



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

# Newsletter

June 2005

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## Bioenergy Australia Membership Update

Bioenergy Australia currently has 48 member organisations, from both the private and government sectors. The membership list is on the Bioenergy Australia website, <http://www.bioenergyaustralia.org>. Recent new members are: Ultra Systems Technology, Grains Research and Development Corporation, Carbon Partners, Gull Petroleum and the Composite Group. 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 bioenergy forum. Bioenergy Australia has specifically set up a membership tier to cater for universities and for organisations with an annual turnover of less than \$2 million per annum.

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## Bioenergy Australia 2005 Conference

The Bioenergy Australia 2003 Conference will be held in Melbourne, **12-13 December 2005**, with a technical tour on **14 December**. While the program and other details are still being developed, this year the conference will incorporate an IEA Bioenergy Task 36 'Energy from Integrated Solid Waste Management Systems' workshop and other participation. Expressions of interest are sought from potential sponsors, paper and poster presenters, and trade exhibitors. It is anticipated that this conference will have a number of international presenters and keynote speakers integrated into the program. Please contact Stephen Schuck, Bioenergy Australia Manager, Ph/Fax: 02 9416 9246, Email: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au) to express your interest.

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## Bioenergy Australia 2004 Conference CD and Proceedings

The CD ROM of the Bioenergy Australia conference program, delegate list (names and organisations), all the presentations from the entire conference (including the international pyrolysis bio-oil workshop) in PDF format, video presentations in MPG format, and several photos from the technical tour from the Bioenergy Australia 2004 conference, held in Adelaide, South Australia 29 November – 1 December 2004 are available for sale. The CD contains some 69 files. The cost is \$66 each (including GST, postage and handling). For further details and orders please contact Steve Schuck on tel/fax: (02) 9416 9246 or email: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au).

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## IEA Bioenergy Participation by Australia

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

- Task 30-*Short Rotation Crops for Bioenergy Systems*
- Task 31-*Biomass Production for Energy from Sustainable Forestry*
- Task 32-*Biomass Combustion & Co-firing*
- Task 36-*Energy from Integrated Solid Waste Management Systems*
- Task 38-*Greenhouse Gas Balances of Biomass & Bioenergy Systems*

Subgroups from the Bioenergy Australia membership have formed to participate in these Tasks, with each Task selecting a National Team Leader (NTL) to co-ordinate involvement. National Team Leaders are: Task 30- Brendan George, NSW DPI, Task 31- John Raison, CSIRO Forestry and Forest Products; Task 32- Brett Corderoy, Delta Electricity; Task 36- Mark Glover, Waste Management Association; and Task 38- Annette Cowie, Forests NSW (DPI).

Should you or your organisation wish to obtain information on IEA Bioenergy or on participation in IEA Bioenergy Tasks, please contact Steve Schuck, the Bioenergy Australia Manager and Australia's representative on the Executive Committee of IEA Bioenergy. Tel/Fax: 02 9416 9246, or email: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au). IEA Bioenergy Task information, the latest annual report with a special colour supplement on Anaerobic Digestion, and its Strategic Plan are available from web site: <http://www.ieabioenergy.com>.

## **IEA Bioenergy Meetings**

Task 30 – *Short Rotation crops for Bioenergy Systems* – held its most recent meeting in association with the Short Rotation Woody Crops Operations Working Group, 8-11 November 2004 in South Carolina, USA. The meeting was attended by Brendan George on behalf of Bioenergy Australia. Planning is proceeding to hold the next Task 30 meeting, combined with the annual Task 31 meeting 1 - 5 August 2005, in Western Australia.

Task 31 – *Biomass Production for Energy from Sustainable Forestry* – held its 2004 workshop on "Sustainable Production Systems for Bioenergy: Forest Energy in Practice" in Sweden and Norway, 12-18 September 2004, with the post-workshop tour in Norway 19-21 September 2004. As noted above, the next annual Task 31 meeting will be held in association with Task 30 in Western Australia 1 -5 August 2005.

Task 32 – *Biomass Combustion and Co-firing* – held its last meeting 16-18 March 2005 in Graz, Austria, where the meeting was held in conjunction with an international workshop on aerosols from biomass combustion. The proceedings of the aerosol workshop (in English) held on 18 March at Graz University of Technology, *Aerosols in Biomass Combustion* can be ordered from the BIOS website at: <http://www.bios-bioenergy.at/> for the price of € 39 including shipping (exclusive VAT). A copy of these proceedings is also available for loan to Bioenergy Australia members from Steve Schuck.

Task 36 – *Energy from Integrated Solid Waste Management Systems* held its most recent half yearly meeting in Bath, England 25-27 April 2005, with a technical tour to the Compact Power plant at Avonmouth. The meeting was attended by Mark Glover, the NTL for Task 36. The next meeting will be held in Melbourne, Victoria, Australia in conjunction with the annual Bioenergy Australia conference in December.

Task 38 – *Greenhouse Gas Balances of Biomass & Bioenergy Systems*. The most recent meeting was held in Dublin, Ireland in the week 25-28 April 2005. The meeting was attended by Annette Cowie, NTL for this Task. The meeting included a workshop with Sustainable Energy Ireland, University College of Dublin and COST Action E31 'Management of

Recovered Wood’ on the topic of ‘Greenhouse Gas Aspects of Biomass Cascading – Reuse, Recycling and Energy Generation’.

ExCo 55 (Executive Committee meeting) was held in Copenhagen Denmark 24-26 May 2005 and was attended by Stephen Schuck. This Executive Committee meeting included a day-long workshop on co-combustion of biomass with fossil fuels. A technical tour, part of the ExCo 55 meeting, visited the 330,000 tonne per year Køge Energi E2 straw and wood pellet plant, 10 km south of Copenhagen, the Avedøre Power Station where unit two is powered by natural gas, wood pellets and straw bales, and the Danish Technical University to view gasifier technologies under development. ExCo 56 is to be held in Dublin, Ireland 11 – 13 October 2005.

IEA Bioenergy will also be providing a two-hour workshop on bioenergy within the IUFRO World Congress in Brisbane, on 9 August 2005. This is to involve Prof. Theo Verwijst, Task 30 Leader, Mr. Jim Richardson, Task 31 Leader, Prof. Jack Saddler, Task 39 Leader (Liquid Biofuels), Dr Annette Cowie, Task 38 National Team Leader, and Dr Stephen Schuck, Bioenergy Australia Manager.

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### **IEA Bioenergy Task 30 and Task 31 Combined Meeting in Western Australia**

IEA Bioenergy Task 30 *Short Rotation crops for Bioenergy System* and Task 31 *Biomass Production for Energy from Sustainable Forestry* will be holding a combined international workshop on ‘Multiple benefits from sustainable bioenergy systems’ in Perth, Western Australia from 31 July until 5 August, 2005. The Second Announcement for this workshop, the program and registration details are now on the Task 31 website : [http://forestry.tamu.edu/Links/IEA\\_Bioenergy\\_Task\\_31/Workshops.htm](http://forestry.tamu.edu/Links/IEA_Bioenergy_Task_31/Workshops.htm).

The workshop will commence with a two day field tour, followed by two and half days of technical sessions. Technical sessions will include invited papers along with volunteer posters and papers. The final day will comprise an ‘Industry Day’ featuring exchanges between international experts and regional managers and project developers. The field study tour will visit the agricultural areas inland from Perth. This will include visits to plantations of *Pinus radiata* and *P. pinaster* where harvest waste will be used to produce biomass, the Narrogin bioenergy plant and examples of potential bioenergy feedstocks such as phase farming with young tree and coppiced oil mallee plantings. Environmental issues, technology issues such as harvesting, and feedstock management will also be included in the tour. This international workshop will offer attendees the opportunity to make and maintain professional contacts and to identify the opportunities for future collaboration.

If you would like to attend the workshop please complete and return a registration form by 11 July 2005.

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### **Benefits of Bioenergy**

IEA Bioenergy’s Executive Committee has published a new 12 page document, entitled *Benefits of Bioenergy*. This free downloadable report provides answers to basic questions about bioenergy and its role as an energy choice in today’s quest for sustainable development. A wide range of biomass sources and conversion technologies are described. Social, environmental and economic factors are discussed. Case studies show how different countries have brought the bioenergy option into play to help meet national energy demand and broader national objectives. The report may be downloaded from the Web from:

[http://www.ieabioenergy.com/library/179\\_BenefitsofBioenergy.pdf](http://www.ieabioenergy.com/library/179_BenefitsofBioenergy.pdf). Steve Schuck, the Bioenergy Australia Manager also has a limited number of hard copies of this document available.

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## **Biofuels Taskforce Established**

The Prime Minister has established a high level Biofuels Taskforce to examine the latest scientific evidence on the impacts of ethanol and other biofuel use on human health, environmental outcomes and automotive operations. Considering such impacts, and also considering the most recent economic analyses of fuel supply in Australia, the Taskforce will assess the costs and benefits of biofuel production and report to the Government by 31 July 2005.

The Taskforce will examine:

- the findings of the December 2003 [CSIRO/ABARE/BTRE desktop study](#) into the appropriateness of a 350 million litre biofuels target
- the findings of the [Department of the Environment and Heritage study](#) into the impacts of E10 and E20 on automotive operation
- other international and Australian scientific research on the health and environmental impacts of supplementing fossil fuels with oxygenates such as ethanol and other biofuel blends, and
- the economic and scientific bases upon which decisions have been made to support ethanol and other biofuel production in North America, Europe and other countries.

Taskforce members are:

- Dr Conall O'Connell, Deputy Secretary, Department of Environment and Heritage
- Dr David Brockway, Chief, Division of Energy Technology, CSIRO
- Dr John Keniry, Chairman Ridley Corporation Limited, and
- Mr. Max Gillard, Vice President and Chief Operating Officer, Toyota Technical Centre, Asia Pacific Australia.

The Taskforce is inviting submissions from interested parties addressing the terms of reference by 24 June. Further information is at the Biofuels Taskforce website at <http://www.pmc.gov.au/biofuels>. For further information contact the Biofuels Taskforce secretariat, tel (02) 6271 5369, email: [biofuels.taskforce@pmc.gov.au](mailto:biofuels.taskforce@pmc.gov.au).

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## **Renewable Energy Development Initiative Formally Launched**

On 8 June the Federal Government launched the Renewable Energy Development Initiative (REDI), a competitive, merit-based grants program, supporting renewable energy innovation and its early-stage commercialisation. The program will provide up to \$100 million over seven years. REDI will provide matching competitive grants worth between \$50,000 and \$5 million to Australian businesses developing renewable energy projects with significant greenhouse gas abatement potential. REDI is to be administered jointly by the Department of Industry Tourism and Resources and the Department of the Environment and Heritage. Biomass energy is specifically listed as a complying renewable energy technology for the program. The program will also support 'enabling technologies' and resource assessment, planning, modelling or decision support tools that provide input into renewable energy projects. To be eligible, applicants must amongst other requirements be able to match the grant provided on a dollar-for-dollar basis over the life of the project, be able to demonstrate that they have access to, or the beneficial use of any intellectual property necessary to carry

out and/or commercialise the proposed project, and be undertaking a project involving a renewable energy technology. To apply, a *Renewable Energy Development Initiative Customer Inquiry Form* needs to be submitted, followed by consultation with an AusIndustry *Customer Service Manager*. Thereafter a formal application can be made based on a business and commercialisation plan.

Public information seminars are to be held in Melbourne, Sydney and Perth on 7, 8 and 13 July. The closing date for first-round funding applications is Thursday, 25 August 2005. For further information on REDI call the AusIndustry Hotline on 13 28 46 or visit the AusIndustry website at: <http://www.ausindustry.gov.au> and click on *AusIndustry products*.

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## **Low Emissions Technology Demonstration Fund**

The *Low Emissions Technology Demonstration Fund* is a \$500 million flagship initiative of the Australian Government's White Paper: *Securing Australia's Energy Future* and is designed to support the commercial demonstration of technologies with the potential to deliver large-scale greenhouse emission reductions in the energy sector over the longer term.

The Australian Government has released a *Statement of Challenges and Opportunities and Draft Programme Guidelines*, available from: <http://www.greenhouse.gov.au/demonstrationfund/pubs/letdf-statement.pdf>. Written comments on the Draft Programme Guidelines are invited by close of business Friday 8 July 2005.

For further information about the *Low Emissions Technology Demonstration Fund*, visit the Australian Greenhouse Office's website at: <http://www.greenhouse.gov.au/demonstrationfund> or call the AusIndustry hotline on 13 28 46.

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## **Industry Cooperative Innovation Program**

The *Industry Cooperative Innovation Program* is a Federal Government, competitive grants program aimed at encouraging business-to-business cooperation on innovation projects that enhance productivity, growth and international competitiveness in Australian industries. The program has a particular focus on meeting strategic industry needs identified through Action Agendas. To date an Action Agenda has been prepared for the broader Renewable Energy Industry, including covering bioenergy. The *Industry Cooperative Innovation Program* will run until June 2011 and will provide \$25 million of assistance. Industry Cooperative Innovation Program projects are carried out by consortia: a group of at least three entities who can carry out the project and provide funds to match the *Industry Cooperative Innovation Program* grant.

The *Industry Cooperative Innovation Program* is to be delivered by AusIndustry which is the Australian Government's business program delivery division in the Department of Industry, Tourism and Resources. Round 1 of the *Industry Cooperative Innovation Program* opened on 2 June 2005 and closes on 25 August 2005. AusIndustry is offering information seminars from 15 to 23 June across Australia about applying for the *Industry Cooperative Innovation Program*.

For further information call the AusIndustry Hotline on 13 28 46, or visit the AusIndustry website at <http://www.ausindustry.gov.au>.

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## Call for Applications for Industry Partnerships Programme

In the 2005 Budget, the Australian Government announced a three-year \$15 million Industry Partnerships Programme as an extension of a pilot programme it introduced in 2004-05. The Industry Partnerships Programme is part of the Agriculture - Advancing Australia (AAA) package, an integrated suite of programmes.

The Department of Agriculture, Fisheries and Forestry (DAFF) is now seeking applications from nationally focused agriculture, fisheries, food and fibre industries for the Industries Partnership Programme's *Action Partnerships to Advance Success* initiative. *Action Partnerships to Advance Success* provides support to participating industries for projects that capitalise on a significant opportunity or resolve a major issue. The projects will be addressed by industries working in partnership with the Australian Government. To be eligible for support, industries will: have recently conducted a rigorous self-assessment of their industry's outlook; be able to demonstrate that the proposed project is an industry priority; and demonstrate industry commitment, resources and ownership of the project.

To apply, go to the website: <http://daff.gov.au/industrypartnerships> or email: [industrypartnerships@daff.gov.au](mailto:industrypartnerships@daff.gov.au) or contact Alain Samarcq on (02) 6272 3292.

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## NSW Issues Guidance Note for the Assessment of Non-Standard Fuels

The New South Wales Department of Environment and Conservation has issued a 12 page *Guidance Note* for the assessment of non-standard fuels, where the non-standard fuel is a waste, or may be derived from a waste. Standard fuels are listed to include bagasse from sugar cane and untreated timber residues, such as from forest operations or sawmilling, but excluding any form of treated or painted timber. The document states that the material can only be combusted where this represents a *genuine energy recovery opportunity* rather than a means of waste disposal.

Part 1 of the Guidance outlines Criteria guiding DEC's consideration of waste materials as non-standard fuels, while Part 2 sets out the more general fuel assessment criteria that are used to evaluate the environmental impact of a proposed use of a non-standard fuel, with particular emphasis on air emissions. Part 3 outlines the information that would be required in support of an application to use such a non-standard fuel. The Guidance note may be downloaded from: <http://www.environment.nsw.gov.au/resources/nonstandardfuel05149.pdf>

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## QAF and Energy Australia in Pig Manure Bioenergy Project at Corowa, NSW

QAF Meat Industries and New South Wales based electricity retailer, Energy Australia have announced plans to develop a \$13 million bioenergy project at the QAF piggery at Corowa, 60km west of Albury, in southern NSW. Energy Australia has lodged a development application for the installation of three gas-fired electricity generators on the QAF Meat Industries' piggery site. It is the first large-scale project of its type in Australia, and one of the first large-scale projects in the world involving a piggery. The power plant will produce 21 gigawatt hours of electricity per year – enough to run the piggery and its abattoir, plus power the equivalent of 1500 homes. The generators at the QAF piggery will save about 90,000 tonnes of greenhouse gases entering the environment each year, which is the equivalent of taking about 30,000 cars off the road. Effluent from the piggery's 200,000 animals currently runs through a series of open lagoons and settling ponds to an extensive irrigation system. Under the bioenergy project, five lagoons will be covered to trap methane

gas, which is produced naturally via anaerobic digestion as the effluent breaks down. The biogas will be piped from the covered lagoons into three gas-fired electricity generators on the farm. The generators will also provide hot water to the piggery's abattoir, which will reduce the piggery's reliance on LPG. Construction of the plant will be designed and managed by the Snowy Mountains Engineering Corporation, and is due for completion in the first half of 2006. Energy Australia will fund and own the project and will lease a parcel of land from QAF Meat Industries for the generators and biogas collection. For further information see <http://www.energy.com.au>.

## Biofacts

### Growth in Electricity Production from Biogas and Solid Biomass in the EU15

	<i>Electricity production, 1997 (GWh)</i>	<i>Electricity production, 2002 (GWh)</i>	<i>Average annual growth (%) 1997 - 2002</i>
<b>BIOGAS</b>			
Austria	70	227	26
Belgium	27	140	39
Denmark	93	233	20
Finland	24	26	1
France	144	406	23
Germany	746	1,913	31
Greece	0	79	-
Ireland	81	81	0
Italy	330	650	15
Luxembourg	0	10	-
Netherlands	251	304	4
Portugal	1	2	15
Spain	139	418	25
Sweden	46	17	- 18
United Kingdom	1,326	3,076	18
<b>EU-15</b>	<b>3,278</b>	<b>7,582</b>	<b>18</b>
<b>SOLID BIOMASS</b>			
Austria	1,590	1,750	2
Belgium	60	189	26
Denmark	314	875	23
Finland	6,941	9,762	7
France	1,807	1,405	- 5
Germany	505	700	7
Greece	0	0	-
Ireland	0	0	-
Italy	195	400	15
Luxembourg	0	0	-
Netherlands (incl. co-firing)	42	1,260	97
Portugal	1	1.2	3
Spain	672	1,949	34
Sweden	2,685	3,775	7
United Kingdom	199	870	34
<b>EU-15</b>	<b>15,011</b>	<b>22,936</b>	<b>9</b>

Source: [http://europa.eu.int/comm/energy/res/legislation/country\\_profiles/2004\\_0547\\_sec\\_country\\_profiles\\_en.pdf](http://europa.eu.int/comm/energy/res/legislation/country_profiles/2004_0547_sec_country_profiles_en.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 1,300 odd addresses given in the previous 23 issues of the Bioenergy Australia newsletters. These lists are consolidated as electronic links on Bioenergy Australia's web page at <http://www.bioenergyaustralia.org>. Recently these links have been converted into an Excel file to allow interested persons to download the file and work with it off-line.

Neste Biodiesel project in Finland

<http://www.nesteoil.com>

Centre for Energy and Environmental Markets (CEEM) UNSW

<http://www.ceem.unsw.edu.au>

Charcoal manufacture site

<http://www.europa.com/~heritage/charcoal.html>

Charcoal making

<http://www.rictec.com.sg/products/charcoal/charcoal-kiln-retort/>

Charcoal making

<http://www.carbo.nl/de%20ovens.htm>

Dairy Manure Management Technologies

<http://www.manureproducts.info>

Ethanol Discussion Paper - Warren Centre

<http://www.warren.usyd.edu.au/Ethanol/Ethanol04.pdf>

Energy Power Resources (UK)

<http://www.epri.co.uk>

Biotech Knowledge Centre (Monsanto)

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

Kokonut Pacific (coconut oil)

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

Vegetable oil in lister diesel

<http://www.powercubes.com/listers.html>

Compost resource - Cornell University's Ag School

[http://compost.css.cornell.edu/Compost\\_Resources.html](http://compost.css.cornell.edu/Compost_Resources.html)

World Soybean Statistics

<http://www.soystats.com/2004/Default-frames.htm>

BioMaxx Systems Inc. (Canada)

<http://www.biomaxxsystems.com>

Venzin project (ELSAM – Denmark)

<http://www.venzin.dk>

ORMAT biomass fueled power unit for rural electrification

[http://www.ormat.com/technology\\_8.htm](http://www.ormat.com/technology_8.htm)

Biomass Future Group (China)

<http://www.acstrategy.org/>

Timberjack

<http://www.timberjack.co.uk/products/forest-energy/forest-residual.htm>

Hydrogen from biomass – media release

<http://www.i-sis.org.uk/BugPower.phpISIS>

Thomas Koch Energy

<http://www.tke.dk/>

IISc Dasag gasifier (Chatel-St-Denis, Switzerland)

<http://cgpl.iisc.ernet.in/fld12.html>

WaterSmart Environmental (AD ex USA)

<http://www.watersmart.com>

Supercritical gasification

- <http://www.btgworld.com/technologies/supercritical-gasification.html>
- Dairy Manure Management Technologies  
<http://www.manureproducts.info>
- Canadian Agricultural New Uses Council  
<http://www.canuc.ca>
- Life Cycle Analysis (LCA) on biodiesel  
<http://www.lcacenter.org/library/pdf/PSME2002b.pdf>
- Small scale gasifier photos and video  
<http://www.inetlink.ca/a31ford/cgcmb/>
- International DME (Dimethyl ether) Association  
<http://www.aboutdme.org>
- ‘Grass makes environmentally friendly biofuel’ article  
<http://www.news.cornell.edu/stories/March05/grass.fuel.ssl.html>
- Office of the Biomass Program (US DOE) project factsheets  
[http://www.eere.energy.gov/biomass/project\\_factsheets.html](http://www.eere.energy.gov/biomass/project_factsheets.html)
- Biomass Action Plan for EU  
[http://www.europa.eu.int/comm/energy/index\\_en.html](http://www.europa.eu.int/comm/energy/index_en.html)
- Anaerobic Digestion site  
<http://www.biogas.ch/software.htm>
- Sinor Synthetic Fuels Report  
<http://edj.net/sinor/sfr.html>
- Dasifier micro gasifier  
<http://www.woodgas.com/DASIFIER.doc>
- Gasifier manufacturers  
<http://gi.grensy.info/manufacturers/index.php?order=name>
- Gasifier report (FAO)  
[http://www.fao.org/documents/show\\_cdr.asp?url\\_file=///DOCREP/T0512E/T0512e1a.htm](http://www.fao.org/documents/show_cdr.asp?url_file=///DOCREP/T0512E/T0512e1a.htm)
- Virent (hydrogen from biomass)  
<http://www.virent.com/>

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## **International Developments**

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### **Dutch Biofuels Emission Performance Study**

TNO Automotive in The Netherlands has conducted a reconnaissance study to assess the emission performance of bioethanol, biodiesel, Fischer Tropsch diesel, biogas, PPO (pure plant oil) and bio-DME (dimethylether), both in pure and blended forms. The main focus of the study concerned engine performance, lifespan, and emissions of the studied biofuels. The conjecture that biofuels are likely to meet future and stricter emission standards in Europe was examined. This was confirmed by the literature study, which looked at 147 previous reports. The report finds that it is currently not possible to provide specific data describing the emissions per biofuel for any of the vehicle fleets in the Netherlands or Europe. However, almost all previous studies indicate that using biofuels will ensure that future emissions standards would be met.

The researchers also looked at possible bottlenecks that could occur based on the expected technological developments for engines and fuels. An important conclusion is that using biofuels will require a number of basic modifications (e.g. other types of rubbers and seals). The study also found that there is no indication that biofuels lead to significant reduction in engine performance or efficiency. However, the current fuel conditions and regulations in Europe for type approval of vehicles do restrict the technical options for the future. The current regulations do not include adequate procedures and standards for measuring emissions and fuel consumption for vehicles running on biofuels. The study may be found on the Web at:

## US Billion Tons of Biomass a Year Report

An Oak Ridge National Laboratory (ORNL) report entitled *Biomass as Feedstock for a Bioenergy and Bioproducts Industry: The Technical Feasibility of a Billion-Ton Annual Supply*, sponsored by DOE's Office of Energy Efficiency and Renewable Energy's Office of Biomass Program has found that the US has the potential to produce one billion dry tons of biomass per year, while still continuing to meet the nation's food, feed and export demands. Biomass from forest and agricultural lands could supply up to 15 per cent of total energy demand in the US by 2030. Current US production of ethanol is about 12.9 billion litres per year, but that total could reach 302 billion litres or more under the scenario outlined in the report. Such an increase in ethanol production would see transportation fuels from biomass increase from 0.5 percent of U.S. consumption in 2001 to 10 percent in 2020 and 20 percent in 2030. The report can be downloaded from:

[http://feedstockreview.ornl.gov/pdf/billion\\_ton\\_vision.pdf](http://feedstockreview.ornl.gov/pdf/billion_ton_vision.pdf).

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## The Role of Biomass in America's Energy Future (RBAEF) Project

The Role of Biomass in America's Energy Future (RBAEF) Project is a multi-institution, multi-sponsor project initiated in 2003 with two primary objectives:

- To identify and evaluate paths by which plant biomass can make a large contribution to meeting future demand for energy services
- To determine what can be done to accelerate biomass energy use and in what timeframe associated benefits can be realised.

RBAEF is jointly led by Dartmouth College (<http://engineering.dartmouth.edu/other/rbaef/>) and the Natural Resources Defense Council (NRDC) (<http://www.nrdc.org/>), with other participants including the Argonne National Laboratory, Michigan State University, the National Renewable Energy Laboratory, Oak Ridge National Laboratory, Princeton University, Union of Concerned Scientists and the USDA Agricultural Research Service. Technical and economic analysis is supported by the US Department of Energy (<http://www.energy.gov/>). Environmental assessment and policy analysis are supported by the Energy Foundation (<http://www.ef.org/>) and the National Commission on Energy Policy (<http://www.energycommission.org/>).

The project is differentiated from previous efforts by the breadth of technologies considered, the diversity of organisations involved (technical, environmental advocacy, policy), and its forward-looking character. With respect to the latter, the analysis is focused on mature technology that can reasonably be expected in the future given a concerted effort. In addition, the project considers the possibility of changes to the status quo that leverage the benefits of advanced energy supply technologies, including high productivity energy crops, high vehicle efficiency, and integrated food and energy production. Working hypotheses for the study under consideration are:

- The fraction of energy services that could be obtained from biomass is much larger than has been considered in most analyses to date.
- Such large-scale provision of energy services could be accomplished with environmental benefits and without using a large amount of new land.
- Fuel produced from cellulosic biomass is a legitimate option as a primary energy carrier for the U.S. transportation sector over the indefinite future.
- Innovation, change, and increased energy efficiency are essential features of most if not all paths to a sustainable and secure energy future.

To date the project has produced a preliminary report, *Growing Energy—How Biofuels Can Help End America's Oil Dependence* published by the National Resources Defense Council. This is downloadable from:

<http://engineering.dartmouth.edu/other/rbaef/reports/NRDC.Growing.Energy.Final.3.pdf>

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### **Springfield Mass Transit District to Use E-Diesel (Diesohol)**

The USA's Illinois' Springfield Mass Transit District (SMTD) will, beginning in June 2005, use a regular diesel and ethanol fuel mixture called E-Diesel in its vehicle fleet. Twenty-five buses and 15 transit vans will run on the new fuel, which contains 7.7 percent corn ethanol. While the fuel costs approximately \$0.10/gallon more than regular diesel, the SMTD will not be affected, as the switch is part of the CityHome program. The CityHome program is sponsored by the Delaware-based O2Diesel Corporation and other sponsors, including corn growers and ethanol boards. The sponsors cover the cost difference in exchange for advertising space on the sides of fleet vehicles. Lincoln, Nebraska and Johnson County, Kansas also participate in the CityHome program. See: <http://www.sjr.com/sections/news/stories/55909.asp>

Source: Biomass Initiative Newsletter

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### **USA's Biobased Products and Bioenergy Coordination Council**

The USA's Biobased Products and Bioenergy Coordination Council (BBCC) (<http://www.ars.usda.gov/bbcc/>) was established by the US Secretary of Agriculture to provide a forum through which the US Department of Agriculture (USDA) agencies coordinate, facilitate, and promote research, development, technology transfer, commercialization, and marketing of biobased products and bioenergy. This includes promoting information sharing, strategic planning, and providing policy advice to the Secretary. The BBCC is an outgrowth of the USDA New Uses Coordination Council, which was created by the Secretary of Agriculture in 1995, renamed the Biobased Products Coordination Council (BPCC) in 1997, and formalised as the BBCC in 2002 by departmental regulation. About a dozen USDA agencies with programs related to biobased products and or bioenergy participate in BBCC activities.

Source: Biomass Initiative Newsletter

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### **Swiss Gasification Technology Developments**

The Paul Scherrer Institute in Switzerland (<http://www.psi.ch>) is engaged in a project called "Ecogas", exploring two routes for producing combustible gas from biomass. The routes being followed are: (a) to gasify dry, woody biomass using "conventional" technology, followed by a methanation unit, and (b) using catalytic hydrothermal gasification on wet biomass, such as manure, sewage sludge, wet wood residues. For details on Ecogas see: <http://lem.web.psi.ch/Ecogas/Ecogas.html> and for the hydrothermal gasification technology see: <http://cpe.web.psi.ch/Projekte1.html>.

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### **Forthcoming Events**

- *BIO 2005 Annual International Convention*. 19–22 June 2005, Philadelphia, PA, USA. Web: <http://www.bio.org/events/2005/>
- *2005 International Fuel Ethanol Workshop & Expo*, 28 June – 1 July 2005, Kansas City, Missouri, USA. Call for abstracts from FEW Program Director, BBI International, PO

Box 159, Cotopaxi, CO 81223 Tel: +(0011 1) 719-942-4353 Email:  
[adamman@bbibiofuels.com](mailto:adamman@bbibiofuels.com)

- *BTU's From the Forest: An Educational Conference on the use of Wood Fiber as an Energy Source*. 29-30 June 2005, Morgantown, West Virginia, USA. Email: [Shawn.Grushecky@mail.wvu.edu](mailto:Shawn.Grushecky@mail.wvu.edu), Tel: 0011 1 (304) 293-2941 ext. 2413. Website: <http://ahc.caf.wvu.edu/woodconf/>
- *Non-CO2 Greenhouse Gases (NCGG-4)*, 4 – 6 July 2005. Utrecht, The Netherlands. Web: <http://www.milieukundigen.nl/pages/ncgg4/>.
- *The International Conference on Energy Information and Cybernetics - EIC 2005*, part of the 9th World Multi-Conference on Systemics, Cybernetics and Informatics. 10 – 13 July 2005, Orlando, Florida. Web: <http://www.iiisci.org/eic05/>
- *Fifth Asia-Pacific Conference on Combustion*, 17 - 20 July 2005, University of Adelaide, South Australia. Web: <http://www.mecheng.adelaide.edu.au/~aspacc05>
- 2005 Environmental Engineering Society National Conference 'Creating Sustainable Engineering Solutions'. 18 – 19 July, 2005 at the Powerhouse Museum, Sydney. Web: <http://www.iceaustralia.com>
- *1st International Biorefinery Workshop*, 20-21 July 2005, Washington, D.C. Website: <http://www.biorefineryworkshop.com>
- *NSW Waste Management Conference and Expo, 'Building the Vision'*, 20 - 22 July 2005, Star City, Sydney. <http://www.nswwasteconference.com.au> or email: [veronica@wmaa.asn.au](mailto:veronica@wmaa.asn.au).
- *Australian Biotechnology Summit 2005*, 26 – 27 July 2005. Sydney Convention Centre. Website: <http://www.acevents.com.au/bio2005>
- IEA Bioenergy Task 30 and 31 combined meeting, *Multiple benefits from sustainable bioenergy systems*, 31 July – 5 August, Perth, Western Australia. See: [http://forestry.tamu.edu/Links/IEA\\_Bioenergy\\_Task\\_31/Workshops.htm](http://forestry.tamu.edu/Links/IEA_Bioenergy_Task_31/Workshops.htm)
- *IUFRO XXII, Forests in the Balance- Linking Tradition and Technology*, 8-13 August, Brisbane Convention and Exhibition Centre. <http://www.iufro2005.com>
- *2005 Biobased Industry Outlook Conference - Growing the Bioeconomy*. 29-30 August 2005. Ames, Iowa, USA. Website: <http://www.valuechains.org/bewg/Conf2005/>.
- *BIOENERGY 2005*, 12 –15 September 2005 with the International Bioenergy and Wood Exhibition in Jyväskylä, Finland. Web: <http://www.finbioenergy.fi/bioenergy2005>.
- *Eastern Biofuels Conference & Expo*, 13 – 15 September 2005, Marriott Hotel, Warsaw, Poland. Web: <http://www.easternbiofuels.com>
- *RENEXPO® 2005*, International Trade Fair and Conference for Renewable Energy and Energy Efficiency. 22 – 25 September 2005, Fairground Augsburg, Germany. Includes a business forum for investment in Australia. See [http://www.renexpo.de/engl/index\\_ko\\_australia.htm](http://www.renexpo.de/engl/index_ko_australia.htm)
- *IHE® WoodEnergy 2005*, International Trade Fair and Conference for Wood Energy. 22 – 25 September 2005, Fairground Augsburg, Germany. [http://www.ihe-woodenergy.com/index.htm?ko\\_programm.htm](http://www.ihe-woodenergy.com/index.htm?ko_programm.htm)
- *ISAF XV: The 15th International Symposium on Alcohol Fuels*. 26 September 2005, San Diego, California, USA. Tel: 0011 1 951-827-2525. E-mail: [reginah@ucr.edu](mailto:reginah@ucr.edu) Website: <http://www.eri.ucr.edu/> and Brochure: <http://bioproducts-bioenergy.gov/pdfs/ISAFbrochure4.pdf>
- *Ninth Grove Fuel Cell Symposium*, Westminster, London, UK. 4-6 October 2005. Web: <http://www.grovetfuelcell.com>
- *6<sup>th</sup> Asia Pacific Roundtable for Sustainable Consumption and Production*. Melbourne, Australia, 10-12 October 2005. Web: <http://www.6aprscp.com/> Email: [6aprscp@currentevents.com.au](mailto:6aprscp@currentevents.com.au)
- *14th European Biomass Conference and Exhibition - Biomass for Energy, Industry and Climate Protection*. 17-21 October 2005, Palais des Congrès, Paris, France. <http://www.conference-biomass.com>. Contact: Angela Grassi Email: [angela.grassi@etaflorence.it](mailto:angela.grassi@etaflorence.it).

- *Bioenergy 2005 International Nordic Bioenergy Conference*, 25-28 October 2005, Trondheim, Norway. Email: [post@nobio.no](mailto:post@nobio.no) Web: <http://www.nobio.no>.
- *Renewable Energy for a Sustainable Future: 43rd Annual Conference of the Australian & New Zealand Solar Energy Society (ANZSES)*, 28-30 November 2005, University of Otago, Dunedin, New Zealand. Web: <http://www.anzsos.org>.
- *Eurolipids: International Trade Fair for Fats & Oil*, 2-4 November 2005. Messe Frankfurt, Germany. Contact: Mrs. Caroline Curik, Tel: +49 (0) 611 – 951 66-28 Email: [eurolipids@mfa.messefrankfurt.com](mailto:eurolipids@mfa.messefrankfurt.com) Website: <http://www.mfa.de>.
- *Green Power Mediterranean*, 15-16 November, 2005, Rome, Italy. Web: <http://www.greenpowerconferences.com/events/greenpowermed.htm>.
- *World Renewable Energy Assembly*, 26 – 30 November 2005. Bonn, Germany. Web: <http://www.wcre.org>
- *Asia Biofuels Conference & Expo*. 6 December 2005, Philippines. Contact: Wendy Vincent, The Stratton Group, Inc. Tel: 0011 1 605 338 6829. Email: [wendyv@thestrattongroup.com](mailto:wendyv@thestrattongroup.com). Website: <http://www.asiabiofuels.com/>
- *Bioenergy Australia 2005*. 12-14 December, with conference tour on 14 December. Melbourne, Victoria, Australia. Program details will be installed at <http://www.bioenergyaustralia.org>. Papers, posters, sponsorship currently being sought.
- *National Biodiesel Conference and Exp 2006*. 5-8 February 2006, San Diego, California, USA. Web: <http://www.biodiesel.org/expo2006/>
- *Eco Show Australia 2006*, 7-9 July 2006, Sydney. <http://www.ecoshow.com.au>.
- *World Renewable Energy Congress*, 19-25 August 2006. Florence, Italy <http://www.wrenuk.co.uk/downloads/WRECix1stcall.pdf>
- *Renewable Energy 2006*, 9-13 October, 2006, Makuhari Messe Japan, Web: <http://www.re2006.org>.

## Residues

- Steve Schuck, the Bioenergy Australia Manager gave a presentation entitled ‘Bioenergy Technology Developments and Applications’ at the Business Council for Sustainable Energy’s annual conference in Melbourne, 27 April 2005.
- Steve Schuck will be giving a presentation at the 2005 Environmental Engineering and Sustainability Conference, at the Powerhouse Museum, Sydney on 19 July. The title of the presentation is ‘Bioenergy as a Sustainable Energy Source’.
- Steve Schuck has been invited to provide a keynote presentation at the ASPACC ’05 (Asia Pacific Combustion Conference) at the University of Adelaide on 20 July.
- Steve Schuck attended the SYNBIOS conference, as part of an IEA Bioenergy Task 33 (Gasification of Biomass) meeting in Stockholm, 18-19 May. The program and presentations are on the EcoTraffic website at <http://www.ecotraffic.se/synbios>.
- At the SYNBIOS conference in Stockholm, which considered second generation biofuels synthesised via thermal processing such as gasification, VOLVO demonstrated a new truck technology that uses a 9-litre dimethylether (DME) fuelled engine in a standard Volvo FM chassis. DME is a fuel similar to liquid petroleum gas (LPG) that can be manufactured from biomass, including paper pulp residual materials.
- The latest IEA Bioenergy Task 31 newsletter is now available under Task News at: [http://forestry.tamu.edu/Links/IEA\\_Bioenergy\\_Task\\_31/Task\\_News.htm](http://forestry.tamu.edu/Links/IEA_Bioenergy_Task_31/Task_News.htm)
- The Novera Energy-Macquarie Bank joint venture has gained 100 percent ownership of the three Fibrowatt chicken litter power stations (60MW) and also the Elean 40 MW straw fired power station in the UK. In addition, some 30 MW of additional assets in bioenergy have been acquired.
- A report *Biogas Production and Utilisation from IEA Bioenergy Task 37, Energy from Biogas and Landfill Gas* dated May 2005 provides an overview of biogas production and utilisation. It was prepared by Dr Arthur Wellinger, the Leader of Task 37, in conjunction with the participants in the Task. It draws on the work of the collaborating

researchers in Austria, Denmark, Finland, the Netherlands, Sweden, Switzerland, UK, and the European Commission as well as associated networks. The report (1624 kB) may be downloaded as a pdf file from

<http://www.ieabioenergy.com/library.php?read=182>

- Bimonthly issues of the Australian Emission Trading Forum Review are available for downloading. Go to [www.aetf.net.au](http://www.aetf.net.au) and click on "AETF Review".
- The Rural Industries Research and Development Corporation has published a report *Bio-Hydrocarbons from Algae* which examines *Botryococcus braunii* as a source of hydrocarbons as a feedstock for possible future fuel industries. *Botryococcus braunii* is a colonial green alga that is found in lakes and reservoirs in Australia and in other parts of the world. Blooms of this alga resemble a large floating mat on the water surface. This alga contains hydrocarbon up to 75% of dry weight, which can be converted into petrol, diesel or turbine fuel or other liquid or gaseous hydrocarbons. Given that Australia has large areas of available land and brackish water and high average radiant energy influx, there is a great potential to develop a source of biofuel production through cultivation of microalgae. The report summary can be found on the Web at: <http://www.rirdc.gov.au/reports/EFM/05-025sum.html> while the full report is at: <http://www.rirdc.gov.au/reports/EFM/05-025.pdf>.
- A RIRDC report (05/012) *Sugar Beet - Preliminary feasibility of ethanol production from sugar beet in NE Tasmania* is downloadable as a PDF file from RIRDC's website at: <http://www.rirdc.gov.au/reports/NPP/05-012.pdf>. The summary report is at: <http://www.rirdc.gov.au/reports/NPP/05-012sum.html>.
- The vast majority of statistical publications on the Australian Bureau of Statistics website (<http://www.abs.gov.au>) will be free from Friday 1 July 2005, as a result of additional funding contained in the recent 2005- 2006 Federal Budget.
- The use of bioresources in many Southeast Asian countries, including the Philippines, Thailand, Vietnam, Indonesia and Malaysia is covered in the web page <http://www.rwedp.org/>.
- A paper, "Improving the Public Perception of Bioenergy in the EU", by Harald Rohrer, et. al suggests that improving the public perception of bioenergy would lead not only to its wider use but also would bring down costs as a result of increased adoption rates and economies of scale. The paper is downloadable from the Web at [http://europa.eu.int/comm/energy/res/sectors/doc/bioenergy/bioenergy\\_perception.pdf](http://europa.eu.int/comm/energy/res/sectors/doc/bioenergy/bioenergy_perception.pdf).
- The German Biomass Material-Flow Analysis (MFA) project looks at biomass technologies and costs and the effects of biomass energy use on the environment. The study finds that the availability of biomass sources is not a constraint on bioenergy; rather it is the transport and storage infrastructure and feedstock costs that are the greatest barriers. See [http://www.bmu.de/files/bioenergie\\_uk.pdf](http://www.bmu.de/files/bioenergie_uk.pdf).
- The Biogas Support Programme in Nepal promoted the wide-scale use of biogas as a substitute for other less efficient fuels used for cooking and lighting. Since its inception, the programme has installed more than 40,000 family-size biogas units benefiting more than 200,000 members of rural households. A critical element in developing the commercial market for these plants has been the programme's innovative financial engineering and consumer subsidies. *Source: World Energy Assessment: Energy and the Challenge of Sustainability, UNDP, UNDES and World Energy Council, 2002,* <http://www.undp.org/seed/eap/activities/wea>.
- In China there are currently some 6.4 million household-scale biogas systems producing some 1.6 billion m<sup>3</sup> per year of biogas and over 600 industrial-scale systems processing 40 million tonnes of waste annually to produce 110 million m<sup>3</sup> of biogas.
- A report, "Biomass Energy in China and Its Potential" by Li Jingjing, Zhuang Xing, Pat DeLaquil and Eric Larson, published in *Energy for Sustainable Development*, Vol V, no. 4 December 2001 is on the Web at <http://www.ieiglobal.org/ESDVol5No4/biomass.pdf>.
- The Dutch waste management company SITA is trying to make its transport vehicles more environmentally friendly. Several years ago SITA took the initiative to have one of its corporate lorries run on Pure Plant Oil (PPO). Since this experiment was very

successful, they are currently also looking at converting two new, longer and heavier lorry combinations. Source: [www.sita.nl](http://www.sita.nl). Source: Novem-Senter GAVE news

- Saab has started to sell its Saab 9-5 2.0t Biopower model in Sweden, This is a Flexible Fuel Vehicle (FFV) that can run on petrol or ethanol, or a mixture of both. Saab says it has been inundated with orders for its new 9-5 Biopower flex-fuel model and has an order book for over 1,000 units. Saab is also planning to demonstrate this new FFV in the Netherlands, the UK, Ireland and Spain. See <http://www.autosieger.de/article5698.html> and [http://www.saabsverige.com/microsites/biopower/biopower\\_main\\_content.html](http://www.saabsverige.com/microsites/biopower/biopower_main_content.html).
- The Finnish company Neste Oil plans to produce a new type of biofuel (NExBTL) in Provo. The company claims that the new fuel combines the advantages of biodiesel and Fischer Tropsch diesel from biomass. The technology uses isomerisation and selective hydrogenation (rather than esterification) to produce a product with a cetane of 99 and low cloud point ideal for the Scandinavian market. Annual capacity at the plant is reported to be around 170,000 tonnes per annum. Neste Oil is investing 100 million Euro, and expects to see the plant operational in 2007. Source: <http://www.nesteoil.com>.
- A EU non-profit portal has launched a fund-watch service, for the environmental and energy sector. Interested parties can register to receive regular updates about energy and environmental EU funding opportunities, tender calls and events: See <http://www.eucenter.org/registration.php>
- A comprehensive list of Energy Products of Idaho FBC power plants, including bioenergy is at <http://www.energyproducts.com/EPIEnergySystems.htm>
- A study entitled *Top Value Added Chemicals from Biomass* is being carried out by Pacific Northwest National Laboratory, National Renewable Energy Laboratory and the US Department of Energy into the 'chemical building blocks' that have the most chance of producing chemicals and materials from biomass-produced sugars and syngas. A 76 page report dated August 2004, entitled 'Volume 1 – Results of Screening for Potential Candidates from Sugars and Synthesis Gas' is downloadable from the Web at: <http://www.nrel.gov/docs/fy04osti/35523.pdf>.
- A report published recently by UK Institution of Civil Engineers (ICE) and the Renewable Power Association (RPA), entitled 'Quantification of the Potential Energy from Residuals' identified that the residual waste left after recycling could be turned into electricity - enough to supply 17 percent of the UK's needs. See: <http://www.ice.org.uk/homepage/index.asp>
- An article entitled, *Relevance Of Bio-Fuel in Coal Based Power Plants* in Energy Pulse examines the production and use of vegetable oils for biodiesel production, and their use in coal fired power stations. The article relates mainly to the Indian electricity sector, where spraying biodiesel on coal is advocated. This would enhance the calorific value of the coal and also reduce emissions. The article surmises that in India for a 1000 MW coal fired power station, spraying 30% by weight biodiesel would result in the reduction of coal by 2.62 million tonnes. See the article at [http://www.energypulse.net/centers/article/article\\_print.cfm?a\\_id=924](http://www.energypulse.net/centers/article/article_print.cfm?a_id=924)
- An article advocating that biodiesel should only be made from waste vegetable oils, and not virgin oil is at [http://www.cec.org/pubs\\_docs/documents/index.cfm?varlan=english&ID=1561](http://www.cec.org/pubs_docs/documents/index.cfm?varlan=english&ID=1561)
- A concise and readable Life Cycle Analysis (LCA) on biodiesel can be found at: <http://www.lcacenter.org/library/pdf/PSME2002b.pdf>.
- The National Renewable Energy Laboratory in Colorado has dedicated a new integrated facility to examine the chemical and biological reactions which can transform renewable plant and waste materials into energy. The US\$2.8 million Biomass Surface Characterization Laboratory will support development of new technologies for bio-refineries. Source: REFocus
- An article, *The Future of the Hydrogen Economy: Bright or Bleak?* by Ulf Bossel, Baldur Eliasson and Gordon Taylor is on the Web at: [www.efcf.com/reports/E02\\_The\\_Hydrogen\\_Economy\\_Report/pdf](http://www.efcf.com/reports/E02_The_Hydrogen_Economy_Report/pdf)

- France currently produces some 100,000 tonnes of ethanol and 500,000 tonnes of biodiesel per annum. The French government is requiring an additional 800,000 tonnes biofuels by 2007, of which 480,000 tonnes would be biodiesel and 320,000 tonnes of ethanol, on the way to meeting its EU target of 5.75% biofuels by 2010.
- The European Commission is setting a continental biomass action plan, to increase the level of biomass from 56 Mtoe (million tonnes oil equivalent) in 2001 to 130 Mtoe in 2010. That target is needed to achieve the target of sourcing 12% energy from renewables. Biomass is expected to contribute another 32 Mtoe for bioelectricity, 24 Mtoe for green heat and 18 Mtoe for biofuels. Of the 81 Mtoe of primary energy from renewables in 2002, 44 Mtoe came from wood energy, led by France with 8.5 Mtoe and 8 Mtoe in Germany. Sweden and Finland were third and fourth. See: [http://europa.eu.int/comm/energy/res/biomass\\_action\\_plan/index\\_en.htm](http://europa.eu.int/comm/energy/res/biomass_action_plan/index_en.htm)
- D1 Oils of the UK is establishing an effluent irrigated plantation of jatropha trees, as a feedstock for biodiesel, in Saudi Arabia.
- Two years after their issue, PDF versions of many of the International Energy Agency's publications can be downloaded free of charge. A new batch of reports has recently been released. See: <http://www.iea.org/Textbase/publications/newfreesearch.asp>
- The Home Grown Cereals Authority in the UK is reported to be providing £49,000 to Greenergy to improve marketing of biodiesel. Consumer research by the Authority shows that consumer awareness of green fuels is low, with 37% unaware of biofuel but 18% prepared to pay a premium, and 74% willing to change retailers if one offered biofuel.
- A report, *25 by 25: Agriculture's Role in Ensuring U.S. Energy Independence* by the US Ag Energy Working Group of the Energy Future Coalition, shows how America's farmers can contribute 25 percent of the total energy consumed in the United States by 2025 and not at the expense of producing abundant, safe and affordable food and feed. The group comprises a blue-ribbon panel of farmers, educators, co-op directors, and members of a broad range of agriculture associations. The report is available at <http://www.bio.org/ind/25x25.pdf>.
- The California Integrated Waste Management Board's draft report 'Conversion Technology Report' is available as Item 22 at <http://www.ciwmb.ca.gov/Agendas/agenda.asp?RecID=1028&Year=2005&Comm=BRD&Month=3>
- Alternative Fuels and Energy reports in its Sun Lizard newsletter that it has signed a contract to help a Queensland company to design and build 20 smaller biodiesel plants for use in abattoirs. These plants will convert tallow to biodiesel for use by the abattoirs and local transport companies. Excess Biodiesel will probably be collected and distributed through a cooperative marketing program.
- Canadian company, SynGas, a subsidiary of Fairchild International Corporation reports that it has completed development of its synthetic, low-cost, natural gas production technology. A prototype model is reported to have been successfully tested using a number of inputs including low-grade coal, wood waste and other biomass, yielding superior results with lower costs and emissions than currently available technology. See: <http://www.fairchildinternational.com/technology.htm>.
- Construction is scheduled to commence this year on an elephant grass fueled bioenergy power station in Staffordshire, central England. The £6.5 million (\$15.7 million) plant is being developed by Eccleshall Biomass, with grant assistance from the regional development agency Advantage West Midlands. The plant will operate for 8,000 hours per year, and involves some 170 farmers diversifying into growing the grass crop as the fuel supply.
- Canadian pyrolysis bio-oil company, DynaMotive has announced that it has reached agreement in principle to develop a 200 tonnes per day pyrolysis plant with an option to develop a further plant with Megacity Recycling Inc. of Ontario, Canada.
- Swedish bus manufacturer Scania has sold 123 ethanol-fuelled suburban buses since the beginning of 2005, mainly to Storstockholms Lokaltrafik (SL), the public transport

operator in greater Stockholm. Stockholm already has the world's largest fleet of ethanol buses. This order raise SL's fleet to some 350 ethanol buses.

- Advanced Alternative Energy Corp of the USA is developing a gasifier that is capable of feeding large round bales of switchgrass or other baleable biomass forms. Small square bales and loose materials may also be utilized in the AAEC automatic feeding gasifier process. See <http://www.aaecorp.com/ceo.html>
- Bioenergy technology company Bedminster International of Ireland has signed a 25-year, EUR 200 million (\$333 million) agreement with Tully Environmental and Petruzzo Products to convert 400 tons of post consumer organic material per day from New York City into a high quality biofuel.
- French company AREVA has been contracted to build two 12.3 MW woody residues, bioenergy plants in the southern Brazilian state of Paraná. The project is part of Brazil's renewable energy incentive program, PROINFA, with the goal of sourcing ten percent of electricity from clean energy sources by 2022.
- The Australian Government's Ethanol Production Grants (EPG) program aims to provide a targeted means of maintaining the use of biofuels in transport in Australia. EPG first commenced on 18 September 2002. The program has since been extended, and in March 2004 it was announced that the Grant would be available to producers until 30 June 2011. Since October 2004 AusIndustry has been delivering the EPG program. Ethanol Production Grants are paid to ethanol producers at a rate of 38.143 cents per litre. See: <http://www.ausindustry.gov.au/content/level3index.cfm?ObjectID=B1EF3084-DB7A-4B56-AE6978EBAB8AB3F0&L2Parent=AEB901E5-7CB8-4143-A3BF33B2423F9DA6>
- Green Energy Resources of the USA, a supplier of woody biomass, has established port facilities in Philadelphia that will export one million tonnes a year of wood biomass. The New York company exports wood biomass from Florida, Alabama, North Carolina and Maryland, and wants to open facilities in New York, Tampa and California. The new operations will allow the company to ship as much as 3 million tonnes annually. Italy, the UK, Sweden and The Netherlands are the main markets for Green Energy Resources.
- For a quick primer or refresher on the basics of organic chemistry see: <http://www.krysstal.com/organic.html>
- Bioenergy Australia member, Waste Service NSW has changed its name to WSN Environmental Solutions, officially launching the new name and logo on 17 March. WSN Environmental Solutions' website is <http://www.wsn.com.au>.
- Drax Power Station, near Selby, North Yorkshire, a 4,000 MW coal fired power station is using biomass for co-firing with coal. See <http://www.draxpower.com/environment.php?page=biomass>.
- As of June 2005, all U.S. Navy and Marine non-tactical diesel vehicles will be required to operate on a B20, a twenty percent biodiesel blend with petroleum diesel, as part of the US military's efforts to increase their use of domestic and clean fuels.
- SembCorp Utilities UK will build the 30 MW 'Wilton 10' biomass power station in northeast England at a cost of £60m (\$146 million). It will be one of the largest renewable energy projects in Britain and will burn 300,000 tonnes of wood a year and will create approximately 400 jobs during construction and 15 permanent jobs. It is expected to be operational by mid-2007.
- The New South Wales Greenhouse Advisory Panel, the State Premier's specialist advisory body on greenhouse gases, has recommended that NSW slash its emissions of greenhouse gases by 60 per cent by 2050.
- An on-line biodiesel industry directory with access to 600 companies, including full contact details is at: <http://www.biodieselindustrydirectory.com/>
- Changing World Technologies' first commercial-scale waste-to-oil plant based on its Thermal Conversion Process is reported to be processing up to 270 tonnes of poultry offal into 300 barrels of oil daily in Carthage, Missouri, USA. See: <http://www.changingworldtech.com/>.

- Information on all aspects of Waste Vegetable Oil for fuel use is available on the Bio-power site <http://www.bio-power.co.uk/makeit.htm>.
- Cambodia Renewable Energy and Sustainable Agriculture for Rural Development web page shows construction photos of a small downdraft gasifier. See <http://www.cresard.com>. Click on "News", click on "Gasifier Blog".
- The Victorian Government has announced the formation of Sustainability Victoria, which will be formed out of the merger of the Sustainable Energy Authority of Victoria (SEAV) and EcoRecycle Victoria.
- Article on how enzymes can solve the energy crisis, by Nobel Physics Laureate for 1997, Dr Steven Chu of Berkley Laurence National Laboratory is at: <http://physics.iop.org/IOP/Press/PR2405.html>
- The US Department of Energy's Office of the Biomass Program website contains various project fact sheets. See: [http://www.eere.energy.gov/biomass/project\\_factsheets.html](http://www.eere.energy.gov/biomass/project_factsheets.html).
- A study by the Argonne National Laboratory in the USA has again considered the energy balances of producing ethanol from corn, finding that such ethanol generates 35% more energy than used in its manufacture, on a life cycle basis. See: [http://www.ncga.com/public\\_policy/PDF/03\\_28\\_05ArgonneNatlLabEthanolStudy.pdf](http://www.ncga.com/public_policy/PDF/03_28_05ArgonneNatlLabEthanolStudy.pdf)
- Australian Renewable Fuels has successfully listed on the Australian Stock Exchange, raising \$15 million in their initial public offering (IPO). ARF is constructing two 44.4 million litres per annum biodiesel plants, one in Adelaide and the other at Picton, Western Australia.
- Presentations from *Future Challenges for Waste Combustion and Co-combustion in Fluidized Bed Conversion* - 48th Workshop organised by the IEA Implementing Agreement on Fluidized Bed Conversion, Vienna, Austria, 24 May 2004 are available on the Web at: <http://www.iea.org/tech/fbc/index.html>.
- Energy Power Resources of Britain has been sold for £200 million to the Australian investment bank Macquarie. EPR generated 12.5% of the UK's Renewables Obligation electricity during 2003. As many as ten companies bid for EPR in an auction process that began last fall. Source: REFocus
- Global Renewable Limited's Eastern Creek, Sydney UR-3R plant has started producing electricity from digested, pre-processed municipal waste. Biogas from ISKA™ percolation modules provides electricity via spark ignition engines and contributes currently over 75 percent of the plant's electricity requirements. Full power production is expected in the third quarter of 2005, as waste throughput and biogas production increases to full capacity. The facility is designed to be self sufficient in both power and water, and will export approximately ten percent of the electricity generated into the grid.
- A bipartisan Bill has been introduced into to US Senate entitled the 'National Security and Bioenergy Investment Act of 2005' to expand research and development of biomass energy and biobased products, to provide incentives for businesses producing biofuels and to establish the position of Assistant Secretary of Agriculture for Energy and Biobased Products at the Department of Agriculture. The bill also establishes an incentive program for the production of one billion gallons per year (3.8 billion litres) of cellulosic biofuels.
- In Alberta, Canada, a demonstration pilot plant has been opened to convert cattle feedlot manure into energy, bio-based fertilisers and reusable water, while reducing greenhouse gas emissions (mainly methane) and other environmental impacts associated with land application of manure. The plant is at Highland Feeders, one of Canada's largest feedlot operations. The plant demonstrates new technology, called 'Integrated Manure Utilization System' developed jointly by the Alberta Research Council and Highmark Renewables. This technology combines anaerobic digestion, biogas utilisation, liquid/solid separation, nutrient recovery and enrichment processes and caters for high-solid manure, typical of most outdoor feedlots. The plant currently produces marginally less than 1 MW, but it is intended to expand electricity production to 3 MW.

- DynaMotive Energy Systems Corporation of Canada has announced it will ship 15 tonnes of their pyrolysis BioOil to the research institute Forschungszentrum Karlsruhe (FZK) for testing conversion of BioOil to Syngas via gasification. FZK has developed a new biomass to liquid (BTL) process to produce tar-free syngas from a mixture of BioOil and pyrolysis char (slurry). The BioOil will be shipped from DynaMotive's facility in Vancouver to a gasifier in Freiberg, Germany and testing will be completed in September, 2005. Syngas can be converted into synthetic diesel, methanol and other chemicals. Synthetic diesel, or Syndiesel, is a renewable greenhouse gas neutral fuel that can replace diesel produced from fossil crude oil. Source: Dynamotive
- DynaMotive Energy Systems Corporation also announced on 6 June that 4.8 tonnes of BioOil produced at their West Lorne, Ontario, Canada BioOil plant have been fired in the Erie Flooring steam boilers, as part of the demonstration phase of the West Lorne BioOil Cogeneration Project. The test burn was reported to be a complete success. The BioOil was fired at up to 580litres per hour. This project has been the subject of several articles in Bioenergy Australia newsletters over the past few issues.
- British Biogen and the UK Renewable Power Association have agreed to amalgamate, creating a single voice for Britain's biomass energy producers.
- Novozymes and US National Renewable Energy Laboratory have reduced the enzyme costs of ethanol production by a factor of 30. Novozymes recently announced this on its website. In a laboratory situation its engineers managed to produce ethanol at a cost price of only 10-18 US cents per US gallon for enzymes. The main conclusion is that these two organisations are able to remove the most important economic barriers to using ethanol. In January 2001, supported by funds from the U.S. Department of Energy (DOE), Novozymes and the National Renewable Energy Laboratory (NREL) entered into a collaborative research subcontract totalling US\$14.8 million over three years, with a one-year extension worth US\$2.3 million granted in April 2004. For further information see: <http://www.novozymes.com/cgi-bin/bvisapi.dll/press/press.jsp?id=32730&lang=en>
- President George W. Bush recently visited a biodiesel plant near Richmond, Virginia. This is believed to be the first time a US President has visited a biodiesel plant.

## Opportunities Corner

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

- German company ADOS has developed an analyser for monitoring biogas quality. Interested parties are requested to contact Joerg Salber (Tel: + 49-241-9769-23) or email: [info@ados.de](mailto:info@ados.de).
- An Australian, currently a PhD candidate at the International Institute for Industrial Environmental Economics (IIIEE) at Lund University, Sweden, working on socio-economic and policy barriers to expanding bioenergy in Europe, is seeking a 12-18 month opportunity to continue research on bioenergy/distributed energy in Australia, preferably Melbourne. Interested parties are invited to contact Kes McCormick-Brennan, email: [Kes.McCormick@iiiee.lu.se](mailto:Kes.McCormick@iiiee.lu.se).
- Yifeng International Trade Company of China, is seeking to purchase 2000 tonnes of biodiesel crude glycerine (of at least 80 percent purity) per month. Offers based on CIF China main port or FOB European port are being sought. If interested, contact Mr. Chenguang Hu, Room No.1830, 123 Changjiang Road, Dalian China. Tel: 86 411 82529399 Fax: 86 411 82529828 Email: [hcg@hotmail.com](mailto:hcg@hotmail.com).
- Industry partner sort for masters thesis project. Purpose of study to provide valuable insights into areas such as emerging technologies, impact of renewable policy on

business strategy and/or business innovation and development. The study would run for approximately four months and would be undertaken in your offices between July and December 2005, resulting in a detail report to be presented to your organisation and Chalmers university of Technology in Sweden. Contact: Jason Nielsen [jason\\_nielsen75@yahoo.com.au](mailto:jason_nielsen75@yahoo.com.au). Environmental Engineer ( graduate from The University of Queensland, 2000), presently studying "Masters of Management and Economics of Innovation" at Chalmers University of Technology.

- ICM Agribusiness has developed a mobile cubing machine that is capable of turning low bulk density products such as cereal straw and timber sawdust into high density products, well suited to transporting, handling and burning in biomass systems. Interested parties are invited to contact Alan Hoppe, Regional Director, ICM Agribusiness, email: [AHoppe@icm.com.au](mailto:AHoppe@icm.com.au) Tel: 03 5726 8388.
- Applications for the 2006 Fulbright Awards are now open. These are scholarship opportunities for study or research in the US. Details available at <http://www.fulbright.com.au>.

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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: <a href="mailto:sschuck@bigpond.net.au">sschuck@bigpond.net.au</a> .
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Editor: Dr. Stephen Schuck, Bioenergy Australia Manager
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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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