



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

Newsletter

June 2008

Bioenergy Australia Membership Update

The Bioenergy Australia membership now includes 66 organisations. Recent new members are National Biofuels Group, Siemens Limited, Poyry, Rocky Point Distillery, Murdoch University, Winwick Business Solutions and A3P.

Bioenergy Australia wishes to further expand its membership and invites interested organisations to contact the Bioenergy Australia Manager, Dr Stephen Schuck on tel/fax (02) 9416 9246 or email: sschuck@bigpond.net.au if your organisation is interested in joining this 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.

Bioenergy Australia Algae Workshop 27 March Canberra

Bioenergy Australia held a very successful meeting on microalgae as a feedstock for bioenergy and bioproducts as part of its 27 March quarterly meeting, held in Canberra. This meeting was attended by 125 participants. The presentations from this meeting are currently on the Bioenergy Australia web page at <http://www.bioenergyaustralia.org>.

Bioenergy Australia 2008 Conference - Melbourne 8-10 December 2008

Bioenergy Australia will be holding its next annual conference on 8-9 December 2008, with a technical tour to bioenergy related destinations planned for 10 December. This follows on from the very successful 2007 conference, which was attended by over 240 delegates. The venue for this year's conference will be the Sebel Albert Park, Melbourne.

Expressions of Interest are sought from potential paper and poster presenters, sponsors and trade exhibitors. Please contact Stephen Schuck, Bioenergy Australia Manager, Tel/Fax: (02) 9416 9246 Email: sschuck@bigpond.net.au to express your interest.

National Climate Change Policies Review – Australia

Lindsay Tanner, the Minister for Finance and Deregulation and Penny Wong, the Minister for Climate Change and Water, have announced a strategic review of the Government's climate change policies. Roger Wilkins, of Citigroup and former head of the NSW Cabinet Office, is leading the review which will develop a set of principles to assess whether existing programs are complementary to an emissions trading scheme. The review will also inform the Commonwealth's input into COAG, which has committed to developing a coherent and streamlined set of climate change measures across jurisdictions to complement Commonwealth implementation of the emissions trading system. The review is due to report to the Government in July 2008.

Australian Government Waste Management Inquiry

Waste management is the subject of a current parliamentary inquiry by the Senate Environment, Communication and the Arts Committee. The terms of reference are:

- trends in waste production in Australia across household, consumer, commercial and industrial waste streams;
- effectiveness of existing strategies to reduce, recover or reuse waste from different waste streams;
- potential new strategies to reduce, recover or reuse waste from different waste streams;
- economic, environmental and social benefits and costs of such strategies;
- policy priorities to maximise the efficiency and efficacy of efforts to reduce, recover or reuse waste from different waste streams;
- consideration of the Drink Container Recycling Bill 2008.

Bioenergy Australia has provided a brief submission, including a Task 36 report on the use of Municipal Solid Waste as an energy source from its IEA Bioenergy participation. The Committee will table its report by August 2008. See:

http://www.aph.gov.au/Senate/committee/eca_ctte/aust_waste_streams/index.htm

Timetable for Emissions Trading Scheme

Senator Penny Wong, Minister for Climate Change and Water, has announced the Australian Government's detailed timetable for introduction of emissions trading.

- March to June 2008: preliminary consultations on technical issues with industry and non-government groups
 - July 2008: public release of a Green Paper on emissions trading design
 - December 2008: public release of exposure draft legislation and a firm indication by Government of planned medium-term trajectory of the scheme
 - March - Mid 2009: Bill considered by Parliament
 - 2009: Consultation on emissions trading regulations
 - 3rd quarter 2009: Act enters into force, regulator established
 - 2010: Emissions trading scheme will commence.
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New Measures for Clean and Renewable Technologies Announced

Three new measures for clean and renewable technologies were announced in the Federal Budget, including the \$150 million Energy Innovation Fund (EIF); \$500 million Renewable Energy Fund (REF); and the \$500 million National Clean Coal Fund (NCCF).

The Energy Innovation Fund has a number of objectives: to restore and maintain Australia's world leadership in solar energy research and development; to develop and advance Australia's research and development capabilities and intellectual property in clean energy technologies; to increase the level of collaboration within Australia and internationally on clean energy research and development; and to create clean energy technology development, growth and export opportunities for Australian businesses. The Fund will commence on 1 July 2008 for four years until 30 June 2012. Consultation on the rollout of the Fund has commenced and will continue in the second half of 2008.

Funding of \$50 million will be provided through the Clean Energy Program, a new program targeted at general clean energy research and development, including energy efficiency, energy storage technologies and hydrogen transport fuels. The Program will have a competitive merit-based application process.

The Renewable Energy Fund, including the Renewable Energy Demonstration Program and the Second Generation (Gen2) Biofuels Research and Development Program, will support the adoption of renewable

energy technologies in Australia. It is intended that the Renewable Energy Fund will help to reduce the cost of demonstrating and deploying key energy technologies that may play a critical role in energy supply and security over the next few decades. Direct beneficiaries of the Renewable Energy fund will be the renewable energy industry as the Federal Government is providing \$500 million over 6 years, including \$15 million over three years for the Second Generation (Gen2) Biofuels Research and Development Program. The program will commence on 1 July 2009 and continue to 30 June 2015. Funding will be subject to competitive, merit-based processes for the various elements of the Fund. Consultation on program guidelines will occur in the second half of 2008.

Other allocations set out in the Climate Change Portfolio Overview comprise:

- A Garnaut Climate Change Review contribution of \$0.7 million in 2008-09
- the Climate Change and Forestry Adaptation Action Plan, which will involve an assessment of the capacity of forests to sequester carbon - \$8.0 million over 2009-10 to 2011-12.

The former government's Low Emissions Technology Demonstration Fund, the Asia Pacific Partnership on Clean Development and Climate, and the Asia-Pacific Network for Energy Technology are all being terminated. The Government has also reduced funding to the Ethanol Distribution Program in 2007-08. The program provides grants of up to \$20,000 for service stations to adapt fuel systems to supply ethanol-blended petrol. Overall Program funding of \$11 million in 2008-09 and \$2.3 million in 2009-10 will be maintained.

Victoria Boosts Renewables Spending by \$72 Million

The Victorian Government has committed over \$187 million in funding to a range of low emissions energy technology initiatives. \$10 million will support Sustainable Energy R&D, including renewable energy, energy efficiency and clean distributed generation. Victoria could reduce emissions to 47% below 2000 levels by 2050 by implementing just 10 actions capable of delivering early and deep cuts, according to research released by the Victorian Department of Premier and Cabinet. It was announced that the government would invest an additional \$72 million for renewable energy projects under the state's Energy Technology Innovation Strategy.

<http://www.dse.vic.gov.au/dpi/dpinenergy.nsf/LinkView/916FB089198CC145CA2572BB000985B4AFE5D9442E22210ACA2572BB00096717>

40 MW Energy Plant Joint Venture

WA Biomass has engaged Connell Wagner to undertake a detailed environmental impact assessment of their proposed 40MW bioenergy plant and to seek planning approval for the proposal from the Shire of Manjimup. The Diamond Mill biomass plant is expected to cost \$110 million to build and will create around 350 short-term and 100 long-term jobs, direct and indirect, with an estimated additional \$4-5 million per year in household income. The plant will provide 40MW of energy from approximately 380,000 tonnes per annum of plantation forest waste. The site is on cleared land located adjacent to the existing Diamond Mill timber operation, approximately 8km south of Manjimup. The power station will be a conventional steam cycle plant generating electrical power, which will be supplied to the South West Interconnected System (SWIS).

Dandenong Bioenergy Plant Under Construction

Consolidated Energy and Resources (Vic) Pty Ltd is building an integrated green waste processing and energy facility in Ordish Rd, Dandenong. Due for completion at the end of 2008, it should save 60,000 tonnes in greenhouse gas emissions each year. The plant will use fluidised bed combustion technology to power a 2 MW steam turbine generator that is expected to produce 24,600

MWh of bioelectricity per year. Sustainability Victoria is supporting the green waste to energy generation plant with \$800,000 from the Victorian Government's Renewable Energy Support Fund.
source: Sustainability Victoria

Australia's Ethtec Ethanol Production

Australia's Ethanol Technologies Limited (Ethtec) has announced a three-year \$20 million project. A new patented fuel ethanol production process will be commercialised with technology that converts fibrous biomass to ethanol and generates surplus electricity from combustion of the lignin co-product.

New technology processes to be brought online at the new plant during the next three years include:

- Phase 1: Hydrolysis: concentrated sulphuric acid treatment of woody biomass feedstock to produce sugars using a twin screw extruder and tube reactor.
 - Phase 2: Lignin separation and acid recovery: separation of the lignin and the acid from the sugars, recycling of the acid for continuous production and recovery of the lignin for combustion to provide process energy.
 - Phase 3: Fermentation: simultaneous fermentation of the pentose and hexose sugars to ethanol using newly developed micro-organisms.
 - Phase 4: Ethanol recovery: from the fermentation broth by induced phase separation using potassium carbonate, simultaneously treating and recycling the water to production.
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Biofacts

- The port of Rotterdam handled 1.2 Mt of biodiesel in 2007, up from the 250,000 tonnes which the port handled in 2006. Bioethanol similarly rose from 500,000 tonnes in 2006 to 1.6 Mt in 2007.
- About 12 percent of vehicles sold in Sweden in 2007 were E85 models. Those vehicles qualify for a 20 percent tax break and many local governments give flex-fuel vehicles free parking.
- The biggest European wood energy producing countries consume together 166 million m³ (40% of total wood volumes used for energy generation in Europe). Major wood energy-consuming countries are:

Country	Million m ³
France	50
Sweden	41
Germany	40
Finland	35

- The bioenergy industry in Germany had a turnover of €10 billion (\$16 billion) in 2007, while employing 96,100 people. About 12 percent of agricultural land in Germany is currently given over to the production of biofuels to meet an EU target of having 5.75 percent of all vehicle fuel derived from biodiesel by 2010.
 - There are currently 3,000 biogas plants operating in Germany.
 - Current biodiesel production in the U.S. is 1,703 million litres per year, which is 0.8 percent of the distillate oil consumed.
 - The combined capacity for biofuel using palm oil as a feedstock in Indonesia is 1.7 million tonnes per year and the country exported an estimated 300,000 tonnes in 2007. (source: Indonesian Biofuel Producers' Association.)
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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 32 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.

Dept. of Crop & Soil Sciences – Cornell University, USA

<http://www.GrassBioenergy.org>

HAASE anaerobic digestion technology

<http://www.haase.de> .

Biofuels Works

<http://www.biofuelswork.com>

FAO ethanol production material

<http://www.fao.org/docrep/w7241e/w7241e00.htm>

Florida Farm to Fuel Initiative

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

Bites - Biofuels Technologies European Showcase

<http://www.biofuelshowcase.eu/>

Biobutanol – BP and Dupont

http://www2.dupont.com/Biofuels/en_US/

Effective and Low-disturbing Biofuels (Elobio)

<http://www.elobio.eu>

MBD Biodiesel

<http://www.mbdbiodiesel.com>

American Biofuels Council

<http://www.americanbiofuelscouncil.com/programs>

Environmental Energy, Inc.(EEI), - butanol

<http://www.butanol.com>

British Columbia Bioenergy Strategy

<http://www.energyplan.gov.bc.ca/bioenergy>

UN Asia Pacific Centre for Agricultural Engineering and Machinery

<http://www.unapcaem.org>

Biomass to Substitute Natural Gas

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

20 MWe power plant in Thailand

http://www.energy.poyry.com/projects/TH2025_ATB.pdf

Biomass Power Plant in California – precis of each one

<http://www.industcards.com/biomass-usa-ca.htm>

10 MWe Agrilectric Power Corporation

<http://agrilectricresearch.com/>

Asia Carbon Global

<http://www.asiacarbon.com>

Japanese Biomass Gasifier – CRIEPI

<http://www.resourcesaver.com/file/toolmanager/CustomO105C399F92025.pdf>

Corky's groups (micro bioenergy)

<http://www.corkys.net.au/index.html>

Advanced Conversion Technology (Gasification) for Biomass Projects Report

[http://www.renewableeast.org.uk/Documents/Renewables%20East%20-%20Gasification%20\(Full%20Report\).pdf](http://www.renewableeast.org.uk/Documents/Renewables%20East%20-%20Gasification%20(Full%20Report).pdf)

Mcgyan Biodiesel process

http://augnet.augsburg.edu/news-archives/2008/03_09_08/sartec.html

Torrified wood pellets

<http://www.topell.nl/>

CSIRO's Tree Seed Centre:

<http://www.ensisjv.com/WorkingwithEnsis/AustralianTreeSeedCentre/tabid/340/Default.aspx>

Bioamass Gasifiers Supply List

<http://gasifiers.bioenergylists.org/gassupply>

Advanced Biorefinery Inc

<http://www.advbiorefineryinc.ca/technology/>

BioWorks Australia (small scale biodiesel)
<http://www.bioworks.com.au/index.shtml>

Solid Biomass in Germany
<http://www.renewables-made-in-germany.com/en/solid-biomass/>

Canadian Gasifier Limited
<http://www.canfuel.com>

Puffer Gas (Missouri wood gasifier)
<http://www.puffergas.com/index.html>

Wood Waste - UK
<http://www.defra.gov.uk/environment/waste/topics/woodwaste.htm>

Forests and carbon (PEFC certification)
http://www.pefc.org/internet/html/news/4_1154_64/5_1105_1774.htm

Biofuels subsidy report from Global Subsidies Initiative
http://www.iisd.org/pdf/2008/biofuels_subsidies_aus.pdf

Alliance for Synthetic Fuels in Europe
<http://www.synthetic-fuels.org/>

Algae Link
www.algaelink.com

National Algae Association
<http://www.nationalalgaeassociation.com/>

German Biogas Industry
<http://www.renewables-made-in-germany.com/en/biogas>

Feed-in tariff policy information
<http://www.feed-in-cooperation.org>

Algae as a binder for pellet manufacture
<http://www.puffergas.com/fireballs/algaebinder/algaebinder1.html>

Algae Production Systems (USA)
<http://www.algaeproductionsystems.com/>

Advanced Biofuels USA
<http://www.AdvancedBiofuelsUSA.org>

Jatropha reality check
<http://www.ecoworld.com/blog/2008/03/07/jatropha-reality-check/>

Food vs Fuel article
http://www.biomassmagazine.com/article.jsp?article_id=1585

Nation Builder water resources
<http://www.nationbuilder.com.au>

Perenia carbon services (Pacific Hydro and SMEC)
<http://www.pereniacarbon.com>

Clean Development Mechanism rulebook (Baker and McKenzie)
<http://www.cdmrulebook.org/>

USA biomass publications
<http://www1.eere.energy.gov/biomass/publications.html>

Fixed Dome Biodigester
http://www.biogasnepal.org/biogas_designing.htm

Carmatec Biogas Digester (Zimbabwe)
<http://www.energy.gov.zw/renewableenergy/Carmatec%20Biogas%20Digester.htm>

Swenska biogas
<http://www.scandinavianbiogas.com/>

Energy Farm (Norway)
<http://www.energigarden.no/engelsk/index.html>

EuropaBio Fact Sheet - Biofuels and food
http://www.europabio.org/Biofuels/PressBrief/Food_March08.pdf

EuropaBio Fact Sheet – Making biofuels sustainable
http://www.europabio.org/Biofuels/PressBrief/making_biofuels_sustainable_March08.pdf

EuropaBio Factsheet: Biofuels and land use
http://www.europabio.org/Biofuels/PressBrief/land_use_March08.pdf

EuropaBio Factsheet: Biofuels and developing countries
http://www.europabio.org/Biofuels/PressBrief/Developing_countries_March08.pdf

EuropaBio Factsheet: Biofuels: Environmental sustainability criteria
http://www.europabio.org/Biofuels/PressBrief/sustainability_criteria-March08.pdf

Cost comparison fuels
<http://www.pelletheat.org/3/residential/compareFuel.cfm>

Wood to Ethanol plant technical details (Tavda Hydrolysis Plant, Siberia, Russia)
<http://www.distill.com/woodhydrolysis/>

CleanTech Biofuels
<http://www.cleantechbiofuels.net/>

Zilkha direct fired biomass system (1.5 MWe)
<http://www.zilkha.com/zilkhabiomassunit.html>

Choren Biomass to synthetic diesel plant
<http://www.theoil drum.com/node/3938>

Oklahoma Bioenergy Center
<http://www.okbioenergycenter.org>

Mesquite, leucaena and prosopis trees- a new use:
<http://www.hort.purdue.edu/newcrop/proceedings1996/V3-133.html>

REEGLE provides information on clean energy policy
<http://www.reegle.info>

Japanese Central Research Institute for Electric Power Industry
<http://www.resourcesaver.com/file/toolmanager/CustomO105C399F92025.pdf>

Biochar interview with Lukas van Zwieten NSW DPI
<http://beyondzeroemissions.org/2008/03/30/luke-van-zwieten-nsw-dpi-biochar-agrichar-terra-pret-a-soil-trials-zero-carbon>

EU, UK move on biofuel sustainability article
<http://www.carbonpositive.net/viewarticle.aspx?articleID=1039>

REFUEL biofuels roadmap for Europe
http://www.refuel.eu/fileadmin/refuel/user/docs/REFUEL_final_road_map.pdf

Institute for Applied Ecology (Germany)
<http://www.oeko.de/service/bio>

The FAO (United Nations Food and Agriculture Organisation).
<http://www.fao.org/newsroom/en/news/2008/1000782/index.html>

New CEN/TC 335 biomass standards
http://www.biomassenergycentre.org.uk/portal/page?_pageid=77,19836&_dad=portal&_schema=PORTAL

"Biogas processes for sustainable development" by Uri Marchaim,
<http://www.fao.org/docrep/t0541e/T0541E00.htm#Contents>

Biomethane from Dairy Waste: A Sourcebook for the Production and Use of Renewable Natural Gas in California"
http://www.suscon.org/news/biomethane_report/index.asp

Bioenergy & Biobased Products Roadmap
http://www.brdisolutions.com/Site%20Docs/Roadmap/OBP_roadmapv2_web.pdf

Highlights from the Washington International Renewable Energy Conference March 2008 at:
<http://www.wirec2008.gov/wps/portal/wirec2008>

Manual for a charcoal gasifier from Queensland:
<http://www.puffergas.com/historic/pederick/manual/cover.html>

UK's new Renewable Transport Fuels Obligation_(RTFO)
http://www.biofuels-news.com/news/uk_rtfo.html

EuropaBio Fact Sheet - Biofuels and food (6pp)
http://www.europabio.org/Biofuels/PressBrief/Food_March08.pdf

EuropaBio Fact Sheet – Making biofuels sustainable (3pp)
http://www.europabio.org/Biofuels/PressBrief/making_biofuels_sustainable_March08.pdf

EuropaBio Factsheet: Biofuels and land use (4pp)
http://www.europabio.org/Biofuels/PressBrief/land_use_March08.pdf

EuropaBio Factsheet: Biofuels and developing countries (5pp)

http://www.europabio.org/Biofuels/PressBrief/Developing_countries_March08.pdf
EuropaBio Factsheet: Biofuels: Environmental sustainability criteria (2pp)
http://www.europabio.org/Biofuels/PressBrief/sustainability_criteria-March08.pdf
Historic small scale gasifiers
<http://www.puffergas.com/historic/missouri/missouri.html>
Ethanol and Land Use Changes
<http://www.newrules.org/de/Ethanol-and-Land-Use.pdf>
butanol article
http://www.ethanol.org/pdf/contentmgmt/March_07_ET_secondary.pdf

International

World Bioenergy Association Formed

The World Bioenergy Association, a global organisation for the fast growing bioenergy sector, was launched at the World Bioenergy 2008 Conference in Jönköping, Sweden in late May. The inaugural meeting of its interim board was held at the conference.

The aim of the new organisation is to be a global voice for bioenergy, and to promote the use of bioenergy in a sustainable and economically efficient way. The World Bioenergy Association will also participate in the development of certification systems to ensure that the fuels are produced in an environmentally friendly and sustainable way, and under acceptable working and social conditions. The organisation will promote trade with biofuels and biomass, standardisation of fuels, technical development and research. An important task is to monitor the potential for bioenergy in different parts of the world. The organisation is open for membership by national and regional bioenergy associations, and for associated commercial enterprises in the bioenergy field.

Bioenergy Australia has been invited to participate in the World Bioenergy Association. This approach is currently being considered by the Bioenergy Australia management team.

New Bioenergy and Greenhouse Gases Report from the USA

A new report by Dr Gregory Morris for the Green Power Institute's Renewable Energy Program of the Pacific Institute shows that bioenergy reduces greenhouse gas emissions and makes a positive impact on the environment. The report finds that in addition to being carbon neutral, bioenergy can contribute to healthier and more resilient forests. Morris says the biomass benefits could be included as offsets in a greenhouse gas tracking program, and that the value of the greenhouse-gas offsets should improve the competitiveness of energy production from biomass and biogas resources in the energy marketplace of the future.

The 50 page report, entitled 'Bioenergy and Greenhouse Gases' is available at:
http://www.pacinst.org/reports/Bioenergy_and_Greenhouse_Gases/Bioenergy_and_Greenhouse_Gases.pdf

Dutch- Malaysian Microalgae Development

Ingrepo BV, a Dutch biotechnology company specialising in industrial large-scale algae production, plans to invest some Euro10 million over the next five years to grow the micro algae industry in Malaysia. Ingrepo will partner with Biomac Sdn Bhd to undertake research and development for strain selection for Malaysia's climate and to assess the economics for local conditions. It is expected that the production plants, or PowerFarms will be ready for commercialisation within a year. Initially Ingrepo and Biomac will experiment with a 1 ha site and power plant in Technology Park Malaysia, Kuala Lumpur. Biomac has obtained a RM10 million Techno Fund grant from the Ministry of Science,

Technology and Innovation. The venture is also holding talks with state governments to provide them with between 5,000 ha and 10,000 ha for the business.

Wood Fired Co-Generation in Fiji

Tropik Wood Industries Limited has commissioned a 12.3 MW cogeneration facility at its saw milling complex in Lautoka, Fiji Islands. Tropik together with Ajynk Limited of New Zealand developed and project managed the development through to its official opening in late April 2008. The power plant is fuelled using wood waste from the existing on-site saw milling and wood chip production. The suppliers of the major plant were RCR Energy for the boiler, Siemens for the turbine generator and Cooling Tower New Zealand for the cooling water system.

Tropik has a pre-existing 3 MW generation for its own use and added a further 9.3MW upon agreeing on a power purchase agreement with Fiji Electricity Authority to supply approximately 75 gigawatt-hours per annum into the national grid. The cost of the enhanced facility was NZ\$24 million. Tropik has become Fiji's the first Independent Power Producer.

source: Friday Offcuts

Biorefining Status Report

The Agrotechnology and Food Sciences Group in Wageningen, The Netherlands has published a 110 page status report on Biorefining. Biorefining is a relatively new research area, in which biomass is converted into several product streams. These products could range from heat and power, to fuels and 'green' chemicals. The report provides an overview of the current status and developments in biorefining, from a Dutch, European and global perspective. The description of the current status includes an overview of existing and ongoing developments including the use of lignocellulosic feedstocks, aquatic biomass, and thermochemical conversion.

The report contains descriptions of pilot and demonstration work, development projects and network activities, and a conclusion. The full report is at:

http://www.senternovem.nl/mmfiles/Status%20Report%20Biorefinery%202007_tcm24-248736.pdf.

First-round Support for US Energy Biosciences Institute

The Energy Biosciences Institute, the world's largest public/private consortium for applying biotechnology in the energy sector, has announced an initial total of 49 projects for funding. BP will contribute the sum of US\$500 million to this 10-year program, with US\$20 million of this being allocated during this first round.

Projects are being supported at all three of the public partner institutions – the University of California, Berkeley; the University of Illinois at Urbana-Champaign; and Lawrence Berkeley National Laboratory. Research is being pursued in four areas related to exploring the opportunities for production of cellulosic biofuels: feedstock development; biomass depolymerization; biofuels production; and the socio-economic impacts of cellulosic biofuels development. The full list of projects and programs may be found at:

http://www.energybiosciencesinstitute.org/index.php?option=com_content&task=view&id=184&Itemid=7

65 MW Lincolnshire UK Biomass Power Plant

The UK Minister for Energy has granted approval to Helius Energy to build a £200 million, 65 MW bioenergy power plant at Stallingborough on the south side of the Humber estuary in Lincolnshire. The power station will be the first phase of an integrated bioenergy development on a 36 hectare site 4 km from the port of Immingham. The power plant will use approximately 430,000 tonnes of biomass per annum and will displace 450,000 tonnes of carbon dioxide per annum, compared with a similarly sized coal-fired power station. A significant amount of the feedstock required for the Stallingborough plant is expected to come from within the United Kingdom. The plant will also produce heat, and options to use the heat produced by the plant, either on site or locally, are being considered. The site will also incorporate an area dedicated to wildlife conservation. Construction of the plant is expected to commence in late 2008, with operation expected in 2011. The plant is expected to create 267 full time jobs during the construction phase and 75 permanent full time jobs working a shift pattern when the plant is running.

UK Power Producer Drax to Produce 10 Percent of its Electricity from Biomass

Drax, a 4,000 MW coal fired power station near Selby, Yorkshire in the UK has entered into a contract with Alstom, the French engineering group, to provide the facilities that will allow it to co-fire 1.5 million tonnes of biomass with coal, to allow the power station to produce 10 percent of its electricity from biomass. The biomass resources will be diverse, using up to 50 different types of biomass, including willow pellets and agricultural residues. The proponents hope to source over half the biomass from within the UK. The project will cost £50 million and is regarded as the UK's largest bioenergy project, as it will generate 400 MW of electricity when commissioned in late 2009. The project will benefit from the UK's Renewable Obligations Certificates (ROC) scheme. See:

<http://www.independent.co.uk/news/business/news/drax-seals-16350m-deal-to-produce-10-per-cent-of-its-electricity-from-biomass-831102.html>

Arizona's Largest Renewable Energy Plant

The 24 MWe Snowflake White Mountain Biomass Power Plant, a wood-fired bioenergy plant located near Snowflake, Arizona, has commenced commercial operation, supplying Arizona Public Service (APS) and Salt River Project (SRP) customers. The power plant is owned and operated by Renegy Holdings, Inc.

At least 75 percent of the Snowflake plant's production will be sourced from forest-thinning occurring on U.S. forest lands surrounding the communities of Arizona's White Mountains. The thinning efforts are in support of the Healthy Forest Initiative, a 2003 Federal law enacted following the Rodeo-Chediski fire. The law was designed to help protect forest lands against catastrophic fires by focusing on responsible clearing of dense undergrowth and brush in critical areas adjacent to private homes and property.

The remaining 25 percent of the plant's energy output will be generated from unusable, recycled paper fibres from a nearby paper mill. The mill produces 250 bone-dry tonnes of unusable paper fiber each day. Prior to being consumed by the Snowflake biomass plant for the production of electricity, the mill's waste material was landfilled. For further information see <http://www.aps.com>.

China Operates World's Largest Anaerobic Digestion System

The world's largest anaerobic digestion system has been operating in China since January this year at a cost of US\$5.7m. The waste from 10,000 cows generates 30,000 kW- hours of electricity per day as well as heating for the farm, and 200,000 tonnes of organic fertilizers p.a. The anaerobic digester

converts the methane into carbon dioxide. This process replaces the use of carbon intensive coal enabling users to sell carbon credits on the international market.

Source: <http://www.worldwatch.org/node/5599>

USA Invests in Biomass R&D

U.S. Department of Agriculture (USDA) and U.S. Department of Energy (DOE) announced combined investments of up to US\$18.4 million, over three years, for 21 biomass research and development (R&D), and demonstration projects. Grants will help fund the innovative research needed to develop technologies and systems that lead to the production of bio-based products and biofuels. Grant recipients are required to raise a minimum of 20 percent matching funds for R&D projects, and 50 percent matching funds for demonstration projects. See:

<http://www.whitehouse.gov/stateoftheunion/2006/energy/index.html>.

Finnish Fuel Cell Unit

Wärtsilä will deliver a fuel cell unit powered by biogas, producing electricity and heat to the Vaasa Housing Fair site in Western Finland. The fuel cell power plant is based on planar solid oxide fuel cell (SOFC) technology. The plant is said to be the first of its kind in the world. The characteristics of SOFC technology include a high operating temperature, excellent efficiency and the ability to use several different fuels, particularly natural gas and biogases. Emissions from a biogas-fuelled fuel cell are very low, which means that the solution supports the development of sustainable energy technology.

German Targets to 2030

Germany has set a target of covering 10 percent of its natural gas consumption with biogas by 2030, with an intermediate target of six percent by 2020. To achieve these targets, the Government will improve the administrative and legal conditions for feeding biogas into the gas network. The gas network access legislation was modified so that certain costs, previously carried by the biogas producer, must now be carried by the network operator.

Germany's largest bio natural gas processing plant has begun operation in Könnern, north of Halle. The company aims to produce over ten million standard cubic metres of biogas annually, and process this to six million standard cubic metres of bio-methane. The company has invested over nine million Euros in the pilot project. More information on biogas: www.renewables-made-in-germany.com/en/biogas/

US\$24.32 Million Cellulose Project

The U.S. Department of Energy (DOE) has awarded \$24.32 million for the first cellulosic ethanol demonstration plant in the northwest United States. Technology to produce ethanol from wheat straw, wood chips and corn stover will be employed. The plant will be co-located at the site of Pacific Ethanol's corn-based ethanol facility in Boardman, Oregon. Production will run at 2.7 million gallons (10.2 million litres) of ethanol annually, which demonstrates the potential of this technology developed by BioGasol ApS. Ethanol is produced from a mixture of biomass, which is available in the area of the Boardman plant. Plant completion is planned for the 4th quarter of 2009.

New Biofuel Specifications

An analysis of current biofuel specifications has been released by the governments of the United States, Brazil and the European Union (EU). The aim is to facilitate expanded trade of these renewable energy

sources. The report was commissioned by the U.S. and Brazilian governments and the European Commission (EC) on behalf of the EU. International fuel standards experts undertook the analysis.

Sixteen specifications for ethanol and 24 for biodiesel are sectioned into three categories according to overall compatibility. The first category can be considered compatible, the second could be reconciled in a short period, and the third category is for standards that are currently irreconcilably different. It was found that the bioethanol and biodiesel standards and specifications are largely compatible and therefore should be able to transcend obstacles to biofuel trade.

The complete 94-page report, 'White Paper on Internationally Compatible Biofuels Standards' is at: http://www.nist.gov/public_affairs/biofuels_report.pdf

The REFUEL – Renewable Fuels for Europe Final Road Map

The REFUEL project is designed to encourage a greater market penetration of biofuels, by developing a biofuels road map, consistent with EU biofuel policies and supported by stakeholders involved in the biofuels field. The road map includes work on:

- determining an ambitious, yet realistic target share for biofuels in the fuel mix for EU transport in 2030
- finding the least-cost biofuel mix to meet this target, with related biofuels production chains, conversion technology, and biomass feedstocks in the EU25+
- assessing the impact of reaching the target share on the main drivers behind biofuels: reducing greenhouse gas emissions, increasing security of supply, and socio-economic impacts, especially in agriculture
- articulating the key stakeholders, their motives, the actions required from them, the barriers they will meet, the optimal timing of their actions
- providing policies needed to mobilise stakeholders, create incentives and reduce barriers.

http://www.refuel.eu/fileadmin/refuel/user/docs/REFUEL_final_road_map.pdf

Forthcoming Events

- *Breaking the Chemical and Engineering Barriers to Lignocellulosic Biofuels*
June 25 - 26, 2008
Washington, D.C., USA
<http://www.ecs.umass.edu/biofuels/>
- *COGENERATION ASIA 2008*
26-27 June 2008
Plaza Athenee Bangkok, Thailand
<http://www.abc-asia.com/cogeneration>
- *Supergen Bioenergy Research Forum on "Liquid Biofuels"*
Thursday 3 July 2008
The Wilton Centre, Teesside, UK
<http://www.supergen-bioenergy.net>
- *Bio Fuels World 2008 Conference & Expo*
9 – 11 July 2008
Yokohama Japan
<http://www.biofuels.co.jp>
- *Biogas 2008 – production, use and realizing the NZ potential*
10 July 2008
Waikato University Campus, Hamilton, NZ
<http://www.bioenergy.org.nz>
- *Biomass '08 Power, Fuels, and Chemicals Technical Workshop*
15-16 July 2008

- Alerus Center in Grand Forks, North Dakota
<http://www.undeerc.org/biomass08/default.asp>
- *US National Algae Association Algae Commercialization Business Plan, Research, and Networking Forum*
 17 July 2008
 Woodlands, Texas
<http://www.nationalalgaeassociation.com>
 - *Climate Change Accounting, Taxation & Corporate Reporting Summit 2008*
 28 - 30 July 2008
 Sydney Marriott Hotel
<http://www.iir.com.au>
 - *Biofuels – Feast or Famine*
 Australian Engineering Week public event
 18:00 for 18:30 to 20:00, 6 August 2008
 Maritime Museum Auditorium, Darling Harbour Sydney
<http://www.engineersaustralia.org.au>
 - *Jatropha Production to Applications - Jatropha Workshop*
 20-21 August 2008
 JW Marriot Hotel Kuala Lumpur, Malaysia
<http://www.cmtevents.com/eventschedule.aspx?id=535&ev=080877&>
 - *Forest Bioenergy - Fuel Supply Chains 2008*
 Conference and Exhibition
 27-30 August 2008
 Jyväskylä, Jämsänkoski and Jämsä cities, Finland
<http://www.bioforest.finbioenergy.fi/>
 - *2008 Conference of the International Biochar Initiative
 Biochar, Sustainability and Security in a Changing Climate*
 8-10 September, 2008
 Newcastle Civic Center, Newcastle, UK.
<http://www.biochar-international.org/>
 - *Third Annual Pacific Rim Summit on Industrial Biotechnology and Bioenergy*
 10-12 September 2008
 Vancouver, BC Canada
<http://www.bio.org/ind/pacrim/08/>
 - *IEA Bioenergy Task 31, Task 38 and Task 40 International workshop
 “Woodfuel Supply Chain – Sharing Experience”*
 14 -19 September, 2008
 Warwick, UK
 For further information in the first instance contact Stephen Schuck or Annette Cowie.
 - *IEA Bioenergy Task 39 meeting Monday and Tuesday, September 15-16 in Cork, Ireland.*
 For further information contact Steve Schuck.
 - *Waste 2008 - Waste and Resource Management - a shared responsibility*
 16 - 17 September 2008
 Stratford-upon-Avon, Warwickshire, England
<http://www.waste2008.com>
 - *NSW Waste Management and Expo Conference 2008: Resource Recovery for Climate Recovery*
 16 - 18 September 2008
 Luna Park, Sydney.
 For further information, please contact:
 Veronica Dullens, Waste Management Association of Australia
 Email: veronica@wmaa.asn.au
 - *International Summit on Algae Biofuels*
 17 - 19 September 2008
 New Delhi, India
<http://www.algaebiofuelsummit.com>
 - *Biomass World*

- 23-24 September 2008
Beijing China
Email: jaim@cmtsp.com.sg
<http://www.cmtevents.com/>
- 4th International Conference “*Biomass for Energy*”
22-24 September 2008
Kiev, Ukraine
<http://www.biomass.kiev.ua/conf2008>
 - 3rd BTLtec (*Biomass-to-Liquids*)
13-14 October
Gothenburg, Sweden
<http://www.cmtevents.com/eventschedule.aspx?ev=081051&>
 - 3rd International Pulpwood Resources & Trade Conference
19 - 21 October 2008
Grand Copthorne Waterfront Singapore
<http://www.pulpwoodconference.com>
 - International Conference on Gasification in Fluidized Beds
21-27 October 2008
Xijiao Hotel, Beijing, P. R. China
Contact: Prof. Dr. Guangwen Xu
Email: gwxu@home.ipe.ac.cn
 - 2008 AIChE Annual Meeting - *T4 Sustainable Biorefineries Topical Conference*
16 -21 November 2008
Pennsylvania Convention Center
Philadelphia, Pennsylvania USA
http://aiche.confex.com/aiche/2008/preliminaryprogram/group_1302.htm
 - ATSE Alternative Transportation Fuels for Australia conference
17-18 November 2008
RACV conference venue, Melbourne
<http://www.atse.org.au>
 - Second International Symposium on Energy from Biomass and Waste
17-20 November 2008
Venice Italy
<http://www.venicesymposium.it>
 - Clean Energy Council Conference & Exhibition 2008
24-26 November 2008
Gold Coast Convention & Exhibition Centre, Gold Coast, Queensland.
<http://www.cleanenergycouncil.org.au>
 - IEEE International Conference on Sustainable Energy Technologies 2008
24 - 27th November 2008
Singapore
<http://www.icset2008.org>
 - Asia Pacific Regional ISES 2008
25-28 November 2008
Sydney Convention & Exhibition Centre
<http://www.isesap08.com> Email: isesap08@icms.com.au
 - International Conference on Biomass Energy Technologies
29 November to 1 December 2008
Guangzhou, China
<http://www.newenergy.com.cn/gz/down.asp>
 - 6th international UFOP/BBE-Conference Fuels of the Future
1-2 December 2008
Berlin, Germany
<http://www.fuels-of-the-future.com>
 - **Bioenergy Australia 2008 Annual Conference**
8-10 December 2008

Sebel Albert Park, Melbourne

Web: <http://www.bioenergyaustralia.org>.

Contact: Stephen Schuck email: sschuck@bigpond.net.au.

- *5th International Conference on Combustion, Incineration/Pyrolysis and Emission Control*
16-19 December, 2008
Chiang Mai, Thailand Email: srk@kmitnb.ac.th
 - *Bioenergy - II: Fuels and Chemicals From Renewable Resources*
March 8-13, 2009
Rio de Janeiro, Brazil
<http://www.engconfintl.org/9af.html>
 - *EcoForum Conference & Exhibition*
28 - 30 April 2009
ATP, Sydney
Email Quitiz@ecoforum.net.au
-

Residues

Bioenergy and its role in emission trading report: Bioenergy Australia and RIRDC have jointly commissioned New Forests Pty Ltd to produce a discussion paper on carbon credit generation and bioenergy development for the forestry and agricultural sectors. This 18 page paper is to be presented as a keynote presentation at the 26 June Bioenergy Australia quarterly meeting, which has specific focus on bioenergy and its role in emission trading. Some 60 members and invitees are expected to attend this meeting to be held in Canberra. It is anticipated that the presentations from this forum and the discussion paper will be uploaded onto the Bioenergy Australia web page after the meeting.

IEA Bioenergy Executive Committee meeting to be held in Australia: Australia is scheduled to host an IEA Bioenergy Executive Committee meeting in October 2011. These ExCo meetings are hosted by the various member countries on rotation.

Bioenergy Australia Manager interviewed on biofuels: Deutsche Welle Radio's English Language Service carried an interview on 12 June 2008 on the topic of second generation biofuels in its Living Planet environmental program. This included an interview with Stephen Schuck, Manager of Bioenergy Australia. The program segment may be streamed as a podcast from <http://www.dw-world.de/dw/article/0,2144,3405688,00.html>.

\$114 million investment by DOE in small-scale cellulosic biorefineries: The U.S. Department of Energy has announced US\$114 million investment in four small-scale biorefinery projects over four years in Colorado, Missouri, Oregon, and Wisconsin. These projects are expected to produce about 9.5 million litres of ethanol per annum, compared to the 75-115 million litres that a full-sized facility can produce.

New waste-to-energy plants in Europe: A report from consulting firm Frost & Sullivan claims that the European waste-to-energy market will continue to grow for at least 10 years and consequently, by 2012, almost 100 new plants will need to be constructed. Waste-to-energy plants are seen as a viable large-scale alternative to landfills as legislative changes in Europe. More information: www.frost.com.

Brazil predicts record ethanol production: Brazilian experts are predicting that 2008 will be a record year for ethanol production from sugar cane. According to the Ministry of Agriculture the amount produced in Brazil will probably be 15-19 percent higher than last year.

Synthetic fuels in Europe: Volkswagen, Renault and DaimlerChrysler together with technology company Bosch and oil companies Shell and Chevron and South African synthetic fuel company Sasol have formed the Alliance for Synthetic Fuels in Europe to support research and development of alternative energy resources to car fuel. See: <http://www.synthetic-fuels.org/>

Sustainability Criteria for Biofuels: The European Association for Bioindustries has introduced an environmental sustainability criteria for biofuels, an initiative that promises to produce biofuels in a way that will protect a country's food security and sustainability of forests, soils and waterways. Source: http://www.europabio.org/Biofuels/PressBrief/sustainability_criteria-March08.pdf

Two new contracts for Wärtsilä: Wärtsilä has been awarded two contracts by Scottish and Newcastle (S&N), the major international brewing group, to supply and install equipment for two biomass-fuelled combined heat and power plants (CHP) using a mixture of spent grain and wood chips from local sources. The two CHP plants will be located in Manchester and Tadcaster. The CHP plants will each have a thermal output of 7.4 MWth and an electrical output of 3.1 MWe. When installed, the Wärtsilä BioPower plants will burn a mixture of spent grain and wood chips.

New synfuel plant in Germany: The Choren group has opened a new Biomass to Liquids production plant near Freiberg, Germany. Shell, Daimler and Volkswagen are partners in the project. Choren hopes to produce 18 million litres of synthetic diesel each year using wood residues.

Animation of synthetic diesel production: An animation of the CHOREN process for producing synthetic diesel from biomass can be seen at http://www.choren.com/swf/carbo_v_en.htm

Sustainability Victoria issues bioenergy report: Sustainability Victoria has released a Biomass Technology Review prepared by fellow Bioenergy Australia member Crucible Carbon Consulting. The report indicates major investments in bioenergy technologies in the coming decade. The report is downloadable from URL: http://www.sustainability.vic.gov.au/resources/documents/Biomass_Technology_Review.pdf

US available: The latest issue of the US Newsletter on biomass, Burning Bio News Volume 2, Number 4 is now available and located at <http://biomassrules.com/eNews/BBNv2n4.pdf>.

Biomass to electricity plant: A two page profile on Celulose Irani's biomass to electricity plant, a CDM project in Brazil is available at <http://www.wbcsd.org/DocRoot/DduIe2BsoCmTIV84OKCZ/Irani%20biomass%20project%2C%20Brazil.pdf>

Handbook on E85: The Handbook for Handling, Storing, and Dispensing E85 is now available from the NREL web page at <http://www.nrel.gov/publications/>.

The Energetics of Ethanol: A discussion of whether it takes more energy to produce ethanol than is contained in it can be found at <http://www.newrules.org/agri/netenergy.html>. The discussion is entitled The Energetics of Ethanol: Introduction and Link to Studies and is written by David Morris.

Podcast on biochar: A podcast on biochar entitled '*Black Gold Agriculture*' *Aids Farming, Curbs Warming* was made available from May 19, 2008 through the Earth & Sky website at: <http://www.earthsky.org/radioshows/52507/black-gold-agriculture-aids-farming-curbs-warming>.

Japan target for renewable energy: Japan has a national target of producing three percent of its overall energy supply from renewable sources by 2010. The goal is to supply some 330 MW of bioenergy power by 2010.

Wood gasifier project: Ararat Rural City Council in Victoria is supporting a waste wood gasifier project in their Council area. The project will use 200-300 tonnes waste wood per annum diverted from the local landfill to heat the public indoor pool.

Dispelling the myths about biofuels: The US Department of Energy has prepared a new fact sheet that dispels a number of common myths about biofuels. Source: <http://www.foodandfuelamerica.com/2008/04/biofuel-myths-vs-facts.html>;

Fact sheet: <http://www.energy.gov/media/BiofuelsMythVFact.pdf>

Report on biofuels: A report, prepared for the International Energy Agency - Advance Motor Fuels (IEA-AMF) program, entitled 'Status and outlook for biofuels, other alternative fuels and new vehicles' is now accessible through the IEA Bioenergy Task 39's website:

<http://www.task39.org/TaskOutputs/Publications/tabid/1806/language/en-US/Default.aspx>

Briefing paper on carbon capture and storage: The NSW parliamentary library research service has issued a briefing paper on carbon capture and storage, outlining policy approaches at the federal level and in various states. See:

[http://www.parliament.nsw.gov.au/prod/parlment/publications.nsf/0/959E4E67AFC1FB63CA25743F007EC318/\\$File/FINAL_CCS%202008.pdf](http://www.parliament.nsw.gov.au/prod/parlment/publications.nsf/0/959E4E67AFC1FB63CA25743F007EC318/$File/FINAL_CCS%202008.pdf)

Largest wood-using bioenergy plant: Europe's largest bioenergy plant that uses only wood is the 66 MW plant in Simmering, Vienna, Austria. The biomass plant, provides sufficient electricity to meet the needs of 48,000 households and as well as the heating requirements of 12,000 more. The Simmering biomass plant uses about 190,000 tonnes per annum of wood sustainably harvested from local forests. In winter when the demand for heat is high, the plant achieves a total efficiency of almost 80 percent with an electrical gross efficiency of 23 percent. In summer, spring and autumn, the plant generates electricity only, and attains an electrical gross efficiency of 37 percent.

Sustainability of biofuels: An eight page consensus document on the sustainability aspects of biofuels is available at:

http://www.renewableenergyworld.com/assets/documents/2008/FINAL%20SBC_April_16_2008.pdf

Citrus waste to ethanol plant grant for Xethanol: Southeast Biofuels LLC, a subsidiary of Xethanol, has received a US\$500,000 grant from the Florida Department of Agriculture and Consumer Services. The grant will be used to expand projects which convert citrus waste as the raw material into cellulosic ethanol. A demonstration plant for converting citrus peel waste into ethanol is being planned by Xethanol which is negotiating an agreement to locate the plant at an existing citrus facility in Florida at a cost of approximately US\$5.9 million.

Biomass gasifier in Finland: Foster Wheeler Ltd's Finnish subsidiary has been awarded a contract by NSE Biofuels Oy Ltd. for a circulating fluidized-bed biomass gasifier to be located in Varkaus, Finland. The plant will be used to convert a wide spectrum of biomass into a clean syngas to be used in a Fischer-Tropsch process to produce a synthetic diesel. The plant is expected to commence operation in early 2009 and will be integrated into the energy infrastructure of the Stora Enso Varkaus Mill

The Gasifier Experimenters Kit: A Gasifier Experimenters Kit has come on the market and offers beginners through to experts an easy way build, customize and compare a wide variety of gasification and pyrolysis reactor types. The kit is built on a modular foundation which allows for easy switching between common reactor types and operating regimes. Each "reactor type" is a separate assembly that bolts into a common "gas cowling" base. Within each reactor type, relevant variables are easily adjusted and sub-assemblies are simply replaced. For further information see:

<http://allpowerlabs.org/gasification/gek/index.html>

University biomass boiler: The British University of Bradford is in the process of installing a new £325,000 biomass boiler to replace three existing gas-fired boilers on campus. The boiler is part of a new £230,000 Energy and Recycling Centre to be housed at the rear of the University's J B Priestley Library. The University hopes to save 500 tonnes of carbon per year with the installation, which has been jointly funded by the University and the Department for the Environment, Food and Rural Affairs (DEFRA). The University has chosen to use wood chips as opposed to wood pellets to fire the boilers as these can be sourced locally, lowering the carbon footprint on delivering the fuel. It is estimated that the new boiler will save the University around £6,000/year at 2008 gas prices.

BIOCAP Canada Foundation: The Foundation has released a report "Analysing Ontario Biofuel Options" prepared by REAP-Canada showing that biomass pellets are more cost-effective for government incentives to reduce greenhouse gas emissions in Ontario, when compared to other renewable energy incentives in the province. The solid biofuels incentive would outperform existing incentives for other bioenergy initiatives and for wind and solar power.

See: http://www.biocap.ca/reports/BIOCAP-REAP_bioenergy_policy_incentives.pdf

Microalgae researchers' network: BEAM is a network of microalgae researchers convened by Mike Borowitzka at Murdoch University (08 9360 2333). To find out more about the network see <http://www.scieng.murdoch.edu.au/centres/algae/BEAM-Net/BEAMHOME.html>

Biodiesel in Indonesia: Output of palm oil-based biodiesel is expected to nearly double to 1.3 million tons this year. According to Paulus Tjakrawan, secretary general of the Association of Indonesian Biofuels Producers, strong demand is expected in overseas markets.

"A Chinese Biogas Manual": This classic book, edited by Ariane van Buren, can now be downloaded as a zipped 12.6 MB PDF file (made from a microfiche). The site from which you can download it is created by Alex Weir, and is full of downloads (900+ free downloads) aimed at the 3rd world. Direct download: 136pp 12 MB http://www.fastonline.org/CD3WD_40/JF/432/24-572.pdf.

Renewal diesel plant in Singapore: Finnish refiner Neste Oil Corporation has selected French oil services firm Technip as contractor to build a new generation renewable diesel plant in Singapore in 2008. Production capacity will be 800,000 tonnes per year and at an investment of around 550 million Euros (\$900 million).

Response to Framework document: Discussion paper submissions are invited in response to the Victorian Government's document "A Regulatory Framework for the Long-Term Underground Geological Storage of Carbon Dioxide in Victoria". For details, see: <http://www.dpi.vic.gov.au/DPI/dpinenergy.nsf/LinkView/6C88D3CDD69B2FB0CA257404000F53B0866B51F390263BA1CA2572B2001634F9>

German report on biofuels: The German UFOP has commissioned a report on the costs, energy input and GHG emissions of biofuels, aspects which are currently a very topical subject. See: http://www.ufop.de/english_news.php. This site also contains a series of excellent biodiesel downloadable reports.

Biogas plants: A portfolio of some 28 biogas plants are described in some technical detail at the web page (in German), see <http://www.biogas-netzeinspeisung.at/anlagenbeispiele/index.html>

Biomethane from dairy waste: A Sourcebook for the Production and Use of Renewable Natural Gas in California by Krich et al., (2005) is available on the Internet and has some valuable information, especially chapter 3 - Upgrading Dairy Biogas to Biomethane and Other Fuels. See: http://www.suscon.org/news/biomethane_report/index.asp

Switchgrass production costs: For a new report on switchgrass production costs from Iowa State University's Prof. Mike Duffy go to: <https://www.extension.iastate.edu/store/ItemDetail.aspx?ProductID=12708&>

Biomass plants in Austria: Cycleenergy has acquired two wood chip CHP facilities in Upper and Lower Austria, each with an electric capacity of 2 MW.

Agricultural Biomass in Europe: There is a large potential for bioenergy production from agricultural biomass in Europe. A discussion on the potential from agriculture has been published by the European Environment Agency (EEA, <http://www.eea.europa.eu/>) in a 138 page report. Increasing demand for biofuels is a concern, however, as pressures are exerted on Europe's environment and farmland biodiversity.

101-megawatt biomass-powered generator: This combined-heat-and-power facility is currently the largest biomass-powered generator in the U.K. In January it was acquired by Scottish and Southern Energy PLC from Slough Heat and Power Ltd. Slough, England, for £49.25 million (\$97.7 million). SSE is the U.K.'s second-largest energy supplier.

US\$10 million wood pellet plant: In December 2007 New England Wood Pellet LLC opened the largest wood pellet manufacturing plant in the United States in Schuyler, N.Y. The plant will produce 100,000 tonnes of wood pellets manufactured out of wood waste from 30 lumber mills. The Schuyler facility is the second for NEWP which operates a 75,000-tonne-per-year wood pellet plant in Jaffrey, N.H., and a packaging plant in Palmer, Mass. Much of the equipment for the New York plant was designed in Jaffrey where the company also maintains a research and development facility.

Cellulosic ethanol development: The wholly owned subsidiary of Lignol Energy Corp., Lignol Innovations Ltd., recently received \$6.8 million in additional grants for its cellulosic ethanol development. Lignol was awarded up to \$2.7 million by Sustainable Development Technology Canada, in addition to the \$1.7 million it was awarded earlier. On top of that, the Alberta government granted Lignol up to \$4.1 million in addition to the \$870,000 it previously announced in May. Lignol is building a cellulosic ethanol pilot plant on the campus of the British Columbia Institute of Technology, Burnaby.

Kooragang Island fuel facility, Newcastle: Manildra Park Pty Limited is planning a biodiesel production plant as part of an expansion of its Kooragang Island fuel facility in Newcastle. The proposed 52ML/year biodiesel plant would be the third and final phase of the overall project, which would also see Manildra refurbish its two existing storage energy alternatives.

\$90m electric power plant: The Estancia company plans to build a US\$90 million, 35-megawatt electric power plant in New Mexico, USA that would be fuelled by wood and forest byproducts, primarily local pine and juniper. Western Water and Power hopes to have the money for construction to begin building no later than the middle of 2008.

World's largest landfill gas-to-liquefied natural gas facility: Waste Management Inc. plans to develop the world's largest landfill gas-to-liquefied natural gas facility. As states such as California require drivers to cut carbon dioxide emissions, WM's initiative will potentially reduce dependence on fossil fuels. The company will invest about \$15.5m in the plant, which is expected to begin operations next year and will produce up to 13,000 gallons (49,200L) of LNG per day.

Plastics, paints and cosmetics from GE plants: CSIRO scientists are making plastics, paints and cosmetics from a generically engineered plant to produce a fatty acid. In the future CSIRO intends to use safflowers for this purpose as they are hardy and suited to Australian conditions.

New biomass drying technology: Swiss Group of Companies has announced the development of a biomass drying technology to be used in the production of wood chips and pellets from eucalyptus and pine trees in Brazil. The drying method uses electromagnetic radiation, which dehydrates the biomass without the use of high temperatures. Swiss Group will build its first facility with the new technology this year, with plans to produce about 200 tonnes of wood chips per hour for European power plants. Source: http://www.biomassmagazine.com/article.jsp?article_id=1393

New Green Vehicle Warranty: Sustainable Fuel Solutions has announced Europe's first 'Biodiesel Warranty'. Backed by AXA Insurance UK plc, this will allow British motorists and fleet owners to use biodiesel in their vehicles without invalidating manufacturer warranties. Further details at: <http://www.sfuels.com>.

E.ON 25 MW power station: E.ON has submitted a planning application to build a 25-megawatt (MW) biomass-fired power station at Blackburn Meadows in Sheffield, England. The estimated cost of the project is \$130 million. E.ON is also looking at opportunities to supply heat to neighbouring commercial and industrial establishments by running the facility as a combined heat and power (CHP) plant. If the

project gets the green light, construction is expected to start early in 2009 with the first power being produced in 2011.

Algae source for biofuel: A project by MBD Biodiesel to use algae as a new source for biofuels is being backed by James Cook University and the Queensland Government. The Queensland Cabinet has announced \$166,000 in government funding for the project. A biodiesel plant and algae farm are to be set up in Townsville.

Emissions estimation manual for boilers: The National Pollutant Inventory has released an updated manual: *Combustion in Boilers - Emission estimation technique manual - Version 3.0*, Department of the Environment, Water, Heritage and the Arts, March 2008. See: http://www.npi.gov.au/handbooks/approved_handbooks/fboilers.html

Air France-KLM fly on algae: Biofuel made from algae will be supplied to Air France-KLM by AlgaeLink in Roosendaal, The Netherlands. A test flight from Amsterdam to London will take place later this year in a Fokker F50 aircraft. AlgaeLink, a sister company of BioKing and have signed a cooperation agreement to conduct trials with Air France-KLM.

Airbus to use algae aviation fuels: Airbus, Honeywell, IAE and JetBlue will develop a sustainable second-generation biofuel for commercial aircraft use. This joint venture will convert biomass and algae-based oils into aviation fuels. It is anticipated that such fuel could provide up to 30 percent of all commercial aviation jet fuel by 2030.

First TAFE course in Australia for Biotechnology: The Gordon Institute in Geelong has become the first TAFE in Australia to provide a research qualification in the field of biotechnology. The course is ideal for professionals wanting to move into biotechnology without necessarily working within the practical field. For more information about the course, email courinfo@gordontafe.edu.au.

Biomass hybrid: A Swedish Precer biomass hybrid vehicle has been developed using a Stirling engine. The wood pellet vehicle uses Solid Biofuel-Powered Vehicle Technology, and is publicised at <http://www.precer.com/Files/Precer%20Data%20Sheet%20C.pdf>

Riverina Oils & Bioenergy (ROBE): ROBE is putting forward a proposal for a \$75 million facility to be constructed outside Wagga Wagga. The plant would use 165,000 tonnes of canola and safflower oilseed a year to produce vegetable oil for the manufacture of biodiesel. It is anticipated that the project will be operational by 2009.

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.

- **National Energy Essay Competition**

A National Energy Essay Competition has been established by Sydney University's Warren Centre for Australians under the age of 31. Major prizes are each worth \$20,000, sponsored by Babcock and Brown Power/Wind Partners and Sumitomo Australia. Entries are sought which provide informed, creative and enlightened insights and potential solutions to Australia's energy demand and supply future. This competition is about Australia's energy future. Specifically it is about the next phase of primary energy sources and the future beyond that. It is also about the younger generation and their contribution

to the future of Australia's energy development. For full details see: <http://www.neec.org.au> to find out more about this competition. Entries close 22nd August 2008.

- **Expertise and Technologies Sought for Togo West Africa**

An association that aims to bring new energy technologies to West Africa seeks to bring biofuel production companies to grow the raw material in West Africa. Hundreds of hectares of lands are available for fuel crops production. The compensation is that the contracted company should industrialise the crop production and twenty-five percent of the allocated land should be used for food production while the other seventy-five percent can be used for biofuel. UNYSAT- BioFuel can provide local assistance and co-ordination. Contact: Rachid Mensah, Email: unysat@gmail.com.

- **Australian Academy of Science - International grants**

Applications are invited from Australian professional scientists to visit Europe, North America and South East Asia between 1 January 2009 and 31 December 2009, to collaborate with researchers in those countries. Applicants must propose a collaborative research project, or specific activity, which has been developed in consultation with host scientists. The Duration of the visits must be 14 to 40 days. This project is supported by the Department of Innovation, Industry, Science and Research's International Science Linkages – Science Academies Programme. Information, deadlines and application forms are available on the web site: <http://www.science.org.au/internat/programs.htm> (to Asia, North America, Europe) and <http://www.science.org.au/internat/europe.htm> (to Europe).

- **Bio-fuels companies seek resource supplies**

A group of companies developing bio-fuels in the South East Asia and Pacific regions is looking for some specific resources e.g. biomass crop specialists who have working knowledge of Australian and/or Pacific Islands and any companies known to be operating in Australia that supply gasifiers, Fischer-Tropsch plant or process engineering specialisation in these types of projects. Contact: Paul Tenukest, Projects Director, Rand Intex Pty Ltd Sydney, Australia. Email: ptenukest@capitalfex.com.

- **Briquettes equipment for sale from India**

An Indian company, Jay Khodiyar Machine Tools, is seeking companies interested in purchasing briquette manufacturing equipment. The briquette presses have a 500-1500 kg/hour capacity. Contact: Ajay Patel, Email ajay.r.patel@gmail.com or Jay Khodiyar Machine Tools, Email: jkbriquetting@gmail.com or info@jkbriquettingplant.com. Web: www.jkbriquettingplant.com.

- **Research Position Sought**

A Ph.D graduate in the area of bioprocess engineering, department of molecular science and material engineering at Kobe University, Japan, is seeking work as a post-doctoral researcher. Post graduate study has related to 'Photobioreactor Design for Effective Production of Natural Antioxidant by Using *Haematococcus pluvialis*', 'Growth Kinetics Study, Media Optimization, Cost Effective Photobioreactor Design and Downstream Process Optimization for Production of *Spirulina platensis*', 'Design and Supervision on Construction of a Novel Cost Effective Photobioreactor for Microalgal Culture', and 'Design and Supervision on Construction of an Airlift Photobioreactor for Plant Cell Culture'. Contact Dr Reza Ranjbar, Email: r_ranjbar@yahoo.com.

- **Employment Sought**

A Brazilian based biofuels researcher with experience in biodiesel technology is seeking employment in Australia. Contact Dr. Hubert Alvarez, Chemical Institute Laboratory Catalysis & Energy/ Hydrogen, University Federal of Piaui, Brazil. Email: hubert@iqm.unicamp.br.

- **French Undergraduate Student Seeks Work Experience Placement**

Benoît de Rouffignac, a second year B.Sc. Agricultural Science student from Angers, France, seeks a work experience placement in Australia. Email: b.rouffignac@groupe-esa.net

- **Ethanol Plant Operator**

An Australian citizen living and working in the U.S.A., currently working as an operator at an ethanol plant, is seeking a job in Australia. Contact is Trev Morris via Email: kdorcutt@yahoo.com.

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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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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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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