

## ALCAS Update

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The ALCAS Committee of Management (CoM) has responsibility for the day-to-day decisions that direct ALCAS' calendar and the use of its income from membership, consulting and meeting management. The CoM needs a good mix of experience and skills, including some people who have been members since ALCAS was created, and some who only joined just last year. At the AGM in September ALCAS office bearers were elected and we saw some new faces and renewed enthusiasm for developing AusLCI and ALCAS communications, amongst other agenda items. If you're interested in getting involved, feel free to join us at meetings – who knows – you might also decide to stand for office next time.

It has been a big year for ALCAS. We provided feedback to the Federal Government on the proposed National Greenhouse Offset Standard and other matters. We lost a professional newsletter editor but have still managed to put out 3 newsletters (thanks to Alastair Woodard for standing in the breach) and run a survey of members regarding the newsletter content and format (see Andrew Carre's article in this edition). We have gained a number of new individual and corporate members, run a national conference\* and roundtables on water use\*, AusLCI Data Collection Guidelines, [social...] and biodiversity metrics (see Fabiano Ximenes' article in this edition). The creation of Life Cycle Association of New Zealand (LCANZ) in June presents the opportunity for increased trans-Tasman collaboration, and to encourage broader international collaboration an editorial was placed in the International Journal of LCA (Int J LCA 14(6)503-507) to draw attention to what ALCAS is doing.

Probably the biggest thing to happen in 2009 has been ALCAS' adoption of AusLCI as an ALCAS project. AusLCI will continue to be the biggest item on the agenda for some time to come, and more roundtables are planned on water use and weighting over the next months. To assist with promotion of AusLCI in government and industry, ALCAS signed an agreement with BPIC to access the computational infrastructure developed with ICIP funding. This valuable step forward will enable ALCAS to more easily demonstrate the benefits of AusLCI to potential supporters. The AusLCI project has also won some additional funding from the Federal Government via an ARC Linkage Grant – this is intended to improve the LCI of some basic chemicals.

So LCA has moved forward in 2009 in Australia and ALCAS continues to play an important role in fostering its use. The AGM put talented people onto the Committee of Management and 2010 will no doubt be a busier year than ever for ALCAS.

\* See the previous edition of ALCAS News

## **ALCAS President's Report**

### **Nigel Howard**

This is my first contribution to the ALCAS newsletter as President and I think we may be about to take LCA to a new level (dare I say mainstream) in Australia for a number of reasons:

**Climate Change:** is now the hottest topic (pun intended) in the media alongside the global financial crisis. We are all looking to Copenhagen with high expectations of an Obama administration to show international leadership, but recognising that the main battle will have to be won domestically in the US. Here in Australia the politics of CPRS and ETS have become also become hot topics politically and business has suddenly realised that it hasn't got the vaguest clue about how financially exposed it may be to the price rises that will flow down from the Scope 3 emissions in its supply chain and into its products and its competitors products. LCA (or the GWP component of it) is the only way they can find out. The challenge for ALCAS is to align its promotion of LCA effectively with this agenda both to industry and to governments.

**Global Financial Crisis:** or more correctly Australia's early emergence from it (I hope I am not speaking too soon). This puts Australian business in a position to adopt new practices and ideas more quickly than other nations because its economy is growing.

**ALCAS/AusLCI Merger:** is a very exciting development with huge potential to embed LCA into business thinking and government policy and regulation. For ALCAS this is a huge opportunity, but also one that carries significant responsibilities and potential liabilities. ALCAS/AusLCI must provide high quality, reliable, well documented data that is "critically reviewed" by competent practitioners. ALCAS/AusLCI must establish the right structure, governance, processes for approval and appeal, training and credentials for reviewers. ALCAS/AusLCI must be able to fund this activity and must rethink its business planning and budgeting to make sure that this is feasible.

**AusLCI and BPIC/ICIP Progress:** AusLCI and the BPIC/ICIP projects have made considerable progress and in doing so have promoted LCA into many sectors of the Australian economy. Now we must build on this progress by energising all sectors to develop their data for AusLCI publication, encouraging business to engage as members of ALCAS and bring business talent and expertise into ALCAS to raise the professionalism of everything that ALCAS/AusLCI undertakes. To do this effectively we also need to energise all regions of Australia – I think we need regional or City based Chapters and Perth has already agreed to form one (Perth members please contact Michele Rosano of Curtin University if you wish to join/participate).

**Life Cycle Association of New Zealand (LCANZ)** formed in June and presents the opportunity for greater trans-Tasman collaboration which matches how business generally sees the Australasian market.

I want to thank my colleagues on the ALCAS COM for engaging with an agenda for change – restructuring our organisation to deliver the ALCAS/AusLCI mission, recasting our business planning and budgeting and engaging with industry to make all of this happen. Now we need everyone's talents, energies and interests engaged appropriately within this new structure, hopefully leaving no one behind. If you're interested in getting more involved, please contact me and let's discuss how you can contribute.

## Energy and greenhouse gas impacts of mining and mineral processing operations

### Terry Norgate & Nawshad Haque CSIRO Minerals Down Under Flagship

CSIRO Mineral Down Under Flagship has recently undertaken life cycle assessment of the mining and mineral processing of iron ore, bauxite and copper concentrate, focussing on embodied energy and greenhouse gas emissions. The results showed that loading and hauling make the largest contributions to the total greenhouse gas emissions for the mining and processing of iron ore and bauxite. In the case of copper ore, the crushing and grinding steps make the largest contribution to the total greenhouse gas emissions for the production of copper concentrate.

These results indicate that efforts to reduce the increased greenhouse gas emissions from mining and mineral processing, anticipated in the future as a result of falling ore grades and more finer-grained deposits, should focus on loading and hauling for iron ore and bauxite, while for copper ore the focus should be on grinding.

There are a number of new and emerging technologies that could be expected to assist in this task, and these include high pressure grinding rolls and stirred mills for grinding, and further advances in diesel engine technology for loading and hauling applications.

This research article has been accepted for publication by the Journal of Cleaner Production in a forthcoming issue.

For further details, please contact [Terry.Norgate@csiro.au](mailto:Terry.Norgate@csiro.au) or [Nawshad.Haque@csiro.au](mailto:Nawshad.Haque@csiro.au)



## ALCAS Strategy

Nigel Howard

### Introduction

Nigel Howard was elected President of ALCAS on 14 September 09. In his statement seeking support for his election, he outlined some ideas for the future of ALCAS which acknowledge the very significant step taken to absorb AusLCI into ALCAS and the opportunities and responsibilities that ALCAS must now assume whilst retaining its traditional role as a learned society. ALCAS traditional role has been educating users and practitioners and promoting the uptake and use of Life Cycle Assessment in Australia, maintaining links internationally, and maintaining the highest standards of professional integrity in the conduct of LCA.

ALCAS is now entering a new era, with new prospects for the uptake of LCA in Australia for two reasons:

Firstly, in absorbing AusLCI into ALCAS, ALCAS has significantly greater opportunities to practically engage with all Australian industry and commercial sectors to encourage the development of LCI data and make the data available to LCA practitioners. There is a need to align ALCAS/AusLCI activities and strategies to make them seamless and effective.

Secondly, in addition, the building material and product sector (BPIC/ICIP) project – jointly funded by the Building Products Innovation Council and Government (AusIndustry) has developed a rudimentary database to house the building industries inventory data. A license for the web based program for this database has been donated to AusLCI and CSIRO have agreed to adapt it to ALCAS requirements to make it usable for AusLCI/ALCAS purposes. This database is a basic, practical storage medium for AusLCI data. AusLCI will very soon be in business with its doors open to accept and publish Australian LCI data. In the longer term this basic resource can be developed and extended to achieve the full functionality required for AusLCI/ALCAS.

AusLCI is now poised to become a reality and will need the enthusiastic reengagement and invigoration of the volunteers that have already given so much time and energy. ALCAS/AusLCI also faces some significant continuing challenges:

1. Funding – a clear and bankable business proposition against which to raise finances for AusLCI needs to be developed and a convincing case needs to be presented to Government presenting AusLCI as a strategic resource for Australia that requires appropriate levels of funding from Government to make AusLCI viable.
2. Sector engagement – this is patchy - some sectors are quite advanced in data gathering, others have yet to be engaged and motivated
3. AusLCI/ALCAS is still to resolve its requirements for peer review and critical review to ensure the quality of the AusLCI dataset and hence the attendant costs of this review and how these costs will be recovered (from providers of data or from users)

What follows are just the author's personal views and do not represent ALCAS policy. These are intended to start a debate. On 29th October, ALCAS Committee of Management convened to consider these and other suggestions in a more thorough review of its strategy looking forward.

## About ALCAS & LCA

**The Australian Life Cycle Assessment Society (ALCAS) is a Professional organisation for people interested in the practice, use, development and interpretation of Life Cycle Assessment (LCA).**

**The society is a not-for-profit organisation with individual and corporate members.**

**The purpose of the society is to promote and foster the responsible development and application of LCA methodology in Australia and internationally, and to represent the Australian LCA community in the international arena.**

**The society is also aimed at making a positive contribution to Ecological Sustainable Development (ESD).**

**For further information about ALCAS, including membership information, events and current projects, log on to our website at:**

**[www.alcas.asn.au](http://www.alcas.asn.au)**

## ALCAS Strategy continued .....

That ALCAS seek greater engagement with Australian industry and commerce as the custodians of LCI data and as the stewards of the future for the products and services that they produce and consume. Industry has a strong commercial incentive to engage with the way products are portrayed in marketing materials, in ecolabels and product declarations and in building rating tools etc. ALCAS offers an independent and authoritative source of reliable, consistent level playing field information which provides a secure basis for industry to evaluate its competitive position (environmentally), understand its vulnerabilities from environmental damages and innovate to mitigate them. Australian industry must become our closest allies.

That ALCAS develop and advocate a strong greenhouse gas measurement and mitigation message, providing industry and commerce with a reliable measure of its exposure to carbon price rises from the supply chain of Australian products and services. To-date most industry has considered CPRS to be just an issue for the large emissions exposed industries. However, all industries will be exposed to the trickle down effect as primary industry transfers carbon price rises down through its materials, through to products and services and into the economy as a whole. These scope 3 emissions can only be assessed using LCA and the AusLCI project will provide the best way for industry to reliably understand its carbon price exposure and innovate to mitigate it. This message gives ALCAS significant relevance and importance to industry and to government in the quest for funding.

That ALCAS go hand in hand (partner) with industry to seek the funding it needs from government to enable the majority of Australian industry and commerce (the non-emission exposed industries) to be able to start understanding its scope 3 emission exposures and innovating to mitigate them. This aligns perfectly with current government policy.

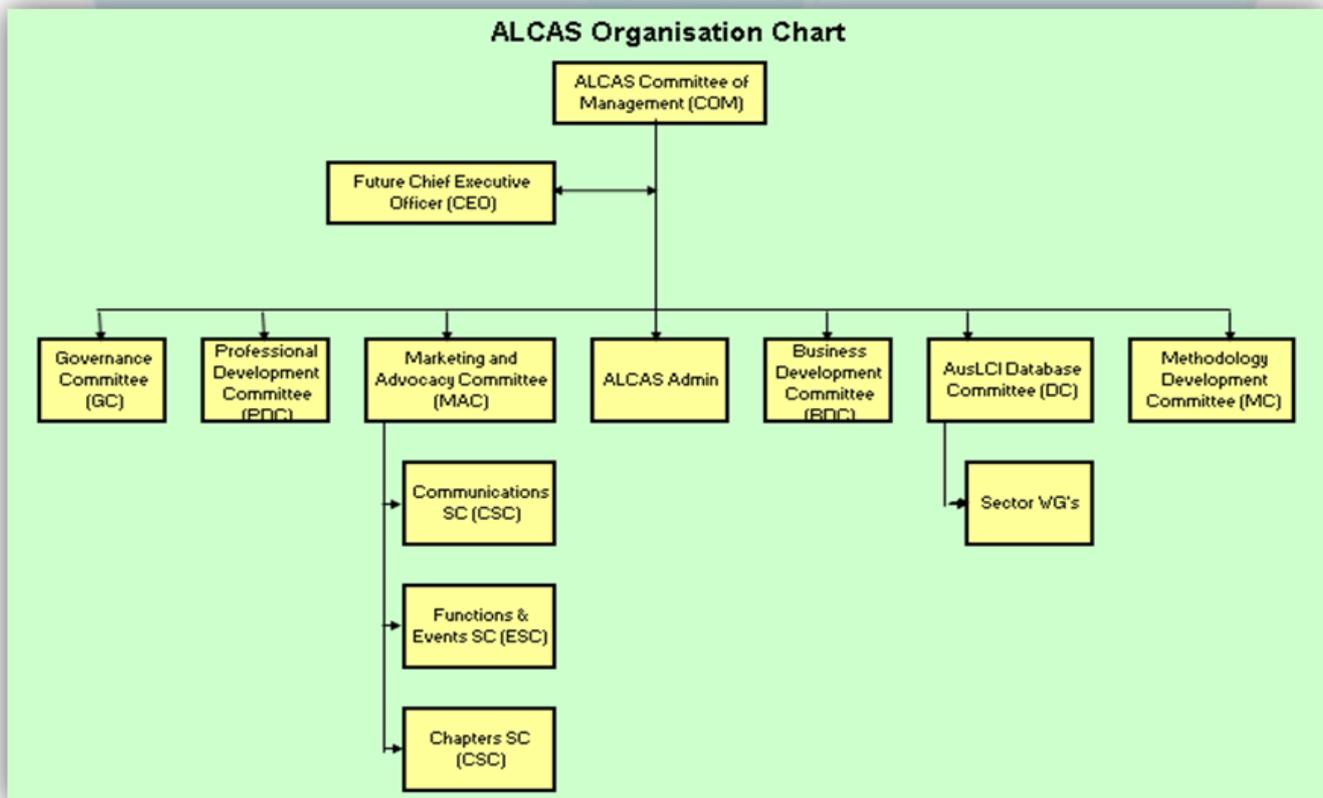
That a well funded ALCAS professionalise its services and improve its offerings to its traditional membership of LCA practitioner members, to a new membership from Australian industry and commerce and further grow its membership base and influence for the promotion of LCA in Australia. Hopefully this can include recruitment of an executive to put into action the direction of the Committee of Management and ensure the long-term viability of AusLCI.

## ALCAS Strategy continued .....

That ALCAS establish Chapters and interest groups within major population centres around Australia to broaden the appeal and value of membership – ALCAS is significantly Melbourne centric in its activities, engagement and influence and less so in other centres. Local and vigorous Chapters can provide the opportunities for LCA education and networking between potential industry and commercial clients and LCA practitioners which should be of mutual benefit to all.

That ALCAS re-examine its constitution and operations in the light of its new potential professional support opportunities; and responsibilities as the corporate body with fiduciary responsibility for AusLCI. This may include additional services such as professional recognition, advice on competent LCA practitioners (possibly formal registration), referrals for technical peer review services, engagement of LCA practitioners for AusLCI methodological review services.

The organisational structure below is currently being considered. Terms of reference are now being developed for each of the identified committees and once completed and signed off by the CoM, ALCAS members will be invited to nominate to assist on the different committees. The CoM hopes you will consider participating – stay tuned.



**Proposed ALCAS Future Organisational Structure**

## Life Cycle Association of New Zealand

Barbara Nebel

The Life Cycle Association of New Zealand (LCANZ) was established in June 2009 to provide a focal point for Life Cycle Assessment and Management work conducted in New Zealand. It aims to promote networking and knowledge sharing between organisations and people. It will also promote and raise the awareness of Life Cycle Thinking amongst the wider public and business. While LCANZ started about five years ago as an informal group of keen individuals, mainly LCA practitioners, we have now a formal recognition as an independent special interest group for LCA in New Zealand with a representative membership, including industry, practitioners and researchers. Essential for this achievement was the support from Government, especially the Ministry for Economic Development.

The management committee is currently working on two major projects. A website ([www.lcanz.org.nz](http://www.lcanz.org.nz)) will be up and running by the end of October and we are planning the first LCA conference in New Zealand for Autumn 2010. Details will be available on our website soon!

Other tasks are the development for a strategy for LCA in New Zealand and involvement and support of a national Life Cycle Inventory database for New Zealand.

If you want to get in touch with LCANZ, please contact one of the Committee members:

- + Barbara Nebel (PE-INTERNATIONAL) – President ([b.nebel@pe-international.com](mailto:b.nebel@pe-international.com))
- + Peter Garrett (ERM) – Secretary ([Peter.Garrett@erm.com](mailto:Peter.Garrett@erm.com))
- + John McArthur (Fletcher Building Ltd) – Treasurer ([john.mcarthur@fb.co.nz](mailto:john.mcarthur@fb.co.nz))
- + Sarah McLaren (Landcare Research)
- + Alistair Mowat (Zespri)
- + Andrew Alcorn
- + Andrew Barber (Agrilink)
- + Gael Ogilvie (URS)
- + Jake McLaren (Formway Furniture)

The objectives of LCANZ are:

- Provide coordinated input to the New Zealand government on its policy development for matters relating to LCA/LCM, with a view to ensuring that government is advised of current work and the views of LCA practitioners;
- Identify, prioritise and address barriers to widespread uptake of LCA/LCM, including:
  - gaps in NZ LCA/LCM expertise;
  - gaps in data;
- Provide input into relevant standards and guidelines (national and international), where it is deemed appropriate to do so;
- Review whether there is a need for professional recognition of LCA/LCM practitioners;
- Facilitate access to relevant LCA/LCM experts in New Zealand;
- Periodically review the need for LCA/LCM resources, and where a need is identified facilitate the development of its/their production;
- Provide technical advice on LCA/LCM work, where appropriate and feasible.

We are looking forward to a close Cross-Tasman collaboration!

Please see first announcement of LCANZ and NZLCM Centre Conference, 24th & 25th March 2010, Wellington, New Zealand.

## Communications Survey Outcomes

### Andrew Carre ALCAS Committee Member

Results of the recent survey of ALCAS member's views on communications were as follows:

20 responses were received for the survey, which reflects a reasonable proportion of active members; however, the respondents contain a significant proportion of committee members which may partially skew the results (at least 25%).

- The results suggest that members value receiving the newsletter and usually read it when received.
- Although that the current delivery mode as an emailed PDF is acceptable, but 50% preferred a short stub article and link. Quarterly issues seem acceptable to most (60%), as would monthly (40%).
- Content preferences vary widely in terms of topics, however most prefer an informal style with a mix of short and long articles and included graphics were relevant. "LCA applications to real problems – Australia" was seen as a major topic.
- There is also a willingness to tolerate a degree of advertising content, though not more than 10%
- There is also some willingness to contribute stories (60%).
- There was willingness from some to help run the newsletter (25%).



## ALCAS Membership

The benefits of ALCAS membership include:

- Discounted access to ALCAS events such as conferences and roundtables
- 50% discount on subscriptions to the International Journal of Life Cycle Assessment, where ALCAS has a permanent column
- Quarterly ALCAS newsletter with information on LCA developments, events and committee news.

As an ALCAS member you can:

- Be part of the Australian LCA Community and keep abreast of, and have input into, national and international issues in LCA, and related environmental tools and methods
- Help in the advancement and appropriate application of LCA and associated tools to create a more sustainable society

## International LCA Conferences 2010

[SETAC Europe 16th LCA Case Studies Symposium - From simplified LCA to advanced LCA](#),  
Poznan, Poland, 1 - 2  
February, 2010

[LCANZ and NZLCM Centre Conference](#)  
24th & 25th March 2010,  
Wellington, New Zealand

[CYCLE 2010](#), the Canadian Forum on the Life Cycle Management of Products and Services. will be held on May 4-5, 2010, in Montreal, Canada.

[20th SETAC Europe Annual Meeting](#),  
Seville, Spain, 23 - 27 May,  
2010

[Brazilian LCM Conference 2010](#), Florianopolis, SC, Brazil, 13-15 October 2010

[EcoBalance 2010](#),  
Tokyo, Japan, 9 - 12  
December 2010 (contact:  
ecobalance2010@sntt.or.jp)



1-800-331-0085

www.walmartstores.com

## Sustainable Product Index: Fact Sheet

On July 16, 2009, Walmart announced plans to develop a worldwide sustainable product index, which is expected to lead to higher quality, lower costs and measure the sustainability of products and help customers, live better in the 21st century. One of the biggest challenges we all face is measuring the sustainability of a product. Walmart believes a research-driven approach involving universities, retailers, suppliers and non-government organizations (NGOs) can accelerate and broaden this effort.

### The Need for an Index

- The world's population is increasing. It is estimated that the global population will reach 9 billion by 2050.
- The world's natural resources are decreasing. Natural resources for everything we grow, eat, drink, make, package, buy, transport and throw away is outpacing the earth's capacity to sustain it.
- Customers want more efficient, longer lasting, better performing products. They want to know:
  - the materials in the product are safe
  - that it is made well
  - the product was produced in a responsible way

### Index Step 1: Supplier Assessment

Walmart will provide each of its 100,000 global suppliers with a survey of 15 simple, but powerful, questions to evaluate their own company's sustainability. The questions are divided into four areas:

- Energy and Climate
- Natural resources
- Material efficiency
- People and Community

Under these categories are some familiar questions on greenhouse gas emissions and location of factories, but the list also includes some new areas, such as water use and solid waste produced. For a complete list of the questions, visit [walmartstores.com](http://walmartstores.com)

Walmart will ask its top tier U.S. suppliers to complete the survey by Oct.1. Outside the United States, the company will develop timelines on a country-by-country basis for suppliers to complete the survey. These are not complicated questions, but we have never systematically asked for this kind of information before. This is an important first step in assessing the sustainability of suppliers, but for true transparency, we also need a tool for the sustainability of products.

Page 1 of 2 Fact Sheet For more information, please visit [walmartstores.com](http://walmartstores.com)

## ALCAS Roundup

### Biodiversity Roundtable

Biodiversity is an abbreviation of the phrase “biological diversity” and encompasses diversity at three scales – 1) ecosystem, 2) populations and species and 3) genetic. It is a complex concept which ecologists have struggled with for decades. There have been a few attempts, but no agreements have been reached on the most appropriate technique to incorporate biodiversity impacts into LCA. In July 2007, ALCAS organised a roundtable at UNSW to identify opportunities for developing a biodiversity metric for use in the LCA framework.

Following the 2007 roundtable, NSW Department of Primary Industries (currently Industry and Investment NSW – I&I NSW) proposed a method for incorporating biodiversity into LCA. The approach relies on a series of data based questions which aims to encompass the main issues relating to biodiversity within a disturbance impact framework. Questions are asked separately for each major taxon, thereby accounting for the varying responses of species groups to the process of interest. Once established, ecologists would answer the questions for processes and thereby provide the background data for many LCIA's.

A second biodiversity roundtable was held at UNSW Wednesday 5<sup>th</sup> August 2009 with the aim of developing the proposed methods. The roundtable was attended by a range of interested parties including ecologists, LCA practitioners and representatives from the building industries.

### LCA Related Websites

**ALCAS**  
[www.alcas.asn.au](http://www.alcas.asn.au)

**AusLCI**  
[www.auslci.com.au](http://www.auslci.com.au)

**The Life Cycle Initiative**  
[www.lcinitiative.unep.fr](http://www.lcinitiative.unep.fr)

**SETAC**  
[www.setac.org/](http://www.setac.org/)

**US Life Cycle Inventory Database**  
[www.nrel.gov/lci/](http://www.nrel.gov/lci/)

**Swedish National LCA Database**  
[www.globalspine.com](http://www.globalspine.com)

**Dutch LCA Database – IVAM**  
[www.ivam.uva.nl/](http://www.ivam.uva.nl/)

**Ecoinvent**  
[www.ecoinvent.ch/](http://www.ecoinvent.ch/)

**Gabi LCA Software**  
[www.gabi-software.com/](http://www.gabi-software.com/)

**SimaPro LCA Software**  
[www.pre.nl/](http://www.pre.nl/)

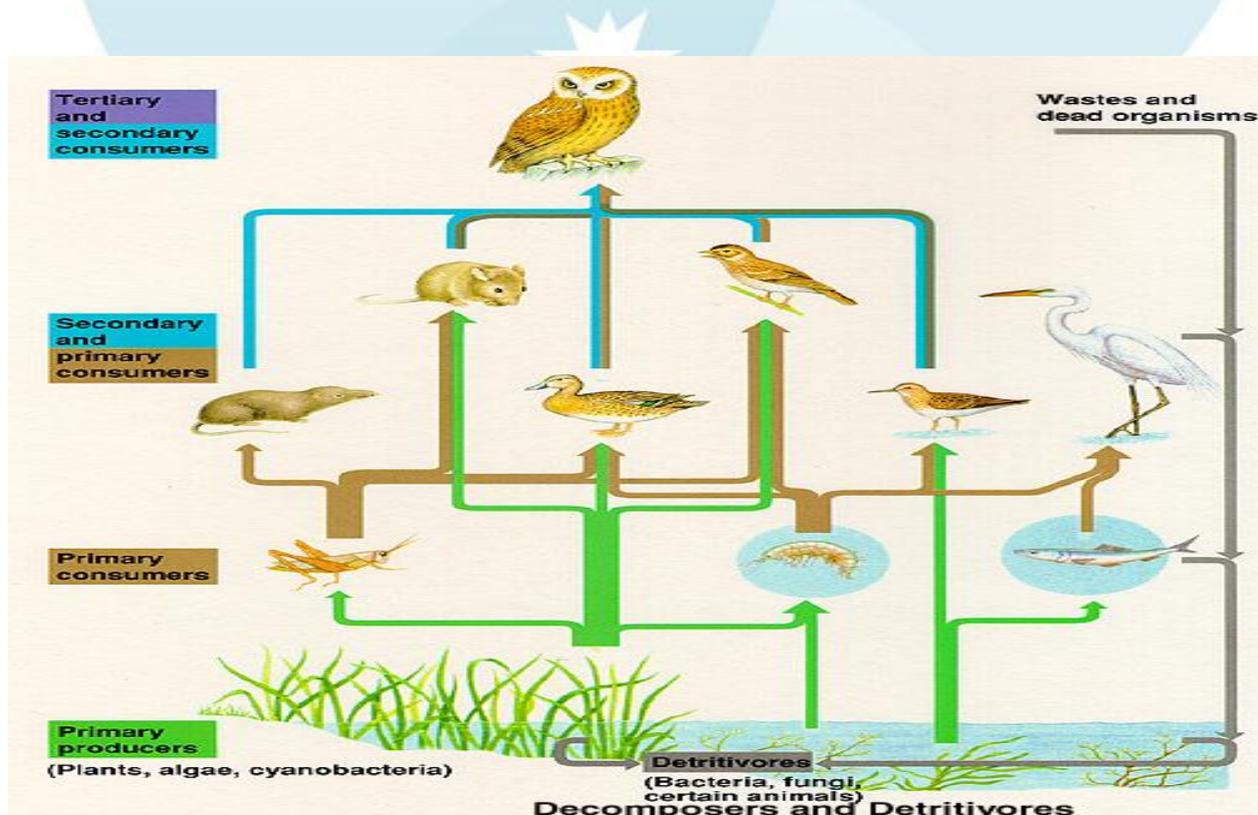
## ALCAS Biodiversity Roundtable Roundup continued ....

### Biodiversity Roundtable

Greg Peters, the chair of the Roundtable, opened proceedings and was followed by:

- Tim Grant, who spoke about the current treatment of biodiversity in LCA.
- Jonas Bengtsson (Edge Environment) then provided an insight into industry's perspective on this issue, particularly in the context of the current "BPIC LCA Project", involving all the major building material sectors.
- Professor Greg Nolan (University of Tasmania) provided a summary of the findings of a recently released report that he co-authored titled "*Methods for comparing the biodiversity impacts of timber and other building materials*".
- Trent Penman (I&I NSW), who outlined details of a method proposed by him and other researchers to account for biodiversity in LCA.

Following a fruitful discussion, the method was given in principle support and a pilot program has been proposed. I&I NSW is currently preparing a proposal to develop and pilot the method on a range of Australian processes. Strong industry support will be sought to ensure that the method is appropriate and acceptable to all parties.



## Resources and Waste Roundtable

This roundtable was held at Curtin University of Technology and was attended by about 30 delegates. The president of ALCAS attended the roundtable and presented about ALCAS and AusLCI. Many delegates were from Perth representing WA government departments (e.g. Department of Agriculture, Department of Environment and Conservation), consulting organisations, universities including many from Curtin University and CSIRO. Although the focus was on natural resources but the presentations included various areas of applications of LCA in various industrial processes and products including building infrastructure, bioenergy and biomass, solar energy, packaging, demolition waste and mining, minerals and metals. The presentation topics can be seen in the following program list and will soon be available on ALCAS website for public. The agenda was as follows:

### AGENDA

- 8:45 Arrive and coffee  
 9:00 Chair – A/Prof Dr Michele Rosano: Welcome address  
 9:10 ALCAS President – Nigel Howard: ALCAS update
- Building and Construction/Demolition sector LCA Use**
- 9:20 Nigel Howard (Edge Environment): Building material sector contribution to AusLCI  
 9:40 Tim Grant (RMIT): LCA of construction and demolition waste in WA  
 10:00 Andrew Whyte (Curtin University): Best practicable environmental options for construction and demolition waste  
 10:20 Chris Lund (GHD): LCA and infrastructure projects  
 10:40 **Morning tea**
- Energy Resources LCA Use**
- 11:00 John Bartle (DEC): Energy balance of biomass production from mallee eucalypt crops  
 11:20 Andrew Moore (PB): LCA on a 1kWp photovoltaic system  
 11:40 Wahidul Biswas (Curtin University): LCA of biofuels in Australia  
 12:00 **Lunch**
- Industry LCA Use**
- 1:00 Juanita Day (Ampcor Australasia) : LCA in the packaging industry  
 1:20 Nawshad Haque (CSIRO): LCA of Metal Production  
 1:40 Krista Imberger (PACIA): Life cycle approaches in the plastics and chemicals industries  
 2:00 Michele Rosano (Curtin University): LCA and agriculture – a WA perspective  
 2:20 **Discussions**  
 3:00 **Afternoon tea**  
 3:30 **Roundtable wrap up and way forward**  
 3:30 Resources and wastes - using LCA to increase efficiency and profitability  
 4:30 **Close**

## Review Snippets on Sustainability

### Nawshad Haque

In the sustainability context, there are three mental models and actions that are often referred in the literature. There are three broad general categories of people in the society who perceive sustainability differently. Although the number may be small, a group of people think that nature is virtually immune, thus human society can continue to depend on nature, extract and utilise natural resources with massive solid waste generation as it is required for the progress of the modern society. On the other extreme, there is a group of people who think nature is extremely fragile. This relates to extreme action analogy of going back to primitive human's cave life. However, this is impractical given our current society's needs and aspiration. A more balanced perception is that the nature is robust but with limits. If some irreversible damage is done, it may be difficult to restore. There is a sub-group within this group who advocates the use of appropriate technology. The definition of appropriate technology in this context is the technology that suits the socio-economic condition of a particular society. Generally, this group prescribes low technology given the large part of this world is not developed economically. The second sub-group of proponents is ready to accept low technology if there is no absolute alternative at all. However, there is ample opportunity to design innovative technology with clever integrated sustainable way by mimicking biological ecosystems that can maintain society's need and aspiration at the same time doing more with less and by generating minimal waste.

### Notices for upcoming newsletter:

Please find our next newsletter for announcements on upcoming roundtable topics.

Please visit our website for the list of LCA practitioners in Australia and other news and events.

## ALCAS Committee Members 2009-10

For further information in regards the ALCAS Committee feel free to contact any of the Executive members:

<b>President:</b>	Nigel Howard	(02) 8962-2644
<b>Vice President:</b>	Greg Peters	(02) 9385-5097
<b>Treasurer:</b>	Lisa Opray	0411 202 940
<b>Secretary:</b>	Alastair Woodard	(03) 9611-9058

### Committee Members:

Andrew Carre	<a href="mailto:andrew.carre@rmit.edu.au">andrew.carre@rmit.edu.au</a>
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