



Bioenergy Association of New Zealand (BANZ)

**BANZ Biogas Interest Group
Presents**

‘Biogas from Municipal Organic Waste’

13th May 2010 (Christchurch)

Who’s Who at the Event

BANZ Websites

www.bioenergy.org.nz

www.woodpellets.org.nz

www.liquidbiofuels.org.nz

www.biogas.org.nz

www.bkc.co.nz

Event Sponsors

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Lunch Sponsors



Morning Tea Sponsors

List of Attendees

Name	Organisation
1. Brian Cox	BANZ
2. Guenter Wabnitz	AECOM
3. Bob Weston	Entec Services Limited
4. Leonid Itskovich	Christchurch City Council
5. Phil Burt	PNCC
6. Jurgen Thiele	CPG
7. Martin Smith	Clarke Energy
8. Nathan Clarke	CPG
9. Grant Smith	Energy for Industry
10. Humphrey Archer	Beca Infrastructure
11. Mark Milke	University of Canterbury
12. Paul Minchin	Transfield Worley Ltd
13. Steve Goldthorpe	Energywatch (Editor)
14. Stuart Roberts	Entec Services Limited
15. Ian Bywater	Natural Systems Ltd
16. Richard Weld	Lincoln Ventures Limited-
17. Greg Offer	Beca Infrastructure Engineers Ltd
18. Sue Weisenburg	Beca Infrastructure Engineers Ltd
19. Iain Sutherland	Beca Infrastructure Engineers Ltd
20. Stefan Borowy	Queenstown Lakes Distinct Council
21. Martin O'Malley	Queenstown Lakes Distinct Council
22. Brent Kennedy	CRL Energy Ltd
23. Byung-sik Peter Park	Korea Institute of Energy Research
24. Rupinder Singh	Lincoln Ventures Limited-
25. Malcolm Loan	Invercargill City Council
26. Simon Coughlan	Massey University Energy Management Student
27. Daniel Gapes	Scion
28. David McLernon	Octa Associates Ltd
29. Kris Thomas	Octa Associates Ltd
30. Iain Satterthwaite	Dunedin City Council
31. Brian Turner	Dunedin City Council
32. Ian Featherston	Dunedin City Council
33. Neville Auton	Dunedin City Council
34. David Harris	Christchurch City Council
35. Michael Henry	Energy NZ
36. Mike Roberts	University of Canterbury
37. Simon Barr	University of Canterbury
38. Jeanette White	University of Canterbury
39. Ken Calvert	University of Canterbury
40. Peter Stevens	Peter Stevens & Associates Ltd
41. Franz Resl	Christchurch City Council
42. Chris Bathurst	Solvent Rescue
43. Julie Simmers	New Plymouth District Council
44. James Young	Biogas Energy

Name of Attendee (s)	Brian Cox
Organisation/ company	Executive Officer – Bioenergy Association of New Zealand
E-mail address	Brian.cox@bioenergy.org.nz
Tel numbers	
Please provide an outline of your activities / interests in relation to the tour/workshop.	
<p>The Bioenergy Association of New Zealand (BANZ) has been established to promote and coordinate the development of a bioenergy industry in New Zealand. BANZ provides a central focus point for liaison with Government agencies, the dissemination of information amongst the industry and long-term positioning of bioenergy into New Zealand's energy system.</p> <p>Members include anyone with a commercial interest in bioenergy - wood processors, foresters, energy suppliers, energy researchers, consultants, manufacturers and investors. Activities are focused around wood energy, biogas and liquid biofuels.</p> <p>The Biogas Interest Group is one of four Interest Groups in BANZ. We also have Interest Groups for Wood Pellets, Wood Fuels and Liquid Biofuels.</p>	
What are you interested in finding out at the Tour/Workshop?	
Promotion of Biogas as a heating and generation option in a variety of situations.	

Name of Attendee (s)	Guenter Wabnitz
Organisation/ company	AECOM
E-mail address	guenter.wabnitz@aecom.com
Tel numbers	(04) 382 2975
Please provide an outline of your activities / interests in relation to biogas.	
<p>Guenter Wabnitz is Convener of the BANZ Biogas Interest Group.</p> <p>AECOM is a global provider of consulting services including the fields of Energy, Environment and Water Infrastructure, and has been involved in numerous biogas projects in New Zealand and overseas.</p>	
What are you interested in finding out at the workshop?	
The interests of New Zealand local governments in biogas and what BANZ can do to help them improve biogas capture and utilisation.	

Name of Attendee (s)	Bob Weston
Organisation/ company	Entec Services Limited
E-mail address	bob@entec.co.nz
Tel numbers	09 277 2211 / 027 663 6344
Please provide an outline of your activities / interests in relation to biogas.	
Provision of design, equipment and long-term operating/maintenance services for power generation, cogeneration and trigeneration from biogas. Development of projects from concept to execution.	
What are you interested in finding out at the workshop?	
Interest in existing and future biogas projects, complementary products and services.	

Name of Attendee (s)	Dr Leonid Itskovich
Organisation/ company	Christchurch City Council
E-mail address	leonid.itskovich@ccc.govt.nz
Tel numbers	03 9418793

Please provide an outline of your activities / interests in relation to biogas.
Energy Manager for Christchurch City, Chartered Professional Engineer. One of the initiators and developers of biogas utilisation projects in Christchurch, including the New Zealand first tri-generation plant.
What are you interested in finding out at the workshop?

Name of Attendee (s)	Phil Burt
Organisation/ company	Palmerston North City Council
E-mail address	phil.burt@pncc.govt.nz
Tel numbers	06 3568199, 0274837082
Please provide an outline of your activities / interests in relation to biogas.	
Involved in construction of new biogas to energy project at PNCC WWTP, work involved included investigation of upgrade options for existing AD including determination of new co substrate for digesters, selection of contractor, procurement of biogas generator and project management of construction.	
What are you interested in finding out at the workshop?	
Seeing what other people in the country are doing in sourcing new feed stocks for biogas production.	

Name of Attendee (s)	Jurgen H Thiele
Organisation/ company	Waste Solutions, a division of CPG NZ Ltd
E-mail address	Jurgen.thiele@nz.cpg-global.com
Tel numbers	+ 64 21 780 727 + 64 3 477 2375
Please provide an outline of your activities / interests in relation to biogas.	
Anaerobic digester system provider small scale municipal to large scale industrial range from simple in ground digesters to in tank sludge digester to high rate UASB digesters design and construction management of regional digester facilities	
What are you interested in finding out at the workshop?	
Meet local authority and industry parties with interest in anaerobic treatment of organic waste, industrial biosolids, municipal biosolids and source separated organics	

Name of Attendee (s)	Nathan Clarke
Organisation/ company	CPG
E-mail address	Nathan.clarke@wastesolutions.co.nz
Tel numbers	
Please provide an outline of your activities / interests in relation to biogas.	
http://nz.cpg-global.com/services/biotechnology/	
What are you interested in finding out at the workshop?	

Name of Attendee (s)	Martin Smith
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Organisation/ company	Clarke Group
E-mail address	Martin.Smith@clarke-energy.com
Tel numbers	Tel: +61 (0) 8 8290 2100 Mob: +61 (0) 439 341 391
Please provide an outline of your activities / interests in relation to biogas.	
www.clarke-group.com	
What are you interested in finding out at the workshop?	

Name of Attendee (s)	Grant Smith
Organisation/ company	Energy for Industry
E-mail address	Grant.smith@meridianenergy.co.nz
Tel numbers	
Please provide an outline of your activities / interests in relation to biogas.	
http://www.energyforindustry.co.nz/About/default.htm	
Grant has worked in the Australian and New Zealand energy markets in roles including power station development, strategy and business development, technology research, commercial and business risk management and retail sales and marketing.	
Grant's specialist areas of industry expertise include commercial and risk management with respect to wholesale spot market dynamics and the development and implementation a number of wholesale and retail related business growth strategies.	
In addition, he has worked on coal fired power station developments in Australia, and spent 8 years in offshore markets consulting in engineering design and building services.	
He has represented Meridian on the Winter '03 Industry Taskforce and Winter '06 Steering Groups as well as contributed to industry development and market education in renewable energy, distributed generation and energy efficiency programmes, participating in various industry committees.	
What are you interested in finding out at the workshop?	

Name of Attendee (s)	Humphrey Archer
Organisation/ company	Beca Infrastructure Ltd
E-mail address	Humphrey.archer@beca.com
Tel numbers	03 374 3162 or 021 927 646
Please provide an outline of your activities / interests in relation to biogas.	
Consulting engineer with extensive experience designing anaerobic digestion systems in wastewater treatment plants and also anaerobic treatment of industrial wastewaters. These projects have involved use of biogas in boilers and gas engine alternator sets. I have also investigated the use of organic wastes – such as food scraps and straw – for the production of biogas.	
What are you interested in finding out at the workshop?	
Keeping up to date with recent developments and networking	

Name of Attendee (s)	Mark Milke
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Organisation/ company	Department of Civil and Natural Resources Engineering, University of Canterbury
E-mail address	Mark.milke@canterbury.ac.nz
Tel numbers	3-3642-248
Please provide an outline of your activities / interests in relation to biogas.	
Solid waste anaerobic decomposition teaching and research. Past associate editor for the international journal Waste Management. Research into landfill gas production and migration. Research into kinetics of food waste anaerobic degradation. Research into wood waste anaerobic degradation.	
What are you interested in finding out at the workshop?	
Current status of biogas projects in New Zealand. Limitations to progress. Research needs of others.	

Name of Attendee (s)	Paul Minchin
Organisation/ company	Transfield Worley Ltd
E-mail address	pminchin@transfieldworley.co.nz
Tel numbers	06 7596300
Please provide an outline of your activities / interests in relation to biogas.	
Process Engineering Manager	
What are you interested in finding out at the workshop?	

Name of Attendee (s)	Steve Goldthorpe
Organisation/ company	SGEA Ltd
E-mail address	Steve.Goldthorpe@xtra.co.nz
Tel numbers	09 432 0532 0274 849764
Please provide an outline of your activities / interests in relation to biogas.	
Forthcoming editor of EnergyWatch General interest in energy conversion technologies	
What are you interested in finding out at the workshop?	
Potential quality, quantity and composition of reliable biogas resources	

Name of Attendee (s)	Stuart Roberts
Organisation/ company	Entec Services Limited
E-mail address	stuart@entec.co.nz
Tel numbers	09 277 2211 / 021 410 826
Please provide an outline of your activities / interests in relation to biogas.	
Provision of design, equipment and long-term operating/maintenance services for power generation, cogeneration and trigeneration from biogas. Development of projects from concept to execution.	
What are you interested in finding out at the workshop?	
Interest in existing and future biogas projects, complementary products and services.	

Name of Attendee (s)	Ian Bywater
Organisation/ company	Natural Systems
E-mail address	ian@naturalsystems.co.nz
Tel numbers	03 376 5549
Please provide an outline of your activities / interests in relation to Liquid Biofuels.	
Dairy farm biogas systems	
What are you interested in finding out at the Workshop?	
Networking	

Name of Attendee (s)	Dr Richard Weld
Organisation/ company	Lincoln Ventures Limited-
E-mail address	weldr@lvl.co.nz
Tel numbers	03 325 3700
Please provide an outline of your activities / interests in relation to biogas.	
Research into thermophilic and mesophilic anaerobic digestion and microbial fuel cells for treatment of sewage and other biological wastes.	
What are you interested in finding out at the workshop?	
Research ideas and collaborations	

Name of Attendee (s)	Greg Offer, Sue Weisenburg, Iain Sutherland
Organisation/ company	BECA Infrastructure Engineers Ltd
E-mail address	Humphrey.archer@beca.com
Tel numbers	366-3521 or 374-3162 or 374-3185
Please provide an outline of your activities / interests in relation to Liquid Biofuels.	
Consulting engineers involved in landfill and digester gas installations	
What are you interested in finding out at the Workshop?	
More about biogas applications and networking.	

Name of Attendee (s)	Stefan Borowy, Martin O'Malley
Organisation/ company	Queenstown Lakes District Council
E-mail address	stefanb@qldc.govt.nz ; martino@qldc.govt.nz
Tel numbers	03 4500526 (Stefan) ; 03 450 0534 (Martin)
Please provide an outline of your activities / interests in relation to biogas.	
Stephan is the Council Solid Waste Manager and is particularly interested in the relationship between adding sludge and other organic waste to landfill and increased generation of gas. Our landfill is situated in a location that has low precipitation levels which results in very low methane gas production	
What are you interested in finding out at the workshop?	
1 Disposal or beneficial re-use of biosolids/sewage sludge and the potential effects or benefits of this. 2 What progress is being made in the practical application of these processes in small district councils around New Zealand. What are the lessons being learned that we can take back to our district. Costs associated with methane gas collection systems and the potential cost benefits of using the gas for onsite activities such as a composting facility. Responsibilities under the emissions trading scheme.	

Name of Attendee (s)	Brent Kennedy
Organisation/ company	CRL Energy Ltd
E-mail address	b.kennedy@crl.co.nz
Tel numbers	07 838 5261
Please provide an outline of your activities / interests in relation to biogas.	
Bio-energy research. Environmental impacts of biogas production and its end use. Biogas process optimisation.	
What are you interested in finding out at the workshop?	
Improvements in current technology	

Name of Attendee (s)	Byung-sik Peter Park
Organisation/ company	Korea Institute of Energy Research
E-mail address	bspark@kier.re.kr
Tel numbers	+82-42-860-3323
Please provide an outline of your activities / interests in relation to biogas.	
Cogeneration specialist	
What are you interested in finding out at the workshop?	
Cogeneration	

Name of Attendee (s)	Rupinder Singh
Organisation/ company	Lincoln Ventures Ltd.
E-mail address	roopbrar@gmail.com
Tel numbers	0211410797
Please provide an outline of your activities / interests in relation to biogas.	
Doing PhD on thermophilic anaerobic digestion of municipal sewage sludge. Primary focus of my research is to see if stability of thermophilic anaerobic digesters can be increased by increasing the microbial diversity. Also to see the impact of combining microbial fuel cell with thermophilic anaerobic digesters. Done master's thesis on "biodiesel production from Jatropa and its environmental effects".	
What are you interested in finding out at the workshop?	
Networking and exploring job opportunities in the field of my interest.	

Name of Attendee (s)	Malcolm Loan
Organisation/ company	Invercargill City Council
E-mail address	Malcolm.loan@icc.govt.nz
Tel numbers	03 2111633; 027 435 7492
Please provide an outline of your activities / interests in relation to biogas.	
Manager of WWTP which produces Biogas	
What are you interested in finding out at the workshop?	
Economics of Electrical Generation from Biogas	

Name of Attendee (s)	Simon Coughlan
Organisation/ company	Massey University Energy Management student
E-mail address	Simon.gina@xtra.co.nz
Tel numbers	09 294 7949
Please provide an outline of your activities / interests in relation to biogas.	
As an Energy student I am interested in all area's of Bioenergy. I am presently doing quite a lot of work in the area of Algae and Biogas ties in well with this.	
What are you interested in finding out at the workshop?	
I want to visit the high rate algae ponds and also broaden my knowledge of Bioenergy. The more I learn the more I realize that there is no one solution and for success a Bioenergy Programme will need to integrate all areas of Bioenergy to give multiple income streams.	

Name of Attendee (s)	Daniel Gapes
Organisation/ company	Scion
E-mail address	Daniel.gapes@scionresearch.com
Tel numbers	07-343-5785
Please provide an outline of your activities / interests in relation to biogas.	
Anaerobic fermentation Reduction of, and value addition to, municipal waste	
What are you interested in finding out at the workshop?	
Update on global research in biogas Networking with researchers and end-users	

Name of Attendee (s)	David McLernon, Kris Thomas
Organisation/ company	Octa Associates Ltd
E-mail address	carol.eades@ch.octa.co.nz
Tel numbers	03 3664 816
Please provide an outline of your activities / interests in relation to biogas.	
What are you interested in finding out at the workshop?	

Name of Attendee (s)	Iain Satterthwaite Brian Turner Ian Featherston Neville Auton
Organisation/ company	Dunedin City Council
E-mail address	isattert@dcc.govt.nz bturner@dudwaste.co.nz nauton@dcc.govt.nz
Tel numbers	03 4562934 03 474 3636

Please provide an outline of your activities / interests in relation to biogas.
Iain Satterthwaite – Wastewater Treatment Manager Brian Turner – Tahuna Project Manager
What are you interested in finding out at the workshop?

Name of Attendee (s)	David Harris
Organisation/ company	Christchurch City Council
E-mail address	David.harris@ccc.govt.nz
Tel numbers	027 240 6279
Please provide an outline of your activities / interests in relation to biogas.	
Operation of Burwood Landfill Gas Treatment Plant.	
What are you interested in finding out at the workshop?	
New information on installation and operation of landfill collection systems.	

Name of Attendee (s)	Michael Henry
Organisation/ company	Energy NZ
E-mail address	michaelh@energynz.com
Tel numbers	09 488 0942 0272 377 046
Please provide an outline of your activities / interests in relation to biogas.	
<ul style="list-style-type: none"> • Have some experience in evaluating gas engines using WWTP biogas. • Currently work with large food processors, consequently am interested in biogas from food waste. • Interested in the direct use of biogas as a supplementary boiler fuel. 	
What are you interested in finding out at the workshop?	
<ul style="list-style-type: none"> • Information about using food waste as a feed stock • Information/experience/costs regarding biogas reticulation (e.g. landfill to Nelson Hospital, Burwood landfill to QE2 complex) • Networking with current practitioners in the field • Cogeneration 	

Name of Attendee (s)	Mike Roberts
Organisation/ company	Dept. Civil and Natural Resources Engineering, University of Canterbury
E-mail address	Mjr174@uclive.ac.nz
Tel numbers	027-285-0874
Please provide an outline of your activities / interests in relation to biogas.	
Third professional (Year 4 Honours) Natural Resources Engineering student. Conducting investigation for our project course on production of biogas from urban grass. Interested in employment prospects on biogas projects.	
What are you interested in finding out at the workshop?	
Latest in biogas activities in New Zealand.	

Name of Attendee (s)	Simon Barr
Organisation/ company	Dept. Civil and Natural Resources Engineering, University of Canterbury
E-mail address	Spb60@uclive.ac.nz
Tel numbers	021-111-6693
Please provide an outline of your activities / interests in relation to biogas.	
Third professional (Year 4 Honours) Natural Resources Engineering student. Conducting investigation for our project course on production of biogas from urban grass. Interested in employment prospects on biogas projects.	
What are you interested in finding out at the workshop?	
Latest in biogas activities in New Zealand.	

Name of Attendee (s)	Jeanette White
Organisation/ company	Dept. Civil and Natural Resources Engineering, University of Canterbury
E-mail address	Jsw91@uclive.ac.nz
Tel numbers	
Please provide an outline of your activities / interests in relation to biogas.	
Masters of Engineering student. Conducting research investigation into potential to use coconut to increase viability of anaerobic digestion of wastewater in Pacific island countries. Interested in employment prospects on biogas projects.	
What are you interested in finding out at the workshop?	
Latest in biogas activities in New Zealand.	

Name of Attendee (s)	Ken Calvert
Organisation/ company	Private C/o University of Canterbury
E-mail address	renertech@xtra.co.nz
Tel numbers	03 230 4525
Please provide an outline of your activities / interests in relation to biogas.	
1/. Conversion of Dairy washdown water filtrate to UASB operation. 2/. Conversion of Municipal Lawn grass mowings to Biogas via silage.	
What are you interested in finding out at the workshop?	
Municipal green waste technology for anaerobic digestion..	

Name of Attendee (s)	Peter Stevens
Organisation/ company	Peter Stevens and Associates

E-mail address	Pstevens.associates@clear.net.nz
Tel numbers	03 354 3511
Please provide an outline of your activities / interests in relation to Liquid Biofuels.	
Focus is on biodigesters and looking at dairy effluent and the by products from this to produce biodiesel	
What are you interested in finding out at the Workshop?	
Networking.	

Name of Attendee (s)	Franz Resl
Organisation/ company	Christchurch City Council
E-mail address	
Tel numbers	
Please provide an outline of your activities / interests in relation to Liquid Biofuels.	
What are you interested in finding out at the Workshop?	
Tour Host	

Name of Attendee (s)	Chris Bathurst
Organisation/ company	Solray Energy
E-mail address	
Tel numbers	
Please provide an outline of your activities / interests in relation to Liquid Biofuels.	
http://solrayenergy.com/ http://www.stuff.co.nz/southland-times/news/801459 Solray Energy is a joint venture company combining the Chemical Engineering skills of Solvent Rescue and the Mechanical Engineering skills of Rayners. Solvent Rescue Ltd is a Christchurch based company specialising in reconstituting used solvents and other chemical liquids into purer or more valuable products. The expertise gained in this field has been regularly sought for other specialised chemical engineering projects. Rayners Ltd is an Invercargill based company in the HVAC Industry and manufacture of high temperature pressure vessels. Solray Energy acknowledges the support of the Christchurch City Council, Canterbury University, SIFT, NIWA, FoRST, NZTE and Investment New Zealand	
What are you interested in finding out at the Workshop?	
Tour Host	

Name of Attendee (s)	Julie Simmers
Organisation/ company	New Plymouth District Council
E-mail address	simmersj@npdc.govt.nz
Tel numbers	06 759 6060
Please provide an outline of your activities / interests in relation to biogas.	
Undertaking project work for New Plymouth District Council with respect to collection of landfill gas for ultimate use as an energy source. We are starting the process of reviewing different options. Interest in issues around design of landfill gas collection system to be fitted for landfill which is	

currently operational. Also questions regarding quantities and quality of gas required for effective flaring.

What are you interested in finding out at the workshop?

Review what others have done in this area. Particularly interested in Spicer Landfill if anyone has had experience there, as it is a similar size to New Plymouth landfill. Also very interested in Burwood Landfill Gas Plant.

Will there be any discussion around ETS charges?

Name of Attendee (s)	James Young
Organisation/ company	Biogas Energy
E-mail address	James@BiogasEnergy
Tel numbers	021 771 612
Please provide an outline of your activities / interests in relation to biogas.	
Commercialisation of Biogas	
What are you interested in finding out at the workshop?	
Networking	

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