



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

# Newsletter

June 2004

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## **Bioenergy Australia 2004 Conference**

The annual Bioenergy Australia conference will be held on 29 and 30 November with the conference tour on 1 December in Adelaide, South Australia. Expressions of Interest are sought from potential paper and poster presenters, sponsors, and trade exhibitors for the Conference. Attendance over the past four conferences has averaged close to 150 delegates from across Australia and overseas. Please contact Stephen Schuck, Bioenergy Australia Manager Tel/Fax: (02) 9416 9246 Email: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au) to express your interest. Also, please diarise this event!

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## **Bioenergy Australia 2003 Conference Presentations CD**

A limited number of CD ROMs of the presentations in PDF format from the December 2003 Bioenergy Australia conference are still available for those who missed the conference, for \$66 each (including GST, postage and handling). 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-*Conventional Forestry Systems for Sustainable Production of Bioenergy*
- 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 to co-ordinate involvement. National Team Leaders are: Task 30- Don McGuire, Forestry SA, Task 31- John Raison, CSIRO Forestry and Forest Products; Task 32- to be announced; Task 36- Mark Glover, Waste Management Association; and Task 38- Annette Cowie, State Forests NSW.

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 and its Strategic Plan are available from web site: <http://www.ieabioenergy.com>.

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## IEA Bioenergy Meetings

Task 30 – *Short Rotation crops for Bioenergy Systems* – is planning to hold its annual meeting in 2004 in association with the Short Rotation Woody Crops Operations Working Group, 8-11 November 2004. The venue is the Francis Marion Hotel, Charleston, South Carolina, USA.

Task 31 – *Conventional Forestry Systems for Sustainable Production of Bioenergy* – will be holding its upcoming workshop on "Sustainable Production Systems for Bioenergy: Forest Energy in Practice" in Sweden and Norway, 12-18 September 2004. Optional post-workshop tour, Norway 19-21 September 2004.

Task 32 – *Biomass Combustion and Co-firing* - will be holding its next meeting from 30 August – 2 September in Victoria, Vancouver Island, Canada to coincide with the Science in Thermal and Chemical Biomass Conversion conference (see *Forthcoming Events* below).

Task 36 – *Energy from Integrated Solid Waste Management Systems* held its half yearly meeting in Norway in late May. Bioenergy Australia was represented at this meeting by Matthew Warnken on behalf of the participation group.

Task 38 – *Greenhouse Gas Balances of Biomass & Bioenergy Systems*. The most recent meeting was held at Rotorua, New Zealand from 24-25 March 2004. Six of the international participants then participated in a workshop convened by Bioenergy Australia on 26 March in Sydney, as part of the quarterly Bioenergy Australia meeting. The presentations from this workshop are on the Task 38 web site at <http://www.joanneum.ac.at/iea-bioenergy-task38/workshops/sydney04/>. The next Task 38 meeting, which will include a workshop with environmental NGOs will be held in Victoria, BC, Canada from 13-16 September 2004.

ExCo 53 was held in Lucerne, Switzerland 5,6,7 May 2004. A joint workshop with Task Leaders was held on 6 May. ExCo 54 will be held in Ottawa, Canada early October 2004, with future meeting as follows: ExCo 55 in Copenhagen Denmark circa May 2005 and ExCo 56 in Ireland circa October 2005.

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## New Australian Bioenergy Report

The Rural Industries Research and Development Corporation (RIRDC) launched a new 266 page report entitled 'Biomass energy production in Australia - Status, costs and opportunities for major technologies' at the 26 March quarterly Bioenergy Australia meeting. The report was commissioned by the Joint Venture Agroforestry Program, in conjunction with the Australian Greenhouse Office, and authored by Col Stucley of Enecon Pty Ltd, Steve Schuck of Stephen Schuck and Associates Pty Ltd, Ralph Sims of Massey University (NZ), Peter Larsen and Nigel Turvey of Greenfield Resource Options Pty Ltd and Bev Marino of Enecon.

The report examines in detail the use of biomass to generate electricity and produce liquid transport fuels. Many different forms of biomass are covered, from forestry and agriculture to a range of process industries, with the main focus of this study being on biomass from forestry, particularly new forestry that may also achieve other environmental benefits in Australia's dryland regions. Examples of several short cycle tree crops are provided, as well as technical sections that introduce current and projected technologies for production of electricity and liquid fuels from biomass.

A summary and overview of the report is downloadable from RIRDC's web page at <http://www.rirdc.gov.au/reports/AFT/04-031sum.html>. The Table of Contents, Introduction

and Executive Summary of the full report are downloadable from the Web at <http://www.rirdc.gov.au/reports/AFT/04-031.pdf>. The \$60 report may be ordered from the RIRDC web site.

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### **Narrogin Plant Back on Track**

The Western Australian Minister for Energy, Eric Ripper, has announced that funding has been secured for Western Power Corporation to resume work on the innovative integrated wood processing (IWP) demonstration plant at Narrogin, in the WA wheatbelt, to complete this bioenergy project to the 'proof of concept' stage.

The plant, which is about 80 percent complete, should be finished by late 2004. Fifteen people are expected to resume working at the Narrogin site for the next six to 12 months.

The announced funding includes \$1.6 million from the Australian Greenhouse Office's Renewable Energy Commercialisation Program and \$400,000 from the Department of Transport and Regional Services Regional Partnerships program. Some \$14.5 million will have been invested in the design and construction of the plant, 75 percent of which has been provided by the WA State Government and Western Power.

The demonstration bioenergy project is the first plant of its type to be built, and its performance is being closely watched across the country and overseas. It will use mallee trees grown in plantations by local farmers to produce electricity, activated carbon and eucalyptus oil. As well as the obvious renewable energy benefits, the plant tackles two of Australia's most serious environmental concerns - dryland salinity and global warming.

At full production, the demonstration plant is expected to use 2 million coppiced mallee trees a year to produce 7.5 GWh electricity, 690 tonnes of activated carbon and 210 tonnes of eucalyptus oil.

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### **Australian Renewable Fuels Limited Biodiesel Plant Set for Adelaide**

Australian Renewable Fuels Pty Ltd (ARF), a wholly owned subsidiary of Amadeus Energy has reached financial closure for its first biodiesel plant, which is to be built at Birkenhead in Adelaide's north-west. Wells Fargo Bank in the USA has approved finance for a AUD\$6.5 million debt facility, while AUD\$8 million in equity has already been committed to the project by investors. The total capital budget for the 45 million litres per year plant is approximately \$13 million. Leighton Contractors are to be the project manager. Australian Renewable Fuels Pty Ltd will be using proven technology supplied by Austrian company Energea Technology. The Adelaide plant is the first of five plants planned nationally, with roll-out planned at six monthly intervals. The next plant in the roll-out is planned for Picton in WA where ARF has already completed a feasibility study and is in the process of acquiring suitable land.

See <http://www.ausrf.com.au> and <http://www.amadeusenergy.com.au>

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### **Bioenergy Stamp Part of Renewable Energy Stamp Series**

Australia Post launched a set of 50 cent stamps depicting renewable energy on 30 March 2004. The series includes an image based on the Rocky Point Sugar Mill to represent bioenergy on one of the four stamps. Steve Schuck, the Bioenergy Australia Manager

assisted Australia Post with candidate photo material and also in reviewing background material to accompany the stamp launch. The images may be viewed on the Web at:

[http://www.auspost.com.au/philatelic/stamps/index.asp?link\\_id=2.741](http://www.auspost.com.au/philatelic/stamps/index.asp?link_id=2.741)

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### **Green Pacific Energy's Staplyton Bioenergy Plant Operational**

Green Pacific Energy's 5 MWe bubbling fluidised bed combustion bioenergy plant at Staplyton, south-east Queensland has commenced operation. It is fueled by urban green waste with the company stressing it is not using native forest wood waste. A long term power purchase agreement for the electricity is with Energy Australia. As reported in the previous Bioenergy Australia newsletter, in addition to the Staplyton project, Green Pacific Energy has five additional bioenergy projects totaling 85MW due for completion within 18 months in Queensland, Victoria, New South Wales, Tasmania and Western Australia.

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### **Clean Energy Future Scenarios Study**

As reported in the August 2003 and January 2004 issues of the Bioenergy Australia Newsletters, Bioenergy Australia joined in a study with other funding partners, including the World Wide Fund for Nature (WWF Australia) and the Business Council for Sustainable Energy (BCSE) to create technically coherent and attractive visions of a 'clean energy future' for Australia, that could be achieved by 2040, and to sketch the technical scenarios, policies and strategies required to reach such futures. The purpose of the project is to show how a 50 percent reduction in greenhouse gas emissions from stationary energy use is achievable using existing technologies coupled to energy efficiency.

The report is on the Bioenergy Australia Web site <http://www.bioenergyaustralia.org>. Some of the media coverage of the report is at:

<http://www.theage.com.au/articles/2004/03/13/1078594593456.html>

<http://www.theage.com.au/articles/2004/03/12/1078594562005.html>

<http://www.smh.com.au/articles/2004/03/12/1078594570009.html>

<http://www.abc.net.au/news/newsitems/s1065195.htm>

[www.edie.net/gf.cfm?L=left\\_frame.html&R=http://www.edie.net/news/Archive/8169.cfm](http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/8169.cfm)

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### **NSW Bioenergy Handbook Nearing Completion**

The former NSW Sustainable Energy Development Authority (now part of the Dept of Energy Utilities and Sustainability) has been compiling a bioenergy handbook to assist in the development of a wide variety of bioenergy project types in NSW. To this end consultants have compiled a 191 page draft final report which is now close to finalisation. The draft document has been provided to various stakeholders and members of a reference group (including Bioenergy Australia) for final input. For further information contact Rebecca Short of DEUS email:

[rebecca.short@deus.nsw.gov.au](mailto:rebecca.short@deus.nsw.gov.au)

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### **Update on Biofuels Excise**

In its May 2003 Budget, the Australian Government announced the effective introduction of excise on alternative fuels and biofuels. This was to commence in mid 2008, and to be

phased in over three years. In March 2004 the Government announced a three year extension to the excise-free period and revised rates. The excise rates are related to their energy content. The table above shows the biofuels excise rates which now commences from 1 July 2011.

| Year        | Biodiesel c/l | Ethanol c/l | Methanol c/l |
|-------------|---------------|-------------|--------------|
| 1 July 2010 | 0.0           | 0.0         | 0.0          |
| 1 July 2011 | 3.8           | 2.5         | 1.7          |
| 1 July 2012 | 7.6           | 5.0         | 3.4          |
| 1 July 2013 | 11.4          | 7.5         | 5.1          |
| 1 July 2014 | 15.3          | 10.0        | 6.8          |
| 1 July 2015 | 19.1          | 12.5        | 8.5          |

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### **Ethanol Labelling Now in Force**

A mandatory label for ethanol blended petrol came into effect on 1 March 2004 in Australia. More information on the labelling requirement is available at:  
<http://www.deh.gov.au/atmosphere/ethanol/index.html#labelling>

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### **Diesohol Discussion Paper**

The Department of Environment and Heritage has released a discussion paper on Diesohol, a blend primarily comprising petroleum diesel and an alcohol, to examine options for regulating diesohol under the *Fuel Quality Standards Regulations 2001*. The paper aims to generate discussion around technical issues associated with the use of diesohol as a transport fuel, and to suggest options for regulating its quality. The 36 page report is available on the Web from <http://www.deh.gov.au/atmosphere/cleaner-fuels/alternative/index.html> or by contacting the Clean Fuels and Vehicles Section of the Department of Environment and Heritage, Tel (02) 6274 1640, Email: [fuel.quality@ea.gov.au](mailto:fuel.quality@ea.gov.au). Stakeholders are requested to provide comments on the issues raised in the paper by 7 July 2004.

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### **New Commercial Ready Program Discussion Paper**

The Department of Industry, Tourism and Resources has released a discussion paper about the Federal Government's new Commercial Ready Program, announced in the recent 'Backing Australia's Ability-Building Our Future through Science and Innovation' package. The Commercial Ready Program will replace the existing R&D Start program, the Biotechnology Innovation Fund (BIF) and elements of the Innovation Access Program (IAccP), and will provide around \$200 million per annum to competitive industry applications from 2004-05 until 2010-11.

Comments on the development of the Commercial Ready program are due by close of business 18 June 2004. Further information is at <http://www.ausindustry.gov.au/>

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### **AusIndustry Biotechnology Innovation Fund - Round 6 Funding**

The Biotechnology Innovation Fund (BIF) aims to increase the rate of commercialisation of Australian biotechnology ventures by reducing the cost of demonstrating 'proof of concept' for new biotech initiatives. Grants of up to \$250,000 are available to eligible firms on a dollar-for-dollar basis.

Applications are now being sought for Round 6 funding. Applications close on 15 July 2004. For more information visit <http://www.ausindustry.com.au> or call the AusIndustry Hotline on 13 28 46.

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## **MRET Review Update**

The report of the statutory review into the operation of the Mandatory Renewable Energy Target (MRET) legislation was made public by the Federal Government on 16 January. The Australian Government is yet to make an announcement on how it will proceed with the report's recommendations. Some key numbered recommendations (of the 30) from the report that relate to bioenergy are:

1. That the MRET measure continue to operate.
7. Interim targets prior to 2010 and the 9500GWh target for 2010 remain unchanged.
8. MRET targets continue to increase beyond 2010 at a rate equal to the rate before 2010 and to stabilise at 20,000 GWh in 2020.
9. The end date of the measure be extended beyond 2020 so that the renewable energy from projects commencing after 2005 receive RECs for a full 15 year period.
16. As the treatment of wood waste from native forests raises issues outside the Review Panel's Terms of Reference, such as National Forest Policy, two options are proposed:
  - a) wood waste from native forests to be excluded as an Eligible Renewable Energy Source; or
  - b) wood waste from native forests to be separately identified as an independent Eligible Renewable Energy Source with the existing regulatory arrangements applying to wood waste from native forests to be retained.
17. Eligibility for plantation biomass to be redefined under 'energy crops'. Provisions to ensure plantation harvesting operations are conducted according to relevant approvals, and to deter landclearing of native forests, to be retained.
18. Eligibility of sawmill residues to be restricted to post-processing residues from sawmilling, veneer or other processing operations (other than wood chipping).
19. The 'primary purpose' test applying to energy crops to be removed.
20. All biomass material directly sourced from a licensed landfill or licensed waste transfer station, which would otherwise be landfilled, to be eligible under the municipal solid waste provisions of MRET.

The full report an executive summary and media release are all available at:  
<http://www.mretreview.gov.au>

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## **NSW Greenhouse Strategy**

The NSW Government has released the NSW Greenhouse Strategy - Discussion Paper. The Paper is the first step in developing a NSW Greenhouse Strategy, and is intended to provide information to a wide variety of stakeholders on the content of the Strategy and to allow for early contributions. The discussion paper can be downloaded from the NSW Greenhouse Office website [http://www.cabinet.nsw.gov.au/greenhouse/discussion\\_paper.pdf](http://www.cabinet.nsw.gov.au/greenhouse/discussion_paper.pdf). The closing date for submissions on the Discussion Paper is 30 June.

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## **Biofacts**

- The European Union has set a target of two percent biofuels use by the end of 2005 and 5.75 percent biofuels penetration by the end of 2010. Current use is approximately one percent.

- Pyrolysis bio-oil has approximately seven times the energy density of dry forest and sawmill residue, giving it a potential logistical and transportation cost advantage over solid biomass.
- Currently the US has 73 operating ethanol plants with a combined capacity of over 12 billion litres per year. There are a further 14 ethanol plants under construction.
- There are 98 Waste to Energy (WTE) plants operating in 29 US States processing 97,000 tonnes each day. WTE generates approx. 2,750 MWe The US \$10 b WTE industry employs more than 6000 workers with annual wages in excess of \$150 million. (Source Waste to energy , Waste Management World Jan-Feb 2004)
- The 2001 National Greenhouse Gas Inventory (NGGIC, 2003) estimated the total biomass combusted in Australia. The table below indicates the scale of this combustion.

### **Total Estimated Biomass Combusted in Australia**

| <b>Fire type</b>                             | <b>Total mass combusted (tonnes/annum)</b> |
|--|--|
| Savanna & temperate grassland                | 216,173,000                                |
| Prescribed burning - forest fuel             | 3,505,000                                  |
| Wildfires - forest fuel                      | 10,588,000                                 |
| Agricultural residue burning - wheat         | 3,492,000                                  |
| Agricultural residue burning - coarse grains | 6,044,000                                  |
| Agricultural residue burning - sugar cane    | 653,300                                    |

Source: NGGIC (2003)

### **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 1,200 odd addresses given in the previous sixteen 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.

Gasifier manufacturers

<http://gi.grensy.info/manufacturers/index.php?order=name>

BIOS Bioenergy Systems (Germany)

<http://bios-bioenergy.at/>

Envirem Technologies Inc. anaerobic digestion plant

[http://www.envirem.com/environment/nutriwave/anaerobic\\_digestion\\_plant.html](http://www.envirem.com/environment/nutriwave/anaerobic_digestion_plant.html)

WoodGas CampStove

<http://www.woodgasllc.com>

Small scale gasifiers

<http://aewgasifiers.netfirms.com/>

CSIRO Land and Water Salinity FAQ

<http://www.clw.csiro.au/priorities/salinity/faq.html>

UK Royal Commission on Environmental Pollution (RCEP) biomass report

<http://www.rcep.org.uk/bioreport.htm>

ExternE (EU site on externalities from fossil fuel)

<http://www.externe.info/>

New Rules Project(USA)

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

Carbohydrate Economy  
<http://www.carbohydrateeconomy.org/>

Clean Diesel Technologies  
<http://www.cdti.com>

Biomass Energy Research Association  
<http://www.bera1.org/calendar.html>

World Bioenergy 2004  
<http://www.worldbioenergy.se>

European Union Research Reports on Renewables  
[http://europa.eu.int/comm/research/energy/nm/nn\\_pubs\\_prn\\_en.html](http://europa.eu.int/comm/research/energy/nm/nn_pubs_prn_en.html)

Nishant Bioenergy Consultancy (India- cook stoves)  
<http://www.nishantbioenergy.com>

New Athena Project (policy formulation for energy conservation and bioenergy)  
<http://www.fuelandfiber.com/Athena>

Practically Green (Anaerobic Digestion)  
<http://www.practicallygreen.com>

Popular Poplars: Trees for many purposes  
<http://bioenergy.ornl.gov/misc/poplars.html>

NSW BioFirst Portal  
<http://www.biofirst.nsw.gov.au/>

Biotechnology Victoria  
<http://www.biotechnology.vic.gov.au/>

Bioenergy Austria  
<http://www.bioenergy.at>

European Renewable Energy Council - Biomass  
<http://www.erec-renewables.org/sources/biomass.htm>

Stirling engine using gasified pellets  
<http://members.aol.com/bkammerich/stirleengl.htm>

Sunpower Stirling Engines  
<http://www.sunpower.com/technology/public.html>

Biomass Energy Research Association  
<http://www.bera1.org/>

Tree Power  
<http://www.treepower.org>

Siemens Technical Papers on Power Generation  
<http://www.powergeneration.siemens.com/en/techpapers/index.cfm>

Gasifier Action Research Project (Indian Institute of Technology, Bombay)  
<http://www.me.iitb.ac.in/garp/>

Biomass Engineering  
<http://biomass-uk.com>

FORCE Technology, Denmark (now merged with dk-TEKNIK)  
<http://www.force.dk>

Chicken Litter Gasification  
<http://www.btgworld.com/technologies/pdf/leaflet-chicken-litter.pdf>

American Bioenergy Association  
<http://www.biomass.org/>

Biomass Energy Businesses in the World  
<http://energy.sourceguides.com/businesses/byP/biomass/biomass.shtml>

Gengassidan (gasification)  
<http://www.gengas.nu/byggbes/index.shtml>

Standard Tar Testing Guideline  
<http://www.tarweb.net/results/pdf/guideline-3.3-v2.pdf>

Barbados Sugar Cane Industry Development, Inc. Five-Year Business Plan  
<http://www.cbet-inc.org/investment/barsugar.html>

Biomass Gasification Group, Technical University of Denmark  
<http://bgg.mek.dtu.dk/>

Anaerobic Digestion paper (lagoon at piggery)

<http://www.ctic.purdue.edu/core4/nutrient/manuremgmt/Paper31.html>

Short Rotation Coppice

<http://www.forestry.gov.uk/src>

Forum for European Australian Science and Technology

<http://www.feast.org/index.php>

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## **International Developments**

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### **Bioelectricity in OECD Countries Report Released by WWF and AEBIOM**

WWF and the European Biomass Association (AEBIOM) on 27 May 2004 jointly launched a major study report entitled 'Bioelectricity Vision: Achieving 15% of Electricity from Biomass in OECD Countries by 2020'. The report was commissioned by WWF International and prepared by the Centre for Energy Policy and Technology and E4tech (UK) Ltd, Imperial College, London. The Bioenergy Australia Manager, Steve Schuck was approached to review and comment on the draft report.

According to the report, biomass provides a cost-effective and carbon-neutral source of energy that could provide 15% (from the current 1%) of the electricity demand from industrialised countries by 2020. It could supply power to 100 million homes, and is equivalent to replacing about 400 traditional large power stations. The report further shows that the substantial increase of biomass for clean power production would require less than 2 percent of land from industrialised nations and will not compete with food production and nature conservation.

The report says that the production of biomass will create up to 400,000 jobs by 2020, particularly in rural areas. In the Northeast, Southeast and West Coast regions of the US alone, the biomass industry has already provided about 70,000 jobs. The report further shows that biomass will be instrumental in meeting national renewable electricity targets under the Kyoto Protocol.

The report recommends that governments develop and implement policies to increase the potential for renewable energy sources such as biomass in the power sector. It calls on industrialised countries to reform their agricultural policies to support the production of energy crops for biomass. The report further recommends that governments develop and enforce best practice guidelines for biomass production to minimise any negative social, economic, or environmental impacts.

The media release for the report is at

[http://panda.org/about\\_wwf/what\\_we\\_do/climate\\_change/news/news.cfm?uNewsID=13301](http://panda.org/about_wwf/what_we_do/climate_change/news/news.cfm?uNewsID=13301)

The full report may be downloaded from the WWF Website at

<http://www.panda.org/downloads/europe/biomassreportfinal.pdf>

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### **UK Royal Commission on Environmental Pollution Report on Bioenergy**

The UK Royal Commission on Environmental Pollution, an independent advisory group that, in 2000, recommended that Britain reduce CO<sub>2</sub> emissions 60% by 2050 recently released a 96 page report entitled 'Biomass as a Renewable Energy Source'. The report is highly supportive of bioenergy and asserts that the UK is underutilising its biomass resource. For example the report recommends planting as much as seven million hectares, of the 17 million hectares of agricultural land available in the UK, with biomass energy crops such as willow and poplar. In addition the report recommends that a new government/industry forum should

be established, consisting of representatives from all parts of the biomass energy supply chain, including farmers, transporters, generators, construction companies, local councils and central government policy makers. The forum would allow its members to identify problems, share solutions and experiences and make recommendations on improving the effectiveness of biomass energy policy. (This sounds very akin to the Bioenergy Australia forum in Australia – Ed.)

The full report by is downloadable from the Web at <http://www.rcep.org.uk/bioreport.htm>

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### **USA Ethanol Industry Sets Annual Production Record in 2003**

The U.S. ethanol fuel industry produced a record 10.6 billion litres of fuel in 2003, according to the Renewable Fuels Association (RFA). The record ethanol production in 2003 is about 32 percent more than production in 2002. One driver for this growth has been the requirement for petrol suppliers to switch from MTBE as a fuel additive, due to environment and health concerns. See Web at <http://www.ethanolrfa.org/pr040122.html>.

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### **Iogen Produces Cellulose Derived Ethanol for Commercial Use**

Iogen Corporation of Ottawa, Canada announced on 21 April 2004 that it is producing the world's first cellulose-based ethanol fuel for commercial use. Cellulose ethanol is an ultra-low CO<sub>2</sub> emission fuel that can be blended with gasoline and used in cars today. Iogen's cellulose ethanol technology is a result of more than 25 years of research and development. Iogen and its partners (Shell, Petro-Canada and the Government of Canada) have committed over Cdn\$110 million to it. The company owns and operates the world's only cellulose ethanol demonstration scale facility. The first shipment of 5,000 litres of cellulose-derived ethanol will be blended with regular unleaded gasoline at a Petro-Canada refinery in Montreal, Quebec. Iogen's cellulose ethanol demonstration facility is the final proving stage prior to the roll-out of full-scale commercial plants. Further information at: [http://www.iogen.ca/HTML2/news/04\\_21\\_2004.html](http://www.iogen.ca/HTML2/news/04_21_2004.html)

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### **Wartsila to Provide Bio Fuelled CHP Plant for Swedish Utility**

Marks Värme AB, a municipality-owned heat and power utility in Kinna about 60 km from Gothenburg, Sweden has chosen Wärtsilä Biopower Oy of Finland as the main supplier of a new biofuelled power plant. The utility's main function is to provide district heat. The new power plant will start operation at the beginning of 2005. The power plant will generate 3.5 MWe of electricity and 16 MWth of heat. Some of the heat will also be supplied to nearby industrial facilities. The bioenergy plant will be fuelled by wood waste, mainly bark and sawdust from sawmills.

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### **GAVE Program Established by Dutch Government**

The Dutch government has established the GAVE program, a Dutch acronym which translates as *Climate Neutral Gaseous and Liquid Energy Carriers*. This program is being implemented by Novem on behalf of the Ministries of Housing, Spatial Planning and the Environment; Economic Affairs; and Transport, Public Works and Water Management. Energy carriers of interest include ethanol, methanol, biodiesel, pure plant oils, hydrogen, synthetic natural gas and Fischer-Tropsch diesel. The aim of the program is to realise demonstrations by 2010 of entire production chains, up to and including the application of

climate neutral gaseous and liquid fuels, largely from biomass. Progress to date has been the formation of alliances for collaborating in setting up supply chains for climate neutral gaseous and liquid fuels. This was followed by the development of blueprints for demonstration of relevant processes and technologies. This is now leading to subsidised demonstration projects.

See [http://gave.novem.nl/novem\\_new/index.asp?id=1](http://gave.novem.nl/novem_new/index.asp?id=1)

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### **Pipeline Quality Green Gas**

In late 2003 the Dutch research institute ECN became the first in the world to successfully produce green gas through gasification of biomass. Large-scale production tests are planned to follow shortly, in collaboration with the Dutch gas utility Gasunie.

Green gas, produced via gasification of biomass, can after additional processing be upgraded to the same quality as natural gas. It can then also be transported via the existing gas infrastructure, or used as an alternative transport fuel. It can also be used to replace natural gas in stationary applications such as heating or electricity generation. It is now technically possible to produce this gas from other sources, such as wood. More information is available in the ECN report entitled 'Feasibility of Biomass/Waste-related SNG Production Technologies'. See <http://www.ecn.nl/library/reports/2003/c03066.html> (source: Novem)

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### **Dynamotive Pyrolysis Bio-Oil Plant Progress**

Canadian company, Dynamotive has announced that it has shipped three BioOil process modules for its 100 tonne per day capacity pyrolysis BioOil cogeneration power plant in West Lorne, Ontario.

The three BioOil process modules were shipped from Ramsay Group's facilities in Sydney, Vancouver Island, BC on 31 May. The modules are expected to arrive in West Lorne on 8 June where the site has been readied for its reception and assembly. It was further announced that the balance of the pyrolysis plant is scheduled to be shipped on 21 June.

The West Lorne Cogeneration Partnership, involving Dynamotive broke ground on the construction site on 14 April 2004 of what will be, when completed, the world's largest pyrolysis plant and the first pyrolysis oil fuelled power co-generation facility.

The project, developed at a cost of Cdn\$ 14.5 million (U.S. \$10.7 million), is the result of cooperative efforts of Magellan Aerospace, Orenda Industrial division; Ontario Power Generation, UMA Engineering, Erie Flooring and Wood Products and Dynamotive.

Procurement of equipment is virtually complete. Equipment costs represent Cdn\$ 9.7 million (U.S. \$7.2 million) of the estimated total project cost. The project has received a Cdn\$ 5.0 million (U.S. \$3.7 million) financial contribution from Sustainable Development Technology Canada.

Construction is in advanced stages with completion expected in July 2004.

DynaMotive further announced that:

- < Most foundation work is now complete, with the remainder to be completed by early June, in time to receive the remaining equipment.
- < 85% of the fabrication process is estimated to have been completed – including process control equipment, process vessels, structural steel, the power generation turbine and electrical equipment required for grid connection.
- < Electrical transformers have been delivered to site and fabrication of switch gear has been completed and it is ready for shipment.

- < Feed processing equipment, hammer mill, conveyors, metal detector and separators as well as feed crew conveyors have arrived on site and are ready for installation.
- < BioOil Storage tanks and their platforms were shipped on May 25 and were scheduled to arrive in West Lorne 4 June.

Once in operation, the plant is expected to process up to 100 tonnes per day of biomass and to produce 70 tonnes of BioOil, 20 tonnes of char and 10 tonnes of non-condensable gases.

Fifty tonnes of BioOil per day will be utilised to fuel a gas turbine developed by Orenda to produce up to 2.5 MW of electricity. This will meet the power requirements of the Erie Flooring plant and export electricity to Ontario's energy grid. Surplus heat generated by the turbine will produce steam for Erie Flooring's industrial operations. The remaining BioOil and char from the plant will be sold to commercial users and used for research purposes. Non-condensable gases will be used to provide heat to the process.

For further information see Website: <http://www.DynaMotive.com> (source Dynamotive)

## **Commentary on Hydrogen Economy and Alternative Strategy**

A study on the hydrogen economy entitled *A Better Way of Getting From Here to There* by David Morris of the US Institute for Local Self Reliance identifies hydrogen's major shortcomings — astonishingly high costs and the reliance on non-renewable fuels to generate the hydrogen and proposes an alternative strategy based on biomass. The report contrasts shortcomings of hydrogen with the dramatically lower cost and near-term feasibility of building an energy economy based on converting sugars into alcohols rather than hydrogen into electricity — a sugar economy instead of a hydrogen economy.

The report makes the points that:

- The US can replace 10 percent of its transportation fuels with ethanol 10-25 years before replacing a similar amount with hydrogen, with no new investments in redesigning cars or refuelling stations or energy delivery systems.
- The current production cost of hydrogen is US\$4-8 per gallon (US\$1.06 – 2.12 per litre) of gasoline equivalent (gge). The wildly optimistic US goal is \$2.65 (70 US cents/litre) per gge by 2015. The current US cost of ethanol is \$1.50-2 per gallon (40-53 US cents/litre).
- The current cost of converting a gas station to ethanol is US \$50,000. The current cost of converting a gas station to hydrogen is reported at over \$600,000.
- The current cost of modifying a conventional car so that it can run on 100 percent ethanol is US\$160. The current cost of a hydrogen fuel cell car is \$1 million. The most optimistic projection for the increased cost of a fuel cell car in 2015 is US\$10,000.
- A sugar-based economy can bring major benefits to rural areas.

The report is on the Web at: <http://www.newrules.org/electricity/betterway.html>.

## **Journal Special Issue on Bio-based Products and the Environment**

The Journal of Industrial Ecology, a peer reviewed international quarterly published by MIT Press and owned by Yale University, has recently published a special issue on Bio-based Products and the Environment.

The special issue examines the environmental implications; positive and negative of increased use of biobased materials and fuels using the concepts and tools of industrial ecology. Articles in the issue analyse the opportunities, processes, and environmental impacts of biofuels, bioplastics, biolubricants, and biosurfactants.

The entire special issue is available on the web at <http://mitpress.mit.edu/JIE/bio-based> at no charge.

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### **‘European Bio-Energy Projects, 1999-2002’**

A report ‘European Bio-Energy Projects, 1999-2002’ which provides synopses of 100 projects supported by the European Commission’s under the 5<sup>th</sup> Framework program (1999-2002), with the theme ‘Energy, Environment and Sustainable Development’ is downloadable from the Web (2.8 MB) at [http://europa.eu.int/comm/research/energy/pdf/european-bio-energy-projects\\_en.pdf](http://europa.eu.int/comm/research/energy/pdf/european-bio-energy-projects_en.pdf).

For each project, basic information is provided on the scientific and technical scope, the participating organisations and contact points. The scope of the projects cover the whole bioenergy chain from biomass production, waste management, conversion technologies up to the production of biogas, hydrogen and biofuels.

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### **New Energy for America Alliance and Report**

A US alliance of labour, environmental, civil rights, business, and political leaders has laid out a vision for a ‘New Apollo Project’ to create 3.3 million new jobs and achieve US energy independence in ten years. Named after President Kennedy's moon program, which inspired a major national commitment to the aerospace industry, the Apollo Alliance aims to unify the country behind a ten-year program of strategic investment for clean energy technology and new infrastructure. The alliance also announced that it has received support from 17 of America's largest labour unions, including the United Auto Workers, the Steelworkers and Machinists, as well as a broad cross section of the environmental movement, including the Sierra Club, the Natural Resource Defence Council, the Union of Concerned Scientists, and Greenpeace. The 44 page report, ‘New Energy for America’ is available at <http://www.apolloalliance.org/docUploads/ApolloReport%2Epdf>

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### **Forthcoming Events**

- **Bioenergy Australia 2004**, 29 November – 1 December 2004, Adelaide, South Australia. Watch <http://www.bioenergyaustralia.org> in coming months for details. PLEASE DIARISE.
- *2004 Corn Utilization & Technology Conference*, 7-9 June, Indianapolis, USA. Theme "Corn: Feedstock of the Future!". Web <http://www.corntechconf.org>
- *REGA Forum 2004* in conjunction with the *ESAA 9th Renewable Energy Conference*, Novotel Twin Waters, Sunshine Coast, Queensland 10-11 June. Web: [www.tmm.com.au](http://www.tmm.com.au) Tel: (02) 9241 2955.
- *Energy & Agricultural Carbon Utilization: A Sustainable Alternative to Sequestration* Athens, Georgia, USA. 10-11 June 2004. Web: <http://www.georgiaitp.org/carbon>
- *14th Annual EPAC Ethanol Conference* "Energy, Parks and Clean Cities: Gemstones in the Treasure State" 13-15 June 2004, Helena, Montana USA. Web : <http://www.ethanolmt.org>
- *The Windsor Workshop, Transportation Technology and Fuels Forum* - an international event on emerging transportation technologies, fuels, systems and policies - Westin

- Harbour Castle, Toronto, Ontario, Canada. 14-17 June, 2004. Web: <http://www.windsorworkshop.ca/>
- International Fuel Ethanol Workshop and Trade Show, 22-25 June 2004. Monona Terrace Convention Center, Madison, Wisconsin, USA. <http://www.bbiofuels.com/few/agenda>
  - *Agriculture as a Producer and Consumer of Energy*, June 24-25, 2004, Arlington, VA, USA. Web: <http://www.farmfoundation.org>
  - *Towards Zero Waste & Business of Sustainability Expo*, Waste Management Association of Australia (SA Branch). 24 - 25 June 2004. Hilton Adelaide, South Australia. See <http://www.wmaa.asn.au>
  - Renewables 2004 - International Conference on New and Renewable Energy Technologies for Sustainable Development. 28 June – 1 July 2004, Evora, Portugal. Email: [renewables@navier.ist.utl.pt](mailto:renewables@navier.ist.utl.pt) Fax: +351 21 847 5545
  - *Australian Biotechnology Summit 2004*, 5-6 July, Sydney Convention Centre. Web: <http://www.acevents.com.au/biotechnology2004>
  - *BioBusiness Asia 2004*, 20 – 21 July 2004, Taipei, Taiwan. Web site: <http://www.BioBusiness-Asia.com>. Contact Ms. Karin Sung, BMEC, Industrial Technology Research Institute, Tel. +(886)-3-5912683 Fax. +(886)-3-5910096 Email: [karinsung@itri.org.tw](mailto:karinsung@itri.org.tw)
  - *Towards Zero Emissions*, 26-28 July 2004. Novotel Brisbane. Tel (02) 9923 5090 Web: <http://www.iir.com.au>
  - *World Renewable Energy Congress VIII*, Denver, Colorado, USA, 28 August - 3 September, 2004. Papers to cover: Heat and Electricity Generation; Energy Crops and Residues; Liquid Fuels and Bio-products; Environmental Aspects; Socio-economical and Case Studies; and Policy and Implementation. Details at [www.nrel.gov/wrec](http://www.nrel.gov/wrec).
  - *Anaerobic Bioconversion for Sustainability*, 29 August – 2 September, 2004, Montréal, Canada. Web: <http://www.ad2004montreal.org/>
  - *International Conference on New Directions in Agroecology: Productivity and Sustainability*. Mildura Campus of La Trobe University, Benetook Ave, Mildura, Victoria. 29 August - 4 September 2004. Web: [http://www.latrobe.edu.au/mildura/science\\_conference.htm](http://www.latrobe.edu.au/mildura/science_conference.htm)
  - *Science in Thermal and Chemical Biomass Conversion*, 30 August – 2 September 2004. Victoria Conference Centre and Fairmont Empress Hotel Victoria, Vancouver Island, BC, Canada. Contact Emma Wylde email: [e.wylde@aston.ac.uk](mailto:e.wylde@aston.ac.uk). Tel: +(44(0) 121 359 3611. Web: <http://www.stcbc.com> (Also contact Steve Schuck for a conference pamphlet).
  - *7th International Conference on Greenhouse Gas Control Technologies*, Vancouver, Canada. 5-9 September 2004. Email: [secretariat@ghg7.ca](mailto:secretariat@ghg7.ca) Web: <http://www.ieagreen.org.uk/> or <http://www.ghg7.ca/>
  - *19<sup>th</sup> World Energy Congress (WEC): Delivering Sustainability*, Sydney 5- 10 September 2004. Tel (02) 9248 0800 Email: [energy2004@tourhosts.com.au](mailto:energy2004@tourhosts.com.au) Web: <http://www.tourhosts.com.au/energy2004>
  - *Hydrogen and Fuel Cell Futures - the transition to sustainable energy Conference*, Perth, Western Australia, 12-15 September 2004. <http://www.dpi.wa.gov.au/fuelcells/conf/index.html>
  - *Second International Ukrainian Conference on Biomass for Energy*, 20-22 September 2004 (Kiev). First announcement and call for paper can be found at: [http://www.repp.org/discussiongroups/resources/First\\_call\\_2004\\_en.htm](http://www.repp.org/discussiongroups/resources/First_call_2004_en.htm) Email: [info@biomass.kiev.ua](mailto:info@biomass.kiev.ua) Web: <http://www.biomass.kiev.ua>
  - *Monitoring Science and Technology Symposium: Unifying Knowledge for Sustainability in the Western Hemisphere*. Adam's Mark Hotel, Denver, Colorado, USA. 20-24 September 2004. Web: <http://www.monitoringsymposium.com/papers.cfm>
  - *New Crops 2004 - the 2nd Australian New Crops Conference*. 21 – 24 September 2004, University of Queensland, Gatton. <http://www.newcrops.uq.edu.au/nc2004/index.html>
  - *Industrial Applications of Renewable Resources – A Conference on Sustainable Technologies*, 11-14 October 2004, Chicago, USA. Email: [meetings@aocs.org](mailto:meetings@aocs.org) Web: <http://www.aocs.org/meetings/iafo>.

- *1st International Ukrainian Conference on Cogeneration for Industry and District Heating Systems*. 18-20 October 2004, Kiev, Ukraine. Email: [cogeneration@biomass.kiev.ua](mailto:cogeneration@biomass.kiev.ua) Web: <http://www.biomass.kiev.ua/cogen>
- *1<sup>st</sup> International Business Forum on Renewable Energy*, 21-22 October 2004. Augsburg Conference Centre, Germany. <http://www.renewable-forum.com>
- R E N E X P O<sup>®</sup> 2004, 21-24 October 2004. Augsburg Exhibition Centre, Germany. <http://www.renexpo.com/>
- *IHE WoodEnergy 2004*, IHE International Trade Fair and Conference for wood energy. 21-24 October 2004, Augsburg Fairground, Germany. Web: <http://www.ihe-woodenergy.com>
- *Sustainable Waste Management*, 24 - 26 November 2004, Carlton Crest Hotel, Melbourne. Contact: Veronica Dullens, Waste Management Association of Australia Tel: (02) 9599 9133 Fax: (02) 9599 6032 Email: [veronica@wmaa.asn.au](mailto:veronica@wmaa.asn.au) <http://www.sustainablewm.com.au>
- *Bioenergy Australia 2004*, 29 November – 1 December 2004, Adelaide, South Australia. Watch <http://www.bioenergyaustralia.org> in coming months for details.
- *Solar 2004 – 42<sup>nd</sup> ANZSES conference “Life the Universe and Renewables”*, 1-3 December 2004. Web <http://energy.murdoch.edu.au/solar2004>
- *BCSE National Conference*, 27-29 April 2005, The Grand Hyatt, Melbourne <http://www.bcse.org.au>

## Residues

- Steve Schuck provided a lecture on bioenergy at the ESAA Power Engineering Residential Summer School at the University of Queensland on 6 February 2004.
- Steve Schuck gave a presentation at the 26 May 2004 Bioenergy Australia endorsed IIR Alternative Fuels Summit 2004 in Sydney on Biomass for Heat and Power. He also was the opening chairman for the conference. He has similarly been invited to give a presentation at the July 2004 IIR Conference ‘Towards Zero Emissions’ in Brisbane.
- Two Australian delegates, including Steve Schuck attended the 2<sup>nd</sup> World Biomass Conference in Rome, Italy from 10-14 May 2004. The conference was attended by approximately 1,100 delegates from over 60 countries. The conference included a trade exhibition, poster and oral presentation and a series of major workshops. Steve Schuck gave a presentation on Australia’s experiences with biomass co-firing with coal at an IEA bioenergy Task 32 organised half-day workshop. A report on the conference is being prepared for Bioenergy Australia members. The Proceedings from the conference are currently ‘in press’ and are expected to be provided to delegates in a few months time. In the mean time the ECN (Energy Research Centre of the Netherlands) papers delivered at the Conference can be downloaded from the ECN internet site: <http://www.ecn.nl/library/reports/2004/bm.html>
- Bioenergy Australia has been a formal supporter of World Bioenergy 2004, held in Sweden from 2-4 June 2004.
- In its May budget, the Australian government has allocated an additional \$70.3 million for the Australian Greenhouse Office’s activities and \$2.5 million for the Office of the Renewable Energy Regulator to administer the Mandatory renewable Energy Target (MRET).
- Bioenergy Australia is again noted in ‘Climate Activities in Australia 2003’ published by the Bureau of Meteorology, AGO and Australian Academy of Sciences as an organisation involved in climate mitigation activities in Australia.
- RIRDC has produced a report ‘Risk and Risk Perception - A Literature Review’. The Summary Report is at <http://www.rirdc.gov.au/reports/HCC/04-043sum.pdf>. The 22 page full report (143kB) is at: <http://www.rirdc.gov.au/reports/HCC/04-043.pdf>
- The Web address for viewing the IEA Bioenergy Task 38 – *Greenhouse Gas Balances of Biomass and Bioenergy Systems* case studies is: <http://www.joanneum.ac.at/iea-bioenergy-task38/projects/task38casestudies/>

- The presentation material from an IEA Bioenergy Task 32 workshop on cofiring in 2002, organised with Task 33 (Thermal Gasification of Biomass) and EUBIONET are now available on the web. The 179 pages of material can be downloaded from the Task 32 Website at: [http://www.ieabcc.nl/publications/AMS\\_Cofiring\\_seminar.pdf](http://www.ieabcc.nl/publications/AMS_Cofiring_seminar.pdf)
- A joint ACF/JVAP consultancy 'Fuelling Landscape Repair' builds the case for public and private investment in biomass plantings and also deals with salinity/greenhouse issues. The report is believed to be nearing completion with its release date still to be determined.
- The Waste Management Association of Australia/Australian Greenhouse Office Project to develop an industry sustainability guide and code of practice for energy from urban waste projects is essentially complete, with the final version of the guide and code of practice at <http://www.wmaa.asn.au/efw/home.html>.
- Back issues of the AETF Review are available for downloading. Go to [www.aetf.net.au](http://www.aetf.net.au) and click on "AETF Review".
- The US EPA estimates that that country's largest animal production facilities produce 300 million tons of manure per year.
- The Legacy Foundation (USA) facilitates biomass fuel briquette making in developing countries as a micro-enterprise, mostly for marginalised populations ( the 90 percent of the populations in the third world). They sell kits for briquetting making. See website, <http://www.legacyfound.org>
- A paper entitled "Development of a Flail Harvester for Small Diameter Brush and Coppiced Trees to Produce Energy/Chemical Feedstock" by Robert A. McLaughlan et al, and presented at the *Mechanization in Short Rotation, Intensive Culture Forestry Conference*, Mobile, Alabama, USA, 1-3 March, 1994 is on the Web at <http://www.woodycrops.org/mechconf/mclaughl.html>.
- Canada's New Energy Resources Alliance (NewERA) is a membership-based organisation that fosters the distributed energy industry. Bioenergy has been identified as a priority category of generating technologies that is being considered under NewERA's activities. See <http://www.newera-energy.ca>
- A 26 page report on various gasifiers is downloadable from <http://www.gasnet.uk.net/files/268.pdf>
- Back issues of the USA Bioproducts and Bioenergy Newsletters are archived at <http://www.bioproducts-bioenergy.gov/news/Archive.asp>
- Choice Magazine ran an article on ethanol blends with petrol in NSW. It surveyed petrol outlets and also inquired about ethanol labeling. See <http://www.choice.com.au/articles/a103921p1.htm>
- A seven page comprehensive summary by Eqtec Iberia of Spain entitled "Integrated Biomass Gasification Power Plants" provides a very good summary with photos and diagrams of a plant of 750 kW electrical output and 3500 kW thermal output using biomass – almond shells and olive pits to power three 250 kW generator sets. Two of these are dual fuelled diesel sets, each producing 250 kW electrical, using approx 8% diesel fuel. So far 15,000 hours of commercial operation have been clocked up over four years. More than 10,000,000 kWh has been produced with each kg of almond shells producing one kWh of electricity, and olive pits 1 kg gives 1.2 kWh. View the PDF document at <http://www.energiaverde.com/Demo67in.pdf>
- The Biodiesel Association of Canada has been formed to promote development of a domestic biodiesel industry, and to lobby for a mandatory target of 2 percent biodiesel in all petroleum based diesel fuel.
- Hydro Quebec of Canada will pay Cdn6.9c/kWh for electricity from three power plants that rely on at least 75 percent biomass feedstock. A total of 74 MW was selected from public bids, involving capital spending of Cdn\$135 million. The 20-year purchases will start in 2006.
- A report which concludes that ethanol from corn uses 65 % more energy than it produces is available on the web at <http://128.32.143.199/papers/patzek/EthanolFromCorn-2003-06-04.pdf>. (This is one of many reports on the life cycle emissions of ethanol production from corn produced over the past years, and was the subject of a plenary session presentation by Dr Ralph Overend of NREL at the May 2004 2<sup>nd</sup> World Biomass

conference in Rome, Italy. Dr Overend's presentation provided a comparison of several LCA studies and the underlying assumptions which largely explain a large variation in emissions and overall energy ratios. The Proceedings of this conference are in press - Ed.)

- An Envirem Technologies Inc. anaerobic digestion plant, with the main feedstock being aquacultural wastes, located in on the Bay of Fundy, New Brunswick, Canada, has a web site at [http://www.envirem.com/environment/nutriwave/anaerobic\\_digestion\\_plant.html](http://www.envirem.com/environment/nutriwave/anaerobic_digestion_plant.html)
- Ms Phoebe Maroulis was awarded The Swire Group Churchill Fellowship to investigate the commercial and technical feasibility of supplying rural and remote communities with renewable energy, particularly bioenergy as a combined management tool for woody shrub invasion and energy supply. The Fellowship has allowed her to conduct a study tour of the USA and Mexico.
- The Mandatory Renewable Energy Target (MRET) Review full report is available at <http://www.mretreview.gov.au/report/index.html>.
- Muellheizwerk Bremen, a German energy company which converts 330,000 tonnes of waste into energy each year is reported to have signed a pioneering deal with a Hamburg retirement home to buy up 100 tonnes of used incontinence pads and soiled tissues each year to provide part of its plant's feedstock. The deal provides a 2,000 Euro rebate on the retirement home's annual waste collection bill.
- The German government has approved a 100% tax credit for solar and biofuel systems.
- Global Renewables Limited has entered into a significant forward contract with Mitsui & Co. (Australia) Ltd for the sale of up to 500,000 tonnes of Carbon Credits from its Waste-to-Resource facility under construction at Eastern Creek near Sydney. The plant will process up to ten percent of Sydney's domestic waste and generate around 350,000 saleable Carbon Credits per annum. The agreement with Mitsui allows for the sale of the Carbon Credits over a period of three years, beginning in 2010. See: [http://www.grd.com.au/pdf/1075706152\\_040203\\_Australian\\_Carbon\\_Credits\\_Sale\\_to\\_Mitsui\\_&\\_Co\\_\(Australia\)\\_Ltd.pdf](http://www.grd.com.au/pdf/1075706152_040203_Australian_Carbon_Credits_Sale_to_Mitsui_&_Co_(Australia)_Ltd.pdf)
- The Australian Labor Party has committed to an MRET renewable energy target of at least 5 percent if elected at the next Federal election.
- Videos of the WoodGas CampStove, a micro gasifier designed for camping and also for use in developing countries may be viewed at <http://www.woodgasllc.com>
- At present, approximately 2.8 million tonnes, or 8 percent, of municipal waste are incinerated in England and Wales every year.
- The Brazilian government will tender expansion projects in the electric power sector this year, which will need investments of US\$7 billion. Biomass, wind, and small hydro will receive US\$2.8 billion for development of 7,000 MW of capacity. (source REFocus magazine).
- The US National Research Council (National Academy of Sciences) has released a report relating to the United States' efforts to embrace a hydrogen economy: <http://www4.nationalacademies.org/news.nsf/isbn/0309091632?OpenDocument>
- The Columbia Boulevard wastewater treatment plant in Oregon USA hosts the first installation in the western United States of a fuel cell running on wastewater digester gas and only the third such system in the US. See the Oregon Department of Energy's Web site at <http://www.energy.state.or.us/biomass/fuelcell.htm>.
- The 'Oregon Cellulose-Ethanol Study', from the Oregon Department of Energy is available on the Web at <http://www.energy.state.or.us/biomass/document/OCES/OCES.PDF>
- In late February 2004, Noosa Council on the Queensland Sunshine Coast called for expressions of interest from suitably qualified organisations to conduct a biodiesel trial. The scope of the project was for the supply, storage and dispensing plant, fuel and testing services and would involve Noosa Council, Cleanaway (Sunshine Coast) and Buslink.
- US companies, Cargill Industrial Oils and Lubricants, Waverly Light and Power and the Electric Research and Manufacturing Cooperative (ERMCO) have collaborated with the United Soybean Board and Soybean Checkoff to develop a unique soybean-based transformer oil called BioTrans 1000™. Currently, BioTrans is in its early

commercialisation stage and about 40 public utilities are currently using BioTrans 1000 in distribution transformers. See [http://www.unitedsoybean.org/lib\\_bbs\\_frame.cfm?ID=25](http://www.unitedsoybean.org/lib_bbs_frame.cfm?ID=25)

- A 181 page 'Report into the Appropriateness of the Australian Government's 350 ML Biofuels Target' is at:  
<http://www.industry.gov.au/content/sitemap.cfm?objectid=48A3B39B-20E0-68D8-ED6A35FE6FDB3B55>
- A substantial set of papers on biofuels, mainly ethanol are available from the GAVE/Novem website at: [http://gave.novem.nl/novem\\_new/index.asp?id=15](http://gave.novem.nl/novem_new/index.asp?id=15)
- The latest eCarbon News, the newsletter of the CRC for Carbon Accounting is available on line at [http://www.greenhouse.crc.org.au/crc/ecarbon/enews\\_May04.htm#top](http://www.greenhouse.crc.org.au/crc/ecarbon/enews_May04.htm#top)
- A team from Southern Cross University in Lismore, New South Wales, is assessing low tetrahydrocannabinol (THC) hemp as a 'mop crop' from a one hectare crop harvested from land next to a public sewage treatment works. The test is to assess the merits of hemp for absorbing treated sewage effluent and biosolids. The trial will also compare how well kenaf, another fibre crop related to hibiscus, and clumping bamboo act as mop crops. The project is in collaboration with Ecofibre Industries Ltd, which provided hemp seed and agronomic support, and the Byron Shire Council. See Web:  
<http://www.abc.net.au/science/news/stories/s1042675.htm>
- The UK has set up a bioregional program to foster the use of biobased energy and products. See their newsletters and other information at <http://www.bioregional.com>. They are reported to be working with Australian Hemp experts Fibrenova to process a crop of hemp and to bring the fibre back to the UK to be made into textile samples for UK retailers.
- Hancock Victorian Plantations (HVP), which owns 245,000 ha of plantations across Victoria, is reported to have become the first plantation company in Australia to become certified by the internationally recognised Forest Stewardship Council. FSC certification is considered by many to be the world's highest endorsement for environmentally and socially responsible forestry practices.
- A "standardised" method for testing for tar and particle evaluation is at <http://www.tarweb.net/results/pdf/guideline-3.3-v2.pdf>
- The 72 page Joint Venture Agroforestry Report, 'Wood for Alcohol Fuels - Using farm forestry for bioenergy' is downloadable at no cost from the RIRDC web site. The URL for this 1.37 MB report is <http://www.rirdc.gov.au/reports/AFT/03-018sum.html>
- NSW Energy and Utilities Minister, Frank Sartor recently appointed David M. Nemtsov as the new Director General of the NSW Department of Energy, Utilities and Sustainability (DEUS). The former NSW Sustainable Energy Development Authority has now been amalgamated into DEUS.
- Landfill Management Services (LMS) and Henry Walker Eltin Ltd have been awarded a landfill gas contract for electricity production at Darwin City Council's Shoal Bay waste disposal facility.
- The Canadian government will fund seven projects that expand the use of ethanol through construction of new facilities with annual capacity of 750 million litres.
- UK Company Severn Trent has commissioned the first of 24 new cogeneration plants across the Midlands generating power from sewage digester gas in a £16 million expansion. By 2005, the company intends to be generating more than 13 percent of its own energy needs from this biogas.
- Wyong Shire Council in NSW recently sought Expressions of Interest for possible waste to energy projects. The EOIs were for 'capture and commercial utilisation of methane gas from solid waste and sewage treatment sites' at the Buttonderry solid waste management facility, and the Toukley and Bateau Bay wastewater treatment plants.
- The Dutch Ministry of Economic Affairs has published a report in English entitled 'Biomass: green tool for energy transition in the Netherlands'. The 59 page report, available on the Web at <http://www.energietransitie.nl> maps a bioenergy and bio-based products future for the Netherlands taking a 40 year perspective. Topics covered in the report include sustainability, transition paths, the biomass marketplace, Government activities, the research agenda, and considers paths involving pyrolysis bio-oil, ethanol

from biomass, bioplastics, synthetic diesel from biomass, and biosaline agriculture. BioSyngas, aquatic biomass, hydrogen from biomass and biorefining are also addressed in the report.

- Publisher Elsevier has published a 181 page hardcover book 'Bioenergy Options for a Cleaner Environment – in developed and developing countries' (ISBN:0-08-044351-6). The book is edited by Assoc. Professor Ralph Sims of Massey University in New Zealand and includes chapters by several international experts in their field. Chapters are on: biomass and resources; delivering biomass to the conversion plant; heat, power and CHP; liquid and gaseous biomass fuels; policy options and strategies for market development of biomass: an Asian-Pacific perspective; biomass – fuel of the rural poor in developing countries. Cost of the book is US\$99. Ordering details are at <http://www.elsevier.com>
- A paper entitled "Anaerobic Digester Lagoon with Methane Gas Recovery: First year Management and Economics" by Leland M. Saele, Environmental Engineer, USDA-NRCS is at <http://www.ctic.purdue.edu/core4/nutrient/manuremgmt/Paper31.html>
- An excellent source of papers and reports on aspects of anaerobic digestion, by Emeritus Professor David Chynoweth of Agricultural and Biological Engineering, University of Florida is on the Web at: [http://www.agen.ufl.edu/~chyn/Webpagecurrent/publications\\_dc.htm](http://www.agen.ufl.edu/~chyn/Webpagecurrent/publications_dc.htm)
- A United Nations' FAO study on the performance of biomass gasifier-engine systems and their environmental aspects is at: <http://www.fao.org/docrep/T4470E/t4470e0i.htm>
- A 36 page study report 'Tennessee Residential Electricity Consumers' Views on Electricity from Bioenergy and Other Renewable Sources' has been conducted to ascertain residential electricity consumers' views on electricity from bioenergy and other renewable sources. Consumers' support and willingness to pay premiums for energy from renewable sources are evaluated. Differences in willingness to pay across sources of renewable energy are also reported. The report is downloadable from the Web at: <http://web.utk.edu/~aimag/pubs/bioenergy/Report.pdf>
- A statutory review of the Fuel Quality Standards Act 2000 is currently underway. The review is to assess whether the legislation meets the Government's objectives in relation to the implementation of fuel quality standards. The review is intended to focus on the impacts of the operation of the Act on stakeholders, and the effectiveness of provisions relating to compliance and enforcement. Consultants Economic Associates and SWB Consulting have been appointed to undertake the bulk of the research and investigation to support the Review Panel. Written submissions closed on 23 April 2004. It is expected that the Review Panel will provide its report to the Minister by August 2004.
- A 500 kW fuel cell project is to be installed at California's Santa Barbara's El Estero Wastewater Treatment Plant. It will use methane from the anaerobic digesters as the fuel source. FuelCell Energy, Inc. and Alliance Power will partner on the project, with FuelCell Energy providing two 250 kW Direct FuelCell (DFC) power plants to supply electric power and heat. Southern California Edison will provide US\$2.25 million under a renewable energy incentive program towards the project. The power plants are expected to commence operation in the fourth quarter of 2004.
- A small biomass gasification stove which can convert agricultural and forestry waste into fuel gas (4.6.-5.2 MJ/m<sup>3</sup>, gas quantity: 6-12m<sup>3</sup>/h) is showcased on the Web at: <http://www.wattpower.com/wpindex6.html>.
- Collex is reported to have received a \$79,000 grant from the Victorian Government to proceed with a new waste-to-fuel facility in the western Melbourne suburb of Brooklyn.
- The ERGO (Electricity Restructuring Group- UNSW) website <http://www.ergo.ee.unsw.edu.au> has recently been updated with some new presentations and papers. These include:
  - Hugh Outhred, 'Emission reduction schemes: MRET, NSW NGAC, Qld Gas Scheme & emission taxes & trading'. Presentation to the Queensland Power and Gas Conference, February 2004
  - Presentations from workshop 'Network and Ancillary Services in the Australian NEM' led by Hugh Outhred. Presentations for the four sessions:
    - "Electricity Industry Restructuring concepts & their implementation"

- “Transmission Network Services in the National Electricity Market”
  - “Distribution Network Services & Distributed Resources in the National Electricity Market”
  - “Ancillary services & their treatment in the NEM”
- Karel Nollens, ‘Environmental markets, financial markets, and experimental economics’. Discussion paper prepared for the ASX Briefing Series, January 2004
- Hugh Outhred, ‘Competitive & regulated network services in the Australian Electricity Industry’. Presentation at ESI2004, The Electricity Supply Industry in Transition, Bangkok, January 2004
- Iain MacGill, Hugh Outhred and Rob Passey, ‘Climate Change and the Australian Electricity Industry: What Role for Geosequestration?’ ERGO Draft Discussion Paper.
- Siemens maintains a site with several technical papers on gas and steam turbine-generator technology, process control and power management systems, operations and maintenance support, power plant modernization and upgrades, and fuel cells for the distributed generation market. These papers are at <http://www.powergeneration.siemens.com/en/techpapers/index.cfm>.
- Organic Resource Technologies Ltd (ORT) is reported to have started construction of a \$5 million, 17,000 tonnes per annum municipal solid waste demonstration digester plant, applying its patented DiCOM aerobic/anaerobic digestion process, at Brockway Waste Transfer Station, Perth, Western Australia.
- Drax, Europe's largest coal-fired power station is conducting a biomass co-firing trial. Renewable Fuels has agreed to supply Drax with an initial 14,100 tonnes of short rotation coppice willow, harvested from 1,500 hectares planted by North Yorkshire farmers at Eggborough. This will displace some 10,000 tonnes of coal. If the tests are successful, willow-based biomass could provide 5 percent of the power station's fuel by 2009. See [http://www.guardian.co.uk/uk\\_news/story/0,3604,1173069,00.html](http://www.guardian.co.uk/uk_news/story/0,3604,1173069,00.html)
- The Mauna Loa Macadamia Nut Corp. processing factory in Kea'au, Hawaii will add a new 1.2 MWe power plant in 2005 to burn macadamia nut shells as a biomass fuel to produce electricity. The new plant will cost US\$12 - \$15 million to build. It will power the macadamia nut processing and packaging plant, saving the company up to US\$700,000 a year in electricity costs. This plant would be very similar in scale to the Australian example at Suncoast Gold Macadamia in Gympie, Queensland. See <http://the.honoluluadvertiser.com/article/2004/Mar/18/ln/ln31a.html> (source Bioenergy and Biobased Newsletter)
- New legislation in Germany has set a fixed price for biomass power (plus wind and solar energy) that is subsidised by increases to other power sources. The Bundestag passed the law that sets a target of 12.5 percent of electricity coming from renewables by 2012 and 20 percent by 2020.
- The report "New and Alternative Energy: Prospects for the UK for the 21st Century: Supporting Analysis" is on the web at [www.dti.gov.uk/energy/renewables/publications/pdfs/support.pdf](http://www.dti.gov.uk/energy/renewables/publications/pdfs/support.pdf) The report is 1,667 kB and 277 pages. Page 213 contains a table comparing life cycle emissions of carbon dioxide, NO<sub>x</sub> and SO<sub>2</sub> for various fossil, bioenergy and other renewable energy technologies.
- Caltex is extending its trial of E10, a 10 percent ethanol blend in petrol for an extra 12 months, to the end of May 2005. The trial is being undertaken in Cairns and Mareeba, northern Queensland.
- REFocus reports that Scottish Coal will launch Scotland's first willow tree energy crop nursery in Midlothian, using 500,000 million seedlings from a 15-hectare site.
- The BioRegional Development Group, based at the BedZED Centre in the UK issues a quarterly newsletter. The recent May 2004 newsletter is at <http://www.bioregional.com/news%20page/newsletters/BioRegional%20Newsletter%20May%202004.pdf>

- A study conducted for the AGO and DEH by CSIRO found that firewood obtained from newly established plantations has a beneficial greenhouse impact compared to sourcing firewood from sustainably managed existing forest or remnant native vegetation. The study was undertaken to assess net GHG emissions from domestic wood heating. This technical report 'life cycle assessments of greenhouse gas emissions from domestic woodheating: greenhouse gas emissions from firewood production systems' is available on the web <http://www.greenhouse.gov.au/bfg/firewood>
- The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy has been reorganised to create a unified Biomass Program. A new Web site for the whole program has now replaced previous separate sites for Biofuels, Biopower, and Industries of the Future-Agriculture. The location of the new Biomass Program Web site is: <http://www.eere.energy.gov/biomass>
- The March-April issue of 'Cogeneration and On-Site Power Production' carried an article "The hydrogen 'illusion'" by Ulf Bossel, founder of the European Fuel Cell Forum, based in Switzerland. He argues that a 'hydrogen economy' is a non-starter due to energy losses associated with the use of hydrogen as an energy carrier. He states that 'instead, a sustainable energy future will be characterised by the intelligent use of precious renewables-based electricity, reduced demand and biomass-fuelled cogeneration'.

## 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, and sources of finance. If you or your organisation are interested in such assistance, please contact Steve Schuck for a free listing.

- DAS Energy of Turkey ([www.dasenergy.com](http://www.dasenergy.com)), who indicate experience with cogeneration plants, including MAN B&W diesel gensets, are looking for international partners to tackle bioenergy projects in Turkey. Local resources include hazel nut shells (Turkey produces 80% of the world hazel nut consumption), pressed olive with shells, corn ears, straw. DAS Energy also wish to explore poultry litter and cattle manure as a feedstock. Interested parties are invited to contact Erdem Yurteri. Email: [e.yurteri@dasenergy.com](mailto:e.yurteri@dasenergy.com).
- Sustaintech Limited has over the past six months been working with over 50 companies in sustainable technologies which are seeking in total over \$165million investment capital and other support. They have also been working with a number of ASX listed companies, Funds and semi Government agencies that have flagged that they are in the market to acquire/ co-develop/ invest in emerging renewable energy technologies across Australasia. Throughout June and July 2004, Sustaintech will take its portfolio of renewable/ bioenergy technologies to such prospective investors. If you are interested in being part of the offering please contact Emanuele Paletto, Managing Director, Sustaintech Ltd on 0414 448 808 or [emanuele@sustaintech.com.au](mailto:emanuele@sustaintech.com.au).
- RE SA Renewable Energy South Australia Pty Ltd, in association with Erneuerbare Energien GmbH, is arranging a renewable energy business trade mission to Augsburg Germany (near Munich) 19-26 October 2004. During the trade mission, participants will take part in the '1<sup>st</sup> International Business Forum on Renewable Energy' ([www.renewable-forum.com](http://www.renewable-forum.com)) which is part of the 'RENEXPO<sup>®</sup> 2004' ([www.renexpo.com](http://www.renexpo.com)) and 'IHE WoodEnergy 2004' ([www.ihe-woodenergy.com](http://www.ihe-woodenergy.com)), including seminars, country presentations, business matching meetings and field trips. In addition to the Forum, participants can exhibit their capabilities to an international audience at the trade fairs. For further information about the trade mission please visit: <http://www.re-sa.com.au>. To express interest please contact: Daniel Pitzer, Management Assistant, RE SA Renewable Energy South Australia Pty Ltd. 64 Melbourne Street, North Adelaide SA 5006. Tel: (08) 8367 0110, Fax: (08) 8239 0311. Email: [assistant@re-sa.com.au](mailto:assistant@re-sa.com.au)

- Aleurite Sunoils Pty Ltd is an Australian company pioneering the use of a high yielding, high oil, tropical to sub tropical nut tree for bioenergy – biodiesel, biocoal and fertiliser. They are seeking an injection of funds to seek protection for the elite germplasm; to register a Managed Investment Scheme and to lay the basis for an ongoing research and development program that will enable them to remain ahead in the field with high value cultivars. An investment in excess of \$500,000 is being sought. Enquires to: John Irvine  
Tel: (02) 6732 2240 or Email: [aleurite@kooe.com.au](mailto:aleurite@kooe.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: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au).

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## Privacy Statement

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