



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

# Newsletter

January 2004

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## **Bioenergy Australia 2003 Conference**

The NSW Minister for Energy and Utilities, the Hon. Frank Sartor officially opened the fourth annual Bioenergy Australia conference, 'Bioenergy Australia 2003 - Sustainable energy for our future' on 8 December at the Novotel Brighton Beach, Sydney. The two day conference was attended by 138 registered delegates, including some from the USA, UK, Sweden, Singapore, New Zealand, Gibraltar and the Solomon Islands. The conference was followed by a technical tour on 10 December to Biomass Energy Services and Technology Pty Ltd to view a small scale biomass gasifier and grease trap waste-oil cogeneration test-facility, and to the Australian Biodiesel Consultancy 40 million litre per year biodiesel plant, which was under construction.

The conference program included over 40 oral presentations as well having an exhibition and display of technical posters on bioenergy. The keynote speaker was Professor Theo Verwijst, of the Swedish University for Agricultural Sciences and Task Leader for the International Energy Agency's Bioenergy Task on *Short Rotation Crops for Bioenergy*. The program included sessions on Policy and Programs, Prospects for Bioenergy, Case Studies of various bioenergy projects, and also had sessions on New Developments, Sustainability, Short Rotation Crops for Bioenergy and Wastes and Residues. Papers covered the whole spectrum of bioenergy, from production and harvesting of biomass, to energy conversion and liquid biofuel production, to overarching issues such as regulatory frameworks, financing bioenergy projects and environmental aspects of bioenergy. The conference also included two extended panel discussions and open forums on 'Overcoming barriers and providing incentives for the development of bioenergy' and 'Winning community support for bioenergy'.

In addition to the printed Conference Proceedings provided to conference delegates, the entire set of presentations are being consolidated onto CD ROM for distribution to conference delegates.

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## **Bioenergy Australia Conference Proceedings and Copies of Presentations**

The printed Bioenergy Australia 2003 Conference Proceedings are available for sale from Stephen Schuck, Bioenergy Australia Manager for \$120 (including handling, local postage and GST). A limited number of CD ROMs of the presentations in pdf format will be available mid January for those who missed the conference, for \$66 each (including GST). Contact Steve Schuck on tel/fax: (02) 9416 9246 or email: [sschuck@bigpond.net.au](mailto:sschuck@bigpond.net.au).

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## **Early Expressions of Interest for Bioenergy Australia 2004 Conference**

Expressions of Interest are sought from potential paper and poster presenters, sponsors, and trade exhibitors for the next Bioenergy Australia Conference, planned for December 2004. 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.

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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 has been 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*

At a meeting of the Executive Committee of IEA Bioenergy in November 2003, Bioenergy Australia recommitted itself, on the basis of Bioenergy Australia member preferences, to the above Tasks from 2004-2006.

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* – is proposing to hold its next meeting in Norway, with field visits to southern Sweden in mid September.

Task 32 – *Biomass Combustion and Co-firing* - will be holding its next meeting in Rome from 10-14 May to coincide with the 2<sup>nd</sup> World Biomass Conference (see *Forthcoming Events* below). The second meeting for 2004 will be held from 30 August – 2 September in Victoria, Vancouver Island, Canada to coincide with the Science in Thermal and Chemical Biomass Conversion conference (again see *Forthcoming Events* below).

Task 36 – *Energy from Integrated Solid Waste Management Systems* will be meeting in Norway in late May.

Task 38 – *Greenhouse Gas Balances of Biomass & Bioenergy Systems*. The next meeting will be at Rotorua, New Zealand from 24-25 March 2004. This will follow a conference on 'The Role of Carbon Sequestration and Bioenergy in National and International Greenhouse Gas Markets' (22-33 March).

ExCo 53 is to be held in Lucerne, Switzerland 5,6,7 May 2004 . A joint workshop with Task Leaders will be held on 6 May. Thereafter ExCo 54 will be held in Ottawa, Canada early October 2004, ExCo 55 in Copenhagen Denmark circa May 2005 and ExCo 56 in Ireland circa October 2005.

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## **IEA Bioenergy Task 29: Socio-economic Drivers in Implementing Bioenergy Systems**

IEA Bioenergy Task 29, which considers the socio-economic aspects of bioenergy has a focus on bioenergy education and promotion. As one of the main activities within the task, a (draft) educational website has been set up at <http://www.aboutbioenergy.info/>. This site, besides providing some useful information on bioenergy, provides interactive learning on bioenergy. It is planned to add a FAQ section on bioenergy to this site soon, from which a book entitled 'Frequently asked questions about biomass and bioenergy' will be derived.

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## **IEA Bioenergy - Municipal Solid Waste and its Role in Sustainability**

A position paper by the Executive Committee of IEA Bioenergy entitled 'Municipal Solid Waste and its Role in Sustainability' has been published by IEA Bioenergy. Copies can be downloaded from the IEA Bioenergy website (<http://www.ieabioenergy.com>) or hardcopies can be obtained from the Bioenergy Australia Manager, Steve Schuck.

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## **Biofuels Capital Grants Program**

The Australian Government invitation for applications for funding under its new Biofuels Capital Grants Program closed on 12 December. Under the Program \$37.6 million is available for one-off capital subsidies for the construction of new biofuels plants or additional plant capacity.

The subsidy will be provided at a rate of 16 cents per litre for projects producing a minimum of 5 million litres (ML) of biofuel a year and grants will be limited to a maximum of \$10 million per project.

Applicants under the Program were required to provide a detailed business case and will be assessed against key criteria including:

- the feedstock must be from renewable sources or biomass waste products
- the need to demonstrate the project will be viable in a post excise relief environment
- evidence of the prospect of firm contracts for the supply of biofuels for use in the domestic transport industry
- demonstrated ability to produce biofuels, which meet current and future fuel standards that have already been announced
- compliance with Commonwealth, State, Territory and local Government environmental approval and management systems, including State/Territory environmental protection agency licence conditions.

The contact for the scheme is Invest Australia on Tel: (02) 6213 6711 or [biofuels@investaustralia.gov.au](mailto:biofuels@investaustralia.gov.au).

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## **Biodiesel Fuel Quality Standard Set**

The *Fuel Standard (Biodiesel) Determination 2003* (the Determination) was signed into force by the Minister for the Environment and Heritage, Dr David Kemp, on 18 September 2003.

The Determination sets out the physical and chemical parameters of the biodiesel standard. It also sets out the associated test methods that the Government will use to determine compliance.

A copy of the biodiesel fuel quality standard, as gazetted is available at:

[http://www.law.gov.au/portal/govgazonline.nsf/0/94dd628e1f90b9d0ca256da6002593fb/\\$FILE/S360.pdf](http://www.law.gov.au/portal/govgazonline.nsf/0/94dd628e1f90b9d0ca256da6002593fb/$FILE/S360.pdf)

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## **Fuel Quality Information Standard (Ethanol) Determination 2003**

The Minister for the Environment and Heritage made the *Fuel Quality Information Standard (Ethanol) Determination 2003* on 19 December 2003 under the *Fuel Quality Standards Act 2000*. The Determination specifies the labeling requirements for the sale of ethanol-petrol blends sold in Australia. The Information Standard commences 1 March 2004.

Copies can be obtained from the following internet sites:

<http://www.deh.gov.au/atmosphere/ethanol/index.html>

<http://scaleplus.law.gov.au/>

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## **Victorian Renewable Energy Support Fund**

The \$8.45 million Renewable Energy Support Fund, designed to support innovative applications of medium-scale, renewable energy technologies has been announced.

The Fund is a key initiative of the Victorian Greenhouse Strategy, designed to support innovative applications of medium-scale, renewable energy technologies - such as energy generated from farm waste.

Proposals are invited for three project types.

- Demonstration Projects which demonstrate innovative applications of medium scale (20 kW - 5 MW electrical, 70 MJ/hr - 20 GJ/hr thermal) renewable energy technologies in Victoria. The contribution from the Fund will not exceed 20% of the capital cost of the project.
- Access Projects which increase the accessibility of best practice technologies that can be used in medium-scale renewable energy projects.
- Capacity Building Projects which build capacity to install, service and/or maintain medium-scale renewable energy projects.

An Invitation to prospective Fund participants has been developed, which sets out the objectives, eligibility and selection criteria, project selection process, and information requirements for the Renewable Energy Support Fund.

More information is available from the Sustainable Energy Authority's URL:

[http://www.seav.vic.gov.au/renewable\\_energy/support\\_fund.html](http://www.seav.vic.gov.au/renewable_energy/support_fund.html)

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## **Land and Environment Court Ruling Clears Way for Broadwater Bioenergy Project**

The Broadwater Action Group Inc. has lost an appeal in the NSW Land and Environment Court to prevent the development of a bioenergy cogeneration facility at the Broadwater Sugar Mill operated by the NSW Sugar Milling Co-operative Limited in northern New South Wales. This ruling clears the way for two similar 30 MW<sub>e</sub> projects, the one at the Broadwater Sugar Mill and the other at the Condong Sugar Mill, that involve Delta Electricity and the NSW Sugar Milling Co-operative Ltd.

The delay caused by the court appeal will probably lead to the requirement to rebid or reprice the EPC contract. To read the court's full verdict see:

<http://www.austlii.edu.au/au/cases/nsw/NSWLEC/2003/290.html>

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## **Camden and Newcastle City Councils Trial Biodiesel**

Two NSW councils are engaged in trialling and evaluating the use of biodiesel in their council vehicles.

Camden Council, west of Sydney is using biodiesel made from used cooking oil and waste fat to power its garbage collection trucks. The Council received funding from the NSW Department of Environment and Conservation (formally the EPA) to trial the use of biodiesel in one of its garbage trucks. The truck will be undertaking a detailed testing program alongside an identical truck running on standard diesel, looking at exhaust emissions and engine performance. The biodiesel will be supplied by the Australian Biodiesel Consultancy, who received financial assistance from SEDA (now part of the Department of Energy Utilities and Sustainability) under the Renewables Investment Program, to upgrade and expand their production plant at Berkeley Vale on the NSW Central Coast. More information about the Council's trial can be found at [http://www.camden.nsw.gov.au/mayoral\\_column.html](http://www.camden.nsw.gov.au/mayoral_column.html)

In a separate development, Newcastle City Council has approved a tender for the purchase of 20 percent biodiesel (B20) for Council's 228 diesel powered vehicles. Newcastle City Council has been awarded \$95,000 from the NSW Department of Environment and Conservation to fund one of Australia's first alternative fuels projects using biodiesel. The NSW Roads and Traffic Authority are providing additional funds through the Federal Department of Environment and Heritage (formerly Environment Australia) to conduct comprehensive emissions testing and analysis on 13 vehicles, including garbage trucks, passenger cars and light vehicles and two Lake Macquarie Council vehicles. The three-phase program will test vehicle emissions while fuelled on diesel, filtered diesel and biodiesel. See: <http://www.ncc.nsw.gov.au/services/environment/ameif/whatsnew.cfm>

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## **CSR Announces 63 MW Bioenergy Plant at Pioneer Sugar Mill**

Australia's largest sugar company, CSR, will supply 12 percent of the country's new renewable energy output after it completes a second power station fuelled by sugarcane fibre. The \$100 million facility will have an electricity generation capacity of 63 MW and will be built at CSR's Pioneer sugar mill in Queensland. Most of the output will be sold to Ergon Energy under a ten-year electricity supply agreement.

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## **Australian Bioenergy Atlas Improvement**

The online Bioenergy Atlas of Australia, available at [http://www.brs.gov.au/bioenergy\\_atlas/](http://www.brs.gov.au/bioenergy_atlas/) is a relatively new and innovative tool to assist in planning an emerging bioenergy industry in Australia. It can be used to make maps and find information about existing and potential biomass resources, industry and infrastructure.

The Atlas was developed by the University of Adelaide and the Bureau of Rural Sciences (BRS) with support from the Australian Greenhouse Office and the Joint Venture Agroforestry Program (JVAP). The BRS are currently updating and expanding the Atlas to include more up to date and comprehensive information.

The atlas developers are seeking suggestions on how they can improve the Atlas to meet the needs of industry, researchers, government and other users. You can have your say by completing a short online survey at <http://data.brs.gov.au/mapserv/biomass/projectbio.php>.

Alternatively, you can contact Adrian Bugg at BRS, on Tel (02) 6272 3503 or email [Adrian.Bugg@brs.gov.au](mailto:Adrian.Bugg@brs.gov.au). A report on the Bioenergy Atlas of Australia, the JVAP Research Update series No. 5, is available from the Rural Industries Research and Development Corporation.

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## **Green Pacific Energy Ltd Completes Staplyton Bioenergy Plant**

Green Pacific Energy Ltd, the company that took over the assets of fluidised bed company Energy Equipment and the Staplyton (south-east Queensland) 5 MW bioenergy project from EnviroStar Energy when that company ran into financial difficulties about a year ago, has now completed the fluidised bed combustor bioenergy project. The fuel supply is mainly green urban waste and non-native forest wood waste. Green Pacific Energy has secured a long-term Power Purchase Agreement with Energy Australia for the Staplyton plant and Fuel Supply Agreements with local generators of green waste.

In addition to the Staplyton project, Green Pacific Energy has five additional bioenergy generation projects totaling 85MW due for completion within 18 months in Queensland, Victoria, New South Wales, Tasmania and Western Australia.

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## **Perth 30 MW Bioenergy Project Announced**

A proposed 30 MW base-load bioenergy project located north of Perth, Western Australia, based on pine plantations biomass, has been announced by a consortium led by Beacons Consulting International. The biomass fuel would also consist of timber processing waste, municipal green waste, crop stubble, grape vine clippings and waste packaging material. The consortium successfully tendered to the WA Forest Products Commission (a member of Bioenergy Australia) for pine plantation residues arising from the FPC clearing plantations to help replenish underground aquifers. Part of the fuel is also expected to be sourced from the new Wesbeam laminated veneer facility in Neerabup. Beacons Consulting International are reported to be considering power station sites at Neerabup or Pinjar. If the project proceeds, commercial operation is expected in 2006.

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## **NSW Requirement for Using Biomass as a Fuel**

Under the NSW Department of Environment and Conservation's (formerly EPA) *Guidelines for the Burning of Bio-material: Record Keeping and Reporting Requirements for Electricity Generating Facilities (2003)*, operators of bioenergy projects in NSW must keep records and may be required to submit annual returns to the Department. This is part of the independent certification process to ensure that power plants comply with the prohibition on burning material from native forests. The guidelines may be downloaded from <http://www.epa.nsw.gov.au/legal/notices.htm>

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## **Clean Energy Future Scenarios Study**

As reported in the August 2003 issue of the Bioenergy Australia Newsletter, Bioenergy Australia has 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 2050 and to sketch the technical scenarios, policies and strategies required to reach such futures. The purpose of the project is to show how both 50 and 80 percent reductions in greenhouse gas emissions from stationary energy use is achievable.

The study is nearing completion, with the final draft 168 page report set for sign off mid January.

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## **SEDA Bioenergy Handbook**

The 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 143 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 comment. It is expected that the design and printing of the report will commence late February. For further information contact Rebecca Short of SEDA email: [rebecca.short@seda.nsw.gov.au](mailto:rebecca.short@seda.nsw.gov.au)

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## **MRET Review Report Scheduled for Release in January**

The report of the statutory review of the operation of the Mandatory Renewable Energy Target legislation is most likely to be made public by the Federal Government on Friday 16 January.

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## **Biofacts**

- The US bioelectricity industry supports 66,000 jobs and represents a US \$15 billion investment. It is based primarily on wood and forestry residues. 26 utility-owned plants are currently operating, of which the largest is the 75MW Bay Front Plant owned by Northern States Power Co. in Wisconsin, which uses wood and wood waste.

- World ethanol production (source IEA Bioenergy presentation by Copersucar, Brazil):

	Million m <sup>3</sup>
Brazil	12.50
USA	6.50
China	3.00
EU	2.00
India	1.70
Russia	1.30
Saudi Arabia	0.40
South Africa	0.38
Others (Australia approx. 0.08 Mm <sup>3</sup> )	<u>5.22</u>
Total	33.00

## 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 1,000 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> which includes an internal search feature.

Biodiesel Excise reforms

<http://www.ato.gov.au/businesses/content.asp?doc=/content/38323.htm>

Australian Sustainable Industry Research Centre Ltd

<http://www.asirc.org.au>

Climate Change: An Australian Guide to the Science and Potential Impacts

<http://www.greenhouse.gov.au/science/guide/index.html>

Green Pacific Energy

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

Australian National Hydrogen Study

<http://www.industry.gov.au/content/whatsnew.cfm>

New Energy Resources Alliance

<http://www.newera-energy.ca>

National Non-Food Crop Centre (UK)

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

Mitsui Babcock Technology and Engineering Co-firing report "Development of Low Cost Systems for Co-Utilisation of Biomass in Large Power Plant, Mid Term Review Report"

<http://www.dti.gov.uk/energy/renewables/publications/pdfs/bu100726midtermreview.pdf>

IEA Bioenergy Task 32 – Biomass Combustion and Co-Firing (new address)

<http://www.ieabcc.nl>

Common Purpose Institute

<http://www.treepower.org>

Utilisation of Biomass in Large Power Plant, Mid Term Review

<http://www.dti.gov.uk/energy/renewables/publications/pdfs/bu100726midtermreview.pdf>

Sustainability Internet Conference (Australia-2003)

<http://www.isosconference.org.au/entry.html>

Commission for Energy Regulation (Ireland)study

<http://www.cer.ie/cerdocs/cer03284.pdf>

World Congress on Industrial Biotechnology and Bioprocessing

<http://www.bio.org/worldcongress>

Resources for the Future (USA)

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

Alternative Technology Association  
[http://www.ata.org.au/about\\_us.htm](http://www.ata.org.au/about_us.htm)

Nathaniel Energy (biomass gasifier/combustor)  
<http://www.nathanielenergy.com/>

Straw 25 MW plant at Sanguesa Spain  
<http://www.ehn.es/eng/textos/biomasa.html>

Biomass Power from Poultry Litter – US Dept of Energy project in Alabama  
[http://www.eere.energy.gov/buildings/state\\_energy/projects/cfm/stateprojectdetail.cfm?pid=213](http://www.eere.energy.gov/buildings/state_energy/projects/cfm/stateprojectdetail.cfm?pid=213)

Education Centre for Innovation and Commercialisation, University of Adelaide (Sydney Campus)  
<http://www.ecic.adelaide.edu.au>

New Energy Resources Alliance (NewERA) (Canada)  
<http://www.newera-energy.ca>

Australasian Emission Trading Forum  
<http://www.aetf.net.au>

Texas Renewable Energy (bioenergy resources)  
<http://www.infinitepower.org/resbiomass.htm>

General Bioenergy  
<http://www.bioenergyupdate.com>

Renewables Canada  
<http://renewables.ca>

Integrated Biosystems Network – activities and publication list  
<http://www.ias.unu.edu/proceedings/icibs/ibs/ibsnet/>

Fuel Cell Technologies to Use Renewable Biogas article  
<http://www.solaraccess.com/news/story.jsp?storyid=1284>

Biomass Gasification Group at the Danish Technical University (DTU).  
<http://www.et.dtu.dk/Halmfortet>

Biochemical Sources of Fuels  
[http://journeytoforever.org/biofuel\\_library/biochem\\_fuel.html](http://journeytoforever.org/biofuel_library/biochem_fuel.html)

European Technical Institute for Wood Energy (Institut Technique European du Bois Energie)  
<http://www.itebe.org>

Scientific Engineering Centre "BIOMASS" (Ukraine site in English)  
[http://www.biomass.kiev.ua/start\\_engl.htm](http://www.biomass.kiev.ua/start_engl.htm)

JF BioEnergy Inc  
<http://www.jfbioenergy.com>

The Pellet Heaters Association  
<http://www.pelletheaters.com.au>

Australian Salinity Action Network  
<http://www.asan.net.au>

American Kenaf Society  
<http://www.kenafsociety.org>

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## **International Developments**

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### **USDA and DOE Award US \$23 Million in Joint Biomass Research and Development Initiative**

The U.S. Department of Agriculture (USDA) and the U.S. Department of Energy (DOE) have announced the selection of 19 projects that will receive US \$23 million for biomass research, development and demonstration. The US 2002 Farm Bill allocated US \$75 million to the USDA over six years to fund projects under the Biomass Research & Development Act of 2000, and 400 proposals were received requesting \$370 million in a competitive bidding round.

The joint grant program is part of the United States' effort to increase energy independence through the development of additional renewable energy resources from the agricultural and agroforestry sectors. Support for biomass and biobased products, fuel and energy should realise significant benefits to the USA through healthier rural economies, improved environmental quality and improved energy independence. In making the announcement, Energy Secretary Spencer Abraham indicated that the development of the biomass industry and biobased products will have a tremendous economic impact on rural America.

The following is a list of the 19 selected projects and the dollar amounts funded:

**DOE Projects (US \$7 million)**

- Trustees of Dartmouth (Hanover, N.H.)—Integration of Leading Biomass Pretreatment Technologies with Enzymatic Digestion and Hydrolyzate Fermentation - \$1,882,866
- University of Florida (Gainesville, Fla.)—Engineering Thermotolerant Biocatalysts for Biomass Conversion to Products - \$1,437,620
- PureVision Technology, Inc. (Ft. Lupton, Colo.)—Demonstration of the PureVision Biorefinery - \$2,000,000
- Cargill, Inc. (Minneapolis, Minn.)—Platform Chemicals from an Oilseed Biorefinery - \$1,877,176

**USDA Projects (US \$16 million)**

- Metabolix, Inc. (Cambridge, Mass.)—Advanced Biorefinery Feedstocks - \$2,000,000
- Utah State University (Logan, Utah)—Research and Demonstration of Anaerobic System on a Large Dairy Farm - \$761,385
- Earth Resources, Inc. (Carnesville, Ga.)—Animal Waste Management-Chicken Litter to Energy - \$1,136,936
- West Central Cooperative (Ralston, Iowa)—New Technologies for Production of Methyl Esters - \$1,199,646
- Clemson University (Clemson, S.C.)—Heterogeneous Catalyst Development for Biodiesel Synthesis - \$894,203
- New Energy Solutions, Inc. (Pittsfield, Mass.)—Design and Demonstration of a Commercial Prototype for Onsite Production of High Purity Hydrogen from Farm Animal Wastes - \$204,603
- Archer Daniels Midland Company (Quincy, Ill./ Decatur, Ind.)—Biomass Research and Development for the Production of Fuels, Chemicals, and Improved Cattle Feed - \$1,400,000
- GrainValue, LLC (St. Paul, Minn.)—GrainValue Process: Pre-Commercialization Trials - \$1,763,160
- Pennsylvania State University (University Park, Penn.)—Coupled Processes for Bioenergy Production: Biological Hydrogen Linked with Microbial Fuel Cells - \$610,913
- Iowa State University (Ames, Iowa)—Biopolymers and Other Value-Added Products from Distillers' Dried Grains - \$1,000,000
- Local Energy (Tesuque, N.M.)—Biomass-Fired District Energy: A Source of Economic Development and Energy Security - \$1,286,768
- Vermont's Alternative Energy Corporation (Willston, Vt.)—Steps Towards a Biorefinery Industry in Vermont - \$746,912
- Texas Agricultural Experiment Station (College Station, Texas)—Biomass for Tomorrow's Energy and Greenhouse Gas Management Needs: An Economic, Engineering and Environmental Appraisal of Opportunities and Policies - \$716,388
- Sebesta, Blomberg & Associates, Inc. (Roseville, Minn.)—Biomass Cogeneration Demonstration Plant at Central Minnesota Ethanol Cooperative - \$2,000,000
- T.R. Miles Technical Consultants, Inc. (Portland, Ore.)—Feasibility of an Integrated System for Improving the Economic and Environmental Performance of Poultry and Ethanol Production in North Alabama - \$254,274

For additional information see <http://www.usda.gov/news/releases/2003/09/0306.htm>

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## **Massachusetts US \$32 Million for Five New Clean Energy Projects**

The Massachusetts Technology Collaborative (MTC) has announced US\$32 million in funding commitments from its Renewable Energy Trust to support projects that will generate close to 100 megawatts of new, clean energy to the New England electric grid. The funding flows from MTC's first-in-the-nation Massachusetts Green Power Partnership, which will purchase renewable energy certificates and provide other price supports to facilitate the financing and construction of new clean energy facilities such as wind, hydroelectric power and biomass.

The projects receiving support include two bioenergy projects:

- Commonwealth Resource Management Corp. Dartmouth, MA 3.1 MW Landfill Gas
- Public Service Company of New Hampshire Portsmouth, NH 47.0 MW Biomass

MTC expects to recoup a substantial portion of this funding commitment through the resale of renewable energy certificates in the green power market.

MTC is the state's development agency for renewable energy and the innovation economy. The agency administers the Renewable Energy Trust, which is maximising the benefits of clean energy and helping to create jobs by stimulating new supply and demand for green power. The Trust was created in 1998 through the electric restructuring law and is funded through a monthly surcharge on electric utility bills. For more information, visit the agency's website [www.masstech.org](http://www.masstech.org).

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## **Research Papers from San San Industrial Cooperative, Myanmar**

A series of brief research papers from the San San Industrial Cooperative Ltd in Myanmar entitled:

1. Production of biomass briquetters by small scale industries in Myanmar.
2. San San Rice Husk Gasifier Stove.
3. Pollution free utilization of biomass through combustion, carbonization and briquetting of residual char.
4. Combustion and pollution free combustion of biomass.
5. Triple effect utilization on biomass.
6. Water Hyacinth for domestic fuel, gold processing and water purification.
7. Biomass gasification for running spark- ignition engines.
8. Self contained power generation for biomass briquetting industries.
9. Utilization project of renewable energy in San San Integrated Farming (Under Construction)

are downloadable from the web at: <http://www.benergyssic.com/brief-research-paper.htm>

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## **USA Study - Assessment of Power Production at Rural Utilities Using Forest Thinnings and Commercially Available Biomass Power Technologies**

Motivated by the catastrophic forest fires that have plagued the western United States over the past decade, the Artares Group has produced a report for the US Department of Energy, the Department of Agriculture's Rural Utility Service (RUS) and the National Renewable Energy Laboratory (NREL), to convert forest thinnings to electric power at rural electric facilities. This new study supports America's 'Healthy Forest' initiative.

This study is a guide to biomass power technology, biomass supply and financial issues. It serves as a “pre-feasibility study” for a rural utility wishing to prepare an application to the RUS. It can also serve as primer for those interested in the current state of commercial biomass power.

The report or its components are downloadable from the Internet at <http://www.antaresgroupinc.com/DOERUSreport.htm>. The components are:

- Entire report (4.8 MB)
- Table of Contents and Executive Summary (314 kB)
- A. Detailed Technical Conclusions (73 kB)
- B. Wildland Fire Management, the U.S. Biomass Resource, and Potential Biopower at Rural Utilities (1.4 MB)
- C. Technology Description Chapters (1.4 MB)
- D. Financial Analysis (of all systems - 146 kB)
- E. Benefits/Challenges Of Using Biomass As A Fuel Source
- Appendix – Supporting Calculations and References (1.6 MB)

For further information please contact: Chris Demeter, Email: [cdemeter@antares.org](mailto:cdemeter@antares.org)

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## Forthcoming Events

- AD-Nett Workshop “Biogas without Limits”, 28 – 30 January 2004. Leipzig Germany. Part of 13<sup>th</sup> Annual meeting of the German Biogas Association. Email: [info@biogas.org](mailto:info@biogas.org) Web: <http://www.biogas.org> Tel: +49(0) 8161 984660
- 2004 National Biodiesel Conference and Expo, 1-4 February 2004, Palm Springs, California, USA. <http://www.biodiesel.org/conference/default.asp>
- 9th Annual Ethanol Conference – Policy and Marketing, Renewable Fuels Association. 16-18 February 2004, Fontainebleau Hilton Resort, Miami Beach, Florida USA. Program web address: <http://www.ethanolRFA.org/nec.shtml> Registration: <http://www.ethanolRFA.org/necregistration.shtml>
- BIOEXPO 2004: A Tradeshow for Biotechnology Products/ Processes/ Applications & Services. 19-21 February 2004. Montreal, Quebec Canada. <http://www.bioexpo.ca>
- POWER-GEN Renewable Energy conference. 1-3 March, 2004, Flamingo Hotel, Las Vegas, Nevada, USA. Conference website: <http://pgre04.events.pennnet.com/> or <http://www.power-gengreen.com>
- European Pellets Conference, 3-4 March 2003, Wels, Austria (English/German). Web <http://www.esv.or.at/pellets04>.
- Technology Partnership for New and Renewable Energy, 4-5 March 2004, Ho Chi Minh City, Vietnam. Contact: Regional Institute of Environmental Technology. Tel +65 6777 2685, email: [robertkoh@riet.org.sg](mailto:robertkoh@riet.org.sg). Web: <http://www.riet.org/NRE/>
- Third European Conference on Green Power Marketing, 18-19 March 2004, Lausanne, Switzerland. Email: [info@greenpowermarketing.org](mailto:info@greenpowermarketing.org) Web: <http://www.greenpowermarketing.org/>
- EMA Second Annual International Greenhouse Gas Conference, 21-24 March 2004, Brussels, Belgium. Email: [info@emissions.org](mailto:info@emissions.org) Web: <http://www.emissions.org/conferences/brussels04/>
- AgSTAR National Conference (US EPA – anaerobic digestion of animal wastes) 24–25 March 2004. Millennium Hotel, St. Louis, Missouri, USA. Details: <http://www.epa.gov/agstar>. Early bird registration fee US \$75. Online registration at <https://www.ergweb.com/projects/agstarreg/register.htm>.
- Enviro 04 Convention & Exhibition, Sydney Convention and Exhibition Centre, Darling Harbour, 28 March – 1 April 2004. A platform for five environment industry associations, Enviro 04 will comprise conference streams on:
  - sustainable energy - markets and programs, technologies and suppliers, projects and case studies

- sustainable industry - food and beverage supply, sustainable urban development, contaminated land management
- water - planning for the future
- waste - finding your place in the brave new “no-waste” world

For registration and program details visit: <http://www.enviroaust.net/e4>

- Bois-Energy 2004 (French), 1-4 April 2004, Lons le Saunier, France. Contact: Alain Pierre. Email: [alain.pierre@itebe.org](mailto:alain.pierre@itebe.org) Web: <http://www.itebe.org/portail/affiche.asp?num=57&arbo=1>.
- REAsia 2004, incorporating Bioenergy Asia. 7-9 April 2004, Beijing, China. Contact: Vivian Li, Grace Fair International Ltd. Tel +8610 6439 0338 Email: [vivian@gracefair.com](mailto:vivian@gracefair.com) Web: [http://www.gracefair.com/reasia\\_home.htm](http://www.gracefair.com/reasia_home.htm)
- First Annual World Congress on Industrial Biotechnology and Bioprocessing. 21–23 April 2004 Orlando, Florida, USA. Hosted by the Biotechnology Industry Organization (BIO), the American Chemical Society (ACS) and the National Agriculture Biotechnology Council (NABC). Web: <http://www.bio.org/worldcongress>. The deadline for submitting panels or papers is 14 January 2004. Conference provides financial assistance for academic speakers to attend.
- 26th Symposium on Biotechnology for Fuels and Chemicals. 9-12 May 2004. Holiday Inn & Centennial Center, Chattanooga, Tennessee USA. Web: <http://www.ct.ornl.gov/symposium/>
- 2nd World Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection, 10-14 May 2004, Rome, Italy. Email: [eta.fi@etaflorence.it](mailto:eta.fi@etaflorence.it) Web: <http://www.etaflorence.it> or <http://www.conference-biomass.com/>
- Bio-Logical Futures II, 17 – 19 May 2004. Delta Bessborough Hotel, Saskatoon, Saskatchewan, Canada. Call for papers and posters until 15 January. Web: <http://www.bio-products.sk.ca> Email: [events@bio-products.sk.ca](mailto:events@bio-products.sk.ca)
- 9th ESAA Renewables & Sustainable Energy Power Conference, Gold Coast, 24 - 25 May 2004. Web: <http://www.esaa.com.au>
- Second "World Renewable Energy Forum: Policies and Strategies" 30-31 May 2004, Bonn, Germany. Fax: +49-(0)-228-361213 or 361279 Email: [info@wcre.org](mailto:info@wcre.org) or [inter\\_office@eurosolar.org](mailto:inter_office@eurosolar.org). Web: <http://www.wcre.org> or <http://www.eurosolar.org>
- International Governmental Conference on Renewable Energy, 1-4 June 2004, Bonn, Germany. Email: [info@renewables2004.de](mailto:info@renewables2004.de) Web: <http://www.renewables2004.de>.
- World Bioenergy 2004, *Conference and Exhibition on Biomass for Energy*, Jönköping, Sweden, 2-4 June 2004. Web: <http://www.elmia.se/bioenergy>
- *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.bbifbiofuels.com/few/agenda>
- 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
- 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/>
- *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>
- 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>
- 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>
- Solar 2004 – 42<sup>nd</sup> ANZSES conference “Life the Universe and Renewables”, 5-8 October 2004. Web <http://energy.murdoch.edu.au/solar2004>
- 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/ia/index.htm>.

## Residues

- Steve Schuck has been invited by the Energy Supply Association of Australia (ESAA) to give a lecture on bioenergy at the ESAA Power Engineering Residential Summer School at the University of Queensland on 6 February 2004.
- The December issue of the ANZSES (Australia and NZ Solar Energy Society) Solar Progress journal carried a special feature on solar energy and agriculture. Included was an article on Australia’s participation in IEA Bioenergy by Dr Stephen Schuck, the Bioenergy Australia Manager. Another paper of interest was ‘Biomass Fuels from Sustainable Land Use: a permaculture perspective’. See <http://www.anzsos.org>.
- An Australian Government report indicates that for Western Australia alone, the direct cost of salinity is \$664 million per year (see summary report at ([http://audit.ea.gov.au/ANRA/land/docs/national/Salinity\\_WA.html](http://audit.ea.gov.au/ANRA/land/docs/national/Salinity_WA.html))). Another government report for eight key Murray Darling Basin catchments states salinity costs \$270 million per year for these regions (see <http://www.aph.gov.au/house/committee/scin/salinity/brochure.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 nearing completion with its release date still to be determined.
- Information on the biodiesel excise reforms are available on the Australian Taxation Office website: <http://www.ato.gov.au/businesses/content.asp?doc=/content/38323.htm>
- The Australian biodiesel fuel quality standard came into force on 18 September, the date when the new excise and production subsidy arrangements for biofuels came into force. The salient items from the standard are available on the Internet at: <http://www.deh.gov.au/atmosphere/biodiesel/index.html>
- The CSIRO held an International Workshop on Pyrolysis and Bio-Oil ‘Thermal Conversion Opportunities for New Wood Products through Research and Development’ 15-17 December in Fremantle, Western Australia. For the Proceedings and additional information contact Paul Fung Email: [Paul.Fung@csiro.au](mailto:Paul.Fung@csiro.au) Tel: (03) 9545 2120 Web: [http://www.ffp.csiro.au/conference/bio\\_oil/](http://www.ffp.csiro.au/conference/bio_oil/)
- All of the presentations from the joint IEA Bioenergy Task 32,33 and 36 joint seminar in Japan (including the photographs) are on Task 32’s website at <http://www.ieabcc.nl>.
- WWF International has engaged the Centre for Energy Policy and Technology and E4tech (UK) Ltd Imperial College, London to prepare a study entitled ‘Bioelectricity Vision: Achieving 15% of Electricity from Biomass in OECD Countries by 2020’. The Bioenergy Australia Manager has been given the opportunity of reviewing and

commenting on the draft 51 page report, which is now expected to be publicly released early in 2004.

- The Japanese national bioenergy plan, Biomass Nippon Strategy is on the web at: [http://www.maff.go.jp/biomass/eng/biomass\\_honbun.htm](http://www.maff.go.jp/biomass/eng/biomass_honbun.htm)
- The ABC has reported that a multi-million dollar piggery being built in South Australia's lower north will become a supplier of green electricity into the power grid. The state-of-the-art piggery between Eudunda and Morgan is due for completion in March 2004. The company, Contract Bacon, plans to use the effluent and bedding from the piggery to produce bio-gas, which can then be used to produce electricity. See <http://www.abc.net.au/news/newsitems/s922163.htm>
- The European Union has set a voluntary target of two percent biofuels use by the end of 2005 and 5.75 percent biofuels penetration by the end of 2010.
- A paper on the opportunities for Australian firms under the market-based mechanisms of the Kyoto Protocol has been published on the Australian Greenhouse Office website. The paper was drafted in consultation with DFAT, DITR and PM&C. The paper is available on the website: <http://www.greenhouse.gov.au/international/kyoto/mechanisms.html>
- Energía Hidroeléctrica de Navarra (EHN) and the Mancomunidad de la Comarca of Pamplona, Spain will use biodiesel in public buses and garbage collection trucks, with the possibility of expanding to all 165 vehicles in the Board's fleet.
- General Motors has more than one million fuel flexible vehicles on the USA road today capable of using E85 (85 percent ethanol blend with petrol).
- Taiwan has announced it will provide NT\$3 billion per year for the development of renewable energy. Government funding is being provided to allow 10 percent of the island's power to come from renewables by 2010 and 12 percent by 2020.
- The Japanese Ministry of Education, Culture, Sports, Science and Technology has announced plans for a project to develop genetically modified trees with a superior ability to absorb carbon dioxide as a mechanism for capturing atmospheric carbon dioxide. The aim is to genetically modify trees such as eucalypts to absorb up to 20 percent more carbon. See: <http://www.co2e.com/News/story.asp?StoryID=1247>
- VTT of Finland has made degradable bioplastic more durable by reinforcing it with natural fibres. This biocomposite, which is totally biodegradable, supports sustainable development. The waste costs for products made from this will be small, and in the future consumers will have an enhanced appreciation of biodegradability of materials. See <http://www.vtt.fi/vtt/newsletter/2003/092.htm>
- Canadian companies, DynaMotive Energy Systems Corporation, Bruks Klockner and UMA Engineering have announced that a preliminary evaluation of a waste-to-energy system capable of converting wood residue into BioOil™ (pyrolysis bio-oil) has been completed. The evaluation, carried out for one of British Columbia's existing forest operations, estimates the cost of conversion to be less than CDN\$ 4.00 per gigajoule of energy, well below the current and historical prices of natural gas in that region.
- The latest news from the Electricity Restructuring Group (ERGO), based at UNSW's School of Electrical Engineering and Telecommunications, is on the ERGO website <http://www.ergo.ee.unsw.edu.au> and has recently been updated with some new presentations and articles. These include:
  - Karel Nolles, "Lessons for environmental markets from the financial markets – some Australian perspectives and experiences" (pdf)
  - Hugh Outhred, "Climate Change and the Electricity Industry" (pdf)
  - Iain MacGill, Hugh Outhred and Karel Nolles "Experience with Market-based Approaches to Climate Change Regulation in the Australian Electricity Industry"
  - Iain MacGill "Experience with Market-based Approaches to Climate Change Regulation in the Australian Electricity Industry" (pdf)
  - Iain MacGill "The Australian Electricity Industry and Climate Change - What role for geosequestration?" (pdf)
- The European Committee for Standardization, CEN, is currently preparing about 30 technical specifications for solid biofuels. The aim is to promote the trade of biofuels, so

that the customer and the seller can unanimously define the quality of solid biofuels. Finland, with VTT as the Finnish representative, is involved especially with the preparation of technical specifications for fuel specification and classes, and quality assurance. Further information:

<http://akseli.tekes.fi/Resource.phx/enyr/puuenergia/en/index.htm> (source VTT)

- Biotechnology industry giant Monsanto is teaming up with General Motors and the US National Ethanol Vehicle Coalition (NEVC) to deliver what the company calls "improved" corn for the dry mill ethanol industry, which aims to drive increased fuel ethanol demand and expand fuel ethanol infrastructure to support that demand.
- The 2001 National Greenhouse Gas Inventory released by the Australian Government in September reports total greenhouse emissions for Australia of 542.6 million tonnes of carbon dioxide equivalent, just 0.1 percent below 1990 emissions. This was achieved almost entirely through reductions attributed to land use change and reforestation. See <http://www.greenhouse.gov.au/inventory/index.html>
- Scientists from the Cooperative Research Centre for Greenhouse Gas Technologies are investigating 'geo-sequestration' of carbon dioxide as a practical and feasible way of reducing Australia's greenhouse gas emissions. Details: <http://www.csiro.au/index.asp?type=mediaRelease&id=PrECOS2>
- The Asian Development Bank is to carry out a carbon sequestration pilot project in Indonesian forests. Details: [http://www.unwire.org/UNWire/20030912/449\\_8359.asp](http://www.unwire.org/UNWire/20030912/449_8359.asp)
- The Australian State of the Forests report, produced by the Bureau of Rural Sciences indicates that less than one percent of the potential 74 percent of forests of harvestable quality are being harvested, and that the amount of area protected in nature reserves has increased by 22 percent. The assessment shows that 164 million hectares, or 21 percent of the nation's land area, is classified as forest (land with trees with an actual or potential height greater than 2 metres and 20 percent crown cover). See <http://www.affa.gov.au> and view 'Publications'.
- The NSW government has created a new Department of Environment and Conservation, bringing together the management of biodiversity, pollution, waste control and scientific research. The Department will include the Environment Protection Authority, the NSW National Parks and Wildlife Service (NPWS), Resource NSW, the Royal Botanic Gardens and the Sydney Catchment Authority. SEDA, the NSW Sustainable Energy Development Authority is also being incorporated into the new Department of Energy, Utilities and Sustainability.
- A centralised anaerobic digester to serve 15 dairies or about 6,000 cows in Washington State, USA, with an anticipated cost of US\$7.9 million is being planned. See link <http://dnr.metrokc.gov/dnradmin/press/2003/0717methane-electricity.htm>
- An A1 poster relating to tree planting for salinity mitigation in the Murray Darling Basin and other information is available from Murray Darling Basin Commission website: [http://www.mdbc.gov.au/naturalresources/salinity/salinity\\_treePlanting.html](http://www.mdbc.gov.au/naturalresources/salinity/salinity_treePlanting.html)
- A large number of papers and book chapters on various aspects of anaerobic digestion of various wastes (hydrolysis, acidogenesis, acetogenesis, and methanogenesis) are downloadable from D.P. Chynoweth's webpage at <http://www.gen.ufl.edu/~chyn/> under 'Publications'.
- A Webpage, including discussion and photos of a small, prototype updraft briquette gasifier stove for developing countries can be viewed at <http://www.repp.org/discussiongroups/resources/stoves/Kobus/gasbriqstove.htm>
- 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 nearing finality with the final version of the guide and code of practice having been developed. For more details <http://www.wmaa.asn.au/efw/home.html>.
- Auspine Limited advertised for Expressions of Interest in October for a bioenergy plant at Tarpeena, South Australia, with Auspine to provide feed of 400,000 tonnes/year woodchips, sawmill and forestry waste to a prospective EPC contractor. The plant capacity stated was in the range 30-35 MW. Auspine was previously the recipient of an Australian Greenhouse Office RECP grant to investigate biomass supply logistics.

- The US Public Service of New Hampshire (PSNH) has filed plans to develop a 50 MW power generating plant to be fuelled by the combustion of low grade wood. The filing with the NH Public Utilities Commission (NHPUC) seeks permission to replace an existing 50 MW coal-burning boiler at Schiller Station in Portsmouth with a new, high-efficiency boiler that burns wood.
- The Canadian government has launched a three-year, CDN\$100 million 'Ethanol Expansion Program' to fund construction of new ethanol plants. The program will allocate 60 percent of its budget in the first round of funding.
- Victorian farmer, Steven Hobbs has been awarded the 2003 Nuffield Scholarship for a new and emerging enterprise, to study the European biofuel industries (plant oil, biodiesel, ethanol). The award is sponsored by the Rural Industries Research and Development Corporation (RIRDC). (The UK Nuffield Scholar, John Stawson delivered a lecture at the December Bioenergy Australia conference on energy crop farming – Ed.).
- The NSW Greenhouse Gas Abatement Scheme launched in 2003, is now operational and application forms, guides to the scheme, case studies and fact sheets are now available online at <http://www.greenhousegas.nsw.gov.au>.
- Australia's first dedicated wood pellet production plant has been completed by Pellet Heaters Australia at Woodburn on the NSW north coast. It is set to produce 1500 tonnes per year pellets from pine plantation residues. The plant and industry prospects were the subject of a presentation by Rod Bailey of Pellet Heaters Australia at the December Bioenergy Australia annual conference. See Web: <http://www.pelletheaters.com.au>
- A plan to use genetically modified willow to make ethanol is reported to be among the first GM projects submitted for approval after the New Zealand Government's moratorium on field trials was lifted on October 29. AgriGenesis, the plant division of Auckland-based Genesis Research and Development, intends to genetically modify willow which it claims would be ideal as a feedstock for fermenting into ethanol.
- The Minnesota Project has been doing research comparing the crop response of crops fertilised with digested manure compared to crops fertilised with non-digested manure and commercial fertiliser. For more on this, go to: <http://www.mnproject.org/index-digester.html>
- Nathaniel Energy of Colorado, USA will build two thermal combustors to fuel a US\$40 million, 6 MW refuse-derived fuel facility in Veneta, Italy. 5 MW of electricity from the plant will be sold to Enel, Italy's largest electricity utility.
- The German Parliament has passed a law which comes into force in January 2004 to exempt bio-fuels from petroleum taxes. Biogas, bioethanol, synthesised gasoline from biomass, biodiesel, hydrogen produced from biomass, and fatty acid methyl ester are 100 percent tax-exempt until 2009.
- A 76 page report on CO<sub>2</sub> levels and requirements for cuts is downloadable from the German Advisory Council on Global Change at [http://www.wbgu.de/wbgu\\_sn2003\\_engl.html](http://www.wbgu.de/wbgu_sn2003_engl.html)
- A National Non-Food Crops Centre has been launched in York, UK. The centre aims to raise awareness among industry, scientists and farmers of the potential of, and emerging market in, non-food uses of crops. Starch-based plastic substitutes, toxin-free solvents, car parts, lubricants and beauty creams are just a few of the hundreds of products that can be manufactured using plant-based materials. See <http://www.nnfcc.co.uk/>
- Victorian based Croydon Buses have used some 66,000 litres of biodiesel in a trial involving some seven vehicles which have collectively covered approximately 200,000 km. Croydon Buses have a fleet of 87 buses which collectively cover over 4,000,000 km per year.
- Further to a brief note in the August 2003 Bioenergy Australia Newsletter regarding co-firing at Tampa Electric's IGCC unit, the full engineering report by Tampa Electric on the co-firing trial is available at <http://www.treepower.org/TECO/polk-cofiring-testburn.pdf>.
- Black and Veatch and Energy Products and Idaho have produced a 3 page report on the Feasibility of Biomass Gasification Retrofit. See <http://www.energyproducts.com/BiomassGreenpower/B&V%20Final%20Report%20Pres%20Release.pdf>

- A Web page which provides substantial information on small scale gasifiers with links to several other pages is <http://solstice.crest.org/discussiongroups/resources/gasification/200kWCHP.html>
- A reference to the PRME gasifier technology in Australia is listed on the page: [http://www.buyusa.gov/australia/en/fuse.html?exp\\_cat=3020&exp\\_pid=107](http://www.buyusa.gov/australia/en/fuse.html?exp_cat=3020&exp_pid=107)
- A US study, published in the journal *Science*, suggests that ecosystems such as forests may be less helpful than previously thought at soaking up carbon dioxide to slow global warming. See [http://www.edie.net/gf.cfm?L=left\\_frame.html&R=http://www.edie.net/news/Archive/7829.cfm](http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/7829.cfm)
- A recent 25 page update on the development of the biomass co-firing market in the UK entitled "Development of Low Cost Systems for Co-Utilisation of Biomass in Large Power Plant, Mid Term Review Report", by Mitsui Babcock Technology and Engineering, is available at: <http://www.dti.gov.uk/energy/renewables/publications/pdfs/bu100726midtermreview.pdf>
- The University of Canterbury, New Zealand will receive four years funding from the Foundation for Research, Science and Technology (FRST) of New Zealand to develop a biomass integrated gasification combined cycle (BIGCC) system. BIGCC involves gasifying biomass and using the combustible gas to produce electricity in both gas and steam turbines. Studies will be conducted to evaluate, improve and optimise the system. The focus will be on medium-scale energy plants using radiata pine residues. This project is one of four to receive NZ \$6 million over four years and will start in July 2004.
- The December/January issue of the AETF Review is now available for downloading. Go to [www.aetf.net.au](http://www.aetf.net.au) and click on "AETF Review".
- The World Health Organisation says global warming killed 150,000 people in 2000, and the death toll could double within 30 years if current trends are not reversed. A further 5.5 million healthy years of life were lost due to diseases linked with emissions from fossil fuels, it reported at the U.N. environment conference in Milan. (source REFocus magazine)
- The Tama Zoo in Tokyo, Japan, with its 420 animals including elephants, lions, and giraffes together generate some 1,000 tonnes of droppings annually. Manure disposal costs 30 million Yen and has led the Tokyo Metropolitan Government, which runs the zoo, to adopt a plan to recycle the dung in the form of biomass energy to cut disposal costs and save on the use of fossil fuels. The zoo will start producing biogas in an experimental processing plant in 2005, paving the way for Tama Zoological Park to become Japan's first zoo to recycle animal dung as biomass energy. See <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?nn20031112b7.htm> (source Bioproducts and Bioenergy newsletter)
- The US has a Biomass R&D Technical Advisory Committee which has developed the US Vision and Roadmap for biomass technologies. In addition the Department of Energy's Office of the Biomass Program has released its Multiyear Plan for 2003-2008. These documents are downloadable as follows:
  - Vision [http://www.bioproducts-bioenergy.gov/pdfs/BioVision\\_03\\_Web.pdf](http://www.bioproducts-bioenergy.gov/pdfs/BioVision_03_Web.pdf)
  - Roadmap <http://www.bioproducts-bioenergy.gov/pdfs/FinalBiomassRoadmap.pdf>
  - Multi year plan for bioenergy <http://www.bioproducts-bioenergy.gov/pdfs/MultiyearPlan2003-2008.pdf>
- The Toyota Motor Corporation has announced plans to use renewable farm products in the production of raw materials for plastic automobile parts. A pilot plant in Japan will use sugar cane to manufacture up to 1,000 tonnes of polylactic acid annually, a biobased alternative to petroleum-based materials. See <http://www.toyota.com/about/environment/news/index.html>.
- The papers from a nine-month Australian Internet conference on Sustainability are downloadable from the Internet at <http://www.isosconference.org.au/entry.html>. The conference involved 200 experts and laypeople, and included 85 papers on nine separate

themes including Water, Land Use, Sustainable Ecosystems, energy, Economic Systems, Climate and Transport.

- The Californian city of Alameda (San Francisco Bay area) put out a Request for Qualification for Power Generation Utilising Pyrolysis/Gasification of MSW. See <http://www.appanet.org/Members/Deed/reports/quarterly/AlamedaRFQ06-30-03.pdf>
- The December 2003 newsletter of the Cooperative Research Centre for Greenhouse Accounting is at: [http://www.greenhouse.crc.org.au/crc/ecarbon/enews\\_Dec03.htm](http://www.greenhouse.crc.org.au/crc/ecarbon/enews_Dec03.htm)
- The Western Australian State Government has released a Draft Greenhouse Strategy for public comment. See Web at: <http://www.greenhouse.wa.gov.au/>
- F.O. Licht publishes the World Ethanol and Biofuels Report, which consists of 24 issues in print form as well as providing an on-line archive. The Subscription is US\$1125. See <http://www.agra-net.com>.
- The Danish Energy Authority has published 'Renewable Energy Danish Solutions' which provides an updated overview of the Danish renewable energy sector and describes a variety of solutions that meet the challenges of harnessing renewable energy. It also describes the results of R&D of promising future technologies. The publication can be downloaded from <http://www.ens.dk>.

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## 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.

- A Queensland based biomass residue cartage contractor has indicated his ability to provide a long term supply of some 190,000 tonnes per year native hardwood sawmill waste, some 120,000 tonnes per year cypress pine residues plus approximately 150,000 tonnes per year of residual fibre from pine plantation for a potential bioenergy plant in the Wide Bay region of Queensland. Interested parties are requested to contact Al Corbet of Corbet Timbers in Gympie. Tel (07) 5482 7388.
- A Singapore based engineering company, Drive Solution Technology (Singapore) is seeking to link up with an Australian engineering partner (systems integrator) to expand their business of servicing the power plant industry within the south east Asia market. Their intended expansion is to provide steam generator sets from 5 MW to 20 MW to the Indonesian and Thai sugar and palm oil industries. They are seeking a partner in the business of packaging boilers, steam turbines, electric generators and controls, especially with experience in sugar mills. Contact Philip Wong, Drive Solution Technology (Singapore), Tel: (+65) 91 720 702 Fax: (+65) 6399 2923 Email: [philip.wong@drivesolution.com.sg](mailto:philip.wong@drivesolution.com.sg)
- The Australian Sustainable Industry Research Centre Ltd, based at the Churchill campus of Monash University, reports a 2003 highlight as forming a tentative alliance between ASIRC and interested parties to consolidate, miniaturise and package turnkey water heating plants for dairies using biogas generated from dairy bio-wastes. For further information contact Dr Kirsten Schliephake on (03) 5122 6973. Web <http://www.asirc.org.au>
- Virtual Engineering and Technology Australia (VETA) service industry and research clients with consulting and computer tools in the broad field known as computational fluid dynamics (CFD) - analytical techniques which model:
  - fluid flow - gases and liquids
  - heat transfer - conduction, convection and radiation
  - particles, bubbles and cavitation
  - mass transfer such as evaporation
  - combustion and chemical reactions
  - noise caused by fluid flow.

VETA is the Australian agent for the STAR-CD CFD package. Contact:

Dr Amir Eghlimi, Business Development Manager, Veta Pty Ltd, Suite 506, Level 5, 83 York St, Sydney 2000 NSW. Tel: (02) 9279 0535 Web: <http://www.veta.com.au>.

- Resources for the Future (RFF), Washington DC, an independent nonprofit organisation specialising in research, policy analysis and public education on environmental, energy and natural resource issues, offers two resident fellowships for each academic year. The fellowships are intended for researchers who have a doctorate degree and wish to devote a year to scholarly work in areas related to natural resources, energy, or the environment. Social scientists as well as natural scientists interested in policy-relevant interdisciplinary research are encouraged to apply. Program URL: [http://www.rff.org/rff/About/Fellowships\\_and\\_Internships/White/Gilbert-F-White-Postdoctoral-Fellowship-Program.cfm](http://www.rff.org/rff/About/Fellowships_and_Internships/White/Gilbert-F-White-Postdoctoral-Fellowship-Program.cfm) Deadline(s): 27/02/2004.

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Bioenergy Australia Newsletter is interested 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 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: Bioenergy Australia 7 Grassmere Rd, Killara, NSW 2071 Phone/Fax: (02) 9416 9246 Email: <a href="mailto:sschuck@bigpond.net.au">sschuck@bigpond.net.au</a> Web: <a href="http://www.bioenergyaustralia.org">http://www.bioenergyaustralia.org</a>
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