TecEco.Pty. Ltd. (ACN 090 097 591)
497 Main Road
Glenorchy
Tasmania 7010
Australia
Ph 61 3 62728622
Fx 61 3 62730010
techmark@netspace.net.au

The TecEco Newsletter

Keeping you informed about the eco-cement project.

Issue 5, 1st February, 2000

Change of Email Address

Please note that we have changed our email address to tececo@one.net.au

Be sure to update your address book!

A new Accelerator – Our Major Accomplishment in the Last Few Weeks

There has been a gap of six weeks now since the last TecEco newsletter. No excuses except that we have been very busy.

Managing director John Harrison has had his head down in chemistry and it has paid off. **We have now found an accelerator to speed up the initial set** meaning we can now de-mould product after overnight curing.

Summary News of the Last Six Weeks

- Chemistry & more chemistry.
- Studying carbonation
- Incorporation of TecEco Pty. Ltd. (ACN 090 097 591) in now complete and we have new shareholders. Welcome along Vincent Lyne Phd.
- Visit to Temco in Bell Bay Tasmania. Yet another use of eco-cement technology has emerged. Agglomeration using eco-cement has advantages and more on this later.
- Continuing discussions with Victorian Power Stations
- Business Tasmania have agreed to appoint a consultant to undertake an independent technology appraisal and to help with documentation of R & D for funding applications as well as business plan development.
- A patent search of both applied and granted patents in North America, Europe and Japan revealed no other relevant applications.

New Directions

For the next month or so we will be concentrating on the chemistry as we are very excited about our new accelerator. A search of the European, Japanese and North American patents applied for and granted has revealed no other relevant applications.

We can now mimic the early set characteristics of Portland cement and have significantly improved the final strength.

This is of tremendous importance in relation to he brick block and paver sub project and it is our intention to go all out for international patents as soon as we are sure about how our new accelerator is working.

Where to Next

One of the problems facing the company is that there are a whole host of uses for the new cement including:

- Stabilisation/solidification of loose material including soils and flyash
- Agglomeration of furnace feeds
- Toxic waste immobilisation/fixation
- Use in areas of high chloride or sulphate contamination of sand and aggregates
- Where there are critical waste shortages such as in China
- For the production of bricks, blocks and pavers utilising coal combustion by-products including waste heat.
- As a substitute for Portland cement in non structurally critical situations.

Opportunities are being sought to test the companies solutions for agglomeration, solidification and toxic waste immobilisation as well as our green conversion of coal fired furnaces to produce as a by-product bricks, blocks and pavers. Contact us if you can help.

Funding a Major Priority

Given the size of the markets and the research that could be done large sums would be useful.

We have had to work within our budget and so far the company have concentrated on uses for which there is a very short route to market and for which minimal research is required such as the brick block and paver sub project.

A stumbling block for fund raising is third party accreditation and documentation of the project.

We are please to announce that the government in Tasmania have agreed to help in this area and we are waiting to see what emerges.

Carbonation

Carbonation is a process of forming carbonates by reaction with CO2 in the air and dissolved in water (Natural rain is mildly acidic as carbonic acid also forms which is a weak acid)

Early lime sand mortars set by carbonation and Portland cement is also subject to carbonation.

By providing a suitable environment it is possible to speed up the process providing a means of hardening our cements relatively rapidly particularly on the surface.

The absorption of CO2 has not yet been measured but we are confident that the process will continue over time, particularly when there are wet dry cycles.

Carbonation as a means of strength gain can only contribute to greenhouse gas abatement.

CO2 Abatement with Eco-Cement.

We have been doing a lot more work on Eco-cements and have come to the following conclusions:

Eco-Cement Compared to Portland Cement

	% CO2 emitted from Eco cement compared to Portland cement (tonnes CO2/tonne cementitious product)			**% Cost (same profit) Eco cement compared to Portland cement**
	No re-absorption CO2	**Re-absorption CO2 (Normal)**	**Re-absorption CO2 ***	
Including Ancillary Activities	.4296/1.201 =35.77	.258/1.1765 =21.92	.258/.809=3 1.89	34.63/125 .75=27.53
Calcining alone	.2345/.81=2 8.95	.0525/.7855 =6.68	.0525/.418= 12.56	16.1/92=1 7.5
Calcining alone (waste heat)	.182/.81=.2 247	0/.7855=0	0/.418=0	0/92=0

*Argonne Technology

To summarise Eco-cements contribute very little carbon dioxide to the atmosphere and are very sustainable. In terms of the new Australian Greenhouse Office (AGO) draft policy – if funds available are in proportion to abatement – we should do well.

It is very important that the government support research through the AGO and we will be relying on the demonstrably good sense of the Australian Democrats to make sure this happens.

Quantum improvements in greenhouse gas abatement are not going to occur without research.

Should Pareto's principle apply and Eco-cements eventually find their way into 80% of the cement market (presumed non structurally critical), then anthropogenic CO2 emissions world wide would fall by an estimated 8%.

The list of Priorities For The Next Few Weeks

- Development of a simple machine to give us a better comparative measure of compressive and shear strength on small samples.
- Studying the new accelerator.
- Undertaking some thermodynamic analysis
- Finishing the business plan for TecEco
- Initiating a conditional R & D Grant application
- Fund raising from grants & shareholders.
- Time series XRD analysis of our best formulations.
- Electron micro probe analysis of some of our best formulations.
- Development of a CO2 machine to test carbonation
- Testing curing the cement at moderate temperatures.
- Finalise licence agreements for the Eco-cement Technology

A message from our Managing Director

If you want to find out more about TecEco please contact us. We are very enthusiastic and motivated to succeed and would like to hear from you.

The project has progressed a long way in six months