



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

# Newsletter

October 2007

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## Bioenergy Australia 2007 Conference

Australia's premier bioenergy conference, Bioenergy Australia 2007, will be held at the Gold Coast International Hotel, Surfers Paradise, Queensland 26–27 November, with a technical tour of biomass and bioenergy facilities on 28 November. Titled 'Sustainable Energy in a Carbon Constrained World' the conference will consider many facets of bioenergy, including:

- Biomass resources and supply
- Liquid biofuels
- Pyrolysis bio-oil and bio-char
- Biorefining
- Anaerobic digestion
- Energy-from-waste
- Heat and power
- Life cycle emissions and land use competition.

The program will cover policies and programs, projects and project development case studies and emerging opportunities. There will be over 60 presentations at the conference. A moderated panel discussion will address the issue 'Will Peak Oil Lead to Peak Soil?' Professor Andre Faaij from the Copernicus Institute at the University of Utrecht, The Netherlands, leader of the International Energy Agency's Bioenergy Task on Sustainable International Bioenergy Trade will provide the keynote address. Professor Stephen Joseph of the University of NSW will be providing the conference dinner speech. In past years this conference has attracted close on 200 delegates.

The technical tour will visit the Condong Sugar Mill cogeneration power plant, a wood energy pellet production facility, a multi-purpose plantation, which includes a bioenergy, and a bio-char field trial.

The Program and Registration Forms are available at: <http://www.bioenergyaustralia.org> or [http://www.conferenceaction.com.au/current/BioenergyAustralia2007\\_RegistrationDocument.pdf](http://www.conferenceaction.com.au/current/BioenergyAustralia2007_RegistrationDocument.pdf)

Contact Hanna Ulkuniemi, Conference Action, tel: (02) 9431 8635,  
email: [hanna@conferenceaction.com.au](mailto:hanna@conferenceaction.com.au) or Stephen Schuck, tel: (02) 9416 9246,  
email: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au)

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## Bioenergy Australia Membership Update

The Bioenergy Australia membership now includes 60 organisations. Recent new members are Southern Cross Agricultural Developments, TreeSmart Australia, the South Australian Research and Development Institute, South East Fibre Exports, the Victorian Department of Primary Industries, the University of NSW (PV and Renewable Energy Centre) and the CRC Sugar Industry Innovation through Biotechnology.

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](mailto:sschuck@bigpond.net.au) if your organisation is interested in joining this government-industry

bioenergy forum. Bioenergy Australia has a membership tier to cater for universities and for organisations with an annual turnover of less than \$2 million per annum.

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## **Mandatory Renewable Energy Target Regulations Amended**

Amendments to the *Renewable Energy (Electricity) Regulations 2001* have very recently been made. The amended Regulations, the *Renewable Energy (Electricity) Amendment Regulations 2007*, can be found at

<http://www.comlaw.gov.au/comlaw/Legislation/LegislativeInstrument1.nsf/0/587F10E7F64351D8CA257369000EF96C?OpenDocument>. A consolidated version of the Regulations is expected to be available from [www.comlaw.com.au](http://www.comlaw.com.au) soon.

This package of amendments to the *Renewable Energy (Electricity) Regulations 2001* finalises the Government's response to the 2003 MRET review.

Changes to the Regulations that impact on bioenergy include:

- clarifying the meanings of eligible and non-eligible renewable energy sources
  - clarifying the eligibility criteria relevant to the treatment of native forest wood waste
  - redefining plantations as energy crops and broadening the definition of municipal solid waste
  - clarifying the circumstances under which the Regulator can suspend an accredited power station
  - clarifying the circumstances under which a variation of 1997 eligible renewable power baselines is possible
  - clarifying the components for a power station and calculation of the electricity generation for a power station
  - clarifying the determination of fees for the surrender of renewable energy certificates and the provisional accreditation of power stations; and
  - allowing for reforms in the National Electricity Market.
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## **New Clean Energy Target 30,000 GWh/year by 2020**

The Prime Minister, John Howard and Minister for the Environment and Water Resources, Malcolm Turnbull have announced a new national Clean Energy Target (CET) of 30,000 gigawatt hours of low-emission energy generation by 2020. Low emissions are being defined as being less than 200 g CO<sub>2</sub> equivalent per kilowatt-hour. The new CET builds on the Government's current Mandatory Renewable Energy Target that has stimulated \$3.5 billion of investment in renewable energy technologies since 2001. The national CET will be established by replacing the existing and proposed state and territory schemes with an aim of simplifying the system for industry.

More information is available at: <http://www.malcolmturnbull.com.au/Pages/Article.aspx?ID=97292>

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## **\$70.7 Million for International Climate Change Initiatives**

The Federal Government has announced three measures to help reduce GHG emissions through international cooperation. The announcements include:

- A \$50 million commitment to the Asia-Pacific Partnership on Clean Development and Climate. Australia's initial commitment of \$100 million, announced January 2006, has been assigned to 63 regional projects. This second commitment will focus on larger clean

energy technology projects.

- \$15.7 million for the Asia-Pacific Forestry Skills and Capacity Building Program, a new initiative to improve forest management practices, maximise carbon retention rates and improve carbon capture in regenerating forests.
- Seed funding of \$5 million for the Asia-Pacific Network for Energy Technology. APNet aims to improve linkages between researchers in the APEC region on emerging low emissions energy and energy efficiency technologies, accelerating the availability of lower-cost clean energy technology.

More details available at: [http://www.pm.gov.au/media/Release/2007/Media\\_Release24523.cfm](http://www.pm.gov.au/media/Release/2007/Media_Release24523.cfm)

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### **\$2.25 Million Funding to Reduce Australia's Agriculture Methane Emissions**

The Minister for Agriculture, Fisheries and Forestry, Peter McGauran, has announced the Government will contribute \$1 million to a collaborative research program aimed at lowering agricultural greenhouse gas emissions by capturing and using methane for energy generation. In addition, another \$1.25 million from a range of industry partners including the Rural Industries Research and Development Corporation, Meat and Livestock Australia, Dairy Australia and Australian Pork Ltd will complement this contribution. The program involves adapting, for Australian conditions, technology already in use in countries such as the United States, United Kingdom and Canada that have intensive animal production. The technology involves the collection of animal waste in a covered pond, allowing the capture of methane generated as the waste is digested. This methane may then be used for industrial heating, drying or electricity generation. The program will help cut agriculture's carbon emissions and provide a potential secondary income for farmers in the intensive livestock industry. The program is being managed by the Rural Industries Research and Development Corporation and will include projects in the dairy, beef and pig industries. It forms part of Australia's commitment to the international Methane to Markets Partnership.

More information is available at: <http://www.maff.gov.au/releases/07/07075pm.html>

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### **Case Study into Selected Renewable Energy Sectors in Australia**

The Australian Parliament's Standing Committee on Industry and Resources recently presented its interim report for its inquiry into developing Australia's non-fossil fuel energy industry entitled *Renewable power: A case study into selected renewable energy sectors in Australia*.

The report is available from: <http://www.aph.gov.au/house/committee/isr/renewables/report.htm>

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### **Global Opportunities Grants Program**

The Department of Industry, Tourism and Resources has announced a pilot round of grant funding and invites applications from Australian industry to pursue potential Global Opportunities (GO). The GO Program aims to assist the Australian manufacturing and services sectors to enter global supply chains and bid for work on major international projects. The program has been allocated \$254.1 million over the next ten years. Applicants are invited to identify global opportunities and supply chains over \$500 million and to outline how these opportunities might be pursued through industry and government working together. The Australian Government will support industry's pursuit of global opportunities, including: providing market intelligence on potential global opportunities; facilitating outward and

inward trade missions; facilitating business matching; and developing Australian industry capability directories.

Applications for the Pilot Round close on Friday, 9 November 2007. However, the Department anticipates subsequent rounds will be conducted on a regular basis in 2008. A series of presentations on the program with opportunities for questions are being held in the capital cities below.

More information is available at: [www.industry.gov.au/GO](http://www.industry.gov.au/GO) or call 13 28 46.

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### **Australian Research Council Biofuel Funding**

The Australian Academy of Technological Sciences and Engineering (ATSE) is undertaking an Australian Research Council funded project on the potential application of biofuels to transport systems in Australia. This project aims to clarify the potential of biofuels (and alternative hydrocarbon fuels) to become a significant component of transport fuels while considering other available alternative fuels. The project also hopes to map critical research required and emerging development and adoption pathways for the biofuels industry. The project will also identify areas where policy initiatives are required and convey this information to the Australian Government.

A summary of the project can be found at: <http://www.atse.org.au/?sectionid=10>

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### **National Collaborative Research Infrastructure Strategy (NCRIS) Support for Biofuels**

The Federal Government, through the Department of Education, Science and Training is committing \$35 million through the National Collaborative Research Infrastructure Strategy (NCRIS) to enhance Australia's capacity to produce biotechnology products in three distinct areas, one of which is biofuels. \$7.98 million has been allocated for the biofuels component, with additional funding from state governments.

Two pilot-scale facilities for development of novel biofuel production technologies are being developed. One of the facilities is being set up by QUT at Mackay, Queensland to convert lignocellulosic biomass to ethanol and the other is being established by the South Australian Research and Development Institute to convert microalgae to biodiesel. The related laboratory infrastructure is being enhanced at three universities – UNSW, Sydney University and Macquarie University. AusBiotech has been awarded the contract by DEST to manage this program. The intent of the program is to make available to the broader research community and commercial enterprises access to research infrastructure for the development of biofuels.

For further information, contact the NCRIS Program Manager at AusBiotech, Dr. Stewart Hay, Tel: (03) 9828 1416.

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### **The University of New England Receives Biofuels Development Grant**

The University of New England has received a \$480,000 grant from the NSW Government to develop technologies for the production of biofuels. The project is being headed by Professor Paul Martin, Director of the Australian Centre for Agriculture and Law, University of New England. The study is to analyse the viability of various feedstocks, including woody waste from the forestry industry, stubble, straw and potentially green garden waste, and their preparation. One desirable outcome of biofuels production is to have a range of income streams from farming. The study will run for two years in conjunction with the Department of Primary Industries says Martin.

More information is available at: <http://www.une.edu.au/news/archives/000803.html>

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### **\$310 Million New South Wales Climate Change Fund**

The NSW Government is establishing a \$310 million Climate Change Fund incorporating the Water and Energy Savings Funds, the Climate Action Grants Program and some funding from the Environmental Trust. Included in the five-year program is a \$40 million Renewable Energy Development Fund aimed at pilot and demonstration projects.

More information available from <http://www.environment.nsw.gov.au/grants/ccfund.htm>

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### **Energetix Trials Greenfuels Emissions-to-Biofuel Technology**

Energetix are trialing Greenfuels Emissions-to-Biofuel technology at the Hazelwood power station in the Latrobe Valley, Victoria. This involves feeding flue gas into a photobioreactor, a containment vessel filled with water, which has been inoculated with specific algal strain(s). The flue gas provides the algae with a carbon and nitrogen source and, with the addition of sunlight, the algae fix the CO<sub>2</sub> into carbohydrates. These carbohydrates are then used to produce biofuels. Energetix hopes this technique will enable a substantial reduction of CO<sub>2</sub> and NO<sub>x</sub> emissions from power stations, whilst providing an inexpensive raw material for the production of biofuels. Energetix are Victoria's largest biofuel producer, producing 100 Megalitres of biodiesel p.a. at North Laverton.

More information can be found Energetix's submission to The Inquiry into the Production and/or Use of Biofuels in Victoria, see:

[http://www.parliament.vic.gov.au/enrc/inquiries/biofuels/submissions/Sub\\_43\\_Energetix.pdf](http://www.parliament.vic.gov.au/enrc/inquiries/biofuels/submissions/Sub_43_Energetix.pdf)

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### **Western Australia Renewable Energy Industry Survey**

Data Analysis Australia, an independent statistical consultancy, in conjunction with ACIL Tasman, is conducting a survey of organisations that operate within the renewable energy sector of Western Australia. The survey, conducted for the Western Australian Department of Industry and Resources, covers both stationary and transport energy. The results will assist the Department to understand the industry, its competitive advantages, as well as barriers to growth and development, which may be addressed through policy action.

WA readers are invited to provide a profile of their organisation. An electronic questionnaire may be downloaded from: <http://www.daa.com.au/survey/doir4>.

Completed electronic forms should be returned by 5:00pm Friday 19 October 2007, via  
Email: [doirsurvey@daa.com.au](mailto:doirsurvey@daa.com.au) Fax: 08 9386 3202 or  
Mail: Data Analysis Australia, Reply Paid 3258 Broadway, Nedlands WA 6009

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### **Synergy to Purchase 40MW from Western Australian Biomass Pty Ltd**

Synergy, the Western Australian State Government owned energy retailer, has selected Western Australian Biomass Pty Ltd (WAB) to supply 40MW of renewable energy enabling the State Government to reach its target of six per cent renewable energy by 2010. WAB's proposed \$90 million biomass power station will burn between 900-1000 tonne/day of forestry waste and will be located 5km from Bridgetown. The plant is reported to be facing community opposition and has not

yet been granted the environmental approvals necessary to begin its 18 month duration construction. The plant is scheduled to commence operating by the end of 2009.

More information is available at:

<http://www.mediastatements.wa.gov.au/media/media.nsf/news/3EE996E0550ECDE5C82573380019FBAE?opendocument>

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## **BP Australia and Manildra Announce Biofuels Agreement**

BP Australia and Manildra Energy Australia recently announced one of Australia's largest biofuels supply agreements. The agreement results in almost half of BP's petrol sales in New South Wales containing renewable ethanol. BP Australia will receive 40 million litres of ethanol over the next year from Manildra's Bomaderry ethanol plant (near Nowra) with deliveries having commenced in August 2007. Combined with BP's existing 15 million litre ethanol supply deal with CSR the Manildra agreement makes BP the largest marketer of biofuels in Australia.

More info available at: <http://www.biofuelreview.com/content/view/1151/>

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## **Biofact**

- **Biodiesel use in Germany:** In 2006, Biodiesel sales in Germany rose to 2.8 million tonnes, accounting for almost 5 percent of that country's total transport fuel sales. In the same year Germany used 28,200,000 tonnes of diesel for transport fuel, 21,800,000 tonnes of petrol, 1,080,000 tonnes of plant oil and 480,000 tonnes of bioethanol. More information is at: <http://www.renewableenergyaccess.com/rea/news/story?id=49745>  
Also see the Biofuels Barometer for more info  
[http://www.mvo.nl/biobrandstoffen/download/baro179\\_b.pdf](http://www.mvo.nl/biobrandstoffen/download/baro179_b.pdf)
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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 1,600 odd addresses given in the previous 30 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.

Acoustic wave pulsed combustion

[http://www.combustion.me.vt.edu/Projects/ACC/Prateep\\_Chatterjee/prateeps\\_work.htm](http://www.combustion.me.vt.edu/Projects/ACC/Prateep_Chatterjee/prateeps_work.htm)

Adoratec Organic Rankine Cycle (ORC) for Biomass

<http://www.adoratec.com/productnav.html>

Algae article

[http://www.unh.edu/p2/biodiesel/pdf/algae\\_salton\\_sea.pdf](http://www.unh.edu/p2/biodiesel/pdf/algae_salton_sea.pdf)

Algae Biomass

[http://www.unh.edu/p2/biodiesel/article\\_alge.html](http://www.unh.edu/p2/biodiesel/article_alge.html)

ArrowBio anaerobic digestion/waste treatment movie

<http://www.arrowbio.com/movie.htm>

Arundo donax from James A. Duke. 1983. Handbook of Energy Crops. Unpublished

[http://www.hort.purdue.edu/newcrop/duke\\_energy/Arundo\\_donax.html](http://www.hort.purdue.edu/newcrop/duke_energy/Arundo_donax.html)

Australian Climate Exchange (ACX)

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

Bio Adapt International Pty Ltd – fast growing biomass

<http://www.bioadaptint.com>  
Biocoup website  
<http://www.biocoup.eu/>  
Biodegradable lubricants' research and interests  
<http://www.pitt.edu/~soriano/biolub.htm>  
BioEnergy Action Plan for California.  
<http://www.energy.ca.gov/2006publications/CEC-600-2006-010/CEC-600-2006-010.PDF>  
Bioenergy Community  
<http://www.bioenergy.fuelchat.org/>  
Bioenergy paper from Berkley University  
[http://petroleum.berkeley.edu/papers/patzek/thermodynamics\\_of\\_biomass.htm](http://petroleum.berkeley.edu/papers/patzek/thermodynamics_of_biomass.htm)  
Biofuel Genomics -Fast growing polyploid biomass  
<http://www.bfgen.com>  
Biofuel talk by Weyerhaeuser VP Denny Hunter  
[http://www.weyerhaeuser.com/futurefuels/GI\\_Fuel\\_rev.mov](http://www.weyerhaeuser.com/futurefuels/GI_Fuel_rev.mov)  
Biofuels Cities (EU)  
<http://www.biofuel-cities.eu>  
Biofuel Cities Resources Centre  
<http://www.biofuelstp.eu/>  
Biofuels Review  
[http://www.biofuelreview.com/component/option.com\\_frontpage/Itemid.1/](http://www.biofuelreview.com/component/option.com_frontpage/Itemid.1/)  
Biofuels, Bioproducts & Biorefining (Biofpr)  
<http://www.biofpr.com>  
Biogas Nord  
<http://www.biogas-nord.com>  
Biomass Strategy – UK  
<http://www.defra.gov.uk/environment/climatechange/uk/energy/renewablefuel/pdf/ukbiomassstrategy-0507.pdf>  
BioTown, USA Sourcebook  
[http://www.in.gov/biotownusa/pdf/Biotown\\_Sourcebook\\_040306.pdf](http://www.in.gov/biotownusa/pdf/Biotown_Sourcebook_040306.pdf)  
Box Ironbark Farm Forestry Network  
<http://www.biffn.org.au>  
Building a Downdraft Gasifier  
<http://www.gengas.nu/byggbes/index.shtml>  
Camelina as Biodiesel feedstock article  
[http://www.treehugger.com/files/2007/05/ancient\\_plant\\_biodiesel.php](http://www.treehugger.com/files/2007/05/ancient_plant_biodiesel.php)  
Carbohydrate Economy  
<http://www.carbohydrateeconomy.org/>  
Cellulostic Ethanol Commercialization  
[http://www.rangefuels.com/range\\_fuels\\_to\\_build\\_first\\_wood\\_cellulosic\\_ethanol\\_plant\\_in\\_georgia](http://www.rangefuels.com/range_fuels_to_build_first_wood_cellulosic_ethanol_plant_in_georgia)  
Chevron biofuels alliance with Weyerhaeuser  
<http://www.weyerhaeuser.com/futurefuels/>  
Department of Bioenergy, University of Southern Denmark  
<http://websrv5.sdu.dk/bio/>  
DuPont Tate & Lyle Bioproducts  
[http://duponttateandlyle.com/life\\_cycle.html](http://duponttateandlyle.com/life_cycle.html)  
Economic Analysis of Biomass Energy – UK  
<http://www.dti.gov.uk/files/file39040.pdf>  
EnAg  
<http://enagri.info>  
Energy White Paper – UK  
<http://www.dti.gov.uk/ewp/>  
European Commission (2005): Biomass action plan  
[http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005\\_0628en01.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0628en01.pdf)

Everything Biomass site  
<http://www.everythingbiomass.org>

Fachagentur Nachhaltige Rohstoffe e.V. (2006): Renewable Resources in Industry  
[http://www.fnr-server.de/pdf/literatur/pdf\\_235fnr\\_nr\\_engl\\_08\\_freigabeversion.pdf](http://www.fnr-server.de/pdf/literatur/pdf_235fnr_nr_engl_08_freigabeversion.pdf)

Firewood Association of Australia  
<http://www.firewood.asn.au>

Future Fuels Middle East  
<http://www.futurefuelsme.com>

Gas cleanup and upgrading  
[http://www.idosi.org/wasj/wasj1\(2\)/12.pdf](http://www.idosi.org/wasj/wasj1(2)/12.pdf)  
<http://www.iea-biogas.net/Dokumente/Biogas%20upgrading.pdf>

Infiniuel Biodiesel (algae to biodiesel)  
<http://www.infinifuel.com/>

International Energy Agency (2007): Renewables in Global Energy Supply. An IEA act Sheet  
[http://www.iea.org/textbase/papers/2006/renewable\\_factsheet.pdf](http://www.iea.org/textbase/papers/2006/renewable_factsheet.pdf)

Lurgi bioenergy media releases  
[http://www.lurgi.com/website/index.php?id=110&L=1&tx\\_ttnews%5b%5d=1184059858&cHash=9aa9747746](http://www.lurgi.com/website/index.php?id=110&L=1&tx_ttnews%5b%5d=1184059858&cHash=9aa9747746)

Mongabay Biofuels report (Goldman Sachs)  
<http://news.mongabay.com/2007/0824-biofuels.html>

National Biofuels Group  
<http://www.natbiogroup.com>

National Energy Foundation (UK) bioenergy portal  
<http://www.nef.org.uk/greenenergy/biomass.htm>

OECD – Organisation for Economic Co-Operation and Development (2004): Biomass and Agriculture: Sustainability, Markets and Policies  
<http://213.253.134.43/oecd/pdfs/browseit/5104011E.PDF>

ORC paper from BIOS of Austria. Norbert Wildbacher.  
<http://www.bioenergy.by/images/feb/prez/99.pdf>

Pacific Ethanol California-based ethanol production  
<http://www.westernfarmpress.com/environment/040307-ethanol-production/index.html>

PetroSun (algae to biodiesel)  
<http://www.petrosuninc.com/>

Potential Contribution of Bioenergy to the Worlds Future Energy Demand  
<http://www.ieabioenergy.com/MediaItem.aspx?id=5586>

Post Carbon Cities  
<http://postcarboncities.net/>

Pressure Swing Adsorption (PSA) – gas cleaning  
<http://www.psaplants.com/psa-process-overview.html>

Pros and Cons of Bioenergy page  
<http://www.inventhp.com/bioenergy-pros-and-cons.html>

Reform of the Renewables Obligation – UK  
<http://www.dti.gov.uk/files/file39497.pdf>

Renewable Energy (New South Wales) Bill 2007  
<http://www.parliament.nsw.gov.au/prod/PARLMENT/hansArt.nsf/V3Key/LA20070627055>

Renewable Energy Focus (new web page)  
<http://www.renewableenergyfocus.com>

Small scale mobile gasifier  
<http://www.memagazine.org/supparch/peoct04/cashingin/cashingin.html>

Small/microCHP  
<http://gasifiers.bioenergylists.org/smallchp>

Strawsons Energy (coppice)  
<http://www.strawsonsenergy.co.uk>

Sustainable Insight magazine  
<http://www.sustainableinsight.com.au/resources.php>

Swedish Biogas Centre – biogas

<http://www.sgc.se/Rapporter/Resources/Biogasinfo07.pdf>

Swedish car powered by wood gasifier

<http://www.vedbil.se/indexe.shtml>

The Department of Bioenergy, University Of Southern Denmark

<http://www1.sdu.dk/bio>

Two stage gasification from DTU

[http://www.mek.dtu.dk/English/Research/Feature\\_Articles/The\\_Viking\\_Two\\_stage\\_Gasifier.aspx](http://www.mek.dtu.dk/English/Research/Feature_Articles/The_Viking_Two_stage_Gasifier.aspx)

US EPA Outdoor Wood-fired Hydronic Heaters Program

[http://www.epa.gov/woodheaters/what\\_epa\\_doing.htm](http://www.epa.gov/woodheaters/what_epa_doing.htm)

Waste Strategy 2007 – UK

<http://www.defra.gov.uk/environment/waste/strategy/strategy07/index.htm>

Waste to Energy (WTE) & Biomass in California.

<http://www.energy.ca.gov/development/biomass/index.html>.

Wood Gas Producers from South Africa

<http://www.arc.agric.za/home.asp?PID=375&ToolID=2&ItemID=1846>

World Business Council on Sustainable Development (2006): Biomass Issue Brief: Energy And Climate

<http://www.wbcsd.org/DocRoot/F0VfmsVHUnSYMppFafOK/biomass.pdf>

Zilkha Biomass Energy

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

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## International Developments

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### IEA Bioenergy Report Points to Potential Contribution of Bioenergy

A new 12-page report *The Potential Contribution of Bioenergy to the World's Future Energy Demand* has been released by IEA Bioenergy. The report summarises a range of biomass resources, the conversion options and end use applications. The report puts the total energy potential for sustainably produced biomass at 1100 Exajoules (EJ) by 2050 under an optimal scenario. The World's current total demand for energy currently stands at approximately 467 EJ. In less optimistic scenarios bioenergy's contribution to the world's future energy supply ranges between 20 and 50 percent (200 - 400 EJ), depending on different energy demand scenarios. Some 130-260 EJ of this amount would be made up of liquid biofuels - more than the world's current total mineral oil output. Associated issues of market development, international bioenergy trade, and competition for biomass are also covered. The report is available from <http://www.ieabioenergy.com/MediaItem.aspx?id=5586>.

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### BP and Associated British Foods to Build £200m Biofuel Plant

Two of the largest names in energy and food production have joined forces to build a £200m biofuel plant to meet the growing need for greener petrol. BP and Associated British Foods claim the Saltend facility, near Hull, UK, will produce 420m litres of ethanol a year when it begins production in 2009. ABF said the move would use some of the two to three million tonnes of surplus wheat produced in the UK and bring some agricultural land back into use.

BP and ABF will both hold a 45 percent stake in the new plant where 70 jobs will be created. DuPont of America will hold a 10 percent share. In addition, BP and DuPont plan to import some corn-based biobutanol from China to feed a research and demonstration pilot plant at the same site.

Further information is available at:

<http://www.guardian.co.uk/environment/2007/jun/27/energy.oilandpetrol>

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## **USDA Awards \$97 M for Renewable Energy Projects**

Four US businesses will receive funds under the USDA's Renewable Energy and Energy Efficiency (Section 9006) guaranteed loan program and the Business and Industry (B&I) guaranteed loan program, which provides financial assistance to agricultural producers and rural small businesses to install renewable energy projects or make energy efficiency improvements. The recipients are:

- Clean Burn Fuels LLC, in Hoke, County, N.C., is approved for a US \$10 million Section 9006 loan and a US \$25 million B&I loan to construct an ethanol plant expected to produce 227 million litres of ethanol per year.
- Blackhawk Biofuels LLC, Freeport, Ill., is approved for a US \$7.5 million Section 9006 loan and a US \$20 million B&I loan to build and operate a 114 million litres biodiesel facility.
- Appling County Pellets, Savannah, Ga., is approved for a US \$10 million Section 9006 loan and a US \$9.5 million B&I loan to produce up to 130,000 metric tonnes of wood pellets to be sold in domestic and international markets.
- National Trail Biodiesel, Newton, Ill., is approved for a US \$10 million Section 9006 loan and a US \$5 million B&I loan to build and operate a 114 million litres per year biodiesel production facility.

More info available at: [http://www.usda.gov/wps/portal/!ut/p/s.7\\_0\\_A/7\\_0\\_1OB?](http://www.usda.gov/wps/portal/!ut/p/s.7_0_A/7_0_1OB?)

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## **WWF Germany Investigates Palm Oil**

WWF Germany has commissioned a study to evaluate the social and ecological effects of the increased use of palm oil as an energy source. The associated change in land use, energy balance and greenhouse gas emissions were assessed. As a result of this study WWF has called for an international certification system that assures sustainable production and use of bioenergy.

The study is available at:

[http://www.wupperinst.org/en/projects/proj/index.html?&projekt\\_id=158&bid=136](http://www.wupperinst.org/en/projects/proj/index.html?&projekt_id=158&bid=136)

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## **DOE Offers \$33.8 Million for Cellulosic Biofuels Projects**

The U.S. Department of Energy (DOE) has made a Funding Opportunity Announcement (FOA) that it will make available up to \$33.8 million to support the development of commercially viable enzymes for the bio-based production of clean, renewable biofuels such as cellulosic ethanol. This biofuels effort focuses on production from non-food materials and agricultural waste such as corn stover, switchgrass, and prairie grass. Funding is subject to Congressional appropriations.

More info is available at: [http://e-](http://e-center.doe.gov/iips/faopor.nsf/8df825feb86675de852564650046faea/f8893baa92573bca8525733a006a9f14?OpenDocument)

[center.doe.gov/iips/faopor.nsf/8df825feb86675de852564650046faea/f8893baa92573bca8525733a006a9f14?OpenDocument](http://e-center.doe.gov/iips/faopor.nsf/8df825feb86675de852564650046faea/f8893baa92573bca8525733a006a9f14?OpenDocument)

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## **BioMaxx Systems to Locate Biodiesel Demonstration Plant in Thailand**

BioMaxx Systems Inc, a Bioenergy Australia member, plans to build a demonstration biodiesel plant in the fertile agricultural region south of Bangkok, Thailand. The multitude of different types of feedstocks available in Thailand will be processed to ascertain optimum production conditions for each feedstock. The nearby port of Laem Chabang also provides the option of accepting feedstock shipments. BioMaxx hopes this plant will assist in developing a line of small-scale biodiesel production plants that may be customised to specific feedstocks and marketed in Asia and around the World.

More information is available at: <http://www.biomaxxsystems.com/news.php?pid=30>

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## **Biogas and Biodiesel Synergy**

Germany's Biogas Nord has been commissioned to construct a large multi-feed biogas plant with a capacity of 2.8 MW in Romania. The plant is to be built in the Transylvanian region close to the county town of Oradea with a cost of approximately 3.5 million Euro. A synergy will be created by coupling the biogas facility to the near by construction of a biodiesel plant. In so doing, the waste products resulting from the production of biodiesel, such as rapeseed pellets and glycerin, will be brought to the biogas plant as substrates. In addition, cogeneration will be employed as the heat energy produced from the generation of electricity at the biogas plant is transferred for use at the biodiesel plant.

More information is available at: <http://www.ad-hoc-news.de/CorporateNews/en/12910475/DGAP-News-Biogas-Nord-AG-Successful-Market-Entry-in> and [http://www.biogas-nord.de/docs\\_en/home.html](http://www.biogas-nord.de/docs_en/home.html)

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## **PG&E Receives Approval for Biogas Purchase**

Pacific Gas and Electric Company (PG&E) have announced that the Californian Public Utilities Commission (CPUC) has approved its gas purchase agreement with Microgy, Inc., a subsidiary of Environmental Power Corporation. The agreement details plans to deliver up to 227 million cubic metres of pipeline quality renewable natural gas daily. The methane gas, captured from cow manure, will be generated by Microgy facilities in California. Microgy will construct four gas production facilities on large dairy farms in California. The gas collected by these systems will run through PG&E's extensive gas pipeline network. The benefit is two fold, producing renewable energy while capturing methane that would have otherwise escaped to the atmosphere.

More details at: <http://www.pge.com/>

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## **European Commission Calls for Sustainable Biofuel Production**

The European Commission is developing legislation that will require minimum sustainability standards to be set for biofuel development. The legislation will legally back the 10 percent goal for biofuels and will include a set of minimum sustainability standards. Only biofuels that meet these standards will be included in the 10 percent target and be eligible for EU tax exemptions. These rules will apply equally to imports as well as to biofuels produced domestically. This legislation is part of a larger EU push to have renewable energy sources account for 20 percent of the region's energy market by 2020.

The European Union is still debating what sustainability standards should be included in the legislation. Issues being discussed include bringing new land into cultivation and the development of biofuels derived from organic waste including woody material. The European Commission's biofuels directive will be ready by the end of 2007. After the draft directive is complete, it will be passed on to the European Council and Parliament for a final decision.

More information is available at: <http://www.enn.com/agriculture/article/22443>

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### **McDonalds and Burger King's Used Cooking Oil to Energy and Biodiesel**

Agri-Energy, a subsidiary of Irish Food Processors, has revealed plans to build a £50m plant to turn used cooking oil from fast food giants such as McDonalds and Burger King into renewable energy and biodiesel. Agricultural crops and animal by-products such as tallow will also be utilised. Agri-Energy plans to refine the used cooking oil and then use it to fuel a 35 megawatt power plant. It would also produce around 200,000 tonnes of biodiesel annually - mainly for use in the local refineries.

For more information see: [http://news.bbc.co.uk/1/hi/wales/south\\_west/6582995.stm](http://news.bbc.co.uk/1/hi/wales/south_west/6582995.stm)

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### **Fungi Make Biodiesel Efficiently at Room Temperature**

Scientists at the Indian Institute of Chemical Technology in Hyderabad, India, have discovered a more efficient and possibly lower cost method of producing biodiesel. Instead of the usual mixing of methanol with sodium hydroxide and vegetable oil and then heating the mixture for sustained periods, sunflower oil and methanol is passed through a bed of pellets made from the compressed fungal spores of *Metarhizium anisopliae*. The enzyme lipase, produced in large amounts by *Metarhizium anisopliae*, links the oil to methanol in solution at room temperature. This removes the energetically inefficient step of heating the mixture thus saving energy and emissions in the production stage of biodiesel.

More information is available at: <http://biopact.com/2007/08/fungi-make-biodiesel-efficiently-at.html>

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### **Canada Launches Can \$500M Fund for Next-Generation Renewable Fuels**

The Canadian Government has launched a \$500 million (Canadian) NextGen Biofuels Fund to be managed by the Sustainable Development Technology Canada (SDTC). The fund will aim to take advantage of the abundance of suitable biomass materials available in Canada by funding large-scale demonstration facilities and encouraging the growth and retention of home-grown technologies and expertise in Canada. Next-generation renewable fuels are derived from non-traditional renewable feedstocks, such as fast-growing grasses, agricultural residues and forest biomass, and manufactured through the use of non-conventional conversion technologies. NextGen biofuels are seen to provide superior environmental benefits and alternate sources of revenue for those in the agriculture, forestry and waste management sectors and are made from cellulose, rather than edible starch.

See the SDTC web page at: <http://www.sdtc.ca/>

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## Forthcoming Events

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- Greenfuel III  
11 - 12 October 2007  
Textile Auditorium, Prabhadevi, Mumbai, India  
Email: [debashree@ficci.com](mailto:debashree@ficci.com) / [ninad@ficci.com](mailto:ninad@ficci.com)
- Sustainable Energy Initiative - Bioenergy workshop  
Monday 15th October, 1–5pm  
Gateway BEET, 75 Lascelles Street, Hopetoun, Victoria  
Contact - Pauline Schmidt, University of Ballarat  
Tel: (03) 5362 2602, Email: [p.schmidt@ballarat.edu.au](mailto:p.schmidt@ballarat.edu.au)
- Renewable Raw Materials for Industry: Contribution to Sustainable Chemistry  
17-18 October 2007, Brussels, Belgium.  
Email: [mvanboven@europoint.eu](mailto:mvanboven@europoint.eu)  
<http://www.greentech.eu>
- Biorefinery Conference  
20 – 23 October 2007, Beijing, China  
<http://www.biorefineries.cn>
- Asian International Biomass Energy Conference & Exhibition  
23-25 October 2007, Beijing Exhibition Centre, China.  
<http://www.bioenergy-asia.com>
- Next Biofuels Technologies  
25-26 Oct 2007 Beijing, China.  
<http://www.cmtevents.com/eventdatas/071047/pdf/071047.pdf>
- Expert Consultation - Sustainable Biomass  
25-26 October 2007  
Dubrovnik, Croatia  
<http://www.task29.net/index.php?id=37>
- Methane to Markets Partnership Expo: A Forum for Projects, Technology, Financing and Policy  
30 October – 1 November 2007, Beijing, China  
<http://www.methanetomarkets.org/expo/index.htm>
- 2007 Biobased Industry Outlook Conference - Growing the Bioeconomy  
Science and Policy for the Next Generation  
5-6 November 2007. Iowa State University, Ames, Iowa, USA.  
<http://www.bioeconomyconference.org/07agenda.htm>
- Yangling Agricultural Hi-Tech Fair, Yangling Agricultural Hi-tech Industries  
Demonstration Zone, Yangling, Shaanxi Province, China 5 – 9 November 2007.  
<http://en.agri-fair.com/>
- 2<sup>nd</sup> International Specialized Exhibition "BIOENERGETICS – 2007"  
6 - 9 November 2007, Crocus Expo Exhibition Centre, Moscow, Russia.  
<http://www.energy-bio.ru/engl>

- 20th World Energy Congress  
The Energy Future in an Interdependent World  
11-15 November 2007, Rome, Italy.  
<http://www.rome2007.it>
- Global Networking Symposium on BioEnergy: Biofuels & Beyond!  
November 13 & 14 2007 at the Roundup Centre, Stampede Park, Calgary, Alberta, Canada.  
<http://theinnovators.net/bioenergy2007/registration.php>
- 2<sup>nd</sup> Annual Pacific Rim Summit on Industrial Biotechnology and Bioenergy  
14-16 November 2007  
Hilton Hawaiian Village, Honolulu, Hawaii.  
<http://www.bio.org/pacrim>  
Email: [pacrim@bio.org](mailto:pacrim@bio.org)
- Ethanol & Biofuels Australasia 2007  
19 - 20 November 2007  
Intercontinental Hotel, Phillip Street, Sydney  
[http://www.terrapinn.com/2007/bio\\_au/](http://www.terrapinn.com/2007/bio_au/)  
Info Pack: <http://www.terrapinn.com/Template/Master/EventBrochure.aspx?txtEID=1898>
- International Trade Fair for the Production and Processing of Oils and Fats made from Renewable Resources. 20 – 22 November 2007, Munich.  
<http://www.oils-and-fats.com/en/Home/cn/Glance>
- **Bioenergy Australia Conference 2007**  
**26-28 November 2007, Gold Coast International Hotel, Queensland**  
<http://www.bioenergyaustralia.org>
- 4th Annual Canadian Renewable Fuels Summit  
2-4 December, Quebec City, Quebec, Canada.  
<http://www.crf2007.com>
- First International Conference Biofuel-2007: Prospects of the Ukrainian Agricultural Sector. 6-7 December 2007, President Hotel, Kyiv, Ukraine.  
<http://www.biofuel.com.ua/eng/>  
E-mail: [APN@nip.net.ua](mailto:APN@nip.net.ua)
- Asia Biofuels Conference and Expo  
11-13 Dec 2007, Singapore.  
<http://www.asiabiofuels.com>
- 6th Annual European Motor Biofuels Forum  
9-10 January 2008. Rotterdam The Netherlands  
<http://www.biofuels2008.eu>
- Central European Biomass Conference 2008  
16 - 19 January 2008, Graz, Austria.  
Conference languages are German, English, Italian, Polish and Hungarian  
<http://www.biomasseverband.at/biomasse/?cid=24803>
- Bioenergy World Europe 2008  
7-10 February 2008, Verona, Italy.  
<http://www.bioenergy-world.com>

- 13th Annual National Ethanol Conference: Policy & Marketing  
25-27 February 2008, JW Marriott Grande Lakes Orlando, Florida  
<http://www.nationalethanolconference.com>
- World Sustainable Energy Days  
5-7 March 2008, Wels, Austria.  
<http://www.esv.or.at>
- GLOBE 2008 Conference and Auto Future Tech Summit.  
12-14 March 2008, Vancouver, Canada.  
<http://www.globe2008.ca> & [www.autofuturetech.com](http://www.autofuturetech.com)  
Email: [info@globe2008.ca](mailto:info@globe2008.ca)
- 8th European Conference on Industrial Furnaces and Boilers (Infub-8)  
25-28 March 2008 Vilamoura, Algarve, Portugal at Forum Dom Pedro.  
<http://www.cenertec.pt>
- International Biomass '08 Conference and Trade Show – Power, Fuels and Chemicals  
15-17 April 2008, Minneapolis, Minnesota, USA.  
<http://www.biomassconference.com>  
Email: [abstracts@bbibiofuels.com](mailto:abstracts@bbibiofuels.com)
- 30th Symposium on Biotechnology for Fuels and Chemicals  
4-7 May 2008  
Astor Crowne Plaza Hotel, New Orleans, LA, USA. Email: [meetings@simhq.org](mailto:meetings@simhq.org)  
<http://www.simhq.org/meetings/30symp/index.html>.
- Enviro 08  
5-7 May 2008. Melbourne Exhibition and Convention Centre.  
[www.enviroconvention.com.au](http://www.enviroconvention.com.au)  
Email: [program@enviroconvention.com.au](mailto:program@enviroconvention.com.au)
- World Bioenergy 2008 Conference and Exhibition on Biomass for Energy.  
27-29 May 2008, Jönköping Sweden.  
<http://www.worldbioenergy.se>
- 3<sup>rd</sup> International Bioenergy Conference and Exhibition  
3-5 June 2008. Prince George, British Columbia, Canada.  
<http://www.bioenergyconference.org>

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## Residues

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**Presentations from the Crawford Fund's 2007 Development Conference:** The presentations from the Crawford Fund's 2007 development conference, *Biofuels, Energy and Agriculture: Powering Towards or Away from Food Security?* held at Parliament House, Canberra on 15 August are available at: <http://www.crawfordfund.org/publications/conference07ppps.htm> with more formal proceedings to be available online and in hard copy format later this year. Steve Schuck, the Manager of Bioenergy Australia gave a presentation at this conference on the evolution of biofuels technologies.

**Veolia acquires an interest in Earthpower:** Veolia Environmental Services and Transpacific Industries Group Ltd have entered into a conditional contract to purchase Earthpower Technologies Sydney Pty Ltd. Earthpower utilises anaerobic digestion and cogeneration to convert organic waste into green energy and nutrient-rich fertilizer. Advantages of this system include its relatively low cost

- resource recovery from organic waste does not attract the NSW State Governments section 88 waste levy, minimal residual by-products, no harmful emissions and the ability to accept both specified liquid and solid organic waste. The plant is situated in Camellia, NSW. More information available at <http://www.collex.com.au/news-room/press-releases/earthpower1.asp> and <http://www.earthpower.com.au/>

**Waste timber research:** Ensis, a collaboration between CSIRO and Scion in NZ, in conjunction with Sydney based Warnken ISE is undertaking a nationwide study to quantify the volume and types of wood waste dumped at strategic waste facilities across Australia. The data collected will be available online in the 'Renewable Energy Atlas' (managed by DEW/AGO). A summary report will also be available on the Ensis website. Contact: Dr Joely Taylor, Ensis. Phone: 03 9545 2121 Email: [Joely.Taylor@csiro.au](mailto:Joely.Taylor@csiro.au)

**New BioEnergy Research Journal:** Springer has launched a new journal titled *BioEnergy Research*. The journals scope includes feedstock biology research related to biomass, biofuels, and bioenergy. Wide ranging articles are published, including peer-reviewed scientific research, reviews, perspectives and commentary, industry news, and government policy updates. Co-Editors-in-Chief are M.D. Casler; W. Vermerris and R.A. Dixon. For more information visit: <http://www.springer.com/west/home/generic/search/results?SGWID=4-40109-70-173756404-0>

**New Biofuels, Bioproducts & Biorefining journal:** Biofuels, Bioproducts & Biorefining is a new journal launched by SCI (Society of Chemical Industry) and John Wiley & Sons Ltd. It covers peer-reviewed information on sustainable products, fuels and energy. Examining international scientific research and industrial development along the entire supply chain, Issue One may be viewed without charge at: <http://www.biofpr.com/biofpr.html>

**Proceedings of The Future of Biogas in Europe Workshop:** The 160 page Proceedings of the European Biogas Workshop *The Future of Biogas in Europe – III* held 14-16 June 2007 at the University of Southern Denmark, is available online at <http://websrv5.sdu.dk/bio/Probiogas/down/work07/Proceedings.pdf>

**GGAS penalty:** The NSW greenhouse penalty for benchmark participants that fail to reduce emissions has risen by 50 cents to \$12.00 per tonne of carbon dioxide equivalent, effective for the 2007 compliance year. More info at <http://www.greenhousegas.nsw.gov.au/>

**USA opens largest biodiesel plant:** A biodiesel plant at Hoquiam, Washington State, USA, has recently been opened with an annual production capacity of 379 million litres. This is more than the total biodiesel production in the USA for the year 2005. More info at: <http://www.sustainableindustries.com/energy/10093946.html>

**Jatropha-fuelled biomass power station:** The first jatropha-fuelled power station is expected to begin supplying electricity in Swaziland in three years. More info at: <http://www.timesonline.co.uk/tol/news/world/article2155351.ece>

**London Cabs switch to B30:** London's biggest black cab company is fuelling its fleet on a blend of diesel and biodiesel. 3,000 black cabs have switch to the B30 biofuel blend. More info at: [http://www.edie.net/news/news\\_story.asp?id=13363](http://www.edie.net/news/news_story.asp?id=13363)

**Alkali deposits in biomass power plants:** The 1995 report, 'Alkali Deposits in Biomass Power Plants' is now routinely used to characterise volatile alkali in biomass fuels for evaluating potential fouling. The report is available at [http://www.trmiles.com/alkali/Alkali\\_Report.pdf](http://www.trmiles.com/alkali/Alkali_Report.pdf)

**Fujitsu has developed a biodegradable laptop chassis:** The chassis is made from corn-starch bioplastic. The material reduces carbon dioxide emissions by 15 percent compared to a chassis made

from petroleum-based plastics and is claimed to totally biodegrade in landfill. More information is available at: <http://asia.cnet.com/crave/2007/08/20/the-biodegradeable-laptop/>

**First UK train to run on biodiesel:** The Virgin Voyager has been modified to run on a blended fuel of 20 percent biodiesel, reducing CO2 emissions without harming the train's engine. Virgin aims to convert more trains in the future. Additional information is available at:

[http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk\\_news/6729115.stm](http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/6729115.stm)

**Engineering excellence awards:** Enecon and Verve Energy have won two engineering excellence awards in Perth for the Narrogin integrated wood processing demonstration project being the best environmental project in WA and best project for rural communities. More information is at:

<http://www.wa.engineersaustralia.org.au/exaw/2007%20winners.html>

**Global biogas market:** The global market for biogas was Euro 2 billion in 2006 and will increase to Euro 25 billion by 2020, according to a report from Helmut Kaiser Consultancy. The generation and storage of renewable energy will be the fastest-growing sector in the energy market for next 20 years and the market volume of global renewables will increase from US\$96 billion this year to \$124 billion in 2010 and \$198 billion in 2015. More information is at:

<http://www.processingtalk.com/news/hel/hel112.html>

**Gas to ethanol:** NZ Company Lanza Tech has secured US\$3.5 million from Khosla Ventures to develop carbon monoxide gas to ethanol. See:

[http://www.nytimes.com/2007/04/24/business/worldbusiness/24ethanol.html?\\_r=1&ex=1178596800&en=993a494433a0bc0c&ei=5070&oref=slogin](http://www.nytimes.com/2007/04/24/business/worldbusiness/24ethanol.html?_r=1&ex=1178596800&en=993a494433a0bc0c&ei=5070&oref=slogin)

**Ethanol article in Rolling Stones Magazine:** An article by Jeff Goodell takes a critical look at corn-based ethanol and its ability to meet US fuel demands. The article may be viewed at:

[http://www.rollingstone.com/politics/story/15635751/ethanol\\_scam\\_ethanol\\_hurts\\_the\\_environment\\_and\\_is\\_one\\_of\\_americas\\_biggest\\_political\\_boondoggles](http://www.rollingstone.com/politics/story/15635751/ethanol_scam_ethanol_hurts_the_environment_and_is_one_of_americas_biggest_political_boondoggles)

**Biofuels in Australia – Issues and Prospects:** A new report from the Rural Industries Research and Development Corporation (RIRDC) provides a synthesis of current knowledge on the biofuels industry. Issues covered include industry drivers, impacts on Australia's rural sector and ways that the industry can be successfully developed to maximize benefits and minimize risk. The report is available at: <http://www.rirdc.gov.au>

**Wood-chips gasifier:** An eleven page article entitled 'Wood-chips gasifier combined heat and power' by Dr. Bjorn Teislev, Manager, Babcock & Wilcox Volund R&D is at:

<http://www.gastechnology.org/webroot/downloads/en/IEA/WoodchipsGasifierCombinedheatandPower.pdf>

**Synbios II Presentations:** The presentations from the Synbios II conference are downloadable as pdf files from: <http://www.ecotraffic.se/SYNBIOSII/index-filer/Page326.htm>

**Net energy balance for ethanol:** A frank report of the concerns surrounding the growing bioethanol industry in the US is available at: [http://www1.eere.energy.gov/biomass/net\\_energy\\_balance.html](http://www1.eere.energy.gov/biomass/net_energy_balance.html)

**United Nations biofuels report:** The United Nations has released its first major report on bioenergy, *Sustainable Bioenergy: A Framework for Decision Makers*. They conclude that biofuels like ethanol can help reduce global warming and create jobs for the rural poor, but their benefits may be offset by environmental issues. The report is available from: <http://esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf>

**Interesting technical paper:** 'Description and evaluation of the new 1,000 kWe Organic Rankine Cycle process integrated in the biomass CHP plant in Lienz, Austria' by Ingwald Obernberger, Peter

Thonhofer, Erwin Reisenhofer is available at: <http://www.bios-bioenergy.at/uploads/media/Paper-Obernberger-ORCLienz-Euroheat-2002-10-01.pdf>

**Eucalypt oil as carbon source:** Rural Industries Research and Development Corporation (RIRDC) have investigated using eucalypt oil as a carbon source for microbes in the hope of deriving useful metabolic by-products. With further research this technique may allow novel application of eucalypt oil constituents in industry. The full report is available at: <http://www.rirdc.gov.au/reports/AFT/07-086sum.html>

**Biogas handbook:** *Running a Biogas Program - A handbook* by David Fulford describes the designs and uses of biogas plants, with technical appendices, for domestic and community plants. Likely economic and social effects of biogas programs are described from his experience, and advice is given on the problems of management. For more information and reviews see: [http://developmentbookshop.com/product\\_info.php?cPath=15&products\\_id=126](http://developmentbookshop.com/product_info.php?cPath=15&products_id=126)

**Algae-to-biofuels startup company:** US algae-to-biofuels startup company, Inventure Chemicals has raised US \$1.5 million to continue its development of a chemical process that turns algae into biodiesel and ethanol. One of the largest backers of the company is Imperium Renewables, a biodiesel producer. More info available at: <http://blog.seattlepi.nwsourc.com/venture/archives/120445.asp>

**PetroSun BioFuels:** PetroSun Incorporated recently announced the formation of PetroSun BioFuels Mexico to establish algae-to-biofuel operations in the State of Sonora, Mexico. PetroSun BioFuels Mexico will enter a joint venture agreement to develop algae cultivation farms and extraction plants in Sonora and southern Arizona producing algal oil, algae biomass products and electricity for the Mexican and U.S. markets. More info available at: <http://biz.yahoo.com/iw/070823/0294180.html>

**NSW GGAS:** The NSW Greenhouse Gas Reduction Scheme (GGAS) Administrator's September newsletter can be found on the following link: [http://greenhousegas.nsw.gov.au/documents/Newsletter\\_Issue5\\_September07.pdf](http://greenhousegas.nsw.gov.au/documents/Newsletter_Issue5_September07.pdf)

**Climate group newsletter:** The Climate Group's latest Newsletter is available at: [http://theclimategroup.org/index.php/news\\_and\\_events/in\\_the\\_headlines/#3](http://theclimategroup.org/index.php/news_and_events/in_the_headlines/#3)

**Food and Fuel:** The increase in world agriculture prices caused by the global boom in biofuels could benefit many of the world's rural poor by providing their agricultural sector an opportunity to compete with the heavily subsidised crops in the US and Europe says a new book *Biofuels for Transport: Global Potential and Implications for Energy and Agriculture*, authored by the Worldwatch Institute and published by Earthscan. More information is available at <http://www.worldwatch.org/node/5302> and <http://www.worldwatch.org/node/5303>

**Biomass fuelled Stirling CHP plants:** biomass-fueled gasifier/stirling-engine combined heat and power plants have been developed and commercialised by SD in Denmark. Photos and more details are available at: <http://www.stirling.dk/default.asp?ID=142>

**Brazil invests in ethanol:** Brazil plans to support research studies focusing on more efficient production methods for converting sugar cane into ethanol. The government has allocated \$60 million for a joint venture between FAPESP and Dedini S/A Industrias de Base.

**Tropical sugar beet:** Syngenta is developing tropical sugar beet for food and biofuels. More information is available at: <http://biopact.com/2007/08/syngenta-introduces-tropical-sugar-beet.html>

**Scottish Power to co-fire energy crops with coal:** Scottish Power plans to cut carbon emission by growing and combusting energy crops with coal at Longannet and Cockerzie power stations. The company plans to grow 250,000 tonnes of cereal crops and begin using it for fuel in 2009 and hopes to

ultimately displace 300,000 tonnes of carbon emissions per year. More information is available at: [http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk\\_news/scotland/6905893.stm](http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/scotland/6905893.stm)

**£52m renewable energy plant in North Wales:** The Phoenix Project is using 200,000 tonnes per year of 'sludge' waste produced from the paper-making process and burning it in UPM's new power plant. Instead of spreading the sludge on farmland, it now helps produce up to 16 megawatts of electricity to help run the plant at Deeside Industrial Park. UPM claims to have cut its carbon dioxide emissions by 30,000 tonnes annually. [http://www.dailypost.co.uk/news/north-wales/news/tm\\_headline=hain-opens--52m---8216-sludge--8217--power-plant&method=full&objectid=19344646&siteid=50142-name\\_page.html](http://www.dailypost.co.uk/news/north-wales/news/tm_headline=hain-opens--52m---8216-sludge--8217--power-plant&method=full&objectid=19344646&siteid=50142-name_page.html)

**Eni to build "Green" diesel facility in Livorno, Italy:** UOP LLC, a Honeywell company, and Eni S.p.A announced they would build a production facility using Ecofining™ technology to produce renewable diesel fuel from vegetable oils. The facility, to be located in Livorno, Italy, is to be completed in 2009 and will process 6,500 barrels per day of vegetable oils to supply European refineries with a high-cetane "green" diesel fuel. The Ecofining process uses catalytic hydroprocessing technology to convert vegetable oils to a green diesel fuel. The product, a direct substitute for diesel fuel, features a high cetane value. UOP will be presenting at the Bioenergy Australia 2007 conference. <http://www.nema.org/media/ind/20070726b.cfm>

**Covanta to build 600,000 metric tonne-per-year energy-from-waste project in Dublin:** Covanta Holding Corp. announced that it has entered into definitive agreements for the development of a 600,000 metric tonne per year Energy-from-Waste project serving the City of Dublin, Ireland and the surrounding communities. Covanta operates over 30 facilities worldwide that utilise solid municipal waste as a fuel to generate renewable energy. <http://www.wastebusinessjournal.com/news/wbj20070911D.htm>

**Bureau of Rural Sciences report:** The Bureau of Rural Sciences has produced a report 'GM oilseed crops and the Australian oilseed industry'. The report was commissioned by DAFF under the Australian Government's National Biotechnology Strategy. Electronic copies are downloadable at: <http://www.daff.gov.au/brs/land/publications>. To follow up any specific issues in this report, contact Hilary Johnson Email: [hilary.johnson@brs.gov.au](mailto:hilary.johnson@brs.gov.au)

**Green Energy Resources (GRGR) lands US\$125 million deal for C&D wood:** Green Energy Resources (GRGR) of the US announced it has received the first ever export supply contract for clean, dry, Construction and Demolition (C&D) wood. The contract is a 5-year supply deal worth over US \$125 million dollars. The contract commences immediately. The C&D includes chipped construction lumber cut offs, recycled pallets, crates, sawmill waste and other kiln and air dry woods. Green Energy Resources is currently organising ports and suppliers along the East and Gulf coasts, including New York, Baltimore, and Florida. Green Energy Resources is a wood biomass supplier sourcing from landfills, municipalities, hurricanes, storm damage and other sustainable sources. The company also offers the sale of Carbon offset credits. For more information see their Web page at: <http://www.greenenergyresources.com>.

**Diversified Energy and XL Renewables testing new algae technology:** Diversified Energy Corp. has formed a partnership with XL Renewables, Inc. where they will provide systems engineering and project management to commercialise XL Renewables' technology called Simgae™. Simgae uses common agriculture and irrigation components to produce algae at a reduced cost. The system uses thin walled polyethylene tubing which is laid out in parallel across a field. Under pressure, water containing the necessary nutrients and a small amount of algae are slowly introduced into the tubing. Carbon dioxide is injected periodically and after roughly 24 hours the flow leaves the tubing with a markedly greater concentration of algae than was started.

The design is expected to provide an annual algae yield of 224 - 448 dry tonnes per hectare. Capital costs are expected to be approximately US \$45,000 - \$60,000 and profitable oil production costs are estimated at US \$180 – 260 per tonne. These oil costs compare to recent market prices of feedstock oils anywhere from US \$550 - \$970 per tonne. The team is currently conducting a demonstration of the technology in Casa Grande, Arizona. Continued testing and system optimisation is expected to occur through 2008. More information is available at: <http://www.diversified-energy.com/> or <http://www.xlrenewables.com/>

**Santa Fe biomass plant gets air quality permit:** The State Environmental Improvement Board of New Mexico, USA has approved an air quality permit for the state's first large biomass power plant. The \$80 million plant proposed by Western Water and Power is expected to generate 35 megawatts of electricity. The plant will be located near Estancia, Santa Fe, New Mexico. Building is expected to begin no later than early 2008. More information is available at: <http://www.mytelegraph.com/mountain/594286mntview09-13-07.htm>

**A Biodiesel from algae article:** An article *Widescale Biodiesel Production from Algae* by Michael Briggs, University of New Hampshire, Physics Department (revised August 2004) is available from the University of New Hampshire's Biodiesel Group is at: [http://www.unh.edu/p2/biodiesel/article\\_alge.html](http://www.unh.edu/p2/biodiesel/article_alge.html)

**Australian Business and Climate Group report:** The Australian Business and Climate Group - formed by companies including Deloitte, Anglo Coal, BP Australia, Mirvac, Rio Tinto, Santos, Swiss Re, VicSuper and Westpac – has released a report that calls for a national low emission technology strategy. The report entitled, *Stepping Up: Accelerating the Deployment of Low Emission Technology in Australia*, calls for the Federal Government to take over research and development into emissions technology from the states, and recommends that low-emissions technology be in place by 2016. The group has warned that if Australia does not succeed in carbon-emissions capture and storage by 2015 then nuclear power will be developed by default. The group says the Federal Government must be a world leader in reducing carbon emissions and pass on clean-energy technology to developing nations. The report is available at: <http://www.businessandclimate.com/report.htm>

**Biogas PhD dissertation:** *Biogas production from energy crops and crop residues* by Annimari Lehtomäki: Studies in Biological and Environmental Sciences, Faculty of Mathematics and Sciences, University of Jyväskylä, Finland 2006 is available at: <http://dissertations.jyu.fi/studbiol/9513925595.pdf>

**Biomass stove and boiler video:** A show video clip of Chinese manufactured Daxu biomass stoves and small boiler systems as at: [http://www.ashdenawards.org/wmv\\_2007\\_daxu](http://www.ashdenawards.org/wmv_2007_daxu).

**Free IEA web-based IEA newsletter:** The IEA OPEN Energy Technology Bulletin is a free web-based newsletter, created under the aegis of the IEA Committee on Energy Research and Technology (CERT) to carry news of the network's activities, findings, events and publications. The work of IEA Implementing Agreements is a key focus. You can access the current OPEN Bulletin and back issues here: <http://www.iea.org/impagr/cip/index.htm>.

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## Opportunities Corner

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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 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 inquiries to verify the below information.

- **Austrade Stand at China's Yangling Agricultural Hi-Tech Fair:** Austrade has an Australian national stand at China's Yangling Agricultural Hi-Tech Fair, 5 -9 November this year. With interest in biofuels and carbon credit projects growing in China, the Fair should be a good forum for Australian companies in the biofuels sector to make contacts and collect market information. Details of Austrades participation can be found at: <http://www.austrade.gov.au/EventViewBookingDetails.aspx?Bck=Y&EventID=931&StyleFolder=1422>
- **CSIRO Flagship Scholarships:** The National Research Flagships program is a CSIRO initiative designed to bring together large multidisciplinary teams to focus on Australia's major challenges and opportunities. A portion of Flagship funding is allocated for projects outside CSIRO, which led to the creation of the Flagship Collaboration Fund. Each year, the Fund supports postgraduate (PhD) scholarships for students co-supervised by researchers in an Australian university and CSIRO while working on a project relevant to one of the Flagships. In 2007/08, the Fund will support up to 50 new scholarships. Applications open in mid-September and close at the end of October. Each Flagship will list a number of priority areas of research in which it is seeking applications. These priority areas, along with the Fund guidelines and links to the application forms, are available at: <http://www.csiro.au/FlagshipScholarships>. For further information, contact CSIRO Careers on 1300 301 509, the Flagship Collaboration Fund project manager on 02 6276 6638, or the relevant collaboration contact for each Flagship listed on the web at <http://www.csiro.au/org/ps1e.html>.
- **Supercritical Water Gasification:** Mr Willi Krüger, Manager of KontraTech Pty. Ltd is keen to link up with people or groups to further the development and commercialisation of gasification via Supercritical Water. His particular interest is to utilise supercritical water gasification for the treatment and energy extraction from sewage sludge. Contact: [willi.kruger@kontratech.com.au](mailto:willi.kruger@kontratech.com.au), Mobile: 0448 856 631.
- **Industrial Micro Algae Farm Construction:** Tom Molak with partner Prof Klaus Wagener, of African Green Future, build industrial micro algae farms for CO2 utilization to produce different biomass products like micro algae for food, bioenergy, biogas and biodiesel. If you are interested they may be contacted at email: [info@AfricanGreenFuture.com](mailto:info@AfricanGreenFuture.com) Web: <http://www.AfricanGreenFuture.com>
- **Weighing Equipment:** Chris Meeson, the Senior Sales and Marketing Executive of the Brisbane based Salter Holdings Group offers services in the supply and design of specialist weighing equipment such as weighbridges. Phone: 07 3216 6966, Mobile: 0407 010 647, Web: <http://www.accuweigh.com.au> Email: [chris.meeson@accuweigh.com.au](mailto:chris.meeson@accuweigh.com.au).
- **Job wanted:** Steve Harris, from NSW, holds a BSc in Biology from Macquarie University (2004) and has a keen interest in Environmental Technology. He is currently employed as a Hydrographer. Steve will consider all positions available under the banner of Environmental Technology and is happy to undertake any further education required for placement. Email: [saharris@bigpond.net.au](mailto:saharris@bigpond.net.au)
- **Job wanted:** Fabrício Lopes Palha de Araújo, from Brasil, lived in Australia studying English while employed as a chemical engineer with an Australian biofuel company. Following his return to Brazil he has studied biodiesel production. Email: [fabpalha@terra.com.br](mailto:fabpalha@terra.com.br).
- **Job wanted:** Karl Christiansson, from NSW, holds a Masters in Chemical Engineering specialising in chemical processes linked to pollution control. He has also completed a course

in Environmental Management in Madrid, Spain. He is currently employed in the administration of research grants in the area of power production from biomass, waste and natural gas. Email: [karl.christiansson@gmail.com](mailto:karl.christiansson@gmail.com).

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### **Self-Managed Subscription to Bioenergy Australia Newsletters**

An email distribution list has been set up, to allow readers of this newsletter to self-subscribe (and unsubscribe) to the Bioenergy Australia Newsletters and to receive our conference notices. To self-subscribe, go to:

<http://groups.google.com/group/bioenergyaustralia/subscribe>

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, as in the not too distant future this will be the only way newsletter notices will be disseminated. If you have any queries, please contact Steve Schuck.

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**Back Issues of Bioenergy Australia Newsletters** – Downloadable from the Bioenergy Australia homepage: <http://www.bioenergyaustralia.org>

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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.

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](mailto:sschuck@bigpond.net.au).

#### *Privacy Statement*

Stephen Schuck, through Stephen Schuck and Associates Pty Ltd maintains an email mailing list and other contact information for disseminating this complimentary email newsletter and publicising bioenergy related activities on behalf of Bioenergy Australia. These details are used only for this purpose. Email addresses will not be disclosed to a third party unless it is for the purpose of informing about a Bioenergy Australia endorsed activity.

**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. Bioenergy Australia may be contacted at:

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