Second Generation Vegetable Oil Fuels EU project
<http://www.2ndvegoil.eu/>

Anaerobic Digestion model
http://www.adelaide.edu.au/biogas/anaerobic_digestion/model/

BioPreferred August Newsletter
http://www.biopreferred.gov/files/BioPreferred_eNewsAugust2009.pdf

Fluidyne Gasification (NZ)
<http://www.fluidynenz.250x.com/>

Masters thesis on anaerobic digestion for developing countries
<http://www.wecf.eu/english/articles/2009/07/domestic-biogas.php>

Waukeshau engine video – manufacturing process
<http://www.youtube.com/watch?v=1oe8q6kSbHs>

Nalco Mobotec Inc., (air pollution control equipment)

<http://www.nalcomobotec.com>
Green World On-line
<http://www.green-world-online.com/biomass-n-biofuels.html>
Aurora Biofuels (algae)
<http://www.aurorabiofuels.com/>
The BioenergySite.com
<http://www.thebioenergysite.com/about/>
Entech Renewable Energy Systems
<http://www.entech.net.au>
Waste2Tricity (gasification)
<http://www.waste2tricity.com>
Biomass Engineering
<http://www.biomass.uk.com/>
Australian Energy News
<http://energy.einnews.com/australia/>
Dept. of Crop & Soil Sciences – Cornell University, USA
<http://www.GrassBioenergy.org>
Wood Pellets
<http://www.pelletheat.com/>
Institute for Agriculture and Trade Policy
<http://www.iatp.org/>
Vehicle biomass gasifiers
<http://www.gengas.se/>
Michigan Renewable Fuels Commission
<http://www.michigan.gov/rfc>
Ibicon A/S (2-G biofuels and green chemicals)
<http://www.inbicon.com>
Calderys refractory solutions
<http://www.calderys.com>
Office of Biobased Technologies, Michigan State University
<http://bioeconomy.msu.edu/>
N-Viro International (RDF cocombustion)
<http://www.nviro.com>
Bion concentrated livestock waste
<http://www.biontech.com>
Dickinson College Biodiesel research
<http://www.dickinson.edu/departments/sustainability/biodiesel.html>
World Biomass Network
<http://www.globalbiomassnetwork.org>
AdvanceBio LLC
<http://www.advancebiollc.com>
The Energy Crowd (including Carbon Free Weekly)
<http://www.theenergycrowd.com>
Daka Biodiesel
<http://www.dakabiodiesel.com>
Emmelev Mølle
<http://www.emmelev.dk>
DP CleanTech (Dragon Power)
<http://www.dragonpower.com>
Algal Biomass Organisation (US)
<http://www.algalbiomass.org>
LiveFuels, Inc (algae-based biofuels)
<http://www.livefuels.com>
ETP MANUFUTURE
<http://www.manufuture.org>

Green Biologics (butanol)

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

Biochar factsheet - CSIRO Land and Water 2009

<http://www.csiro.au/resources/Biochar-Factsheet.html>

Abengoa Bioenergy

<http://www.abengoabioenergy.com>

Algal Biomass Organisation guidelines for LCA studies

<http://www.algalbiomass.org/committees/documents/ABOLCABrief.pdf>

International

French Torrefaction Technology

French engineering company Thermya is working to commercialise and introduce a fast continuous biomass torrefaction technology. In 2006, the TORSPYD process was completed and the first pilot unit was built in 2007. Thermya describes its process as a soft thermal treatment of biomass (240 degrees Celsius) based on the continuous circulation of two air flows moving in opposite directions. As a result of the hot neutral gases, the biomass is dehydrated and then depolymerized in the reactor to eventually produce 'biocoal'.

According to Thermya, the TORSPYD biocoal product retains 90 percent of its initial biomass mass and contains a moisture level of 1 percent. Wood-derived biocoal has a calorific value of 20,000 to 21,000 kilojoules per kilogram. Units developed by Thermya range from 100 to 5,000 kilograms per hour, which are designed to operate on the basis of 8,000 production hours annually. The first commercial TORSPYD torrefaction plant is currently under construction in Northwest Spain, and should be operating at the end of 2010.

Louisiana Wood Pellet Plant

Point Bio Energy LLC has announced plans to establish a US\$100 million wood pellet plant at the Port of Greater Baton Rouge, Louisiana, USA. When complete, the plant will produce 450,000 tonnes per year of wood pellets derived from locally sourced woody biomass as well as wood delivered by barge from other locations on the Mississippi, Atchafalaya and Red rivers, and the Intracoastal Waterway through existing barge unloading facilities. Point Bio Energy intends to ship the pellets to Europe with its well-established fuel pellet market. Louisiana Economic Development estimates the project will generate US\$12.9 million in new state tax revenue and US\$9.6 million in local tax revenue over the next 10 years. Up to 100 new direct jobs and 273 new indirect jobs are expected to be generated from the plant's construction. Commercial pellet manufacturing operations are expected to commence in the last quarter of 2011.

Vattenfall Acquires Share in Liberian Biomass Supplier

European energy giant, Vattenfall, together with Swedfund, has acquired a 30 percent stake in Buchanan Renewables Fuel Limited of Liberia to expand its operations and secure a significant biomass supply. Vattenfall's share will be 20 percent, and Swedfund's 10 percent. State owned Swedfund is Sweden's leading development finance institution that specialises in investments in developing countries.

Vattenfall has an existing sourcing agreement with Buchanan Renewables. The move has been driven by Vattenfall's requirement to reduce its carbon dioxide emissions from fossil fuels and is a step towards acquiring an international biomass supply portfolio. Sustainability requirements are being addressed, with

the resource consisting of old rubber trees at the end of their productive lives. Trees that have previously been burned for disposal will now become an energy resource.

Fast Pyrolysis Commercial Plant for Alberta Canada

Ensyn Technologies Inc. and Tolko Industries Ltd. have formed a partnership, High North BioResources Limited Partnership, to build and operate the world's largest commercial fast pyrolysis plant at High Level, Alberta, Canada. The plant will be capable of processing 400 bone dry tonnes of biomass per day into 85 million litres of pyrolysis oil annually. The pyrolysis oil will be used to produce renewable energy in the form of electricity and heat that will be used in Tolko's sawmill at High Level. The facility will also be capable of producing a renewable resin ingredient that can be used in the manufacture of wood panel products. High North has commenced gaining regulatory approval for the project.

Florida Regulators Approve a 100-Megawatt Biomass Power Plant

The Gainesville Regional Utilities (GRU) and American Renewables received approval for a 100-megawatt biomass power plant on May 27 from the Florida Public Service Commission. American Renewables plans to build, own, and operate the facility, which will be called the Gainesville Renewable Energy Center. Under a 30-year contract, GRU will purchase all of the power produced by the facility, which will generate power from urban wood waste, wood processing wastes, and logging residues. American Renewables plans to build the facility at GRU's Deerhaven Generating Station, which currently features an 80 MW unit that can run on natural gas or oil and a 235 MW coal-fired power plant. The company plans to begin construction in December 2010 and achieve commercial operation in late 2013. See the [GRU press release](#) and the project summaries from [GRU](#) and [American Renewables](#).

Largest Bioenergy Plant Begins Production in Finland

Finland's largest wood-burning biomass power plant, with a capacity of 385MW of thermal power and 125MW of electricity has commenced production at Lappeenranta, southern Finland. The plant, owned by energy companies Pohjolan Voima and Lappeenrannan Energia cost €240 million to construct. Forty percent of the biomass fuel is bark from a sawmill, a pulp mill and a paper mill located in the Kaukas mill complex of Finland-based product forest company UPM Kymmene. The remaining biomass consists of branches, stumps, small wood and peat.

DOE and USDA Offer US\$33 Million for Biomass Research and Development

The US Department of Energy and the U.S. Department of Agriculture (USDA) on May 6 jointly announced up to US\$33 million in funding for biomass research and development. The funding will support projects and processes that produce advanced biofuels, bioenergy, and high-value biobased products. Advanced biofuels produced from these projects are expected to reduce greenhouse gas emissions by a minimum of 50 percent, as determined by the U.S. Environmental Protection Agency. Proposed projects must also integrate all three technical areas addressed by the Biomass Research and Development Initiative, namely feedstocks development, biofuels and biobased products development, and biofuels development analysis. Pre-applications were due on June 7. See the [DOE press release](#) and the funding opportunity announcement on [Grants.gov](#) and [FedConnect](#).

Electrabel and GDF Convert Coal Plant to Biomass

Energy company Electrabel and France-based electricity generation and distribution firm GDF Suez Group have launched a €40 million biomass generating system at the Gelderland Power Station in Nijmegen, The Netherlands. The Gelderland Power Station originally burnt coal but the conversion will result in around one quarter of this being replaced by wood pellets. With a total capacity of 590MW, the power plant will now have a biomass capacity of 180MW. 470,000 tonnes of wood pellets will be burned annually at the facility, resulting in a 750,000 tonne-a-year decrease in CO2 emissions. This is the same as erecting 250 wind turbines.

Jatmoil to boost plantations in Vietnam

ASX listed Renewable energy firm Jatmoil will become majority shareholder in its Vietnamese jatropa plantations as it invests further into the joint venture with Green Energy Vietnam (GEV). The company hopes this investment will dramatically increase its production of jatropa oil. Jatmoil's additional investment will give Jatmoil 51% ownership in the two-year partnership.

400 hectares of jatropa seedlings are currently being grown in the Ninh Thuan area, south-central Vietnam, after being planted by contracted farmers. GEV has plans to increase this acreage by the end of June 2010 with a new jatropa plantation site located in the Binh Tuan and Hue/Quang Tri areas.

According to Jatmoil, GEV will soon seek to raise additional funding from private investors and banks for further expansion projects that will see the cultivation of more than 15,000 hectares of jatropa plantations within the next three years.

Source: BioSpectrum - <http://www.biospectrumasia.com/content/190410SGP12454.asp>

Bioamber and Mitsui Partner for Biobased Succinic Acid Distribution in Asia

Bioamber, a joint venture between DNP Green Technology and ARD, and Mitsui & Co. Ltd have signed an agreement granting Mitsui exclusive Asian distribution rights for Bioamber's biobased succinic acid. Bioamber recently commissioned the world's first biobased succinic acid production facility in Pomacle, France. The annual production capacity is 2,000 tonnes. Mitsui has targeted biobased chemicals, with a strategy that leverages its global access to biomass and integrates cutting edge technologies to produce finished products. Mitsui has invested in several biobased projects, including fatty acids, glycerin and alcohols, sebacic acid and other green chemicals. Biobased succinic acid will broaden Mitsui's portfolio and offer customers a renewable C4 building block for use in polymer chemistry, personal care and other applications. Mitsui believes that the availability of biobased succinic acid and derivative products such as 1,4 butanediol will fuel the development of renewable polymers and accelerate the growth of the overall succinic acid market and Bioamber is well positioned as the market leader and the only source of high quality, biobased succinic acid.

Source: [DNP logGreen Technoy](#)

Verenium Awarded U.S. Department of Energy Funding for Demonstration-Scale Facility

Verenium Corp., a pioneer in the development of next-generation cellulosic ethanol and high-performance specialty enzymes, has announced that it has been awarded an additional US\$4.9 million from the U.S. DOE to fund ongoing activities at its demonstration-scale facility in Jennings, Louisiana. This cooperative agreement is an extension of the grant previously awarded to the company in July of 2008 under a DOE program supporting the development of demonstration-scale cellulosic ethanol biorefinery plants. The company plans to use the additional funds to support on-going cellulosic technology and process optimization at its Jennings, Louisiana, demonstration facility.

Source: PRNewswire - <http://www.prnewswire.com/news-releases/verenium-awarded-us-department-of-energy-funding-for-demonstration-scale-facility-91803264.html>

Fischer Tropsch (FT) Microchannel Reactor Wins Award

A Fischer Tropsch microchannel reactor developed by Velocys Inc., combined with a new highly active FT catalyst developed by Oxford Catalysts, has been named winner of the CWC World XTL award 2010. The CWC XTL Award was established in 2006 to celebrate excellence and encourage innovation in the synthetic fuels sectors. This year's award, open to companies of any size involved in the XTL (X to liquids) value chain, was designed to honour the company that has contributed most to XTL innovation during the past year. The winner was chosen from a short list of nominees that also included BioMCN, ENI/IFP/Axens, Oryx GTL, Rentech, Shell and Technip.

The microchannel technology makes it possible to produce liquid biofuels from a wide variety of waste feedstocks, including municipal waste in situ, thus avoiding the need to transport large volumes of waste to central processing facilities. A demonstration biofuels plant, which includes the FT microchannel reactor and uses gasified woodchips as a feedstock, is currently being commissioned in Güssing, Austria. The reactor can achieve productivities that are orders of magnitude greater than conventional FT reactors, and can operate economically at outputs as low as 500 barrels (79,350 litres) per day.

Microchannel reactors are compact reactors that have channels with diameters in the millimetre range. The small diameter channels dissipate heat more quickly than conventional reactors with larger channel diameters in the 2.5 – 10 cm range so more active catalysts can be used. Microchannel reactors make it possible to greatly intensify chemical reactions to enable them to occur at rates 10 to 1000 times faster than in conventional systems.

Promising applications for microchannel reactor technology include the production of next-generation biofuels from a wide variety of waste sources via biomass to liquids (BTL) processes.

The Oxford Catalysts Group is currently working with the Portuguese company SGC Energia (SGCE), to demonstrate and commercialize the Oxford Catalysts Group's FT microchannel reactor for the distributed production of biofuels. It is also working with other partners to demonstrate the application of microchannel GTL for use on offshore platforms and floating production, storage and offloading vessels.

Previous winners include Oryx GTL, GTL.F1, and Shell Gas & Power.

Source: Oxford Catalysts

National BioEnergy Partners with China Construction Bank in \$4b Biomass Scheme

The China Construction Bank (CCB) has extended a US\$4 billion credit line to China's National BioEnergy, a subsidiary company of the Dragon Power Group, to finance a plan by the biomass-based electricity generator to build 100 biopower plants over the next five years. The credit line is part of a strategic cooperation agreement that China Construction Bank and Dragon Power signed in February. Dragon Power is China's largest biomass power generator with 19 biomass power plant, comprising 60 per cent of the local market. The 100 biomass power plants will provide an additional capacity of 3 GW over the next five years. Dragon Power is also seeking to introduce some large companies as strategic partners, and will start to prepare for an initial public offering in 2011.

The plants will be operated through National BioEnergy, while the design engineering and manufacture of the biomass power plants, will be conducted by another Dragon Power subsidiary DP CleanTech.

Futero Launches PLA Bioplastics Pilot Plant in Belgium

Futero, a 50:50 joint venture between Galactic and Total Petrochemicals has launched its biobased PLA (PolyLactic Acid) bioplastics pilot production unit in Escanaffles, Belgium, believed to be the first of its type in Europe. The pilot unit, which has a capacity of 1,500 tonnes per year and represents an investment of €15 million, will be used to test and improve the successive steps in this technology

This production process comprises two main steps. Firstly, the preparation and purification of the monomer, lactide, from lactic acid, which is obtained by fermenting sugar, mainly from beet. Secondly, the polymerisation of the monomer to obtain biodegradable vegetable plastic granules, PLA.

Products from lactic acid include lactide and PLA oligomers and polymers. They will be used by the packaging industry, primarily food packaging, and in other sustainable applications.

Forthcoming Events

- Seventh annual World Congress on Industrial Biotechnology & Bioprocessing
27 – 30 June 2010
Gaylord National Resort & Convention Center Washington, DC. USA
<http://bio.org/worldcongress>
- Renewable Energy 2010 - Conference and Exhibition
27 June – 2 July 2010
Pacifco Yokohama, Yokohama, Japan
<http://www.re2010.org> and <http://www.renewableenergy.jp>
- International Symposium on the Genetics of Industrial Microorganisms
28 June – 1 July 2010
Melbourne Convention and Exhibition Centre
<http://www.gim2010.org>
- Australia and New Zealand Biochar Researchers Network Workshop
28 June 2010
Hobart, Tasmania.
<http://www.anzbiochar.org>
- ORBIT 2010 "Organic resources in the carbon economy"
29 June - 3 July 2010
Heraklion, Crete, Greece.
<http://www.orbit2010.gr>
- AEBIOM European Bioenergy Conference & RENEXPO Bioenergy EUROPE
30 June -1 July 2010
Brussels, Belgium
<http://www.renexpo-bioenergy.eu/>
- 2nd Argus Biofuels Trading in Asia
7 – 8 July 2010
Singapore
<http://www.argusbiodiesel.com>
- Pyrolysis 2010: 19th International Symposium on Analytical and Applied Pyrolysis
11 – 15 July 2010
Montreal, Quebec, Canada
<http://www.pyro2010.org>
- CSIRO Cutting Edge Symposium
as part of the 19th International Symposium on Plant Lipids

- 11 – 13 July, 2010
Cairns, Australia
<http://www.ispl2010.org>
- 16th Asia International Sugar Conference
14 - 16 July 2010
The Laguna Resort & Spa, Nusa Dua, Bali Indonesia
<http://www.abc-asia.com/sugar>
 - Biomass '10: Renewable Power, Fuels, and Chemicals Workshop
20 – 21 July 2010
Grand Forks, North Dakota, USA.
<http://www.undeerc.org/biomass10/Default.aspx>
 - BIT Life Sciences' 3rd Annual World Congress of Industrial Biotechnology 2010
25 - 27 July 2010
Qingdao, China
<http://www.bit-ibio.com>
 - Northeast Biomass Conference & Expo
4 – 6 August 2010
Boston, Massachusetts
<http://ne.biomassconference.com/ema/DisplayPage.aspx?pageId=About>
 - BioPro Expo 2010
24 - 26 August 2010
Cobb Galleria Center, Atlanta Georgia USA
<http://www.bioproexpo.org/>
 - Forest Bioenergy 2010
31 August - 4 September 2010
Tampere and Jämsä cities, Finland.
<http://www.bioenergy.finbioenergy.fi/>
 - Australasian Industrial Ecology Conference
2 - 3 September 2010
Sydney NSW
<http://www.austindustrialecology.com.au>
 - Ecogen 2010
5 – 8 September 2010
Sydney Convention and Exhibition Centre
Darling Harbour, Sydney, NSW
<http://www.ecogeneration2010.com>
 - International Conference on Polygeneration Strategies - ICPS10
7 - 9 September 2010
Leipzig, Germany
<http://icps-conference.eu/>
 - 10th Pellets Industry Forum
7 - 8 September 2010
Stuttgart, Germany
<http://www.pelletsforum.de>
 - Interpellets 2010
8 - 10 September 2010
Stuttgart, Germany
<http://www.interpellets.de>
 - Biofuels Hall Of Fame 2010 Summit and Exhibition
13 – 14 September 2010
Berlin, Germany
<https://www.eventelephant.com/fame2010berlin>
 - International Biomass Valorisation Congress
13–15 September 2010 (Date changed from 20-22 April)
Regardz 'Zilveren Toren' Amsterdam Centre, Amsterdam

- <http://www.biomass-valorisation.com>
- International Training Seminar on "Biomass heating – market development and technologies"
15 - 17 September 2010
Linz, Austria.
<http://www.oec.at/en/projects/international-training-seminar-biomass-heating-market-development-and-technologies/>
- TCS2010--Symposium on Thermal and Catalytic Sciences for Biofuels and Biobased Products
21 – 23 September 2010
Iowa State University, USA.
<http://www.bioren.iastate.edu>
- Bioten
21 – 23 September 2010
Birmingham, UK
<http://www.bioten.co.uk>
- Chemeca 2010: The 40th Annual Australasian Chemical and Process Engineering Conference
26 - 29 September 2010
Adelaide, South Australia.
<http://www.chemeca2010.com>
- Biomass Pellets Trade Asia
27 - 28 September 2010
Jakarta, Indonesia
<http://www.cmtevents.com/eventschedule.aspx?ev=100937&>
- BTL Conference
6-7 October 2010
Rotterdam, The Netherlands
<http://www.cmtevents.com/eventschedule.aspx?ev=101034>
- All-Energy Australia 2010
6 - 7 October 2010
Melbourne Convention and Exhibition Centre, Australia
<http://www.all-energy.com.au> Email: info@all-energy.com.au
All-Energy Australia 2010 is a free-to-delegate, business-to-business exhibition, conference and networking forum showcasing renewable energy, clean coal, carbon sequestration and energy efficiency. It targets no single solution, but embraces all opportunities within the clean energy market. All-Energy Australia 2010 is proudly supported by the State Government of Victoria. The 2009 event attracted over 1700 delegates from 16 countries and featured 100 plus leading International speakers in the multi stream conference.
- BTL & Bio-Based Chemicals
6 - 7 October, 2010
Rotterdam
<http://www.cmtevents.com/eventschedule.aspx?ev=101034&>
- Carbon Expo Australasia 2010
11 - 13 October 2010
Melbourne, Victoria.
<http://www.carbonexpo.com.au>
- Biogas USA
13—14 October 2010
San Francisco, USA
<http://www2.greenpowerconferences.co.uk>
- 8th Biennial SRWC operations working group conference - Short rotation woody crops in a renewable energy future: challenges and opportunities
17-19 October 2010
Sheraton Syracuse University Hotel and Conference Center
Syracuse, New York, USA
<http://www.esf.edu/outreach/pd/2010/srwc/>

- 10th Annual BioCycle Conference on Renewable Energy from Organics Recycling
18 - 20 October 2010
Des Moines Marriott Downtown, Des Moines, Iowa, USA.
<http://www.BioCycleEnergy.com>
- AusBiotech 2010 national conference
19 - 22 October 2010
Melbourne Convention & Exhibition Centre, Victoria, Australia
<http://www.ausbiotech2010.com.au>
- Industrial BioWaste-to-Energy Technologies - QWESTnet events
20 October 2010
South East Queensland.
http://www.derm.qld.gov.au/environmental_management/sustainability/industry/qwestnet_queensland_water_and_energy_sustainable_technologies_network/index.html
- Third International Symposium on Energy from Biomass and Waste
8 – 11 November 2010
Venice, Italy
<http://www.venicesymposium.it>
- Advanced Biofuels Markets
9 – 10 November 2010
San Francisco
<http://www2.greenpowerconferences.co.uk/>
- **Bioenergy Australia 2010**
8-10 December 2010
Novotel Manly Pacific, Manly, Sydney, NSW
<http://www.bioenergyaustralia.org>.
- 3rd Central European Biomass Conference
26 - 29 January 2011
Graz, Austria
<http://www.biomasseverband.at/biomasse?cid=41146>
- European Pellet Conference 2011
2 – 3 March 2011
Wels, Austria
<http://www.wsed.at/en/programme/european-pellet-conference/>
- EcoForum Conference & Exhibition
9 – 11 March 2011
Australian Technology Park, Sydney
<http://www.ecoforum.net.au/2011/>
- Biowise 2011
14-15 March 2011
Kuala Lumpur
<https://www.eventelephant.com/biowise>
- BioPro Expo 2011
14 – 16 March 2011
Atlanta Hilton, Atlanta, GA, USA.
<http://www.bioproexpo.org/>
- World Biofuels Markets Conference and Exhibition
22 – 24 March 2011
Beurs – World Trade Centre, Rotterdam
<http://www.worldbiofuelsmarkets.com/>
- 9th International Lignin Forum of ILI
24 – 25 March, 2011
Stockholm, Sweden
<http://www.ili-lignin.com>
- BioCycle Global 2011
11 - 14 April 2011

San Diego, California

<http://www.BioCycleEnergy.com>

- 9th European Conference On Industrial Furnaces And Boilers (INFUB-9)
26 - 29 April 2011
Palacio Estoril Hotel, Estoril, Portugal
<http://www.cenertec.pt/infub/>

Residues

Bioenergy publication: A 21 page report *Bioenergy Commercialisation for Australia's Dairy Industry* - Publication no: 09-164 by Bruce Edgerton is available from the Rural Industries R&D Corporation. The cost in printed form is \$25.00. The downloadable version (380.4 KB) is at:
<https://rirdc.infoservices.com.au/downloads/09-164.pdf>

Ethanol from corn: According to a study from the University of Illinois at Chicago, the energy needed to make ethanol from corn in the US has reduced by an average of 30 percent. In the study funded by the Illinois Corn Marketing Board, researchers at the university's Energy Resources Center surveyed 150 dry mill ethanol plants. The companies that supplied data for the study represented 66% of the 35 billion litres of ethanol distilled each year in the US. The survey found that ethanol plants use 28 percent less thermal energy – gas, coal, biomass or landfill gas – and 32 percent less electricity to turn corn into ethanol than they did 10 years ago.

Wind turbines and biomass plants in China: China has boosted the installed capacity of renewable energy projects to 52.5 gigawatts, mainly in the form of wind turbines and biomass plants. Low-carbon energy now accounts for 4 percent of the total capacity in China.

Aurora Biofuels Inc., an Alameda, California-based biofuels company focused on open-pond algae aquaculture, has raised US\$15 million in third-round funding. The company previously raised US\$25 million.

AEBIOM newsletter: The February issue is at: http://www.aebiom.org/wp/wp-content/uploads/file/Newsletters/AEBIOM%20newsletter_February2010_final.pdf

Trouble at Mill - Landline – ABC: <http://www.abc.net.au/landline/content/2010/s2845290.htm>
15 minute documentary on the troubles at NSW Sugar Milling co-op.

A handbook on energy crops for heat and power for energy producers: This handbook on energy crops has been published by the project partners of the ENCROP project (Promoting the production and utilisation of energy crops). The book covers the reed canary grass, willow, hemp and poplar as well as a chapter on biogas production from energy crops. The 20 MB file is downloadable from:
<http://www.encrop.com>

New ethanol pipeline in USA: The construction of a 2,900-km pipeline that would transport ethanol from the Midwest to the US East Coast, finishing in Linden, New Jersey was announced earlier this year as a joint venture between Magellan Midstream Partners and POET. A loan guarantee for the \$4 billion project will be required from the Department of Energy, which is expected to create up to 50,000 construction jobs. The project is looking at completion in 2014.

Guidelines for Life Cycle Analyses: The Algal Biomass Organisation has published a set of guidelines for LCA on its website. Visit: <http://www.algalbiomass.org/committees/documents/ABOLCABrief.pdf>

Wholesale electricity prices: A useful source of information for electricity wholesale prices by State is accessible from the d-cyphaTrade Data Centre. See: <http://www.d-cyphatrade.com.au>

Australia's electricity demand: A snapshot of Australia's electricity demand, energy usage both by state and by season is at: <http://www.aer.gov.au/content/index.phtml/tag/MarketSnapshotLongTermAnalysis>

'Sustainable Production of Second-Generation Biofuels': A 221 page report 'Sustainable Production of Second-Generation Biofuels - Potential & Perspectives in Major Economies & Developing Countries' may be freely downloaded from the IEA web page http://iea.org/papers/2010/second_generation_biofuels.pdf.

Global investment of US\$653 b in Renewable Energy: Carbon News 2010 reports that global investments in renewable energy are expected to reach US\$653.35 billion by 2015. Investment in renewable energy increased 10-fold between 2001 and 2009, from US\$39.24b to \$336.78. The latest Renewable Energy Investment Opportunities in Emerging Economies has been released by GBI Research. This gives an analysis of the emerging economies as upcoming renewable energy hotspots and provides investment forecasts up to 2015.

Why is biomass so misunderstood?": An article from the UK, 'Why is Biomass so misunderstood?' by David Williams is at URL: http://www.eco2uk.com/en/news_events/news_detail.asp?news_id=29. The article provides some useful insights from the CEO of a UK company.

Dalkia's largest biomass project: Energy company Dalkia is to invest €70 million on the construction of two biomass generators in Poland. Owned by French energy firm EDF and Veolia Environnement, this is the Dalkia Group's largest biomass combustion project so far. The two biomass plants are to be located in the central city of Lodz and the western city of Poznan, Poland. The plants are set to become operational by the end of 2011 and will require 700,000 tonnes of biomass annually. Source: Waste Business Journal.

Biotech Eucalyptus: The US Department of Agriculture has granted clearance to ArborGen to conduct a field trial of biotech eucalyptus trees that could become new sources of wood for biofuels, pulp and paper. The agency issued the permit after an assessment showed that the field trial of the bioengineered trees, which will be tested in seven states, would not result in environmental problems.

IRENA: Australia joined the International Renewable Energy Agency (IRENA) in June 2009 and has committed \$5.6 million over 4 years to support this forum which will be headquartered in the United Arab Emirates. This was the subject of a brief presentation at the most recent Bioenergy Australia quarterly meeting, held in Canberra on 23 June.

Gasifier Manufacturers: A summary of proven designs can be found in Florian Nagel's doctorate thesis: <http://e-collection.ethbib.ethz.ch/view/eth:41553>

Biosecurity in the new Bioeconomy: Threats and Opportunities: Conference booklet on the outcomes from the *Biosecurity in the new Bioeconomy: Threats and Opportunities* Symposium which was held in Canberra, November 2009 is now available in PDF format at <http://www.csiro.au/science/2009-Biosecurity-Symposium.html>. The proceedings will appear in the journal *Current Opinions in Environmental Sustainability* (COCUST) in early 2011 – http://www.elsevier.com/wps/find/journaldescription.cws_home/718675/description#description

Using wood waste from private land to generate electricity: A Bellevue, Washington State, USA based company has filed documents to build a 35 MW bioenergy plant costing between US\$70 million and US\$120 million in Klamath Falls. Klamath Falls Bioenergy would use wood waste from private lands to generate electricity in the plant, according to a press release. The project would create about 175 jobs during construction, 30 permanent positions and 100 jobs in the woods. Source: <http://www.kmed.com>

Biofuels not to blame for food price rises: UK Government recently released a report that unequivocally concluded that biofuels were not to blame for rising food prices. The full report can be found at www.defra.gov.uk/foodfarm/food/pdf/ag-price-annex%205.pdf

US AgSTAR report. A report *Market Opportunities for Biogas Recovery Systems* indicates that a farm owner should have more than 500 head of dairy cows or more than 2,000 pigs to make anaerobic digestion financially viable in the USA. Average per-cow gas generation equals about 2.5 kWh per day.

Landfill-based anaerobic digester-compost pilot project report now available: The project, funded by CalRecycle, California, examines the use of an in-situ digester cell at an existing landfill to generate electricity, produce quality compost, and reduce emissions as compared to current aerobic composting technology and also demonstrates the technical and economic viability of this new technology as part of a solution to California's organic materials recycling capacity. To download a copy, go to: <http://www.calrecycle.ca.gov/Publications/default.asp?pubid=1354>

Siemens to supply steam turbine-generator for biggest biomass power plant in the UK: Siemens Energy has received an order from Aker Solutions to supply a steam turbine-generator for currently the largest biomass-fired combined heat and power plant in the UK. As the EPC contractor, Aker Solutions will design and build the power plant adjacent to the Tullis Russell paper mill in Scotland under contract to the RWE power renewables, the UK subsidiary of RWE Innogy. Following the start of commercial operation scheduled for late 2012, the power plant with a capacity of 50 MW will provide an efficient, low-carbon supply of power and process steam to the paper mill. Source: http://www.siemens.com/press/pool/de/pressemitteilungen/2010/Oil_Gas/EOG201004067e.pdf

Rollcast develops three biomass power plants: North Carolina-based Rollcast Energy is developing three bioenergy plants in the US states of Georgia and South Carolina. The first of these power plants will commence operation in 2012. The 53.5 MW Piedmont Green Power project will combust about 500,000 tons of wood waste per year including logging residue and urban wood waste. Rollcast recently selected Texas-based Zachry Industrial Inc. to engineer, procure and construct the facility. The company is also developing a woody biomass project near Franklin, Georgia., and another near Newberry, South Carolina., both similar in size to Piedmont Green Power. All will use a mix of forest residue and urban wood waste to some degree.

Source: Biomass Magazine - http://www.biomassmagazine.com/article.jsp?article_id=3674

EuBioNet Reports: A series of reports from EuBioNet are at: <http://www.eubionet.net/default.asp?SivuID=25484>

Mixed-fuel biomass for the Philippines: DP CleanTech, Global Green Power PLC Corporation (GGPC) and Pöyry Energy Inc have signed an agreement for the delivery of two biomass power plants to the Philippines which will be fuelled with agricultural waste and be grid connected. DP CleanTech has also signed agreements for the delivery of two 17.5 MW multi-fuelled biomass boiler islands to be located in Iloilo and Nueva Ecija, as well as a letter of intent for another 35 MW plant in Bukidnon, in the Philippines. Source: Renewable Energy Focus.

UK to import wood chips: According to a report from the Confederation of Forest Industries (Confor) titled *Wood Fibre Availability and Demand in Britain 2007-2025*, Britain will, for the first time, become reliant on wood chips and pellets as the demand for biomass will exceed domestic supply as early as 2012. If all the energy plants planned for the UK materialise then the amount of imported wood products could dramatically increase to an annual total of 27 million tonnes per annum.

ClearFuels Technology Inc.: ClearFuels Technology Inc. will receive the first US\$7.7 million of a US\$22.6 million grant to build a biorefinery to convert sugarcane and wood waste products into renewable diesel and jet fuel. The project is being developed with Rentech which has a 25 percent ownership in ClearFuels, at its Energy Technology Center in Commerce City, Colorado, USA. The biorefinery is

expected to be completed in late 2011. ClearFuels announced that it had signed a deal with the U.S. Department of Energy for the first portion of the grant.

NRG Energy co-firing contract: NRG Energy Inc. (Princeton, NJ) has received a 10-year contract from the New York State Energy Research and Development Authority (NYSERDA) for power generated using renewable biomass fuel at its coal-fired Dunkirk Generating Station in western New York state. The project, which is expected to be completed by the end of 2011, will produce up to 15 MW of the station's total output by co-firing with clean wood biomass.

A 10 page Dutch report 'Identifying the indirect effects of bio-energy production' from the Netherlands Environmental Assessment Agency is downloadable from <http://www.rivm.nl/bibliotheek/rapporten/500143003.pdf>

Quiz question: Native forest bioenergy has recently resurfaced as a contentious issue in the media in Australia, with articles in The Age, Sydney Morning Herald, and on ABC TV's 7:30 Report. Given all this interest, how many Renewable Energy Certificates have been produced from native forest biomass in Australia over the past nine years? The answer is surprising ... **one** – via a small gasifier in the Huon Valley, Tasmania where is contributed to the supply at the Tehune aerial forest walk visitor's centre. The overall LRET requires 41,000,000 RECs to be provided in 2020 from all forms of compliant renewable energy source.

CORRECTION

The editor wishes to correct a report made in the January Newsletter that Plantation Energy Australia is constructing a wood pellet plant at Wandilo, near Mount Gambier in South Australia with production expected to begin in March 2010. Plantation Energy Australia made no such announcement and whilst it has been successful in obtaining a permit to build such a wood pellet plant, it has made no announcement about construction commencement or likely production commencement and is continuing to assess a number of key features related to the project. Bioenergy Australia apologises for the mistake made in reporting.

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 and energy companies, source of finance and other opportunities. If you or your organisation is interested in such assistance, please contact Steve Schuck for a free listing. Please note notices are placed using supplied information, without checking its veracity. Interested parties should make their own enquiries to verify the information below.

- **Position sought:** A Dutch 42 year old professional has the opportunity to take a sabbatical year and is seeking to expand his knowledge in renewable energy projects. He has experience in open- and closed landfills, water treatment plants (leachate water from landfills) and landfill gas extraction plants. Since 2001 he has been working as a project manager in Design and Construction. Any interested companies or institutions can contact Vincent Rasch on: Tel: +31(0)88 - 801 08 01 or email: v.rasch@afvalzorg.nl
- **Scientific Director:** Southern Cross University, located at Lismore, northern New South Wales, is seeking a visionary Scientific Director for the Centre for Plant Conservation Genetics, following Prof. Rob Henry's move to the University of Queensland. The Centre delivers internationally significant, innovative solutions in research, education and commercialisation of Plant Molecular Genetics. The

contact for inquiries is Emeritus Professor Peter Baverstock. Email: peter.baverstock@scu.edu.au Tel: 0421 491 353.

- **Torrefied wood:** Jim Arcate of Transnational Technology LLC, Hawaii (<http://www.techtp.com>) is working on torrefied wood, and is seeking collaborations and projects in Australia. He is promoting the use of Wyssmont Turbo equipment to dry and torrefy wood and other biomass. If there are any opportunities for collaboration, please contact Jim on (808) 741 7502 (mobile), Email: arcate@msn.com or via his web page at: <http://www.techtp.com>
 - **Internship required:** The University of Wageningen, The Netherlands' MSc program Agricultural and Biosystems Engineering has a compulsory internship of 4 months (or longer) where students are supposed to work at an academic or comparable level on research and development issues in their second year of the two-year MSc program. A position is sought for a student in Australia for an internship. Information on the MSc program is found here: <http://www.mab.wur.nl/UK/> Anyone interested in offering an internship, is please invited to contact:
Dr.ir. Willem B. Hoogmoed, Farm Technology Group, Wageningen University,
Tel: + 31 317 48 43 Email: willem.hoogmoed@wur.nl Web: www.fte.wur.nl
 - **VM technology for separating waste into wet and dry fractions :** Ron Mendelsohn of Sunspun is seeking interest in the VM press, developed in Italy and The Netherlands. The press is a waste pressurising machine designed to physically separate waste into two fractions, an organic wet fraction with hardly any non-organics and a solid dry fraction with an almost total absence of organic substances. The separation process consists of a chamber with a very strong mesh, in which waste is compressed using as high a pressure as 1000 Bar. This results in changing the structure of the organic material into a fluid plasma, allowing it to be pressed through the mesh. This wet organic fraction can be used in dry anaerobic digestion plants as is, or processed to biogas in a wet digestion process, after the very small quantities of plastic and grit contaminants have been separated, to yield a quality fertiliser if required. The dry non-organic fraction contains mainly refuse derived fuel (RDF), but also some minerals and metals. After the dry fraction has undergone optional additional separation processing to sorting out these materials, only RDF or a landfill product remains. The press comes in three sizes; 8 tonnes per hour of waste input suitable for shopping centres and food markets; 17 tonnes per hour; and 35 tonnes per hour (suitable for transfer stations and landfill sites).

Inquiries should be directed to Ron Mendelsohn, Sunspun, Tel: (03) 9529 4294 Mob: 0410 609 386, email: sales@sunspun.net web: www.sunspun.net.
 - **Partners/investors/sponsors sought for ethanol production from cassava in Tanzania and East – Central Africa:** ACDIA has completed a comprehensive feasibility study on the production of bio-ethanol from cassava and is looking for partners/investors/sponsors for this project. It appears that the production of ethanol in Tanzania and East-Central Africa from cassava has the potential to be a viable alternative source of fuel. It would also have macro and microeconomic benefits, create jobs, empower rural populations, and add to nutritional health. 10-year draft financials have been prepared on the basis of total funding of US\$56 million. Seed capital is now required to run the Brisbane coordination office, to complete in-country detailed analysis of feedstock production costs and availability in East-Central Africa, and finalise negotiations with various African Partners. ACDIA would then start the construction of the plant circa 2011 capable of producing 30 - 100 million litres of bio-ethanol per annum. Interested companies or organisations can contact Mr. Protais Muhirwa, the Director, at pmuhirwa@hotmail.com or on mobile 0424 833 284.
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Back Issues of Bioenergy Australia Newsletters – Downloadable from the Bioenergy Australia homepage: <http://www.bioenergyaustralia.org>

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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.

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Editor: Dr. Stephen Schuck, Bioenergy Australia Manager

Any comments, suggestions, articles and feedback are welcome. The views expressed in this newsletter are not necessarily those of the member organisations. Articles do not constitute endorsement of any products or services mentioned. Bioenergy Australia may be contacted at:

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