

# Biomass Taskforce



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## Biomass Symposium

The Biomass Taskforce held a one day symposium at the Forestry House Conference Centre in Canberra on 21st October 1997. The symposium brought together 60 participants with interests in biomass and biomass energy.

The morning session provided an update on opportunities and the state of the industry, with presentations by project developers and leading researchers. The presentations were:

- *Forest Biomass for Energy and Chemicals* – Dr Paul Fung of the CSIRO Division of Forestry and Forest Products
- *Commercial Opportunities Using Sugar Industry Residues* – Dr Terry Dixon of the Sugar Research Institute
- *Grains for Gain* by Dr Frank Kelleher of the University of Western Sydney
- *The Enersludge™ Process: An Energy and Cost Efficient Sludge Management System* by Mr Trevor Bridle of Environmental Solutions International Ltd
- *Innovative Low Cost Biomass Gasifier for Application in Australia* by Dr Stephen Joseph of Biomass Energy Services and Technologies Pty Ltd.

Each 30 minute presentation was followed by discussion and questions. In general discussion, Alan Cummine, the National Policy Director of the Australian Forest Growers spoke in some detail about ethanol developments in Australia.

The afternoon session commenced with a broad introduction to the International Energy Agency Bioenergy Program by the Biomass Taskforce Manager, Dr Stephen Schuck. The Biomass Taskforce is canvassing support for Australian participation in this international collaborative program. This was followed by a general presentation by the Biomass Taskforce Manager on the Taskforce and its activities.

This led into a workshop, facilitated by Associate Professor Ralph Sims of Massey University in New Zealand which examined biomass industry priorities and Issues. The participants considered Social, Environmental, Technological Development and Financial Issues in the workshop. This information has provided the Taskforce with input for its activities.

Proceedings of the symposium incorporating the technical papers, the status of ethanol production, the IEA Bioenergy and Biomass Taskforce presentations, workshop pre-prepared material and contributions from participants, information on IEA Bioenergy, and a comprehensive list of delegates including contact details were issued shortly after the symposium.

A limited number of copies of the Proceedings are available for sale at \$20 each to cover production and handling costs. These are available through Dr Stephen Schuck on phone/fax 02-9416 9246 or email [Steve.Schuck@bigpond.com](mailto:Steve.Schuck@bigpond.com).

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### Commonwealth Greenhouse Measures Announced

Shortly prior to “Kyoto” the Federal Government announced a number of greenhouse gas abatement measures to the value of \$180 million. Relevant to the activities of the Biomass Taskforce are:

- Confirmation of an allocation of \$2 million for an ethanol pilot plant to be built at Bomaderry in NSW to demonstrate new Australian technologies for the production of ethanol from wood fibres and simultaneous waste treatment. It is anticipated that the NSW’s government will match this funding, with an additional “in-kind” contribution coming from Manildra, the host industry.
- Extension and expansion of the Greenhouse Challenge Office; a government/industry co-operative agreement program. Allocation \$27.1 million.
- Accelerating energy market reform by lowering the rate of growth of emissions by improving the economic efficiency of energy supply. The intent is to expand energy market reforms, and with the States develop the means to identify greenhouse intensity of energy sources in energy market trading pools by 2001. Allocation \$5.6 million.
- Mandatory targets for the uptake of renewable energy in power supplies. Targets will be set for the inclusion of renewable energy in electricity generation by the year 2010. Electricity retailers and other large electricity buyers will be legally required to source an additional two percent of their electricity from renewable or specified waste-product energy sources by 2010 (including through direct investment in alternative renewable energy sources). This will accelerate the uptake of renewable energy in grid-based power applications, and provide an ongoing base for commercially competitive renewable energy. The program will also contribute to the development of internationally competitive industries which would participate effectively in the burgeoning Asian energy market. (Ed note- released late November). Allocation \$3.8 million.
- Renewable Energy Innovation Investment Fund (REIIF). The REIIF will provide funding specifically for the facilitation of commercialisation and application of renewable energy technologies. All initial investments will be required to be in the early stages of company development. Government funding will be provided through licences to REIIF fund managers on a competitive basis and invested along with private sector funding on a 2:1 basis. Allocation \$21 million.
- Renewable Energy Technology Commercialisation loans and grants. This will provide support for, and promotion of, strategically important renewable energy initiatives that have strong commercial potential. This will be integrated with the existing REIP (Renewable Energy Industry Program). Allocation \$29.6 million.
- Renewable Energy Showcase. A few leading edge “showcase” projects will be selected via competitive tender for seed funding and/or promotion. These include projects which are close to becoming commercial, such as tidal power projects, solar thermal and central photovoltaic generating projects in a technology park. (Hopefully this will include biomass projects- Ed.). Allocation \$10.5 million.
- Renewable Energy Technology Internet Site. This is to set up an internet site along the lines of the US Department of Energy for information on technologies, examples of their application and available government assistance. Allocation \$300,000.

- Activities Implemented Jointly (AIJ). Additional funding is being provided to the AIJ Office to facilitate commercial projects in developing countries and help meet the additional transaction costs incurred in undertaking AIJ projects. This should provide Australian industry with a greater incentive to undertake such projects.
- Plantations – 2020 Vision. This program is to implement key Commonwealth responsibilities of the Plantation 2020 Vision which aims to treble Australia's plantation estate by 2020. The program involves removing impediments to Australian commercial plantations and supporting plantation establishment and enhancing investment in plantation-based industries. Allocation \$1.9 million.
- Bush for Greenhouse. This will facilitate corporate funding of Natural Heritage Trust revegetation projects through Bushcare. Companies or investors will obtain recognition for the carbon sequestered. By allowing companies to invest in revegetation activities, companies will have a method to offset emissions created by their activities elsewhere. Allocation \$5.5 million.
- National Carbon Accounting System for Land Based Sources and Sinks. Allocation \$12.5 million.
- Reducing methane emissions from livestock. Funding will be provided to promote a CSIRO developed vaccine which inhibits the production of methane in the rumen of livestock. Allocation \$1.0 million.

In addition a Commonwealth Greenhouse Office will be established within the Department of the Environment. It will be responsible for the coordination of domestic climate change policy and delivery of greenhouse response programs. This office will be the lead Commonwealth agency on greenhouse matters. Another \$10.5 million has been provided for other National Greenhouse Strategy measures. These are to be finalised in consultation with the States and Territories.

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### **IEA Bioenergy**

As previously related in the Biomass Taskforce newsletters, IEA Bioenergy is an international collaborative agreement to improve international co-operation and information exchange between national bioenergy programs. IEA Bioenergy aims to realise the use of environmentally sound and cost-competitive bioenergy on a sustainable basis, to meet a significant proportion of future energy demands.

The Biomass Taskforce is seeking participation from interested organisations for joining the IEA Bioenergy program. Contact with, and the gathering of information from the Executive Committee of IEA Bioenergy has been ongoing. In addition, a major study tour and an End-of-Task XII (Biomass Production, Harvesting and Supply) meeting will be attended by a delegation of about 40 international visitors. This meeting will be held at the CSIRO Forestry House Conference Centre, Canberra, from 17-20 March, 1998. The Biomass Taskforce is providing financial and organisational support for this meeting. There will be a one day tour of biomass and biomass energy facilities as part of the meeting. The main purpose of holding this meeting in Australia is to facilitate Australia joining IEA Bioenergy. About 20 Australian representatives will be invited to participate in this meeting. A session has been allocated to discuss Australia's participation.

The new set of IEA Bioenergy Tasks for the period 1998-2000 were adopted at the IEA Bioenergy Executive Committee meeting in Rome on 20-21 November 1997.

The Tasks, level of participation and cost per participating country per year are summarised in the following Table. This is a revision of the table from the October newsletter:

<b>Task</b>	<b>No. of Participating Countries</b>	<b>Est Cost per Country US\$</b>
Short Rotation Crops	9	7,778
Conventional Forestry	10	13,200
Combustion (including co-firing)	12	7,083
Gasification	11	6,818
Pyrolysis	3	9,600
Technoeconomic Analysis (1.5 years only)	5	10,000
MSW Thermal Conversion	5	15,320
MSW Biological Conversion	5	14,840
MSW Integrated Waste Management□	3	37,767
Greenhouse Gas Balance	6	13,883
Liquid Biofuels□	5	28,000
Bioethanol	5	9,600

□More recent information to hand indicates that the MSW Integrated Waste Management Task would not proceed, and its program is to be merged with the remaining two MSW Tasks. The Liquid Biofuels Task is also subject to review.

In addition to contributions to specific Tasks, each participating country will pay a fixed cost of US\$4,000 for running the secretariat. An administration cost of US\$450 also applies to each Task in which a country participates.

It is of interest to note that Mr John Tustin of the Forest Research Institute of New Zealand has been elected as the Executive Committee Secretary from January 1998. At the Executive Committee Meeting in Rome, it was agreed that India, Croatia and Ireland be invited to join the IEA Bioenergy program, with Brazil already having been granted an invitation.

### **Biomass on the Internet**

Previous issues of the Biomass Taskforce Newsletter have provided some highly relevant web sites for biomass and biomass energy. You may be interested in some of the following additional sites, including the web address for the Australian Biomass Taskforce:

Australian Biomass Taskforce

[http://www.users.bigpond.com/Steve.Schuck/Australian\\_Biomass\\_Taskfor.htm](http://www.users.bigpond.com/Steve.Schuck/Australian_Biomass_Taskfor.htm)

Institute for Local Self Reliance (including the Carbohydrate Economy)

<http://www.ilsr.org>

Sustainable Minnesota

<http://www.me3.org>

Tobacco as biomass

<http://rampages.onramp.net/~bdrake/altengy.html>

Common Purpose

<http://www.serve.com/commonpurpose>

Daily Energy and Environmental News site (USA)

<http://www.geocities.com/RainForest/2958/news.html>  
 Energy Inputs for Biomass Production  
<http://www.panis.com/~jimcook/data/ec-workshop.html>  
 Convertech (NZ based company)  
<http://www.southpower.co.nz/conver.htm>  
 ESAA  
<http://www.ozemail.com.au/~ESAAMELB>  
 State Forests of NSW  
<http://www.forest.nsw.gov.au>  
 Finland-wood  
<http://www.vtt.fi/ene/enepotu>  
 Numerous case studies from Caddet  
<http://www.caddet.co.uk/regagfor.htm>  
 Transportation Fuels Analysis (AIChE – government relations committee)  
<http://www.aiche.org/docs/government/altfuel.htm>  
 Research Centre for Agriculture and the Environment (J Moerschner)  
<http://gwdu19.gwdg.de/~uaat/energ.htm>  
 Renewables High School Debate-site sponsored by Natural Gas Supply Association  
<http://www.renewable.org/>  
 Renewable Fuels Association  
<http://www.ethanolrfa.org>  
 TPS Plants (Swedish gasification technology)  
<http://www.tps.se>  
 World Bank (biomass)  
<http://www.worldbank.org>  
 Greenhouse Reduction Network – newsletter  
<http://www.ecobusiness.com.au>  
 Institute of Sustainable Futures (UTS)  
<http://www.isf.uts.edu.au>  
 AgStar Program (USA EPA)  
<http://www.epa.gov/docs/GCDOAR/agstar.html>  
 American Solar Energy Society  
<http://www.ases.org/solar>  
 Netherlands Energy Research Foundation  
<http://www.ecn.nl>  
 NREL Biomass  
<http://www.rredc.nrel.gov/biomass/>  
 DPIE forestry site  
<http://www.dpie.gov.au/dpie/forestryoz.html>  
 Arkenol (ethanol)  
<http://www.arkenol.com>  
**Industrial Hemp for Biomass**  
<http://thehia.org>  
<http://www.hempseed.com>  
<http://hemp-cyberfarm.com>  
 The Institute for Hemp  
 email: [instforhemp@delphi.com](mailto:instforhemp@delphi.com)  
 Hemp Tech  
<http://www.hemptech.com/> email: [info@hemtech.com](mailto:info@hemtech.com)  
 Hemp Industries Association  
<http://www.indirect.com/www/chptrk/index.html>  
 Business Alliance for Commerce in Hemp  
<http://www.zpub.com/z/bps.html>  
 Coalition for Hemp Awareness  
<http://www.indirect.com/www/chaptrk/chal.html>

US Energy Information Administration  
<http://www.eia.doe.gov>

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## **Biomass Power Joint Venture**

Energy Equity Corporation Ltd and AUSTA Energy have formed The Green Energy Company to develop 1,000 MW of green energy in Australia over the next five years and to develop projects in the Asia-Pacific region. Initial emphasis will be on bagasse. Energy Equity Ltd are understood to have publicly called for Expressions of Interest from those with wood wastes who would be interested in wood power projects.

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## **Bioenergy E-mail Lists**

The Center for Renewable Energy & Sustainable Technologies (CREST) hosts five mailing lists for industry, academia and government to discuss biomass production and conversion to energy. Details on how to subscribe to these lists were given in the previous issue of the Biomass Taskforce Newsletter.

List messages are archived on the web so that they contribute to the pool of online bioenergy information.

The lists and archive URLs are:

1. Bioenergy - <http://solstice.crest.org/renewables/bioenergy-list-archive>
2. Gasification - <http://www.crest.org/renewables/gasification-list-archive>
3. Anaerobic Digestion - <http://www.crest.org/renewables/digestion-list-archive>
4. Stoves - <http://www.crest.org/renewables/stoves-list-archive>
5. Bioconversion – <http://www.crest.org/renewables/bioconversion-list-archive>

The bioenergy list gets in excess of 1000 public hits per day.

For further information contact CREST at [info@crest.org](mailto:info@crest.org) or Stephen Schuck.

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## **Report Review**

*Estimating Potential Methane Production, Recovery and Use from Waste. Waste Management Workbook. A Quick Reference Guide.* Environment Australia and Greenhouse Challenge, 1997. Prepared by Aquatech Pty Ltd.

This workbook and summary document provides a useful tool for estimating the commercial viability of recovering methane generated by the disposal of organic wastes. Methane, the main constituent of natural gas, arises from the anaerobic (in the absence of oxygen) digestion of organic solid and liquid matter. Methane is 21 times more potent a greenhouse gas than carbon dioxide, yet can be recovered for use as a fuel or chemical feedstock. This has greenhouse gas benefits through the conversion of the methane to carbon dioxide and water, while offsetting fossil fuel use that would otherwise be used.

The summary document provides detailed steps, using worked examples, for calculating the biogas potential from landfill; from anaerobic digestion of organic solid waste; from municipal waste water; and from industrial wastewater. For each source, mathematical formulae are provided for calculating the amount of methane generated, the energy equivalent, and the indicative value of the electricity that could be generated from such a

source. Project viability is then estimated. The workbook summary also estimates the greenhouse gas benefit in terms of tonnes of carbon dioxide gas equivalent that would be achieved.

The 20 page summary report can be downloaded from the World Wide Web at <http://www.environment.gov.au/portfolio/esd/climate/indust2.html>. Copies may be obtained from Environment Australia's Community Information Unit on 1800 803 772.

## Opportunities Corner

- The CSIRO Division of Forestry and Forest Products has been researching and developing the use of effluent for irrigating fast growing eucalypt and pine plantations. This work is now at an advanced stage and the Project Leader, Brian Myers of the CSIRO would be interested in making contact with potential commercial partners with an interest in converting the biomass into energy or other value added products. Brian may be contacted on telephone: 02 6281 8222, Fax: 02 6281 8239 or email: [brian.myers@ffp.csiro.au](mailto:brian.myers@ffp.csiro.au).
- The Biomass Taskforce would like to organise some informal gatherings in different regions throughout Australia so that those in the biomass industry with interests ranging from the supply side to technology suppliers to project developers can meet and network in a relaxed atmosphere. If interested in participating, please contact Steve Schuck.

*If the Biomass Taskforce can assist your organisation in making contact with others to promote the development of the biomass industry, please contact Steve Schuck. The Taskforce may also be able to help with the provision of technical information.*

## Forthcoming Events

Outlook 98 Conference. Canberra 3-5 February 1998. Inquiries 1800 806 591.

Australian Cogeneration Association National Conference. 12-13 March 1998, Melbourne. Contact: Robyn Buccheri. Tel: 03-9530 6777 Fax: 03 9530 6526

The ESAA 4<sup>th</sup> Renewable Energy Technologies & Remote Area Power Supplies Conference. 23-25 February 1998, Hobart. Tel: 02 9241 2955, Fax: 02 9241 5354.

Biomass for Energy and Industry. 10<sup>th</sup> European Conference and Technology Exhibition. 8-11 June 1998. Würzburg, Germany. Tel: +49 89 720 1232, Fax: +49 89 720 1291. Internet: <http://www.wip.tnet.de>

Bioenergy '98, October 4-8 1998. Madison, Wisconsin, USA. Great Lakes Regional Biomass Energy Program. Abstract deadline: 28 February. Internet: <http://www.cglg.org/bioenergy98/>

MAVA'98, International Business Convention on Thermal Treatment and Energy Recovery from Waste and Biomass. May 4-5 1998. Lausanne, Switzerland. This brings together suppliers, potential buyers and decision makers in a networking convention. Internet: <http://www.mava.ch>. Details also available from Steve Schuck.

