



## News release

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### **Rubbish – A Really Green Gas!**

Turning waste into valuable resources is the focus of Lee Walker's PhD studies. Maximising green energy (biogas) production in composting processes and converting biodegradable waste from landfill to high quality compost are key aspects of Lee's investigation.

Lee is a PhD candidate for Environmental Biotechnology CRC, at Murdoch University, in Perth, Western Australia where Lee has been optimising a composting process called DiCOM<sup>®</sup>.

"Little systematic attention has been paid to the benefits of separately composting the biodegradable part of household rubbish. Most organic waste is still buried in landfills", Lee says.

"Biogas, a renewable energy source, is produced when organic waste is placed in landfills. Even though modern landfills are designed to harness this green energy, it is difficult to control environmental factors to optimise the biogas production and the valuable residue is left buried. Consequently, an opportunity exists to produce biogas more efficiently as well as provide a value-added organic residue/compost that is environmentally beneficial".

The DiCOM<sup>®</sup> process uses two groups of naturally occurring micro-organisms that until recently were believed not to be able to co-exist. One of these groups uses the oxygen in the air and the other works in the absence of air. The second group, 'the work-horses' of the process degrades the waste and produces renewable energy in the form of biogas.

"Our research has shown that contrary to belief these two groups of micro organisms not just co-exist but can be tweaked to work together to improve the process."

"The environmentally friendly process is operated in a completely sealed tank where compost and biogas can be collected. The biogas is then turned into electricity and used to meet the energy requirements of the facility. The surplus green energy can be fed back to the grid to be made available for community use."

The knowledge gained from Lee's research will allow the DiCOM<sup>®</sup> process to more effectively deliver environmental benefits. These include: rapid waste processing; the generation of renewable energy; minimisation of wastewater production, as it is reused in the process as well as waste sanitisation.

"I'm excited to be part of groundbreaking improvements in waste management practises. Clever waste disposal and recycling practises using advanced biotechnology provide ways to achieve a cleaner and greener living environment", Lee concludes.

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For more information, please contact Mr Lee Walker on 0419 917 519.



**About EBCRC:**

Environmental Biotechnology CRC (EBCRC) develops advanced technologies based on biological systems to improve efficiency and reduce or utilise waste to benefit a wide range of industries and the environment.

EBCRC concentrates its research and development efforts in three core areas: Biofilm prevention and dispersal, rapid in-field microbial detection and control and bioprocesses such as bioremediation and industrial wastewater treatment.

EBCRC brings together the multidisciplinary skills of researchers, engineers and industry participants to bring out novel technologies in environmental, industrial, agricultural, veterinary, and medical applications.

**About DiCOM<sup>®</sup>:**

DiCOM<sup>®</sup> is a patented bioconversion process developed by AnaeCo, based in Perth WA. The system incorporates advanced sorting, recycling, anaerobic digestion and aerobic composting to recycle municipal solid waste (MSW) into renewable energy from biogas, agricultural grade compost and recyclables such as steel, aluminium, glass and plastics, thus ensuring maximum diversion from landfill and ensuring social, economic and environmentally sustainable management of MSW.