

## 2016 Semi Finalists

Following the brief overviews of each Semi Finalist, a more detailed company is profiled for all Semi Finalists in alphabetical order.

Company	State	Entry Summary	ADVANCED MANUFACTURING	CYBER SECURITY	ENERGY RESOURCES	FOOD & AGRIBUSINESS	MEDTECH & PHARMA	MINING TECH	NEW ENERGY	SMART CITIES
Advanced Fertigation Systems	WA	Advanced Fertigation Systems provides a cost-effective water and nutrient management platform, SWAN (Scheduling Water And Nutrients), that helps to manage water resources, allocations and nutrient inputs precisely and to plan.	Y			Y				Y
Aeration Control Australia	WA	Aeration Control Australia provides unmatched management of grain in storage by providing of aeration at the right temperature and humidity in order to improve the grain condition.				Y				
Aglive	VIC	Aglive has developed a system and method for digital supply chain traceability that has significantly enhanced tracking of red meat from farmer to end consumer.	Y			Y				
Airtopia	VIC	Airtopia is an air conditioning controller that integrates seamlessly with any IR (infra-red) controlled split systems allowing Building Management Systems to fully mimic the original remote control and transforming the process of air conditioning automation.								Y
Aquamation Equipment	VIC	Aquamation's Water Cremation technology uses water instead of propane gas fired incineration to cremate bodies that reduces energy use, emissions, toxic fumes and airborne mercury pollution.					Y			Y
Axis Energy Group	QLD	Axis Energy Group's vertical axis wind turbine is particularly suited to the low and turbulent flows encountered urban environments and features novel slanting blades that enhance its start-up capabilities, minimise vibrations levels and eliminate power fluctuation.							Y	Y
Conflux Technology	VIC	Conflux Technology uses metal Additive Manufacturing (3D printing) to produce a smaller, lighter and more efficient heat exchanger with intricate geometry and a high surface area density.	Y		Y				Y	
Conveyor Manufacturers Australia (CMA)	NSW	Conveyor Manufacturers Australia's REDLINE Conveyor System is a mono-rail mounted conveyor system that can be advanced and retracted into position via a pneumatic/hydraulic drive system.						Y		

Company	State	Entry Summary	ADVANCED MANUFACTURING	CYBER SECURITY	ENERGY RESOURCES	FOOD & AGRIBUSINESS	MEDTECH & PHARMA	MINING TECH	NEW ENERGY	SMART CITIES
Core Resources	QLD	Core Resources' Toowong Process is a novel technology enabling the removal of toxic contaminants from mineral concentrates produced by mines and fix them in an environmentally stable and non-toxic form.						Y		
Cortical Dynamics	WA	Cortical Dynamics has developed a disruptive Brain function monitor, the Brain Anaesthesia Response (BAR) monitor, that better detects the effect of anaesthetic agents on brain activity and aids optimal anaesthetisation.	Y				Y			
CryptoPhoto	QLD	CryptoPhoto provides better authentication and makes it fast and easy for ordinary people to login and use the internet safely, protecting against phishing scams, social engineers, fake web sites and similar attacks, even if the user is unsophisticated or unmotivated.		Y						Y
Cubic QED	NSW	Cubic QED's process captures and transforms mineral salts from the discharge water of reverse osmosis desalination into mineral carbonates that become valuable commercial minerals.						Y		Y
Elexon Mining	QLD	Elexon Mining's Cave Tracker System provides underground mine operators with the ability to measure movement in the underground ore body in near-real time to improve mine safety and productivity.						Y		
Energy Made Clean	WA	Energy Made Clean's Solar Construction offers integrated solutions to complex energy challenges including off grid power, utility and commercial scale solar, water pumping systems and lithium battery storage system.							Y	
Fulcrum 3D	NSW	Fulcrum 3D's CloudCAM is an advanced sky imaging system which utilises a ground-mounted fisheye camera together with advanced image processing to identify, categorize, track and predict cloud movement over solar photovoltaic power plants.							Y	
Gamechanger Technologies	VIC	Gamechanger Technologies VForce® Compound Motion technology for wind turbines and other airfoils provides variable angle of deflection and extension (morphing) that other systems cannot achieve.	Y						Y	
Greenland Systems	VIC	Greenland Systems' Evacuated Tube Solar Thermal collector is capable of efficiently raising the temperature of a Heat Transfer Fluid to 200C for direct applications for industry.							Y	
Heat Trap Solar	WA	Heat Trap's Emergency Safety Shower Chiller cools unsafe incoming hot water making safety shower and/or eye baths safe to use.						Y		

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HMS Group of Companies Australia	NSW	HMS Group's remote controlled mini loader for open cut mines or underground mines is designed to safely collect the coal that drops from the conveyor belt whilst the belt is still operating.						Y		
Imunexus	VIC	Imunexus improves the cancer killing ability of existing antibody drugs by quickly and easily creating bispecific biobetter versions using small antibody-like modules called "Imunexins" that can be engineered to bind to any specific target.					Y			
Independent Products	VIC	Independent Products' uses the waste-water created by air conditioners to improve energy efficiency by up to 40% and can be retrofitted to most of the world's split system air conditioning and refrigeration units.							Y	Y
Long Pipes	WA	Long Pipes' Fluid Highway is a continuous joint-free pipe, produced at 20kms/day using composite pipe technology cured onsite to provide the lightest, strongest, toughest, fastest to install, longest lasting, cheapest solution for long distance transportation of gases and fluids.			Y	Y				
MAKO Turbines	NSW	MAKO Turbines' tidal technology has been designed to produce predictable/baseload renewable electricity from free-flowing water in tides, rivers, canals, inter-island channels or tailraces of hydro dams around the world.							Y	
Medical Safety Systems	NSW	Medical Safety Systems' RiskMx continuously monitors pathology and other patient-level data using pre-defined algorithms that provide the basis for automated, real-time, healthcare practitioner-friendly Risk Management Plan implementation.					Y			
Micronised Mineral Solutions	NT	Micronised Mineral Solutions has developed a solution that enables faster and more efficient decontamination of toxic mine water through the removal of 99.8% of dissolved metals and re-balancing water pH to meet environmental requirements.						Y		
Ozius Spatial	QLD	Ozius Spatial's Naxia Land Management Tools are a suite of spatial information tools derived from remote sensing analytics and used for environmental monitoring and land management.			Y			Y		Y
Reservoir Rock Technologies	WA	Reservoir Rock Technologies has developed a highly efficient automated imaging, computer based process for analysis of core samples in the oil and gas industry.			Y			Y		
SCT Operations	NSW	SCT Operations' ANZI cell is a device that measures the three dimensional in situ stresses in rock, a key parameter in mining, tunnelling, and related industries.			Y			Y		

Company	State	Entry Summary	ADVANCED MANUFACTURING	CYBER SECURITY	ENERGY RESOURCES	FOOD & AGRIBUSINESS	MEDTECH & PHARMA	MINING TECH	NEW ENERGY	SMART CITIES
Secure Code Warrior	NSW	Secure Code Warrior is a web-based gamified skills development and assessment platform that mimics real-life security vulnerabilities in software code, provides learning opportunities for developers to locate, identify and fix these vulnerabilities.		Y						
StabilCo	NSW	StabilCo's MatrixMaterials provide an innovative roadbase-and-rail infrastructure solution from waste by capitalising on scientifically designed and engineered material properties to deliver improved performance and cost benefits to both infrastructure owners and the environment.								Y
Stochastic Simulation	WA	Stochastic Simulation's ResAssure is a revolutionary reservoir simulation tool for the upstream oil and gas industry that enables the industry to confidently make development decisions with previously unmatched confidence and speed.			Y					
SunSHIFT	NSW	SunSHIFT is a pre-engineered, pre-fabricated, moveable turnkey solar-PV solution specifically designed to overcome the limitations of traditional solar-PV and enable new users, such as miners, to adopt alternative energy.						Y	Y	
SupraG Energy	VIC	SupraG Energy is a graphene technology commercialization company which develops next-generation high-energy-density energy storage devices, including supercapacitors, for power management and transportation applications.							Y	
Taggle Systems	NSW	Taggle Systems builds and operates a low power wide area radio network enabling the highly efficient collection of vast amounts of data from connected devices such as water meters.								Y
V2H International	QLD	V2H International has developed innovative lateral drilling technology using high pressure water jetting for the global oil and natural gas industry that radically enhances the hydrocarbon production of new and existing wells.			Y					
Vectus Biosystems	NSW	Vectus Biosystems has developed a platform technology that allows the production of small molecules that mimic the activity of the vasoactive intestinal peptide (VIP), allowing construction of more than 70 compounds with anti-hypertensive and/or anti-fibrotic properties.					Y			
Wattwatchers	NSW	Wattwatchers has developed the ultra-compact Auditor series of internet appliances for energy that deliver accurate, real-time energy management over the internet independently of billing meters and equipment manufacturers' monitoring systems.							Y	
Worldpoly	VIC	Worldpoly's Australian PolyForce technology provides automated, safe and consistent welding of HDPE pipe systems using current hydraulics and electronic controls and designed for remote and rugged use.			Y			Y		



# Advanced Fertigation Systems



## CAPABILITIES

- AFS facilitates effective and efficient water and fertiliser use for any managed plant population
- AFS develops analytic platforms for application of technology driven plant production
- Solutions are applicable by private, public and corporate entities for maximising resource use efficiency, and monitoring of related performance measures
- Provide an evidence base for adaptive management and for timely decision-making
- Reporting for accountability, regulatory compliance

## DISCRIMINATORS

- AFS's SWAN (Scheduling Water and Nutrients) platform integrates water and nutrient budgeting and accounting
- Platform incorporates actual (historical) and predictive data to generate a scheduling program for irrigation and nutrient application
- Processing of remote telemetric data sources to deliver a "cloud-based" analytic tool to mobile devices and desktop computers
- Incorporation of satellite mapping technology to provide NDVI data as a qualitative performance measure
- Real-time record keeping and budget-to-actual reporting for irrigation/fertiliser delivery (accounting and compliance)

## KEY CUSTOMERS

- Local councils & sporting bodies who manage public open space parkland
- Government authorities who have the oversight of water and/or nutrient resource use
- Large scale irrigators within the fodder, cereal cropping and cotton sectors
- Smaller scale irrigators in the horticultural sector including wine grapes, citrus, stone fruits and nut production

## KEY PARTNERS

- Technology partner: NGIS Australia
- Govt sector: Dept of Agriculture & Food of WA
- Private sector consulting: Acknowledge

## QUALITY APPROVALS & AWARDS

- Smart Approved Watermark

## CONTACT DETAILS

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## CAPABILITIES

- Unique method of Drying and Cooling grain in storage
- Complete turnkey solutions that include switchboard manufacture and fan supply.
- Software developed to provide a dedicated app for the remote control and monitoring of the system
- Integration of the Aeration system with material handling and power supply alternatives

## DISCRIMINATORS

- ACA controllers uniquely control the activation of the fans based on the condition of the grain and not just on the ambient condition as with all other controllers.
- There is only one other manufacturer in the world that uses condition feedback but that relies on the installation of sensor cables. Cables that are damage prone and only measure a very small area around the sensor
- The Aeration Manager uses a predictive algorithm that avoids the use of sensors in the silo

## KEY CUSTOMERS

- CBH, Western Australia
- Bungulla farming, WA

## KEY PARTNERS

- Prairie And Agricultural Machinery Institute
- GRDC
- CSIRO

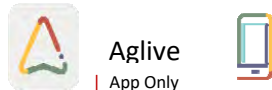
## QUALITY APPROVALS & AWARDS

- ISO 9001:2008
- New Inventors Award ABC TV
- WA Department of Agriculture

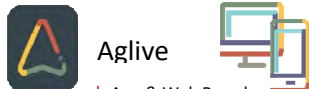
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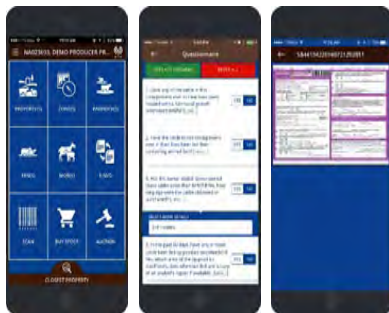




**Aglive**  
| App Only  
| MOB



**Aglive**  
| App & Web Based  
| MOB & Individual Movements



## CAPABILITIES

- Software application (app) for the electronic National Vendor Declaration (eNVD®) system
- Fully customisable farm livestock & management reporting suite allowing management of individual and mob based animal movements
- Cloud based platform to track livestock using location enabled mobile devices
- Unique digital geo-string enabling animal lifetime traceability & seamless provenance validation
- Flexible data capture platform with the capability to extend the technology and share data across additional industry verticals (e.g. Horticulture)
- A Global software solution for global food trust & provenance

## DISCRIMINATORS

- IntegriData® - capturing, transferring and receiving data of eNVD's across the livestock value chain
- Digital Geo-String – which enables Aglive to turn existing industry data points into clear, concise, actionable information
- Open architecture data warehouse and can share data with other systems via web services, API, or import/export CSV wizards etc.
- Scalable to enable varied industries and multiple industry verticals (e.g.)
- A disruptive & industry enabling technology
- A platform that employs block-chain attributes providing traceability, biosecurity, food safety and livestock management.
- Patent pending

## KEY CUSTOMERS

- Farmers/Producers
- Livestock Transporters
- Feedlots
- Livestock Agents & Saleyards
- Meat Processors

## KEY PARTNERS

- Meat & Livestock Australia (MLA)
- SAFEMEAT

## QUALITY APPROVALS & AWARDS

- 2015 CBA Agriculture Innovation Award
- 2014 Telstra Advanced Technology Award
- 2014 ICT Industry RFID Invention Award
- 2014 NAB Agribusiness Innovation Award

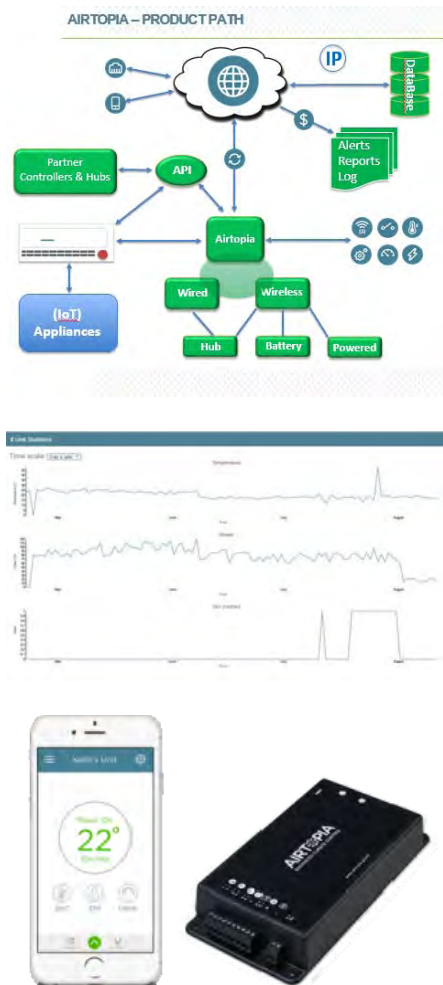
## CONTACT DETAILS

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# Airtopia by iCONNECTbms



## CAPABILITIES

- Airtopia is a technologically advanced monitoring, notification and scheduling system for controlling split system air conditioning.
- Airtopia delivers optimum air comfort, significant energy savings, and asset protection all year round.
- Airtopia fully mimics remote controllers and permits access and control via smart devices to any number of devices from anywhere in the world.
- Airtopia's intuitive, historical and predictive algorithms are designed for lifestyle, energy management, and advanced statistical Reporting of any device with an Airtopia controller.

## DISCRIMINATORS

- Airtopia disruptively advances the control of air conditioners; adding hitherto unavailable capability for installers and users alike.
- Installation requires no IR code learning. What once took 8 hours now takes less than 10 minutes.
- Airtopia is compatible with all IR split system air conditioning unit brands. It intuitively adapts to a wide range of remote commands. It uses advanced notification, monitoring, scheduling to ensure desired air temperature at all times.
- The Airtopia Application Program Interface (API) provides a simple open platform for any third party automation manufacture to integrate with the Airtopia products.

## KEY CUSTOMERS

- Residential and Commercial Building Automation Integrators (presently selling into 17 countries)
- Aged Care Facilities
- Hotels and Motels
- Hospitality
- Education
- Data Comms Rooms
- Offices and Retail
- Government Bodies
- Council Facilities
- Air Conditioner Installers

## KEY PARTNERS

- Schneider Electric
- Crestron
- Control4
- Push Control
- Clipsal CBUS

## QUALITY APPROVALS & AWARDS

- Certificate of Compliance EN 55022 and AS/NZS CISPR 22 Report No. M140709
- R & D grants totalling \$175,000
- IP and TM protected.

## CONTACT DETAILS

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# Aquamation



## CAPABILITIES

- Developing new human body disposal technology that dramatically reduces toxic, carcinogenic, pollution created by existing systems.
- Successful trials, about to go fully commercial.
- An Australian Made product.
- Aquamation promises considerable returns on capital investment.

## DISCRIMINATORS

- Aquamation uses only 5-10% of the energy of cremation.
- Demonstrated reduction in toxic pollution including mercury and the carcinogenic chemicals used in embalming.
- High level of public interest and excellent market research indicators.
- A very high level of interest internationally in Aquamation.
- Aquamation is approved by the major religions and is acceptable in most religious traditions.

## KEY CUSTOMERS

- Funeral Directors
- Cemeteries
- Crematorium

## KEY PARTNERS

- Contracts in place with funeral directors and cemeteries.
- Distribution agreement in the USA

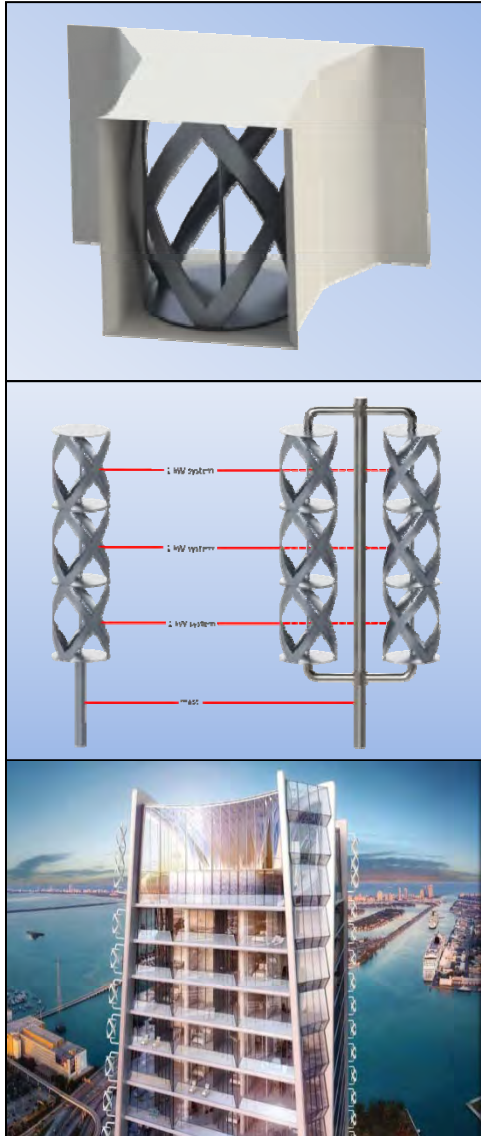
## QUALITY APPROVALS & AWARDS

- We have recently been approved for \$300,000 R&D Tax Incentives, otherwise we have been entirely self-funded.
- Semi Finalist in Australian Technology Competition 2016

## CONTACT DETAILS

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## CAPABILITIES

- Provides viable commercial volume power to grid-connected and off-grid energy users
- Is a clean and reliable source of energy that provides customers with certainty of energy costs
- Produces energy even in turbulent flows and low wind velocity sites, allowing for massive distributed power uptake
- Smooths out costly power spikes associated with traditional energy supply by electricity grids
- Combines with solar and energy storage to provide hybrid power solutions
- Has application in marine energy and offshore wind energy extraction

## DISCRIMINATORS

- Patented and innovative technology that is uniquely suited to the built environment where it operates efficiently, safely, silently and blends in architecturally
- Provides compelling economics by being the lowest cost commercial quality turbine and providing customers with up to 335% returns
- Turbines are mass-produced modular and stackable units, allowing for minimal installation costs, limited downtime and quick and easy replacement if a unit fails
- Turbines can be ducted which increases power output by up to 5 times
- Produces up to 18 times more power than a solar installation of the same footprint

## KEY CUSTOMERS

- Entertainment venues, hotel chains (e.g. SeaWorld Australia & Village Roadshow)
- Global industrial & commercial enterprises (e.g. Sharikah Fanniyah Omaniya, Oman)
- High-rise residential
- Off-grid energy users including remote/rural industrial and commercial enterprises, island resorts and communities, mining, defence, commercial ships

## KEY PARTNERS

- Athenta (UK)
- University of Queensland
- Bond University
- Worley Parsons, SLR Consulting
- DIAB Group / CCG Composites

## QUALITY APPROVALS & AWARDS

- Advance Queensland Ignite Fund recipient
- Semi Finalist in Australian Technology Competition 2016

## CONTACT DETAILS

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## CAPABILITIES

- Design Engineering for Additive Manufacturing
- Supply of Metal Additive Manufactured goods
- Innovations in functional applications of Additive Manufacturing
- Advancement in Heat Exchanger technologies utilising Additive Manufacturing
- Advanced simulations of thermos-fluidics utilising Computational Fluid Dynamic modelling

## DISCRIMINATORS

- International design patent
- Founders' 12 year experience in Additive Manufacturing.
- Backing of world leading supplier of metal Additive Manufacturing Printing Machines
- Founders relationships directly into early entry segments

## KEY CUSTOMERS

- Ongoing enquiry from multiple potential customers from Automotive, Aerospace, Chemical Processing & Data Centre cooling markets

## QUALITY APPROVALS & AWARDS

- Supply chain certified to ISO 9001:2008
- In certification process for AS9100

## KEY PARTNERS

- EOS Gmbh
- CSIRO
- Deakin University
- Amaero Pty Ltd

## CONTACT DETAILS

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**conflux**  
 TECHNOLOGY



## CAPABILITIES

- Engineering and design of innovative solutions in the mining and construction industries
- Partnerships with multiple world-class manufacturing facilities
- Manufacturing and distribution networks throughout Australia and China.

## DISCRIMINATORS

- REDLINE Conveyor system; CMA's Flagship product
- Patented rapid installation conveyor system
- Patented "Roll-Over" replacement idler system
- Patented installation and recovery process for installing and removing conveyor structure

## KEY CUSTOMERS

- CMA is currently in discussions with multiple end users of the REDLINE Conveyor system and potential distributors throughout Australia and Asia.

## KEY PARTNERS

- Equipment Resource Group
- China Coal Engineering and Technology Group (CCTEG)

## QUALITY APPROVALS & AWARDS

- ISO 9001
- ISO 14001
- OHSAS 18001

## CONTACT DETAILS

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**Conveyor Manufacturers**  
Australia



## CAPABILITIES

- The Toowong Process is a novel technology enabling the removal of toxic contaminants from mineral concentrates produced by mines.
- It fixes the contaminants in an environmentally stable form.
- The core innovation is a newly developed chemical process that leaches contaminants from specific mineral species.
- The chemistry achieves very effective contaminant removal with minimal use of expensive reagents.
- The Technology is a fully integrated, hygienic, continuous process.
- The extracted contaminants are disposed of in an environmentally stable and sustainable manner.

## DISCRIMINATORS

- The Toowong Process addresses a profound global environmental problem **for which there are currently no widely used solutions.**
- Globally, mines' contaminant levels are rising while there are increasing constraints on shipping mineral products with elevated contaminants.
- The Toowong Process is a novel technology for cleaning-up mineral products. **No alternative cost-effective solutions are yet established to address this issue.** The technology will enable mining operations to remove contaminants to dispose of them in an environmentally sustainable manner, and then ship the products in a clean form.

## KEY CUSTOMERS

- Mining companies with base metals projects where sale of products is significantly compromised (or impossible) due to elevated contaminants
- Mining companies with gold-antimony projects where use of the technology will enable the antimony co-product to be recovered and valorised

## KEY PARTNERS

- Core currently works with a range of well-regarded engineering partners for the delivery of mineral processing projects.
- As part of the Toowong project, Core is forming a Project Delivery Partnership with a tier-one engineering group to support delivery of the Toowong Process.

## QUALITY APPROVALS & AWARDS

- In April 2016, Core was awarded a ~\$1 million "Accelerating Commercialisation" grant from the Australian Commonwealth Government for the commercialisation of the Toowong Process.
- Core was an "Australian Innovation Challenge" 2015 finalist for its development of the Toowong Process.

## CONTACT DETAILS

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## CAPABILITIES

- Developer and marketer of BAR Monitor, a paradigm busting next generation brain function monitor
- Strong Patent position – 5 patent families with 22 applications - 19 currently granted
- TGA & CE Mark Approved, enabling Cortical to earn an ongoing revenue stream
- Cutting edge research and development capabilities into the genesis of brain electrical activity which will enable development of ground breaking medical devices
- Experienced team of professionals including neuroscientists, physicians, electrical engineers and business developers, with strong capabilities

## DISCRIMINATORS

- Only EEG based depth of anaesthesia monitor to differentiate hypnotic (level of consciousness) and analgesic (pain relief) components of anaesthesia
- BAR Monitor can detect a larger range of sedative and anaesthetic agents which other depth of anaesthesia monitors cannot detect
- Produces a reading with a 2-second delay, against around 30 seconds for leading industry competitor
- Reduces risk of waking or recall during the surgical procedure
- Reduced risk of receiving too high a dose of anaesthetic agent which may lead to severe post-operative complications
- Reduces risk of litigation due to patients experiencing awareness and discomfort during surgery
- Only model with algorithms based on a model of brain electrical activity derived from physiological principals

## KEY CUSTOMERS

- Hospitals
- Anaesthetists
- Clinical Research Labs

## KEY PARTNERS

- Swinburne University of Technology
- St. Vincent's Hospital Melbourne (clinical trial of BAR Monitor)
- University Medical Centre Groningen (co-authored publications on BAR Monitor)
- Device Technologies Australia

## Quality Approvals & Awards

- 2004 – National Finalist in the Sensis Business Ideas Competition
- 2004 – Dept of Comms, Information Technology & Arts \$30,000 funding received, to develop Proof of Concept device.

- 2007 – NHMRC Development Grant – Commercial Testing of physiologically based theory of oscillatory brain electrical activity in anaesthesia monitoring
- 2011 Australian Innovation Challenge finalist
- 2012- ARC Linkage Grant- Model-based estimation methods for improved classification of electroencephalographic data: application to monitoring depth of anaesthesia
- 2015 ISO 13485 certified
- 2015 TGA approval received
- 2016 CE Mark Approval received

## CONTACT DETAILS

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## CAPABILITIES

- Fast, easy, secure logins

Our tech makes the internet safe for everyday users, and makes it a **lot** faster and easier to get things done... safely!

- Block Phishing
- Neutralize Malware

Phishing and Malware cause more than 90% of all internet security break-ins!

We block both.

- Call-Centre & in-person instant customer identification (with non-repudiation)
- Transaction Digital Signatures with Non-repudiation

We protect customers against evil fraudsters, and we also protect our users against possible fraudulent customers as well. Always: fast and easy.

## DISCRIMINATORS

- Fast and Easy:- Nothing is more important to security! If it's slow or hard, nobody wants to (or can) use it.
- Significantly stronger security than any competing product. Enormously broad threat-protection coverage.
- Mutual Authentication; nobody else has a working solution to this.
- Patent Granted (2012 – priority date 2007) and other patents pending.
- Easy to get started for users. Easy to deploy for businesses. Strong protection suitable for everyday people, including unmotivated and unsophisticated users.

## KEY CUSTOMERS

- Banking (presently with tech deployed in proof-of-concept stage with “big 4” bank)
- Government (DTO, QGov, etc)
- Online hosting and cloud (Internet.bs, Nephoscale, etc)
- Social, e-commerce, etc: everything that has a password can be safer, faster, and easier with CryptoPhoto.

## KEY PARTNERS

- TATA Consultancy Services
- Several Australian banks (confidential)
- Microsoft Ventures
- Several cloud platforms (confidential)

## QUALITY APPROVALS & AWARDS

- TCS Co-Innovation winner (current)
- Microsoft Ventures 2015 Alumni
- The-Australian Innovation Challenge 2012
- 2015 iAwards; Financial-Category National Winner
- NIST SP800 compliance

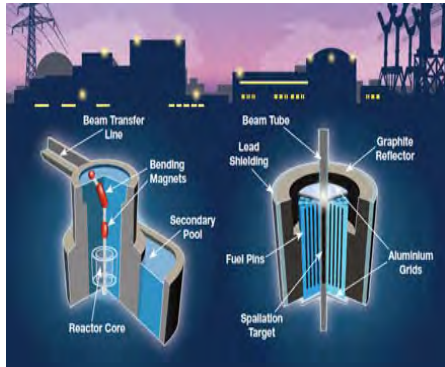
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# Cubic QED



## CAPABILITIES

- Uses CO2 to transform desalination reject water to make commercial minerals and uses one to chemically separate thorium from flyash and rare earths for a vertically integrated zero emission energy system to power desalination.
- Reduces CO2 of coal or gas base load power and makes desal carbon neutral. Extends life of coal / gas power lowering peak coal Institutional investor losses.
- Commercial minerals enable early payback of plant, lowers cost of energy and increases yield of lower cost RO desalinated water.
- Creates low cost Mg metal process, substituting imports. Develops new flyash products & cleans up U and Th ash sites

## DISCRIMINATORS

- No other desalination technology cuts energy by 1/3 and reduces desal plant payback period by 1/3 through sale of commercial by products
- No other RO desalination process extracts minerals from its 50% waste stream and doubles output of water without huge energy penalty
- No other RO desalination process creates multiple revenues by carbonated minerals of Ca, Mg, Na, K, and potentially Li
- No other desalination process produces by products of Ca & Mg to make a proprietary mg metal process
- No other process creates neutral CO2 emission for SWRO Desalination using mineral carbonation of CO2

## KEY CUSTOMERS

- Power & Water Utilities
- Chinese Government water & energy 5 year plan
- Improved economics for Magnesium metal producers in China
- Irrigators / horticulture/ commercial scale aquaponics, land reclamation in China
- Building materials from flyash for brick and cement, pozzolonic building materials technology & soil improvement projects in China

## KEY PARTNERS

- UNSW Tyree Energy Unit
- China Innovation Fund
- CAE Holdings Ltd (HK)
- UNSW / Cubic J/V

## QUALITY APPROVALS & AWARDS

- Two ICT Patents for mineral removal and for treated water reuse for algal biomass products
- Federal Govt grant for the process design and NSW State Govt grant for water reuse scheme
- Third Party Independent review confirmed process sits within economic global cost curve for Mg metal

## CONTACT DETAILS

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 M: 0407 493 253  
 CEO: David McMurrin





## CAPABILITIES

- Innovative Geotechnical In-ground monitoring system.
- Wireless in-ground monitoring
- Cave Back and Flow Monitoring
- Sublevel Caving Drill and Blast Improvement
- In-house development and manufacturing of monitoring systems

## DISCRIMINATORS

- Complementing traditional geotechnical monitoring systems

Video link:

<https://youtu.be/EGHfcrP-Vf8>

## KEY CUSTOMERS

- Rio Tinto
- Newcrest Mining
- Codelco
- Glencore
- BHP Billiton

## QUALITY APPROVALS & AWARDS

- ISO 9001

## KEY PARTNERS

- CRC Mining
- CSIRO
- University of Chile
- Rio Tinto
- Newcrest Mining

## CONTACT DETAILS

Simon Steffen

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07 3205 8450

[www.elexonmining.com](http://www.elexonmining.com)



## Fulcrum 3D



Figure 1 – Fulcrum 3D Remote sensing



Figure 2 – Fulcrum 3D CloudCAM



Figure 3 – Fulcrum 3D Sodar

### CAPABILITIES

- Innovative Australian technology company that provides state of the art products and support to the renewable energy industry
- Developed and commercialized a range of technologies to measure weather and environmental parameters crucial to the different fields of the renewable energy industry
- This includes the development and sale of the Fulcrum 3D logger for remote sensing, Fulcrum 3D Sodar which measures wind speed and direction with sound pulses and the Fulcrum 3D CloudCAM which predicts cloud movement and solar plant output

### DISCRIMINATORS

- Australian owned and operated
- Unique technologies developed within Fulcrum 3D's R&D team
- Award winning customer service and first class on-going support
- All products are supported by a cloud-based management system that allows customers easy on-line access to data

### KEY CUSTOMERS

- Wind energy developers and operators
- Solar energy developers and operators
- Metrological utilities
- Electrical utilities

### KEY PARTNERS

- Epuron Pty Ltd
- Australian Renewable Energy Agency

### QUALITY APPROVALS & AWARDS

- Clean Energy Council innovation award finalist 2016
- Australian Technologies Competition semifinalist 2015, 2016

### CONTACT DETAILS

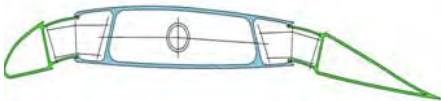
- Paul Copestake  
p.copestake@fulcrum3d.com  
(02) 8456 7400

- Matthew Willmott  
m.willmott@fulcrum3d.com  
0424 424 418

**Fulcrum 3D**  
precision sensing



Morphing Section through Morphing Airfoil



## CAPABILITIES

- Reduce fuel consumption in fixed wing aircraft by a conservatively estimated 11%.
- Reduce fuel consumption in Marinecraft by 40%.
- Reduce fuel consumption in Rotorcraft (Helicopters) estimated at 6%.
- Reduce corresponding emissions to meet statutory requirements.
- Increase energy production by 20% over conventional Wind Turbines.

## DISCRIMINATORS

- VForce® technology patented in the United States, China, Japan, Russia and Australia. Examination continuing in the European Union, Brazil, Canada and India.
- Award winning.
- There is no known technology that provides the fuel saving and energy generation benefits that VForce® technology can.
- The competition not using VForce® technology will be at a financial disadvantage due to additional operating and environmental costs.

## KEY CUSTOMERS

- Sikorsky/Lockheed Martin (in discussions)
- Brumby Aircraft (in evaluation)
- AVIC China (in evaluation)

## KEY PARTNERS

- Brumby Aircraft Australia Pty Ltd and joint venture partner the China Aviation Industry Corporation (AVIC).
- Sikorsky/Lockheed Martin currently in discussion.

## QUALITY APPROVALS & AWARDS

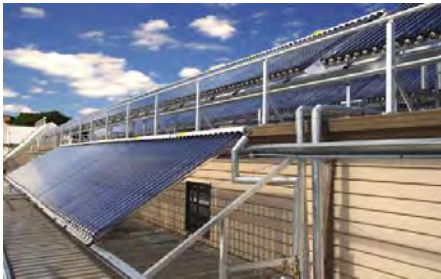
- Sikorsky (3<sup>rd</sup>) Entrepreneurial Challenge Award.
- References from Aerospace and Patent professionals

## CONTACT DETAILS

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 Suite 105  
 Royal Domain Corporate  
 370 St Kilda Road, Melbourne  
 Victoria 3004, Australia  
 john@gamechangertechnologies.com.au  
 Phone: +61 (0) 451 826199



VForce® The Next Generation Green GAMECHANGER  
 for Aircraft, Rotorcraft, Marinecraft and Windpower.  
[www.gamechangertechnologies.com.au](http://www.gamechangertechnologies.com.au)



## CAPABILITIES

- Manufacturer and Project Developer of Advanced Evacuated Tube Solar Thermal Systems for Industrial and Commercial applications
- Key technology provides efficient thermal energy delivery, for applications to 200 degrees C
- Technology is designed to be used in large scale fields (100KW to 10's of MW's)
- Internal core capability for project scoping, energy balance, load profiling, system concept and performance modelling
- Relationships with Tier 1 Engineering consultancies for detailed system design & bespoke integration

## DISCRIMINATORS

- Highest efficiency non-concentrating solar thermal collector commercially available globally
- Benefits of non-concentration means system works effectively under cloudy conditions, while avoiding mechanical complexity
- Extraordinarily robust, simple, maintenance free with very low O&M designed for use within industrial systems.
- Designed for site zero-downtime

## KEY CUSTOMERS

- Food, Dairy & Meat Processing and fruit drying Industry
- Alcoholic and non-alcoholic beverage Industry
- Commercial facilities (e.g. aged care, hospitals, large buildings, university campuses etc.)
- Minerals drying and processing industry using steam systems (enhanced oil recovery, copper electrowinning, bauxite digestion and alumina refining, shale and carbonates drying process)

## QUALITY APPROVALS & AWARDS

- Certified for all relevant Australian and European Standards
- Certified by Solar Keymark, iZes, DIN CertCo & Global Mark
- Patented "Heat Shield" technology

## CONTACT DETAILS

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# Heat Trap Solar



## CAPABILITIES

- Design, manufacture, supply and on-site commissioning of Chillers for emergency eye/face wash and deluge shower stations
- Design, manufacture and supply of Chillers for cool water supply to domestic and commercial applications in hot environments
- Renewable Energy system design expertise for residential and commercial applications.
- Manufacture, supply and installation of Hybrid Solar and heat Pump Systems throughout Australia
- “Heat Smart” Solar Hot water systems controller hardware, firmware and software design



## DISCRIMINATORS

- An International patent cover has been applied for emergency safety shower chiller
- Emergency safety shower chiller is the first to market
- Chillers especially suited for retro fitting into existing industrial applications
- Ongoing supplier of chillers to RIO TINTO, the recognised leader in mining technology and quality standards
- Only hot water heater supplier combining solar thermal and heat pump boost
- Most energy efficient hot water heater
- West Australian made

## KEY CUSTOMERS

- RIO Tinto
- FMG
- BHP
- Mining companies
- Oil and Gas companies
- Middle East Industries
- Households seeking most energy efficient hot water heater

## KEY PARTNERS

- RIO Tinto
- Galvins
- TIS Engineering
- Reece
- Clean Energy Regulator

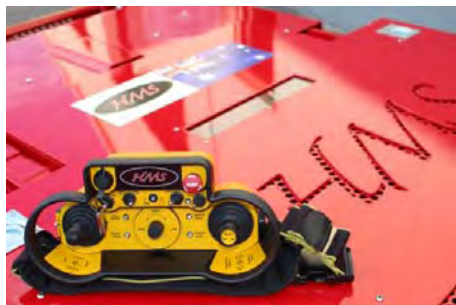
## QUALITY APPROVALS & AWARDS

- Watermark Certificate WMKA22242 AS3498
- OCEANMARK Certificate OMK22242 AS/NZ 2712
- CER IAPMO Registration
- Semi-finalist ATC 2015
- Energy Saving Product of the year 2013

## CONTACT DETAILS

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 +61 8 9242 8777  
 +61 (0) 402 838 321





## CAPABILITIES

- Remote control integration incorporating electrical, hydraulic & mechanical modifications.
- Specialised machinery design and development; concept through to manufacture, integration and commissioning.
- 3D Computer Assisted Design (CAD) utilising AutocAD Inventor.
- High quality fabrication facility incorporating small repairs workshop.
- Plant documentation design and development.
- Personnel training & development:
  - First Aid;
  - Fork Lift;
  - Aged Care;
  - Health / Business Admin;
  - RSA / RCG etc.

## DISCRIMINATORS

- 100% Australian Owned and Operated; supporting local industry and local people.
- Superior quality in design and manufacture; providing ease of maintenance, efficient use and durable equipment solutions.
- Founder has 25+ years direct mining experience across multiple major original equipment manufacturers (OEM's).
- Established supplier network harnessing local as well as international industry expertise.
- Flatter management structure enabling dynamic strategic response to evolving industry problems.

## KEY CUSTOMERS

- Lafarge Holcim
- AGL Energy
- Toro Australia
- Ausdecom

## KEY PARTNERS

- Southcott Hydraulics
- Hetricon Australia
- R&D Technology
- Dave's Paint & Panel

## QUALITY APPROVALS & AWARDS

- NSW Mining Suppliers Award (2013)
- Hunter Manufacturing Award (2014)
- Best New Product Award (Diesel, Dirt & Turf, 2016)

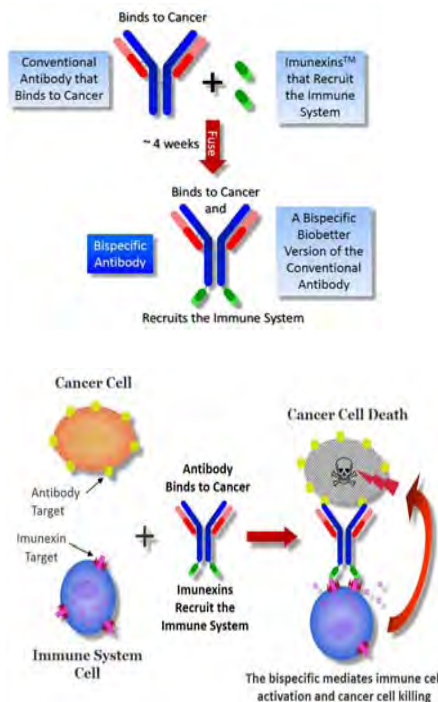
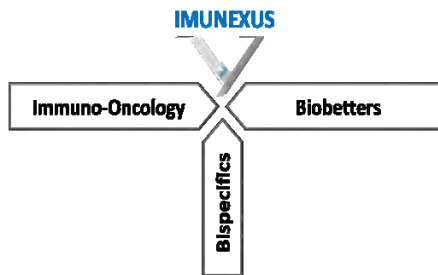
## CONTACT DETAILS

HMS Group HQ

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## CAPABILITIES

- Imunexus promises exceptional growth potential in the quickly expanding and lucrative fields of bispecifics, immune-oncology and biobetters.
- Imunexus has unique patented technology (Imunexins™) that converts existing antibodies into bispecific biobetter versions that overcome key limitations of the original antibody drugs by making them better equipped at killing cancer cells by enhancing the way they engage the body's own immune system (immune-oncology).
- The Company's unique technology platform leads to de-risked, cheaper and faster antibody drug development as products are based on well validated or existing commercial antibody drugs that are quickly and simply converted into bispecific biobetter versions.

## DISCRIMINATORS

- Imunexus' bispecific technology is modular in nature with retrofitting capability that allows an unprecedented level of flexibility for generating bispecifics from existing antibodies.
- Imunexus' product development pipeline is not limited by traditional drug discovery. A vast number of existing antibodies are available for conversion into bispecifics. Multiple products can be developed in parallel, increasing company value with each product.
- Only a handful of companies Worldwide can make bispecifics based on whole antibodies. Many alternative technologies have significant limitations, including performance limitations. Imunexus has overcome these limitations and offers a high performance, plug-and-play platform that is faster, cheaper, and less risky.

## KEY CUSTOMERS

- Deals on bispecifics have made in excess of US\$9 billion over the last few years with many bispecific technology platform companies and drug assets already acquired by pharma; the technologies and bispecific drug products fetching premium prices.
- Currently Imunexus has three pipeline products in development. These are biobetter bispecific versions of whole antibodies fused to Imunexins that recruit the immune system.
- Disease indications being targeted include lung cancer, melanoma, certain solid tumours, leukaemia and lymphoma.
- These products are based on commercially successful antibody drugs whose patents are expiring and where the efficacy of the original antibody drug can be improved by enhancing immune system engagement.

## QUALITY APPROVALS & AWARDS

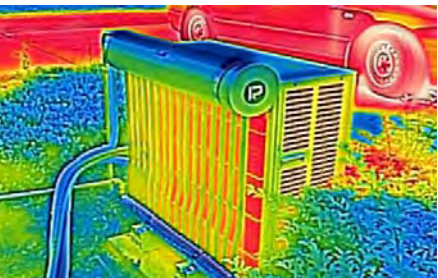
- **World-wide technology innovation competition by the Chinese Government**  
Imunexus ranked equal 2<sup>nd</sup> out of ~1000 global applicants from USA, AUS, NZ, EU, UK, JPN, ISR. - \$75,000 prize money
- **Independent Due Diligence** by eExec Factor: Excerpts from the report: *"with the correct strategies in place, rapid uplifts in valuation are possible, given the applicability and robustness of the technology at hand"*
- **Expert evaluation of Company's Intellectual Property (IP) assets** by Pharma Ventures: *"a conservative valuation of the current Imunexus IP within the range of AU\$85M to AU\$107M"*

## CONTACT DETAILS

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[www.imunexus.com](http://www.imunexus.com)



# Independent Products – embedded energy productivity



## CAPABILITIES

- Product Development
- ERK is an aftermarket inter-cooler installed onto any big brand HVAC, from small split system to large industrial scale chiller

- Sales

Direct large B2B, Gov.

Distributors and Affiliates covering Qld, NSW, South Australia, WA, Vic

- Operational (partially outsourced)

- Manufacturing (outsourced, highly scalable capacity)

- Financing

## DISCRIMINATORS

- Unique, patented (pending) technology
- Up to 55% energy saving
- Up to 4.5 deg cooler air
- Av. 30% less Co2 emissions
- No electronics or moving parts
- Reduces peak demand
- Extends life of HVAC
- Simple, quick install

- Case Studies
- MEPs validation tested
- Energy saving calculator/business case
- Consulting report
- Money back warranty
- Customer Journey
- Brand

- Installer training, IT enablers / tools
- Distributor training, IT tools

- Watermark certification
- Local responsiveness
- Australian made

- Customer financing (B2B and B2C)

## KEY CUSTOMERS

- BHP (BMC, Qld)
- University of Western Sydney, NSW
- Top 3 National Energy Retailer (under NDA – trial/pilot sites), Vic & Qld
- Cypher Building Energy Experts, Qld
- Light Factory, South Australia
- Australian living, NSW

## KEY PARTNERS

- Top 3 National Energy Retailer (under NDA – exclusive energy retail distributor)
- Trinity (manufacturer, Watermark certification)
- Cypher Building Energy Experts
- Financial - 88GreenVentures, ACAC Innovation

## QUALITY APPROVALS & AWARDS

- Watermark quality certification (pending)
- Global Impact Award, 2nd University Western Sydney, 2015
- Winner Engineers Australia, Sir George Julius Award 2015
- Australian Technology Competition, semi-finalist 2015
- Winner Consensus Innovation Award 2014
- Winner NASSCOM Australia Innovation Award 2013

## CONTACT DETAILS

Steve Heaton, CEO  
[sheaton@independentproducts.com.au](mailto:sheaton@independentproducts.com.au)  
 M: 0402 852 623





## CAPABILITIES

- **Made on site continuously:**
- **No Joints:** The Fluid Highway is “spliced together” in the field without a joint
- **Strongest:** on strength to weight basis; our pipes are the highest pressure rating, composite, pipes known
- **Lightest:** 75% less weight than steel or HDPE in most applications; 80- 90% weight saving in larger diameter HDPE
- **Fastest to install:** production rate 5-10 X faster than HDPE or steel
- **Corrosion and erosion resistant:** The Fluid Highway is made with: **thermoplastic inner liner/fibre reinforcements/PVC outer casing.** The Fluid Highway is like a hydraulic hose protected on the inside by the rubber liner and the outside by the PVC casing.

## DISCRIMINATORS

- **Made on site:** 10-20:1 logistics saving
- **No Joints:** Joints are where pipes fail/leak
- **Low labour/km in field** 10-20/1 labour saving
- **Light:** We can transport the materials or short sections of pipe for delivery by helicopter
- **Corrosion and erosion resistance:** Absolute advantages in; slurry, tailings, brine, sour gas, geo thermal, hydrogen transport, CO2 Geo Sequestration etc.
- **Lowest CAP EX:** in many pipe sizes and pressure ratings we are highly competitive; in large HDPE 60% less cost
- **Lowest OP Ex:** lifetime costs: energy saving maintenance and life are predicted to be much lower than steel or HDPE
- **Lowest CO2 and Environmental Impact:** lowest installed CO2 lowest methane leaks

## KEY CUSTOMERS

- Coal Seam Gas
- Conventional Gas
- Oil
- Mining
- Agribusiness
- Water
- Waste water
- Geo-thermal
- US\$10-12B/yr

## KEY PARTNERS

- Our Customers
- BASF for thermoplastics for liner
- Raven Industries blown film
- SAERTEX for weaving the reinforcements, glass, carbon, basalt
- Zolteck for carbon fibre supply
- Swancor for resin supply
- Advanced Composite Structures Australia (ACS) for certification to API RP 15S Standards

## QUALITY APPROVALS & AWARDS

- Woodside WA Innovator of The Year
- Working towards API certification for gas, brine and oil
- ISO 9001 in process

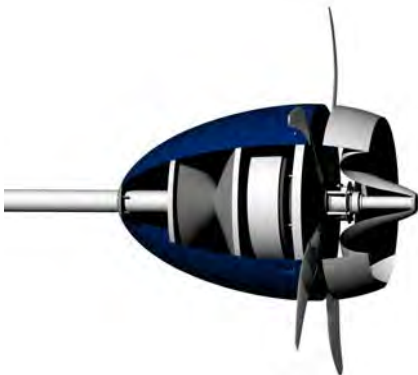
## CONTACT DETAILS

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Co-Founder Director  
Long Pipes Pty Ltd  
T:+(61) 8 9455 6911  
M:+(61) (0) 427428868  
ngramham@longpipes.com.au





Tank Testing at Australian Maritime College in Tasmania



Cutaway of initial MAKO turbine showing direct drive generator



MAKO turbine and test rig being launched for endurance testing

## CAPABILITIES

- **Design**  
Our in-house team utilise a software suite and the massive processing power of cloud-based processing, to design, simulate and optimise the MAKO.
- **Fabrication**  
MTPL has invested in high-precision CNC fabrication equipment (robot, lathe, 3D printers) to allow all non-standard components to be made in-house.
- **Business Development**  
The MAKO turbine is ideally suited to Asian customers so we have established business development hubs in Singapore and Tokyo staffed by locals.
- **Market Insight**  
MAKO targets massive untapped potential in slow flowing sites based on 7 years market insight, engineering effort and customer feedback.

## DISCRIMINATORS

- **Superior Design:**  
Shorter blades than competitors and only one moving part for lower maintenance. Patented bulb design accelerates flow past blades improving efficiency (Cp).
- **Shipping & Installation:**  
Largest turbines still fit into shipping container for transport to site. Assembly & retrieval without specialist lifting equipment.
- **Low Speed Flows:**  
Designed to be cost-effective in low flow sites - 95% of the world's tidal locations. Reduce competition for sites and offer unique
- **WiFi /Satellite Comms:**  
Incorporates low cost onboard controls and communication suite based on IoT (internet of things) platform for maintenance warnings and automated billing.

## KEY CUSTOMERS

- **Small MAKO turbines (0.5 to 2.5kW)**  
Canal operators to harness untapped resource for local use. Homeowners or farmers in suitable sites to enable full grid-independence
- **Mid-size MAKO turbines (50-300kW)**  
Remote industry or tourism facilities now relying on expensive diesel generators – particularly in SE Asia and the Pacific.
- **For very large MAKO turbines (>1MW)**  
Utility companies or tidal site developers. Tidal locations can contribute to central grid in large arrays. Ocean streams & currents can provide baseload renewable power.

*At any scale, the MAKO promotes energy security & empowers communities*

## KEY PARTNERS

- **Australian Maritime College within the University of Tasmania**  
Collaborative Research focussed on improving efficiency of MAKO design and reducing the cost of deploying turbines.

## CONTACT DETAILS

- **Douglas Hunt**  
Managing Director  
*Douglas.Hunt@MAKO.Energy*
- Corporate: Level 12, 95 Pitt Street Sydney NSW 2000  
+61 (0)2 8249 8333
- Engineering: Unit 2, 26A Ralph St. Alexandria NSW
- Pilot Plant: Tamar River, near Launceston TAS

**MAKO**  
TURBINES

# Medical Safety Systems



David Gahan - Head of Business Development & Operations



Sean Riminton  
Director/Co-founder



Stephen Reddel  
Director/Co-founder

## CAPABILITIES

- Effective Medical Solutions: developing medical systems that ensure the safe delivery of life-saving complex and sophisticated medicines.
- Building a Community of Support: Medical Safety System/RxMx programs builds a community of support around the patient using web-enabled and smart phone technology.
- Engagement and Adherence: Existing Medical Safety Systems/RxMx programs demonstrate extraordinary success rate in engaging patients and physicians, achieving risk management plan (RMP) adherence rates at levels never previously seen before.

## DISCRIMINATORS

- Designed by physicians for physicians and patients.
- Enhancing the value of medicines to physicians and pharmaceutical companies by creating a new standard of care for risk management plan (RMP) implementation.
- Provides lifecycle management strategies and generic defence for pharmaceutical companies.
- Innovative IT solutions to critical clinical questions and issues.
- Increase drug prescribing confidence among healthcare professionals.
- Proven patient adherence and compliance to medication and monitoring.

## KEY CUSTOMERS

- Sanofi Genzyme
- Johnson and Johnson
- Biogen

## KEY PARTNERS

- Converged IT Solutions

## CONTACT DETAILS

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[www.medicalsafetysystems.com.au](http://www.medicalsafetysystems.com.au)

## QUALITY APPROVALS & AWARDS

- Validation of clinical trial platform to FDA standards
- Integral part of Lemtrada Launch submission that won the Best New Product/Brand Launch in PRIME Awards 2015.
- Lemtrada being the finalist for the Innovation Award in PRIME Awards 2015.



**MEDICAL SAFETY  
SYSTEMS**



## CAPABILITIES

- Industrial Minerals Specialist - Manufacturer and supply of a comprehensive suite of industrial minerals and providing services to the gas & oil, mining and agricultural sectors of Northern Australia
- pH Control and Management - Whole of service approach for mine process pH control treatment, including manufacture, transport and treatment hardware.
- Engineering and chemical design - Including product development, in house and third party laboratory testing, engineering and construction of large scale water treatment systems.
- Soil Stabilisation – manufacturer and supplier of reagents for acid sulphate soils for the civil and mining industries.
- Agricultural Products – manufacturer and supplier of agricultural soil treatment minerals.

## DISCRIMINATORS

- Patented Technology for innovative mine process pH control treatment systems and chemistry. This technology provides a fast and affordable method for the emptying of acidated mine pit water for either rehabilitation or the recommencement of mining.
- Specialised Manufacturing Equipment including twin vertical roller mills providing annual capacity of >100,000 tonnes production infinitely managed by turbine classification for careful particle size management for exacting product sizes ranging from 5-250 micron.
- Vertically integrated from mine to product. Modern purpose built facility with multiple road train access. 500 tonne silo storage. Road tankers, ISO and purpose built tipping containers for client delivery options.
- Exclusive international supply contracts

## KEY CUSTOMERS

- Vista Gold Australia – Mt Todd Mine Pit – whole of service treatment of 10.3 billion litres of acid mine drainage.
- Australian Mud Company manufacture and supply drilling grade barite and vendor services for onshore oi and gas exploration.
- Pacific Aluminium Provision of contingent containerised burnt lime and container discharge equipment and personnel.
- Monadelphous Group Ltd – manufacture and supply of reagent for gas pipeline trench for Inpex Site.

## KEY PARTNERS

- National Lime Association
- Chememan Company Ltd
- Australian Heavy Logistics
- Toll Global Forwarding

## QUALITY APPROVALS & AWARDS

- Accelerating Commercialisation Grant 2016
- Short Listed Australian Technologies Competition

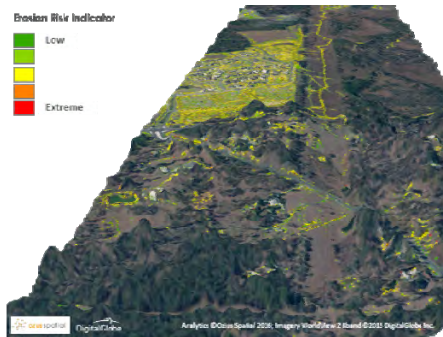
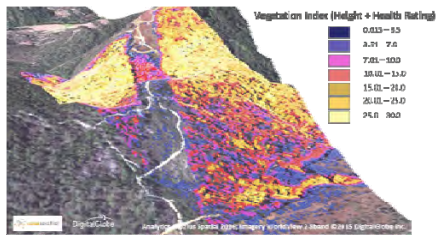
## CONTACT DETAILS

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Web: [micronisedminerals.com.au](http://micronisedminerals.com.au)

Email: [admin@micronisedminerals.com](mailto:admin@micronisedminerals.com)





## CAPABILITIES

- Experts at fusing environmental science and spatial technology.
- We combine industry-leading spatial technology with machine learning to help our clients decrease costs and improve operational efficiency of environmental monitoring and land management practices.
- Our analytics can consume your own corporate data to improve accuracy and precision to meet your business needs.

## DISCRIMINATORS

- Over a decade of published scientific research in the field.
- We replace time consuming and subjective manual techniques with automation and machine learning to improve efficiency and consistency.
- Our in depth knowledge of Environmental Science, Environmental Planning and Development, provides real world practical insight.

## KEY CUSTOMERS

- Queensland Government
- New South Wales Government
- Mining
- Power Utility

## KEY PARTNERS

- We have access to the world's best satellite imagery.

## QUALITY APPROVALS & AWARDS

- **Planning Institute of Australia – National Award** for Planning Practice Improvement (Partnership with Logan City Council and Parsons Brinckerhoff)

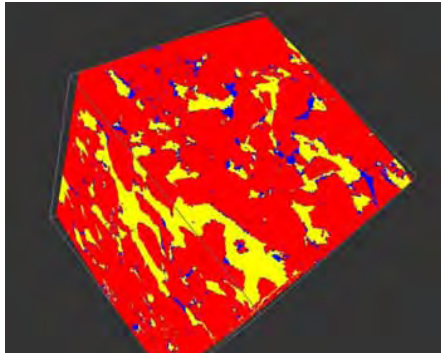
## CONTACT DETAILS

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 Founder - Director  
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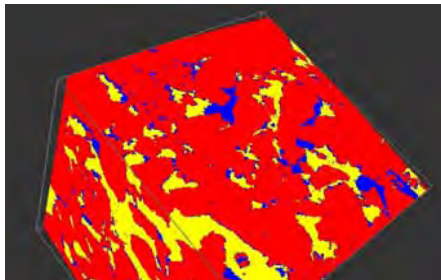


# Reservoir Rock Technologies

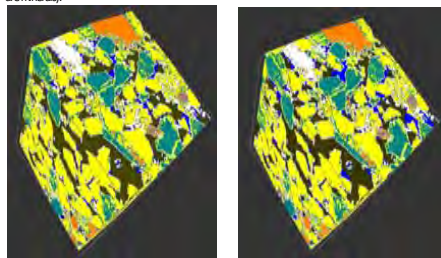
Water flooding in rock matrix for oil recovery (red-grain, yellow - oil, blue-brine or salt water)



Water flooding in rock matrix for oil recovery (red-grain, yellow - oil, blue-brine or salt water)



3D Mineral Mapped water flooding oil recovery example (gray-oil, blue-brine or salt water, others are minerals).



I. Before water flooding

II. After water flooding

## CAPABILITIES

- Make confident, effortless oil and gas reservoir decisions by capturing reservoir rock fluid displacement to the tiniest detail.
- Improve your well placement and management, achieve better recovery rates, faster and for less.
- Effortless, accurate, super-fast, non-destructive analysis. Can use drill-cuttings side walls and unconsolidated sands.
- Porosity, pore-connectivity, pore geometry, micro-porosity, z-profile, radial-profile, mineral identification, fluid distribution, fluid displacement distribution, fluid mineral contact area, changes.

## DISCRIMINATORS

- Minerals, Detailed
- Accurate and Super Fast
- Confident, Effortless
- Non-destructive, works on broken samples.
- Better recovery rates, faster for less

## KEY CUSTOMERS

- Oil and Gas production
- Mining
- Oil and Gas, Mining Service companies
- Biology, Construction, Materials companies

## KEY PARTNERS

- Woodside
- AusIndustry

## QUALITY APPROVALS & AWARDS

- WA IOTY 2015 Woodside Oil and Gas Encouragement Award Finalist
- WA IOTY 2016 Emerging Category Semi Finalist
- WA IOTY 2016 Woodside Oil and Gas Encouragement Award Finalist- in progress

## CONTACT DETAILS

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 +61414419576



# Strata Control Technology



## CAPABILITIES

Strata Control Technology (SCT) are rock engineering consultants delivering practical solutions to the underground mining and civil industries.

We undertake complex field investigations using our in-house instrumentation and measurement expertise.

Based on a thorough understanding of the ground conditions, we simulate the likely ground response to design excavations that manage geotechnical risk.

SCT provide geotechnical services at every stage of the project cycle from concept to mine closure.

Our team of engineers, geologists and field technicians have strong operational and hands-on skills based on many years of practical application.

We maintain strong professional development and accreditation programs for our staff. SCT actively conduct research through industry (ACARP) and transfer this to our consulting work.

## DISCRIMINATORS

SCT has Australian and International recognition for engineering excellence. We deliver innovative, safe and cost effective solutions.

We link field measurement, analysis, ground simulation and design outcomes. This ensures all work is relevant to the site.

We conduct 3D stress measurements in exploration boreholes to depths of greater than 400m. We use our own in house gear to do this.

We invest heavily in developing numerical simulation capability in conjunction with Itasca (USA). We support this with highly qualified modellers and computing hardware.

We invest heavily in research and development.

We design, manufacture and distribute a range of geotechnical instrumentation to measure ground displacement, rock stress, support loads, seismicity, groundwater and reservoir response.

## KEY CUSTOMERS

- BHP Billiton
- Glencore
- Rio Tinto
- Anglo American Australia
- South32
- Yancoal Australia Ltd
- Peabody Energy Australia

## KEY PARTNERS

- ACARP
- Itasca
- CSIRO Energy
- Holville Pty Ltd
- Strata Testing Services
- University of Wollongong
- University of New South Wales

## QUALITY APPROVALS & AWARDS

- Futers Medal 1992
- Australian Coal Association Excellence in Research Award 1998
- CSIRO Medal for Research Achievement 2001
- Syd Peng Ground Control in Mining Award 2007
- Illawarra Coal HSEC Excellence Award 2013

## CONTACT DETAILS

SCT Operations Pty Ltd  
[www.sct.gs](http://www.sct.gs)  
 Ph +61 2 4222 2777





# Secure Code Warrior



## CAPABILITIES

- Continuous learning and In-depth, 100% hands-on asynchronous training for developers on critical software security vulnerabilities
- Assessment of security capability of (overseas) software suppliers
- Measuring, monitoring and benchmarking of individual developers, teams, organisations, regions and industries on secure software coding skills
- Enables Agile/DevOps practices and increases trust in secure coding skills of developers
- Reduces the likelihood of data-breaches and reduces overall cost of fixing software security bugs

## DISCRIMINATORS

- A learning solution that is scalable over thousands of developers
- Hands-on training that is specific to the software language and framework the developer uses (JAVA, C#, JavaScript...)
- Gamified training that developers want to take and keeps them engaged with leader boards, badges, points, etc.
- A tool for executives that allows them to assess, measure, monitor and benchmark developers, internal teams and software suppliers in secure coding skills
- A home-grown team of cyber security experts who are building software to solve a 15 year old problem that causes millions of damage.

## KEY CUSTOMERS

- Sportsbet (AU)
- Tyro Payments (AU)
- Discover (USA)
- Verizon (USA)
- ING Group (BE)
- CommBank (AU)
- Maquarie Bank (AU)

## KEY PARTNERS

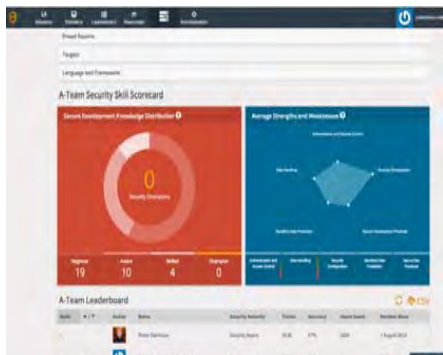
- Hivint (AU)
- Seer Security (AU)
- Asterisk InfoSec (AU)
- Intuition

## QUALITY APPROVALS & AWARDS

- AusCERT Awards (2016) Finalist – Best Security Initiative
- Cyber Security Excellence Awards (2016) Finalist – Best Education Provider

## CONTACT DETAILS

Pieter Danhieux, CEO  
 pdanhieux@securecodewarrior.com  
 0429 503 077





## CAPABILITIES

- ‘Glocalised’ technology – developed & distributed globally to accommodate conditions and users in local markets
- Evidence-based, solution for constructing low cost, low maintenance, high performance, sustainable infrastructure: roads, rail, airport hardstand areas, cycleways, dam cores & landfill linings
- Technology for re-use of Coal waste but equally suitable to incorporate a diverse range industrial and chemical wastes
- Enables industry partners to reduce waste disposal costs and participate in the circular economy
- Foster internal innovation capabilities to build smart cities of the future

## DISCRIMINATORS

- Low capital, portable, local materials source, low production cost
- Directly solves road & rail infrastructure failure; reduces life-cycle costs
- Responds to rising expectation of responsible practice - social licence & community goodwill high
- Uses 100% waste - halves carbon emissions of infrastructure, helping meet international targets
- Diverts waste from landfill – preserves virgin resources
- Helps achieve goals of the Paris Agreement & UN SDGs
- Triple revenue stream:
  1. waste raw materials
  2. product sales; &
  3. carbon credits

## KEY CUSTOMERS

- National, state & local infrastructure authorities
- Mining companies
- Developers
- Construction contractors



## KEY PARTNERS



## APPROVALS & AWARDS

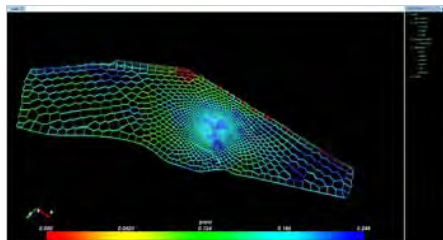
- Road authority ‘Unique Material’ specification created
- **GREEN GLOBE** Winner 2014
- Over 2 million tonnes already produced with technology, constructing 180km of NSW roads
- Recipient partner in Australian Govt ARC Linkage Research Grant for \$590 000

## CONTACT DETAILS

www.matrixmaterials.com.au  
 iAccelerate Centre  
 Innovation Campus  
 North Wollongong NSW 2500

M: +61 438 416 479

Watch what we do:  
[youtube.com/watch?v=avpGxpb99ok](https://www.youtube.com/watch?v=avpGxpb99ok)



## CAPABILITIES

- Reservoir Simulation
- Integrated Asset Modelling & Market Driven Gas Planning
- History Matching & Uncertainty Analysis
- Drill Risk Reduction & Earth Stress Analysis
- Oil Deliverability Modelling & Production Forecasting

## DISCRIMINATORS

- Faster Reservoir Simulation, gives millions of visual realisations in minutes
- Market-Driven gas planning, that's back allocated based on market demands.
- All software is compatible and can be integrated with each other and leading industry tools.
- Scalable, intuitive and fast software
- Robust Components, Cognitive Performance, Updated Software

## KEY CUSTOMERS

- ExxonMobil
- Santos
- Oil Search
- Beach Energy
- BHP Billiton

## KEY PARTNERS

- Uzma Engineering (Malaysia)
- Pap Energy Ltd (Ghana)
- PetroLead Technologies (Oman)
- Triple EEE (Netherlands)

## QUALITY APPROVALS & AWARDS

- Australian Gas Innovation Awards 2013: Commercial FINALIST
- Western Australian & Export Awards 2012- Emerging Exporter FINALIST
- The 2010 iAwards – Industrial Application WINNER
- The 2009 iAwards Industrial Application WINNER

## CONTACT DETAILS

4/97 Hector St W, Osborne Park  
 Western Australia 6017  
 Tel: (08) 9446 2099





## CAPABILITIES

SunSHIFT is the modular and moveable solar PV solution for large-scale on-grid and off-grid electricity generation.

- SunSHIFT offers stand-alone power systems or turn-key integration with fossil-fuelled generators.
- SunSHIFT offers flexible financial arrangements for clients with outright purchase + buyback options, lease + buyout options, or purchase & financing + buyback options.

## DISCRIMINATORS

■ *Pre-engineered*  
A SunSHIFT solar PV system is tailored to a client's power requirements with off-the-shelf 50kW and 1MW sub-systems to minimise engineering and design costs.

■ *Pre-fabricated*  
All major system components are manufactured off-site and efficiently transported to site where they are rapidly and safely installed at a low cost.

■ *Scalable*  
SunSHIFT systems are designed to enable future expansion and contraction of solar PV and energy storage capacity to give clients maximum flexibility.

■ *Moveable*  
A modular approach solar PV enables relocation of systems over their useful life, minimising the risk of asset stranding and enabling short-term offtake agreements.

## KEY CUSTOMERS

- Off-grid remote industry
- Off-grid remote communities
- On-grid emerging economies
- On-grid temporary site

## KEY PARTNERS

- Laing O'Rourke plc
- SunPower Corporation
- ABB Inc.
- Australia Renewable Energy Agency

## QUALITY APPROVALS & AWARDS

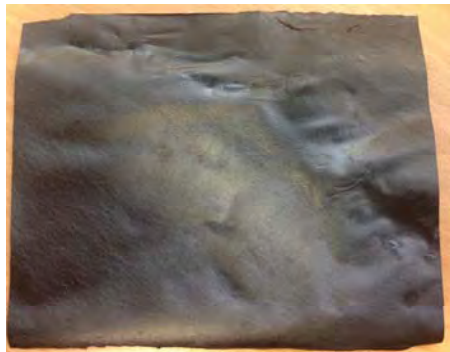
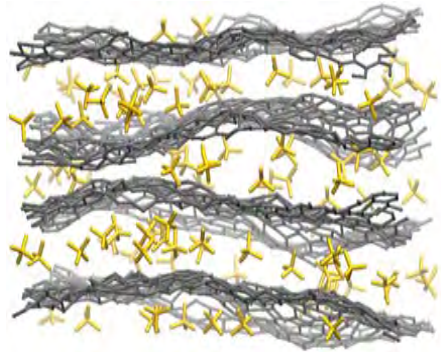
- NSW Government Green Globe Awards 2015 – Winner: Environmental Innovation
- The Australia Innovation Challenge 2015 – Finalist: Minerals and Energy
- International IET Innovation Awards 2015 – Finalist: Sustainability

## CONTACT DETAILS

Will Rayward-Smith  
(General Manager, SunSHIFT)

Level 4, 100 Arthur Street  
North Sydney, NSW 2060  
P: +61 (0) 427 548 813  
E: [will@sunshift.com](mailto:will@sunshift.com)





## CAPABILITIES

- Pilot scale production of next generation high-energy-density supercapacitors
- Pilot scale production and testing line of advanced energy storage devices
- Commercialization of world-leading graphene technologies by bridging the gap between R&D and manufacturing
- Delivering disruptive energy storage solutions by capitalizing on national and international resources, include government support, advanced research outcomes, downstream business network, and international investment interests.

## DISCRIMINATORS

- A graphene technology entrepreneur for energy storage devices
- A graphene technology commercialization startup devoted to delivering disruptive energy storage solutions
- A technology transfer platform enabled by capitalizing on various international resources
- Strong research and development capability, and rich international marketing and manufacturing support

## KEY CUSTOMERS

Potential customers under discussion

- State Grid Corporation of China



- Tunghsu Group



## KEY PARTNERS

- Tangshan Jianhua Industrial Group



- Monash University



MONASH University

## QUALITY APPROVALS & AWARDS

- Two International Patents

## CONTACT DETAILS

Dr. Yufei Wang  
 Email: [yufei.wang@supragenergy.com](mailto:yufei.wang@supragenergy.com)  
 Ph: 03 9905 4939  
 Add: 16 Alliance Lane,  
 Clayton VIC 3168





## CAPABILITIES

- Low power wide area telecommunications network to gather small amounts of data from thousands of sensors (water, gas & electricity meters, environmental sensors and others) distributed across vast areas. Key enabler for “Internet of Things” in Smart Cities

### ■ Example applications:

Automatic Meter Reading for utilities

Sub-metering for large buildings and campuses

Environmental monitoring

Sewer monitoring

## DISCRIMINATORS

- Australia’s most widespread low cost fixed network (currently over 100,000 sq kilometers)
- Data acquisition at 1/10<sup>th</sup> the cost of previous technologies
- Australian designed technology suitable for harsh environmental conditions
- Very low power battery operated devices with up to 20 years life on AA battery
- Very long range radio receivers ~1,000 sq kilometre per receiver in rural settings

## KEY CUSTOMERS

- Yarra Valley Water
- Mackay Regional Council
- Goldenfields Water
- Isaac Regional Council
- GWM Water
- Federation Shire Council

## KEY PARTNERS

- Honeywell/Elster
- Tyeware
- Select Solutions

## QUALITY APPROVALS & AWARDS

- Winner - TEch23 (2010)
- Winner – Telstra R&D award (2010)
- Member – Australian Technology Showcase

## CONTACT DETAILS

Taggle System Pty Ltd  
Level 3 189 Kent Street Sydney  
NSW 2000

Ph: 02 8999 1919  
[www.taggle.com.au](http://www.taggle.com.au)





## CAPABILITIES

- Rapidly drill (jet) multiple laterals horizontally from a Vertical Well. Distances range from 20m-300m
- Increase Oil & Gas production & recovery (EUR) from 1000's of existing (old) wells. Also a perfect completion method for new wells.
- Dramatically reduce the footprint for new Oil & Gas field developments.
- Compelling, safe and environmentally alternative to fracking as the industry standard completion method.
- Potential to revolutionise the way Oil & Gas wells are drilled and completed throughout the world.

## DISCRIMINATORS

- Proof of exit from steel casing
- Proof of laterals being drilled via real-time electronic data capture
- Real-time steering capability
- Two complimentary technologies for both completions and workovers
- Reliable, cost effective process

## KEY CUSTOMERS

- Westside Corporation Pty Ltd
- Anglo American
- Shell
- BHP Billiton
- AGL Energy
- Arrow Energy

## CONTACT DETAILS

Darren Rice – Chief Executive Officer  
 E. [Darren.rice@v2h.com.au](mailto:Darren.rice@v2h.com.au)  
 M. 0400 112913

## KEY PARTNERS

- Tempres Technologies (Seattle)
- CRC-Mining (Brisbane)





## CAPABILITIES

- **Drug discovery**  
Vectus has developed a platform technology allowing the discovery of more than 200 novel, biologically active compounds with anti-hypertensive and/or anti-fibrotic properties.
- **Preclinical research**  
Vectus has the expertise and facilities to carry out early stage preclinical testing in-house
- **Commercialisation experience**  
The board has a track record in founding and developing highly successful life science companies, as well significant experience in the pharmaceutical industry

## DISCRIMINATORS

- **Reversal of fibrosis**  
Fibrosis has been reported to play a role in more than 40% of diseases worldwide. Vectus is the only company to report the ability to reverse fibrosis in multiple organs, leading to the regeneration of healthy tissue architecture.
- **Very strong IP position**  
Vectus has a family of 11 patents (granted or applied for) giving them a very strong IP position.
- **Platform technology**  
Vectus has discovered multiple compounds with specific activity in various organs, including the heart, kidney, lung and liver.

## CONTACT DETAILS

Dr Duncan Macinnis  
[dmacinnis@vectusbiosystems.com.au](mailto:dmacinnis@vectusbiosystems.com.au)  
0409 336 373







## CAPABILITIES

- Internet of Things (IoT) for energy - real-time, utility-grade (Class 1 accurate) electricity management over the internet
- Independent of utility metering systems and equipment suppliers' monitoring solutions (e.g. solar or battery inverters)
- Data streaming flexibility allows Wattwatchers to work with many apps, dashboards, hosting etc.
- Built-in switching capability being added to allow control of energy flows at circuit-level as well as observation and data aggregation & analytics
- Remotely manage energy flows on any number of circuits at one/many sites

## DISCRIMINATORS

- Enterprise quality – 5-year+ warranties available, Service Level Agreements (SLAs), full power factors
- Ultra-compact size with all-in-one DIN mounted form – especially important for retrofits for easy installation (20-30 min. by qualified electrician)
- Low-cost per circuit (under \$100 per circuit for hardware) – 1/3 to 1/5 cost of traditional sub-metering
- Fully-managed IT solution with over-the-internet remote maintenance, re-configuration and upgrades
- Adaptable for overseas market requirements

## KEY CUSTOMERS

- Solar Analytics
- AGL New Energy
- Energy Matters
- Grid Analytics by Acresta

## KEY PARTNERS

- Solar Analytics
- Acresta (Grid Analytics)
- National Narrowband Network (NNCo)
- Wattblock
- Object Consulting/Our Green Home
- Knowledge-Global

## QUALITY APPROVALS & AWARDS

- Australian certifications
- US certifications (pending)
- Handpicked for CEM7 Start-Ups & Solutions Showcase (San Francisco, June 2016)
- ATC semi-finalist 2012

## CONTACT DETAILS

Murray Hogarth – Director of Communications & Community Networks  
 E [murray@wattwatchers.com.au](mailto:murray@wattwatchers.com.au)  
 M 0417 267235





## CAPABILITIES

- Highest level of safety, removal of operator variables, faster welding times and greater quality control
- High value intellectual property
- In-house R&D and manufacturing capabilities
- Factories in 2 hemispheres and distributors in 12 key regions ensure a global distribution network
- CNC automation of poly pipe welding equipment
- The only medium and large diameter in-field CNC controlled poly welders in the world

## DISCRIMINATORS

- 55 years industry experience spanning 3 generations
- Worldwide relevance in major growth sector
- A unique technology
- Rapidly scalable business
- Through alliance partners we have the capacity to meet demand

## KEY PARTNERS

- Austrade
- Entrepreneurs Program
- EFIC
- Austmine
- Bosch Rexroth
- Jayben
- Borouge, Abu Dhabi

## KEY CUSTOMERS

- BHP Billiton, Chile
- Fortescue Metals Group, Australia
- Georg Fischer, USA
- Rio Tinto, Peru
- Reece Civil, Australia
- JM Eagle, USA
- Al Wassel, Saudi Arabia
- AGRU Fimex, Mexico
- Katanga Mining, Democratic Republic of the Congo
- 110 client countries and counting

## QUALITY APPROVALS & AWARDS

- CE Approval by SGS Switzerland
- AS/NZS ISO 9001:2008
- Earthmover & Civil Contractors Technology Release of the Year Award 2015
- Governor of Victoria Export Awards Winner 2013
- Australia Export Awards (Minerals & Energy) Finalist 2013

## CONTACT DETAILS

Nikita Hall  
Marketing Manager  
+61 (0)3 8795 3888  
+61 (0)438 356 959  
[nikita.hall@worldpoly.com](mailto:nikita.hall@worldpoly.com)





# Competition Alumni Companies

## 2015 Finalists & Semi Finalists

Company	Company Overview	Website
<b>AUSTRALIAN TECHNOLOGY COMPANY OF THE YEAR 2015</b>		
<b>Calix</b>	Calix's mission is to simplify how things are made. Calix has invented and developed micron-sized, nano-active MgO particles for use as a plant foliar spray that is a safe, environmentally friendly and helps plants fight disease without expensive, dangerous chemicals.	<a href="http://www.calix.com.au">www.calix.com.au</a>
<b>ADVANCED MANUFACTURING AWARD WINNER</b>		
<b>Ocius Technology</b>	Ocius Bluebottles are a new type of Unmanned Surface Vessels (USVs) that differentiate themselves from competitors by using Ocius core technology developed over 14 years of patented Rigid Opening Sails (ROS), rudder wave oscillators and Hybrid Marine Power technology. By combining solar, wind and wave energy BlueBottles have 2-5 times the power, payload and performance when compared to known competitors.	<a href="http://www.ocius.com.au">www.ocius.com.au</a>
<b>BUILT ENVIRONMENT TECHNOLOGY AWARD WINNER</b>		
<b>Pacific Environment</b>	Pacific Environment's EnviroSuite is a proactive environmental management system that combines real-time monitoring and predictive modelling with high resolution weather forecasting and automated data analysis to enable clients to maximise operational efficiencies whilst meeting or exceeding their regulatory compliance obligations.	<a href="http://www.pacific-environment.com">www.pacific-environment.com</a>
<b>ENERGY TECHNOLOGY AWARD WINNER</b>		
<b>GreenSync</b>	GreenSync has built a suite of complementary products that share the fundamental aim of better balancing electricity use across the grid to reduce network, customer and generation peaks. GreenSync's PeakResponse™ and MicroEM™ products are built on a robust, industrial strength technology platform and provide energy optimisation and demand management.	<a href="http://www.greensync.com.au">www.greensync.com.au</a>
<b>FOOD &amp; AGRITECH AWARD WINNER</b>		
<b>Calix</b>	Calix's mission is to simplify how things are made. Calix has invented and developed micron-sized, nano-active MgO particles for use as a plant foliar spray that is a safe, environmentally friendly and helps plants fight disease without expensive, dangerous chemicals.	<a href="http://www.calix.com.au">www.calix.com.au</a>

Company	Company Overview	Website
<b>GLOBAL DEVELOPMENT AWARD WINNER</b>		
<b>Melville Equipment</b>	Melville Equipment has developed a machine to safely remove Pandrol Elastic railway fasteners that hold the rail to the sleepers and can become rusted into position and difficult to remove. The technology uses an impact force with a “squeeze byace” to vibrate and remove the clips in a controlled, safe manor.	<a href="http://www.melville.com.au">www.melville.com.au</a>
<b>MINING TECHNOLOGY AWARD WINNER</b>		
<b>Southern Innovation</b>	Southern Innovation has developed, patented and commercialised "SITORO®" a proprietary, disruptive, digital signal processing technology for radiation-based materials analysis across a range of industries enabling real-time material characterisation capability with unprecedented speed, accuracy and scale.	<a href="http://www.southerninnovation.com">www.southerninnovation.com</a>
<b>2015 FINALISTS</b>		
<b>Aquamation</b>	Aquamation's Water Cremation technology uses water instead of propane gas fired incineration to cremate bodies that reduces energy use, emissions, toxic fumes and airborne mercury pollution.	<a href="http://www.aquamationindustries.com">www.aquamationindustries.com</a>
<b>CIM Environmental Group</b>	The CIM Enviro ACE Platform identifies the root cause of human, software and hardware faults within mechanical and control systems in the built environment delivering multiple benefits such as improved thermal comfort, longer life cycle of plant and equipment plus significant energy cost savings.	<a href="http://www.cimenviro.com">www.cimenviro.com</a>
<b>Corky's Sustainable Energy</b>	Corky's VAM RAB is a method of safely abating coal mine methane from an underground coalmine's ventilation air which is variable in terms of flow, methane and dust concentration. The VAM RAB has advantages over other competitors because it provides superior safety and emissions outcomes that can be use on working coal mines.	<a href="http://www.corkys.net.au">www.corkys.net.au</a>
<b>FluidIntel</b>	FluidIntel developed and owns the world's leading fuel and lubricants management system for the mining sector which enables fuel reductions of 2-5%. Its system has been selected by six of the ten top global miners as clearly the market leader.	<a href="http://www.fluidintel.com">www.fluidintel.com</a>
<b>Metro Power Company</b>	Metro Power has invented a smart grid analytics platform named 'E2M' that acts as a decision support system for large grid network operations control centres by predicting future rolling 15 minute peak electricity loads across their grid, 96hours ahead of time.	<a href="http://www.metropower.com.au">www.metropower.com.au</a>
<b>Oceansmart</b>	Oceansmart's Smart Tuna Hook system is a solution that prevents hundreds of thousands of endangered seabirds and turtles taking baited hooks, subsequently becoming hooked and killed on longlines every year. The technology uses galvanic reaction to release a shield that covers the baited hook immersed in water and is below the feeding depth of seabirds & turtles.	<a href="http://www.oceansmart.com.au">www.oceansmart.com.au</a>

Company	Company Overview	Website
<b>Polymeric Powders</b>	Polymeric Powders has developed a new flexible plastic-rubber composite material that has increased shock absorption, increased resistance to cracking, increased thermal insulation and increased acoustic insulation. The material can thus be utilised for manufacturing of high-tech products via traditional moulding type manufacturing as well as new 3D printing manufacturing techniques.	<a href="http://www.polymericpowders.com">www.polymericpowders.com</a>
<b>Reedbed Technology</b>	Reedbed Technology has developed an advanced reedbed treatment system called the “Reedcell” system that successfully treats wastewater, industrial wastewater, mining wastewater and contaminated groundwater and is extremely simple to operate, has a long lifespan, uses no chemicals, produces no odours and provides a visually attractive living amenity.	<a href="http://www.reedbedtechnology.com">www.reedbedtechnology.com</a>
<b>Spinifex Resins</b>	Spinifex Resins' has developed an organic, non-toxic, non-carcinogenic Resin free from Urea Formaldehyde extracted from the Spinifex plant. This innovative resin provides a cost competitive, renewable, non-fossil fuel based resin for engineered timber products (MDF, Particleboard, Plywood etc).	-
<b>Switch Automation</b>	Switch Automation has the world’s first completely cloud-hosted, holistic enterprise operations platform for managing buildings and other physical assets. We are ambitious in our goal to revolutionize the way that buildings are managed.	<a href="http://www.switchautomation.com">www.switchautomation.com</a>
<b>2015 SEMI-FINALISTS</b>		
<b>5B Australia</b>	5B is providing the first commercially viable relocatable PV system. The prefabricated, portable, modular solar PV power system ideal for customers whose energy needs are changeable, short-term or spread across multiple assets.	<a href="http://www.5b.com.au">www.5b.com.au</a>
<b>ABM Combustion</b>	ABM Combustion designs, manufactures, installs and commissions waste gas handling and gas compression equipment, predominantly in the landfill gas and abattoir waste water treatment industries.	<a href="http://www.abmcombustion.com.au">www.abmcombustion.com.au</a>
<b>Flurosol Industries</b>	Flurosol has developed the world’s first virtually transparent solar panel. Light hits the surface of the glass or polymer and some energy is sent to the edge of the glass or polymer and converted to electricity with PV using small PV cells affixed to the edge of the sheet.	<a href="http://www.flurosol.com">www.flurosol.com</a>
<b>Fulcrum3D</b>	CloudCAM is an advanced ground-based sky imaging system based on Fulcrum3D camera platforms and advanced image processing techniques to identify, categorize, track and predict cloud movement, and ultimately when the cloud shadow will affect a solar power station.	<a href="http://www.fulcrum3d.com">www.fulcrum3d.com</a>
<b>HabiDapt</b>	HabiDapt’s Energy Management System (EMS) is a sophisticated cloud based software platform, originally developed by the CSIRO, that delivers energy management services to households and SMEs and demand management services to electricity companies like retailers and network operators.	<a href="http://www.habidapt.com">www.habidapt.com</a>

Company	Company Overview	Website
<b>Heat Trap Solar</b>	Heat Trap Solar combines roof mounted solar hot water with a heat pump booster to provide the most energy saving means of heating water. The system has panels on the roof and a 340 litre slimline storage tank and heat pump on the ground controlled by a computer that determines boost times and durations according to season, time of day, ambient and incoming water temperature and temperatures at various levels within the tank.	<a href="http://www.heat-trap.com.au">www.heat-trap.com.au</a>
<b>Impacts Solar</b>	Impact Solars' proprietary Solar Thermal Technologies replace non-renewable sources in situations requiring low-cost heat between 60-350°C, such as desalination, process heat and steam, thermochemical processing and electricity generation. Impacts' principle IP is a low-cost, planar high-performance Solar Thermal Collector and its third generation Perfection® collector which is a low CAPEX, low OPEX collector for large-scale Concentrating Solar Power (CSP) plants.	<a href="http://www.impacts.com.au">www.impacts.com.au</a>
<b>Independent Products</b>	Independent Products' Hybrid HVAC delivers an average a 30%-40% energy reduction on cooling costs compared to these conventional HVAC units. The technology can also be retro fitted to conventional HVAC units to deliver on average 40% energy savings to the client.	<a href="http://www.independentproducts.com.au">www.independentproducts.com.au</a>
<b>Me3D</b>	Me3D has developed a range of low cost 3D printers which are designed and manufactured in Australia. The Me2 range of printers has been designed with a focus on learning and the education of additive manufacturing, beyond just "making stuff". The Me2 design is an open and accessible device for teaching various STEM learning objectives.	<a href="http://www.me3d.com.au">www.me3d.com.au</a>
<b>MetaFlush</b>	MetaFlush® is a radical new valveless toilet flush control system that is ultra-simple, and cannot leak and waste water. Water for flushing is held in a self-centring, pivoted tank with an integral siphon on each side.	<a href="http://www.metaflush.com">www.metaflush.com</a>
<b>Ptronik</b>	PTronik's principal product is the pMC Master Controller that monitors and controls dust collector equipment and their filters. The pMC continuously collects data from a variety of sensors measuring key metric, compares real time plant performance data and determines the optimum point in time to automatically triggering 'bag pulse' cleaning with reductions in energy costs of 40 to 60%and extends filter bag life by up to 30%.	<a href="http://www.ptronik.com">www.ptronik.com</a>
<b>Renewable Energy Solutions Australia</b>	RESA's VoltLogic is an integrated energy management solution that can operate as an inverter/charger for renewable energy applications, including off-grid and hybrid applications, as well as improving power quality through voltage regulation, power factor correction and phase balancing in grid networks.	<a href="http://www.resau.com.au">www.resau.com.au</a>
<b>Sustainable Infrastructure Solutions</b>	Sustainable Infrastructure Solutions has the only proven, scalable solution to eutrophication, the chronic contamination of water bodies due to the inflow of agricultural runoff, treated wastewater etc that results in high levels of algae, aquatic weeds, pathogenic bacteria and fish kills. It provides a means of recovering unusable fresh water resources in contaminated river systems.	<a href="http://www.sustainableinfrastructuresolutions.com">www.sustainableinfrastructuresolutions.com</a>
<b>World Environmental Solutions</b>	World Environment Solutions' technology provides freshwater from the atmosphere moisture and an agriculture system that can control and the Thermal Energy Agriculture (TEA)™ which accelerates the growth of plants by simulating the first of spring soil environment.	<a href="http://www.wesolutions.com.au">www.wesolutions.com.au</a>

## 2014 Finalists & Semi Finalists

Company	Company Overview	Website
<b>AUSTRALIAN TECHNOLOGY COMPANY OF THE YEAR 2014</b>		
<b>Targ Safelash</b>	<p>How does a small Sydney-based company make every container ship and port in the world safer? Targ Safelash™ has the answer. Appalled by the high rate of injuries in container ports and after a death in Sydney in 2010, the team has developed a way of lashing that is safer, quicker, cheaper and easier than the half-century old system in use around the world today.</p> <p>The Targ Safelash™ is a safer, stronger and more reliable way of lashing containers on ships. The solution is much easier, lighter and safer to use and can cut injuries by 30%. They are working with their first customers in Europe and Asia and have big plans to go global very quickly.</p>	<a href="http://www.implementation.net.au">www.implementation.net.au</a>
<b>BUILT ENVIRONMENT TECHNOLOGY AWARD WINNER</b>		
<b>CINTEP</b>	<p>CINTEP's Recycling Shower system is possibly the world's first life-saving shower system. It reduces water and energy consumption from showering by 70% without reducing flow rate, temperature, or time in the shower. This can translate to a family household saving of \$937 every year, along with 73,000 litres of water and 2.6 tons of CO<sub>2</sub>. Its potential to save lives however, was what caught the attention of the US Army. Now in negotiations with CINTEP, the US Military estimates that this recycling shower could reduce operational fatalities by 20% due to the drastic reduction in supply convoys who primarily move large quantities of water to the front line.</p>	<a href="http://www.recyclingshower.com.au">www.recyclingshower.com.au</a>
<b>ENERGY TECHNOLOGY AWARD WINNER</b>		
<b>RayGen Resources</b>	<p>Developing the world's lowest cost energy. Raygen's Concentrated Solar Photovoltaics (CSPV) combines the best elements of two leading solar power technologies, without their shortcomings. CSPV power stations use mirrors to concentrate light by 800 times onto a dense array of ultra-efficient photovoltaic cells. World solar capacity is growing exponentially. A mass of 3GW of solar capacity was added in 2013 at a cost of over \$100B. It is a huge market and Raygen is developing a genuine breakthrough product.</p>	<a href="http://www.raygen.com">www.raygen.com</a>



Company	Company Overview	Website
<b>FOOD TECHNOLOGY AWARD WINNER</b>		
<b>Microbiogen</b>	<p>Sydney-based Microbiogen has developed technology that can simultaneously convert waste plant biomass into fuel ethanol, high protein feed for our farm animals and fish, as well as a product that can serve as an environmentally friendly coal substitute.</p> <p>Microbiogen specialises in the improvement of yeasts for multi-billion dollar industrial applications such as baking and first generation ethanol. It has also used its proprietary high throughput breeding and selection technologies to develop brewer's yeast strains (called <i>Saccharomyces cerevisiae</i>) able to metabolise carbon compounds present in a wide range of waste plant biomass. Unlike competing technologies, Microbiogen's approach does not use any genetically engineered organisms.</p>	<p><a href="http://www.microbiogen.com">www.microbiogen.com</a></p>
<b>MANUFACTURING TECHNOLOGY AWARD WINNER</b>		
<b>Rheology Solutions</b>	<p>Rheology Solutions has developed solutions that help any industry using liquids in processing to accurately measure their properties in real time. This means that industry has better control, can improve quality and avoid wastage. By measuring liquid properties flowing in pipes, the 'OnLine Rheometer' (OLR) is helping food, personal care and, mineral processing industries to improve their efficiency and productivity.</p>	<p><a href="http://www.rheologysolutions.com">www.rheologysolutions.com</a></p>
<b>MINING TECHNOLOGY AWARD WINNER</b>		
<b>Minnovare</b>	<p>Minnovare has found the solution to time consuming land surveying methods when aligning a drill rig. The Azimuth Aligner device is easy for drillers to use and reduces the time needed to align a drill rig from more than 1.5 hours to just five minutes.</p> <p>By using the latest in military grade north seeking gyro technology, drill rig operators can use the Azimuth Aligner®'s real time display to accurately align a rig and replace the need for GPS and surveyors. By automating what is traditionally a manual and labour intensive process the Azimuth Aligner® significantly improves 'bit on bottom' time, safety, efficiency and overall drilling productivity.</p>	<p><a href="http://www.minnovare.com">www.minnovare.com</a></p>
<b>WATER TECHNOLOGY AWARD WINNER</b>		
<b>Calix</b>	<p>Calix's mission is to simplify how things are made. Refined minerals help make almost everything, and yet they are expensive and energy intensive to use. Calix has developed an elegant technology that creates mineral "popcorn" - fluffy tiny mineral particles that combine more readily into products and innovative new materials – while capturing CO2. Its first product-to-market is a magnesium-based fluid, a superior additive for the treatment of waste water, that delivers price and energy savings of at least 25 % against current methods.</p>	<p><a href="http://www.calix.com.au">www.calix.com.au</a></p>

Company	Company Overview	Website
<b>2014 FINALISTS</b>		
<b>Baleen Filters</b>	<p>The unique patented <i>Baleen Filter</i> provides a sophisticated yet easy to implement solution to effectively separate suspended matter from industrial, mining and municipal wastewaters.</p> <p>The Baleen Filter uses a double-act of high pressure, low volume sprays, enabling smooth continuous operation and overcoming the inadequacies and high costs involved in conventional systems.</p> <p>The modular, scalable Baleen Filter is proven in a very wide range of industries, and has solved many industrial and municipal wastewater treatment problems and requirements, including mining, food and beverage production, livestock processing and municipal waste treatment.</p>	<p><a href="http://www.baleenfilters.com">www.baleenfilters.com</a></p>
<b>BioGill</b>	<p>BioGills' Nano-Ceramic Membranes™ combine science and technology to create the most useful and cost effective wastewater treatment systems. BioGills are the perfect habitat for nature's best recyclers, bacteria and fungi; to grow, multiply and consume nutrients from wastewater faster and more effectively. <i>BioGill - focusing the force of nature.</i></p>	<p><a href="http://www.biogill.com">www.biogill.com</a></p>
<b>Carnegie Wave Energy (ASX:CWE)</b>	<p>Carnegie Wave Energy (ASX:CWE) is focused on developing and commercialising its 100% owned CETO wave energy technology which is capable of producing zero-emission power and direct desalinated water.</p> <p>CETO differs from other wave technologies under development globally by being fully submerged and being able to generate power both onshore and offshore. CETO has been proven at pilot scale and is now in its commercial demonstration phase.</p>	<p><a href="http://www.carnegiwave.com">www.carnegiwave.com</a></p>
<b>Eden Energy (ASX:EDE)</b>	<p>Eden Energy is developing carbon nanotube (CNT) enriched concrete for use in construction and infrastructure. CNT's are super strength, nano-carbon particles with a flexural strength of 200-300 times that of steel. A small percentage of CNT added to concrete should significantly reduce the quantity of concrete required for structures and reduce or even perhaps eliminate the need for re-enforcing steel, resulting in cheaper, lighter, stronger structures, far more flexible designs and far lower Greenhouse Gas footprints.</p> <p>Eden Energy has commenced trials in the US of its carbon-nanotube enriched concrete.</p>	<p><a href="http://www.edenenergy.com.au">www.edenenergy.com.au</a></p>
<b>Global Future Solutions</b>	<p>Global Future Solutions (GFS) has developed and patented a method of producing surfactin. Surfactin is one of the most powerful biosurfactants available. Our unique approach uses <i>Bacillus subtilis</i> and the surfactin it produces to manufacture a poultry house sanitizer that far exceeds the effectiveness of currently used toxic sanitizers. Unlike current products, GFS Poultry Protect can be used to treat both the shed and the litter. It is cost effective for the grower as it produces healthier birds and is effective over an extended period of time controlling pathogens &amp; pests, while also controlling odour.</p>	<p><a href="http://www.globalfuturesolutions.com">www.globalfuturesolutions.com</a></p>

Company	Company Overview	Website
<b>GreenSync</b>	<p>GreenSync is changing the way that its customers consume energy. They have developed a system that allows utilities and large customers to better forecast and predict their energy loads to maximise the efficiency of when equipment is used. Its systems work 24×7, integrating weather and climatic data, production schedules, along with information from networks and markets around the country to predict forthcoming high load and high cost events.</p> <p>More than just another Big Data framework, GreenSync have developed a unique real-time analysis for detecting and quantifying peaks, and a way to automatically respond to these peaks through reducing energy demand of industrial equipment.</p>	<p><a href="http://www.greensync.com.au">www.greensync.com.au</a></p>
<b>Nano-Nouvelle</b>	<p>Nano-Nouvelle is developing the Tin Nanode™, a high performance battery technology, which increases the energy density by up to 50% so that more energy can be stored in smaller batteries. Stephanie Moroz and her team aim to commercialise their high capacity lithium ion batteries in the next 2-3 years, meeting the ever increasing energy demands of mobile devices. In 2012, 4.5 billion lithium ion battery cells were produced worldwide, which was 32GWh of storage capacity, and value of US \$10.5 billion. Nearly all of these were for phones, laptops and tablets but they are being used in more and more devices. The Nanode has the potential to impact our daily lives. Phones could last a lot longer between charges, and in the longer term electric vehicles might have an extra 100km of driving range.</p>	<p><a href="http://www.nanonouvelle.com.au">www.nanonouvelle.com.au</a></p>
<b>Regen Power</b>	<p>Regen Power has developed a generator that integrates wind, solar, diesel and battery storage. HybridGen™ Power Pack saves 85% fuel over a conventional generator. In addition, the HybridGen system works more efficiently providing improved quality and reliability and reduced maintenance. The system is ideal for remote and regional communities and mining operations.</p>	<p><a href="http://www.regenpower.com">www.regenpower.com</a></p>
<b>Robertson Technology</b>	<p>The Robertson Technology provides a measurement of efficiency and fluid flow rates of motor driven devices such as pumps, blowers, and hydro-turbines, by thermodynamic methods. It is accurate and stable differential temperature measurement (&lt; 0.001°C over 10 years), can be portable or fixed and has low maintenance costs.</p>	<p><a href="http://www.robertson.technology">www.robertson.technology</a></p>
<b>2014 SEMI-FINALISTS</b>		
<b>Acid Solutions</b>	<p>Acid Solutions provides a solution to very quickly treat extremely large volumes of highly contaminated, low pH, dissolved metal contaminated water to irrigation, drinking water or environmental release quality. Its capabilities allow the treatment hundreds of millions of litres of contaminated water in-situ on difficult to access remote sites such as mine sites.</p>	<p><a href="http://www.acidsolutions.com">www.acidsolutions.com</a></p>
<b>Aeratron</b>	<p>Aeratron provides an energy saving, noise reducing fan/turbine technology suitable for applications in IT, server cooling, medical devices, defence, and many more. With more than 10,000 units sold worldwide, Aeratron is currently finalising its extended product range (light, different sizes, accessories), with all products being the most energy efficient and quietest in their class.</p>	<p><a href="http://www.aeratron.org">www.aeratron.org</a></p>

Company	Company Overview	Website
<b>Aromatrix Australia</b>	Aromatrix Australia's technology involves the treatment of air for removal of hazardous or odorous gases in industrial settings. The heart of the treatment process uses bacterial (both autotrophic and heterotrophic) inoculated on a packing media to absorb pollutants through the bio-film which are then degraded to simple non-hazardous and non-odorous compounds. The process is environmentally sustainable and the operating costs a fraction of more traditional forms of gas treatment.	<a href="http://www.aromatrix.com">www.aromatrix.com</a>
<b>Ecoult</b>	UltraBattery energy storage solutions are safe and has complete existing end-of-life recycling. Combined with Ecoult's enabling software and hardware, UltraBattery outperforms its competitors in longevity, cycle life, efficiency and performance. UltraBattery is a hybrid lead-acid energy storage device containing both an ultracapacitor and a battery in a common electrolyte. It provides a 13x increase in longevity over traditional lead acid batteries when operated in high rate charge and discharge applications.	<a href="http://www.ecoult.com">www.ecoult.com</a>
<b>Energy Farmers Australia</b>	Energy Farmers has created an on farm, waste to energy solution for poultry manure. The system enables farmers to alleviate the problems of on farm storage of poultry waste, use heat generated through the process for their farming operation and produce high value, nutrient rich by-products to sell. The by-product of the process is biochar, an increasingly in demand product for soil conditioning. The advantage of our technology is that it is continuous flow, can handle a wide range of waste types, is simple to operate and maintain and can process the litter without the addition of other feedstocks.	<a href="http://www.energyfarmers.com.au">www.energyfarmers.com.au</a>
<b>Green Distillation Technologies Corporation</b>	GDTC recovers energy from end of life tyres. The technology, known as Destructive Distillation, which is based in pyrolysis, breaks down the rubber in a tyre into its constituent atoms. Some of these recombine into a hydrocarbon vapour which is extracted and condensed into a 'manufactured' oil comparable to a light crude or a #2 diesel fuel. Of 100% energy utilised in the manufacture of a new tyre, GDTC recovers approximately 65% in the form of oil and carbon.	<a href="http://www.gdtc6.com">www.gdtc6.com</a>
<b>Hydrasyst</b>	Kerawash™ is a patented and disruptive water recycling technology for continuous batch washers (CBW) in the commercial laundry industry. Commercial laundry is one of the largest consumer of potable water and generator of polluted waste water. Using Kerawash, a typical commercial laundry operation will reduce water use by up to 80% reduce energy use by up to 70% and reduce water pollution loading in trade waste.	<a href="http://www.hydrasyst.com">www.hydrasyst.com</a>
<b>HySSIL</b>	HySSIL is commercialising a range of green, lightweight, sustainable building products based on the CSIRO's biomimicry and geopolymers technologies, which will make construction of housing and commercial buildings significantly more affordable and sustainable. The HySSIL products currently being commercialised are geopolymer lightweight cellular precast wall panels and flooring systems and geopolymer lightweight roof tiles.	<a href="http://www.hyssil.com">www.hyssil.com</a>
<b>InnovEco Australia</b>	InnovEco developed a new process based on the ion exchange (IX) technology which solves some problems in the existing copper extraction processes. One particular problem is the presence of large quantities of fines fractions in the ore which significantly reduces the efficiency of the traditional technologies. Proposed IX process can recover over 90% of copper and other metals from fines, clays and low grade minerals in a cost effective way in comparison to less than 50% using traditional methods.	<a href="http://www.innoveco.com.au">www.innoveco.com.au</a>

Company	Company Overview	Website
<b>Magellan Power</b>	The GPSS-SWR is an energy storage solution consisting of solar panels, a four quadrant inverter, lithium batteries and a battery monitoring system. It is designed to correct power quality problems associated with the Single Wire Earth Return transmission system used in regional areas.	<a href="http://www.magellanpower.com.au">www.magellanpower.com.au</a>
<b>Marinova</b>	Marinova is a biotechnology company focused on developing innovative medical and nutritional applications from marine plants. Specifically, Marinova’s manufacturing facility is targeted to the extraction of sulphated polysaccharides known as fucoidan from brown seaweeds. Marinova’s solvent free Maritech® extraction technology generates a high volume of aqueous by-product containing significant quantities of nutrients and minerals beneficial in horticultural applications. This by-product is being commercialised to achieve increased crop yields and qualities.	<a href="http://www.marinova.com.au">www.marinova.com.au</a>
<b>Polymeric Powders Company</b>	The company has developed environmentally sustainable technologies for utilising reclaimed natural/synthetic rubber crumb (including tyre crumb) as raw materials for the manufacture of a new engineering material – Polymeric Powders. The powders are a genuine partial substitute for the more costly natural/synthetic rubber base polymers required by industrial and automotive rubber products manufacturers, as well as a valuable ingredient for plastic-rubber composite materials manufacturing in their own right including 3D printing.	<a href="http://www.polymericpowders.com">www.polymericpowders.com</a>
<b>QuikCool Cooling Technologies</b>	Quickcool's product is a thermal storage system that can store cold energy in special ice bank tanks using cheaper off peak electricity at night to then provide cold energy during the day to commercial refrigeration medium temperature applications. It is in simple terms “special ice” and is capable of achieving reductions in energy costs of up to 50% compared to alternative systems.	<a href="http://www.vacuumcooling.com.au">www.vacuumcooling.com.au</a>
<b>Taggle Systems</b>	Taggle Systems has developed a radio-based telemetry system which is being deployed as Australia’s first dedicated M2M telecommunications network. Its aim is provide a means by which to gather small amounts of data from millions of devices at low cost hitherto unavailable. The system comprises low-cost, low-power transmitters which send small data packets hourly from, say, water meters for over 10 years on a single AA battery to a receiver.	<a href="http://www.taggle.com.au">www.taggle.com.au</a>
<b>TankPro</b>	The TankPro Unit is a small, portable, stand alone water sterilising unit that provides eco-friendly re-use of stored or collected water. The primary use for the TankPro unit is for sterilizing diseased water containing human harmful bacteria, micro-organisms, pathogens and viruses that is responsible for the deaths of millions of people every year in developing countries that do not have access to clean, safe sterile water.	<a href="http://www.tankpro.com.au">www.tankpro.com.au</a>
<b>The Footprint Company</b>	TFC has developed a cloud based Life Cycle Assessment platform “Plan8 iQ” which resolves the critical need to connect building designers with whole-of-life environmental information at the point of design. It successfully eliminates two fundamental barriers to more sustainable buildings being, the cost and time intensity of assessments. Plan8 iQ achieves a factor 10 reduction in these barriers, which TFC hopes will deliver radical innovation.	<a href="http://www.footprintcompany.com.au">www.footprintcompany.com.au</a>

Company	Company Overview	Website
<b>Virtual Curtain</b>	The Virtual Curtain technology purifies mine wastewater in a rapid, more-effective way that does not require substantial infrastructure or difficult chemistry to achieve. The treatment involves the formation of hydrotalcite, a layered mineral that simultaneously incorporates many of the contaminants already present in the wastewater in a synergistic way into its structure. The development of the Virtual Curtain technology challenges the longstanding paradigm of the use lime to treat acidic mining wastewaters.	<a href="http://www.austechcomp.com/#!2014-finalists/c1xkg">www.austechcomp.com/#!2014-finalists/c1xkg</a>
<b>WDU Sustainability</b>	WDU Sustainability's OSCA (On-Site Composting Apparatus) is an automated, aerobic composting technology designed for on-site management of organic waste. Using minimal energy, OSCA processes food waste, agricultural waste, compostable packaging, paper and cardboard, manure, and green waste into safe, stable, high quality compost.	<a href="http://www.onsitecomposting.com.au">www.onsitecomposting.com.au</a>
<b>ZEN Technologies</b>	The ZEN Freedom PowerBank is a residentially sized Energy Storage System with unique aggregated fleet control designed as alternative infrastructure for Utilities to maximise the value of existing grid infrastructure through “edge of grid” energy storage. The system features large format lithium ion phosphate cells for compact long life use. And a full Battery Operating System (BOS) for intelligent distributed control on the grid. The system comes standard with 20kWh of Energy Storage with options for 10kWh or 40kWh.	<a href="http://www.zenenergy.com.au">www.zenenergy.com.au</a>
<b>Zenogen</b>	Hydrogen is the fastest growing industrial gas market worldwide, worth US\$150B annually, for use in the manufacture of metals, chemicals, semiconductors and food products. The traditional methods of producing hydrogen involve fossil fuels or electrolysis using platinum catalysts. Zenogen's technology is a proprietary electro-catalyst that eliminates platinum metals, reducing the cost of catalysts potentially to 1/10th of today's prices, with a demonstrated improvement in energy efficiency of over 30%.	<a href="http://www.zenogen.com.au">www.zenogen.com.au</a>

## 2013 Finalists & Semi Finalists

Company	Company Overview	Website
<b>AUSTRALIAN WINNER 2013 &amp; MANUFACTURING CLEANTECH AWARD WINNER</b>		
BluGlass Limited	BluGlass is a semiconductor company bringing to market a breakthrough in the LED lighting and solar industries called Remote Plasma Chemical Vapour Deposition (RPCVD). RPCVD is a revolutionary approach to the manufacture of group III nitrides which are essential components of millions of electronic and power devices.	<a href="http://www.bluglass.com.au">www.bluglass.com.au</a>
<b>MINING CLEANTECH AWARD WINNER</b>		
Global Future Solutions	Global Future Solutions (GFS) is an Australian Biotechnology company producing environmentally friendly products for the Oil and Gas, Poultry, Life Sciences and Sanitisation Industries. This submission is focussed the Oil and Gas industry, specifically the highly controversial unconventional gas extraction. GFS MEGR 102 is unique in that it utilises bacteria and bio surfactin to replace toxic chemicals and outperforms the competitor's products in all gas well environments.	<a href="http://www.globalfuturesolutions.com">www.globalfuturesolutions.com</a>
<b>BUILT ENVIRONMENT CLEANTECH AWARD WINNER</b>		
Organic Response	Organic Response is a revolutionary lighting control system using Distributed Intelligence to deliver maximum energy savings with optimal occupancy comfort. Uniquely, the technology requires no additional design, hardware, wiring or commissioning to install. The system allows other building management systems to access and exploit its real time, location specific occupancy information to make more intelligent decisions and improve their own energy efficiency.	<a href="http://www.organicresponse.com.au">www.organicresponse.com.au</a>
<b>ARENA RENEWABLE ENERGY AWARD WINNER</b>		
Specialty Coatings	EnerSheet™ is a large format resin-impregnated fibreglass composite roof sheeting product with embedded thin film solar photovoltaic (PV) material. EnerSheet™ is easy to install and is Australia's only building-integrated PV (BiPV) roofing material.	<a href="http://www.specialty.com.au">www.specialty.com.au</a>
<b>FOOD &amp; BEVERAGE CLEANTECH AWARD WINNER</b>		
Z-Filter	Z-Filter separates solids from liquids, by trapping them inside a single, zippered, filter element a 'Sock'. The Z-Filter continuously filters separates, rolls, compacts and compresses the solids inside the sock expelling the liquids to provide a dry cake. Z-Filter's 'Filtration Innovation' is the most efficient means available to separate solids from liquids.	<a href="http://www.z-filter.com">www.z-filter.com</a>

Company	Company Overview	Website
<b>2013 FINALISTS</b>		
Elevare Energy	An Australian power electronics company using its technology to make energy storage with batteries commercially viable reducing GHG's and rising power prices. Solutions include community energy storage and the dSTATCOM that solves Power Factor Correction and other issues in commercial sites.	<a href="http://www.elevare-energy.com">www.elevare-energy.com</a>
MicroHeat Technologies	MicroHeat Technologies (MHT) develops advanced fluid heating technologies, that is patent (PCT) protected globally and delivers energy optimisation & water consumption reduction. The Technology uses a 'direct energy transfer' method of heating to for point of use appliances with a small footprint .	<a href="http://www.microheat.com.au">www.microheat.com.au</a>
RayGen Resources	RayGen is creating the lowest cost power generation technology in the world - and it's renewable. RayGen's solar technology combines the most efficient solar cells (>44%) with mirrors, the lowest cost and most efficient collector. Unlike all other PV systems, RayGen separates collector and generator to optimize each independently. This provides a breakthrough in cost reduction.	<a href="http://www.raygen.com">www.raygen.com</a>
<b>2013 SEMI-FINALISTS</b>		
Bombora Wave Power	Bombora Wave Power has developed a novel wave energy convertor that converts the ocean's swell into a fossil fuel free source of cost effective electricity. Through a sturdy, seabed mounted design and flexible membrane, we're able to withstand storms and harness a greater proportion of the available wave energy.	<a href="http://www.bomborawavepower.com.au">www.bomborawavepower.com.au</a>
Commercial Diving Services	HST assists ships to travel faster through the water, consume less fuel and emit lower green-house gases, ensuring that their hulls are clean and smooth - free from fouling organisms such as slime, algae, weed and/or molluscs - through the application of heated sea water within a patented underwater device which travels along ships' hulls.	<a href="http://www.commercialdiving.com.au">www.commercialdiving.com.au</a>
DiUS Computing	DiUS Computing's ChargeIQ is a world-leading home charging solution for plug-in electric vehicles. ChargeIQ seamlessly integrates the driver, vehicle and the grid to minimise the costs of charging for vehicle owners, utilities and society more generally.	<a href="http://www.dius.com.au">www.dius.com.au</a>
F Cubed Australia	F Cubed's unique technology is a solution to the world's water issues only using natural renewable solar energy. F Cubed panels produces pure clean drinking water, from any feed water source by bio-mimicking the natural water cycle of evaporation and condensation; also producing a secondary water supply of UV disinfected, heated, and filtered water, precipitating inorganic compounds and leaving no waste.	<a href="http://www.fcubed.com.au">www.fcubed.com.au</a>
Imaca NeoPower	Neopower solar hot water uses highly efficient evacuated tube solar collector to collect the sun energy. When the solar controller senses the collector is heated by the sun, it will give a signal to a circulation pump, then the pump pushes water through the solar collector, transferring the captured heat into the water.	<a href="http://www.neopower.com.au">www.neopower.com.au</a>



Company	Company Overview	Website
KATRU Eco-Inventions	The IMPLUX™ Wind Power Turbine (IMPLUX) is an internationally patented, distinctly unique cutting edge technology that delivers power from turbulent winds in the urban environment. It is a highly efficient technology which captures the limited urban wind resource. IMPLUX overcomes the shortcomings of existing turbines for urban applications including poor efficiency, safety, noise and aesthetics via a radically different next generation design developed specifically for multi-storey buildings.	<a href="http://www.katru.com.au">www.katru.com.au</a>
New Wave Power Systems	The DC HYBRID Power Transmission System is designed to achieve optimum efficiency when integrating energy generation, storage and consumption within a building. The system allows a premise to use renewable- generated (DC) energy either directly - for example to power lighting - or by storing the energy for possible back-up power, UPS or peak time load-shifting.	<a href="http://www.map.eng.unimelb.edu.au/teams/power-system/">www.map.eng.unimelb.edu.au/teams/power-system/</a>
Nexus eWater	Nexus eWater is commercialising products that will transform the energy and water performance of homes by unlocking the value of grey water, an abundant and largely untapped resource found in every home. These innovative products will deliver high-efficiency hot water using heat recycled from grey water, and high-quality treated water for non-potable uses such as toilet flushing and garden irrigation.	<a href="http://www.nexusewater.com">www.nexusewater.com</a>
ORACLE Air Conditioning Services	Air-conditioning units are least efficient at high ambient temperatures, when cooling demand is highest. We have developed a new hybrid chilled-water evaporative cooling technology. We have named our technology as an 'ultra cooler' because of its performance capabilities relative to other evaporative cooling products.	-
Oztren Industries	Rotogen is a variable pitch vertical turbine system that is self regulated and dynamically adjusts to the wind in gusty conditions, making it safer and able to work in a wider range of weather conditions. It is reliable in extreme weather and outperforms all other vertical turbines for total variability both in blade adjustment and grid tie power production.	-
Positive Recycling	Positive Recycling delivers a Used Battery Collection Service that provides a convenient, safe, environmentally appropriate, regulation compliant solution for the collection, storage and transportation for recycling of Used Lead Acid Batteries (ULABs). At the core of this service will be the Positive Pallet which is a specially designed, enclosed, banded, signed, front loadable, collapsible, dangerous goods Pallet.	<a href="http://www.positiverecycling.com.au">www.positiverecycling.com.au</a>
PTronik	The pMC Master Controller is an Environmental Dust Management System, developed by Ptronik, to significantly improve efficiency in Industrial Dust Collectors. The 'pMC' is a breakthrough technology that collects and uses real time plant data to automatically monitor and control the cleaning process thereby optimizing plant performance.	<a href="http://www.ptronik.com">www.ptronik.com</a>
Q Solar	Q Solar's high efficiency solar heaters have multiple applications in industry, agriculture and for heating of all size buildings. The new solar heaters are easy to retrofit to existing fuel burners and can be used to preheat the air of combustion and decrease fossil fuel consumption and pollution.	<a href="http://www.q-solar.com">www.q-solar.com</a>

Company	Company Overview	Website
QuickCool Cooling Technologies	Our concept is an efficient thermal storage system for medium temperature (0 to 8 dg) commercial refrigeration applications using phase change materials (PCM). During the night in low ambient temperature a standard refrigeration plant will freeze the PCM material within the thermal storage unit reducing energy demand and costs.	<a href="http://www.alltechrefrig.com.au">www.alltechrefrig.com.au</a>
Reposit Power	Reposit Power has developed a 'Batteries-as-a-Service' platform to enable electricity retailers to put a battery in every home to solve a number of technical and commercial challenges faced in the electricity grid. The Reposit Power platform manages residential energy storage to deliver energy, power and other services that create savings and produce additional revenue streams for retailers and consumers in the National Electricity Market (NEM).	<a href="http://www.repositpower.com">www.repositpower.com</a>
Samec	SAMEC is developing wirelessly connected, solar powered, devices that are part of an 'internet of things'. The first is My Free Power, which integrates a smartphone app, Bluetooth technology and the latest organic photovoltaic solar cell technology in a smartphone protective case. The product will share information about the user's power savings via social media by showing the amount of CO2 savings taking place and promotes peer networking to increase power savings and help market the product.	<a href="http://www.samec.com.au">www.samec.com.au</a>
Silenceair	Silenceair has developed an award winning technology platform that targets the rapidly expanding 'Green Building' ventilation market, currently estimated to be worth \$15 B in the USA alone. Our products enable architects, engineers and builders to create low cost, energy efficient, fresh air ventilation systems for buildings in noise-affected environments that would otherwise require expensive and energy hungry mechanical systems to provide the necessary ventilation.	<a href="http://www.silenceair.com">www.silenceair.com</a>
SmartBurn International	The SmartBurn device is a combustion catalyst for wood heaters. Based upon a mixture of natural, non-toxic and non-corrosive ingredients the SmartBurn device improves the combustion efficiency of wood heaters and open fireplaces resulting in a 54% reduction in wood particulate emissions from entering the atmosphere and a 17% more effective burn of wood.	<a href="http://www.smartburn.com.au">www.smartburn.com.au</a>
Uniflow Power	The Uniflow Generator is biomass fuelled, steam driven engine that produces 5kW of electricity, rotary mechanical power, steam, hot water, and other heating services. It is a 21st century steam engine that can be fuelled with the lowest grade fuels to produce renewable energy services on demand.	<a href="http://www.pritchardpower.com.au">www.pritchardpower.com.au</a>
Utilitas	Utilitas partners with farmers, food and beverage manufacturers, waste managers, and wastewater treatment plant operators to recycle energy from their organic waste streams to cap their increasing energy costs. Utilitas, a specialist biogas project development company, uses well proven technology and a smart business model to produce competitively priced 'Organic Energy'.	<a href="http://www.utilitas.com.au">www.utilitas.com.au</a>
ZEN Energy Systems	ZEN has developed a range of 'Intelligent Distributed Energy Storage' systems from Residential to Utility Scale based on a distributed computing architecture that allows for joint participation by all parties. The core is a world leading 'Battery Operating System' (BOS3) that enables a high level of functionality and control together with advanced battery optimisation of large format lithium iron phosphate cells to break through previous cost barriers to storage.	<a href="http://www.zenhomeenergy.com.au">www.zenhomeenergy.com.au</a>

Company	Company Overview	Website
Zeobond	E-Crete™ is a geopolymer based binder that delivers up to 80% CO2 emission savings compared to Portland cement and is capable of meeting the maximum Green Star Concrete Credit performance criteria. E-Crete meets all of the performance requirements of standard N-Grade concretes under AS 1379 and is specified in VicRoads section 703 for General Concrete Paving.	<a href="http://www.zeobond.com">www.zeobond.com</a>

## 2012 Finalists & Semi Finalists

Company	Company Overview	Website
<b>WINNER</b>		
enLighten Australia Pty Ltd	enLighten Australia designs and supplies highly efficient LED lighting for commercial, industrial and residential strata applications, reducing energy consumption by up to 93% compared with traditional fluorescent lighting.	<a href="http://www.enlighten.com.au">www.enlighten.com.au</a>
<b>RUNNERS-UP</b>		
Polymeric Powders	Polymeric Powders I has developed a high-tech process to turn end of life tyre waste into a high value very fine devulcanised and activated rubber powders that can be used to economically replace virgin material in the manufacture of high end products in the areas of rubber, plastics and elastomers.	<a href="http://www.polymericpowders.com">www.polymericpowders.com</a>
Biofiba Ltd	Biofiba is a composite comprising 100% natural organic matter sourced from commercially grown, renewable, non-food crops processed and extruded into a simulated timber plank as an alternative to timber, plastic, cardboard and polystyrene in the manufacturer of biodegradable export shipping pallets.	<a href="http://www.biofiba.com">www.biofiba.com</a>
<b>FINALISTS</b>		
Silicon Fertilisers	Silicon Fertilisers has developed an innovative product (MaxSil) from post-consumer waste glass which will reduce the amount of waste being taken to landfill and can be used to significantly increase plant nutrient uptake and increase crop yields by up to 25%. MaxSil has also demonstrated the capacity to reduce carbon intensive phosphate inputs by up to 50%.	<a href="http://www.maxsil.com.au">www.maxsil.com.au</a>
Aeratron Pty Ltd	Aeratron has developed a new fan design with increased airflow efficiency that reduces energy use by up to 50% on air conditioning, creates reduced noise and can be retrofitted.	<a href="http://www.aeratronaustralia.com.au">www.aeratronaustralia.com.au</a>

Company	Company Overview	Website
SkyCool Pty Ltd	SkyCool manufactures a cool-roof coating reduces the internal temperatures of buildings, such as shopping malls, airports and warehouses to below ambient, typically saving 30-50% of a building's air-conditioning energy giving IRRs of 25-100%.	<a href="http://www.skycool.com.au">www.skycool.com.au</a>
Tropiglas Technologies Ltd	Tropiglas Technologies Ltd is developing energy-generating clear glass technology that will have market entry as a clear low-emissions glass for the automotive and building industries. The technology blocks IR and UV radiation and associated heat whilst allowing visible light through.	<a href="http://www.tropiglas.com">www.tropiglas.com</a>
<b>SEMI-FINALISTS</b>		
Active Bio-Culture Pty Ltd	Active Bio-Culture Pty Ltd has developed a cost-effective and energy efficient aeration device (Aeralif) to achieve water and wastewater aeration for multiple applications with reduced capital and operating costs and also reduced energy consumption.	<a href="http://www.activebioculture.com.au">www.activebioculture.com.au</a>
Bennett Clayton	Bennett Clayton provides high efficiency onsite generation using multiple small-scale gas generators that switch on and off with demand and operate at peak efficiency and have the capability of also being used for cogeneration.	<a href="http://www.bennettclayton.com.au">www.bennettclayton.com.au</a>
Casafico Pty Ltd	Casafico's walling and construction systems are an innovative combination of latest technology materials and unique construction methods that are able to utilise industrial land-fill waste to produce high quality, low cost, energy efficient construction.	<a href="http://www.casafico.com.au">www.casafico.com.au</a>
CINTEP Pty Ltd	CINTEP make showers that use 70% less water and energy than conventional showers without reducing flow rate, water temperature or time spent in the shower. The product provides a 70% reduction in water and energy consumption in a package with an average payback of 3 - 4 years at current utility prices.	<a href="http://www.recyclingshower.com.au">www.recyclingshower.com.au</a>
ELE Australia Pty Ltd	ELE Australia has developed a concentrating solar solution utilising fresnel lenses and combined with biogas to provide a complete solution initially to the intensive animal farming sector.	<a href="http://www.ele-australia.com.au">www.ele-australia.com.au</a>
Elemental Energy Technologies	The SeaUrchin™ hydro-kinetic Turbine is designed to economically capture the vast energy of the world's ocean streams, tidal currents and river flows for the generation of electrical power. The SeaUrchin™ technology harnesses up to four times more power, is up to 70% more efficient and costs less than conventional "propeller" based marine generators.	-
Energy Saving Networks Pty Ltd	The Wattwatchers technology is an energy monitoring system that allows consumers to be involved in large scale demand-side participation. This allows consumers to control their power bills over smartphones and PC's, enables new forms of energy services to flourish based on aggregation or profiling, and community-based energy saving networks to form.	<a href="http://www.wattwatchers.com.au">www.wattwatchers.com.au</a>

Company	Company Overview	Website
Environmental Sciences Australia Pty Ltd	The SkyVent - SeaBreezer product is a wind directional skylight ventilator that combines daylight and natural ventilation in the one product It uses a innovative wind directional exhaust ventilation system connected to a light pipe using no energy at a low cost to create a healthy house.	<a href="http://www.envirosciences.com.au">www.envirosciences.com.au</a>
GenesisERT	GenesisERT has developed a highly efficient micro-hydro technology that generates electricity from waste kinetic energy from movement of fluid through pipes and is 50% more efficient than existing micro-hydro units.	-
GreenSync Pty Ltd	GreenSync has developed a demand response platform which enables electricity retailers to offer their commercial and industrial customers money for reducing power usage during critical periods by switching off non-critical equipment when requested in return for incentive payments.	<a href="http://www.greensync.com.au">www.greensync.com.au</a>
H2O Organiser Ltd	H2O Organiser technology provides control systems to stop water loss by monitoring flow and automatically stopping flow for detected unwanted flows.	<a href="http://www.h2ostoptheflow.com.au">www.h2ostoptheflow.com.au</a>
Intelligent Software Development	ISD's SimulAlt simulation program operates in the field of advanced data analytics, using simulation and artificial intelligence technologies to provide mass-consumer-based forecasting and decision-support tools to assist business and Government with strategy and policyfor energy and smart grids, water, waste and environmental policy.	<a href="http://www.isdanalytics.com">www.isdanalytics.com</a>
Intresto Pty Ltd	Intresto's Rocksolver is building material optimisation software. Rocksolver solves the jigsaw puzzle when building with irregular-shaped blocks of unprocessed rock to make it easy to use this cheap, abundant and sustainable resource.	<a href="http://www.intresto.com.au">www.intresto.com.au</a>
Katrú Eco-Inventions Pty.Ltd.	Katrú Eco-Inventions has developed the IMPLUX Wind Power Turbine that provides an efficient, tailored, safe and aesthetically compatible small wind solution.	<a href="http://www.katru.com.au">www.katru.com.au</a>
nDure Technologies Pty. Ltd.	nDure Technologies is developing a technology that helps diesel burn more completely to reduce pollutants and enhancing fuel efficiency.	<a href="http://www.nduretec.com">www.nduretec.com</a>
Recycling Solutions Pty Ltd	A range of small manual Plastic Bottle Crushers that will crush all plastic bottles, aluminium and steel cans designed to be used in homes and the commercial industry. By reducing the waste volume, the product helps make recycling more viable.	<a href="http://www.plasticbottlecrusher.com">www.plasticbottlecrusher.com</a>
Rotary Heat Exchangers	Rotary Heat Exchangers has developed an enthalpy or total energy rotary heat exchanger for use to provide high efficiency air conditioning in humid climates. This is being extended for application in all climates with potential energy reductions of up to 50%.	<a href="http://www.rotaryheatexchangers.com">www.rotaryheatexchangers.com</a>
Silenceair International Pty Ltd	Silenceair's technology provides soundproof ventilators for buildings and machinery that reduce noise levels by over 85% whilst allowing air to enter buildings with very little resistance.	<a href="http://www.silenceair.com">www.silenceair.com</a>

Company	Company Overview	Website
Smart Roof Australia Pty Ltd	Smart Roof Australia has developed a solar thermal heating, cooling and ventilation system known as Smartbreeze, which is able to save up to 40% on heating and cooling bills by using radiant warm air to heat a building on a cool day and provide purging and natural nocturnal cooling to assist cooling a building on and after a hot day.	<a href="http://www.smartroof.com.au">www.smartroof.com.au</a>
Solar Dwellings	Solar Dwellings has developed Energy Efficient Refrigerator that changes the concept of refrigeration for domestic and commercial use through having a number of separate air-tight drawers that are opened independently to reduce unnecessary energy loss.	<a href="http://www.solardwellings.com.au">www.solardwellings.com.au</a>
Switch Automation Pty Ltd	Switch Automation has developed the Switch Smart Hub, a cloud based building management system for buildings and communities that can integrate renewable energy management and is provided on a software-as-a-service solution.	<a href="http://www.switchautomation.com">www.switchautomation.com</a>
Tat-G Corp Pty Ltd	The Tat-G On-Site Organic Digester is a commercial-scale organic waste processing system using advanced vermiculture technology and capable of handling a variety of organic materials in combination with cardboard packaging materials.	<a href="http://www.ecco-technologies.com">www.ecco-technologies.com</a>
Timbercrete Pty Ltd	Timbercrete has developed a low emissions masonry product utilising waste timber feedstock that can replace many brick and concrete applications. The product is easier to construct, more versatile, better insulating and reduces waste to landfill.	<a href="http://www.timbercrete.com.au">www.timbercrete.com.au</a>

## 2011 Finalists

Company	Company Overview	Website
<b>WINNER</b>		
Smac Technologies	SMAC Technologies' Shaw Method of Air Conditioning (SMAC) is a patented and proven highly energy efficient, low costing air conditioning (AC) technology with results from over 40 installations showing reduced AC energy consumption of between 30% and 85%.	<a href="http://www.smactec.com">www.smactec.com</a>
<b>RUNNERS-UP</b>		
SolMax	The SolMax combines existing roofing and solar products to produce a cheap, efficient solar concentrator that can be retrofitted and delivers heat, cooling and electricity to commercial premises at the lowest cost.	-

Company	Company Overview	Website
Clean Oil Services	Clean Oil Services' LubeMaster utilises a centrifuge technology to provide ongoing cleaning of oil in a more efficient way than standard pore membrane filters.	<a href="http://www.cleanoilservices.com">www.cleanoilservices.com</a>
YellowDot Energy	YellowDot Energy has developed Australia's largest solar high-flow groundwater extraction system bore based on a proprietary control algorithm to operate the motor in such a way that we can achieve maximum possible shaft speed (and pumping volumes) given the available solar energy incident on the PV array at any moment in time.	<a href="http://www.ydot.com.au">www.ydot.com.au</a>
<b>FINALISTS</b>		
AquaGen Technologies	AquaGen's SurgeDrive wave energy system overcomes the historical problems of wave energy by converting the energy above water and provides a solution that is scalable and cost competitive with other renewable energy sources.	<a href="http://www.aquagen.com.au">www.aquagen.com.au</a>
AquaHydrex	AquaHydrex is an inexpensive, integrated solar-powered water-splitting technology that enables onsite manufacturing of hydrogen for use in industrial processes.	-
MOES	The Calcination Energy Storage system provides an energy storage solution that combines conventional molten salt technology with the chemical dissociation reaction of lime calcination to deliver an order of magnitude increase in energy storage capacity per unit volume.	-
Cogen Microsystems	Cogen Microsystems is developing a hybrid solar energy system for household and commercial application using a heat engine and low cost solar thermal collector to generate electricity and hot water at lower installed cost than competing technologies. This system is commonly referred to as a micro combined heating and power (mCHP) product.	<a href="http://www.cogenmicro.com">www.cogenmicro.com</a>
Ducane Australia	The Drainwave is a simple device that can be installed in any house that enables the use of low flow water appliances such as ultra-low flush toilets. It enables this through capturing water through a 'tipping bucket' design and then using pulse flushes to ensure the low flows can pass through conventional plumbing.	<a href="http://www.drainwave.com.au">www.drainwave.com.au</a>
RESA Operations	RESA's Eco Whisper Turbine is a unique virtually silent 20kW horizontal axis wind turbine for on and off grid connections that utilises a unique blade design and an outer cowling/ring to ensure optimum energy capture and conversion.	<a href="http://www.resau.com.au">www.resau.com.au</a>
Sundermann Water Power	The patented bi-directionally Sundermann low-head water turbine has been specifically designed to maximise operational efficiency in slow water flows to open up new viable locations for tidal and run-of-the river flows.	<a href="http://www.sundermannwaterpower.com">www.sundermannwaterpower.com</a>