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The TecEco Newsletter

Keeping you informed about the TecEco project on alternative cements and building technologies. Issue 3, 28th October, 1999

Help With Magazine Article?

I am writing an article for the Australian Business Magazine January Issue and hope readers will make comment on the draft that follows. I am finding it hard to create interest without giving the game away too much. I also want to help make sure that appropriate policies are place in relation for AGO funding.

Draft Article

New Hope for Achievement of Greenhouse Gas Reduction Target

According to John Harrison a Hobart entrepreneur, scientist and accountant, worldwide achievement of less that the 1990 level of greenhouse gas emissions should not be so hard.

John has formed a new company, TecEco Pty. Ltd. that has an objective doing just this.

A major asset of the new business will be intellectual property belonging to John concerning alternative cements that can incorporate up to 75% flyash, a waste from burning coal, which is a figure far higher than attained by any other cement.

John says fly ash is a number one world wide muck maker with some 600 millions tonnes predicted to be produced by the year 2000 and is very excited about finding a new use for it

In a recent article featured in the October, 1999 issue of this magazine at page 31 the message of the keynote speaker, James B Quinn, at the May 27th, 1999 forum on sustainable development at Parliament house, Canberra was that “environmental protection is a market, not a cost”. This new market is the target of TecEco Pty Ltd. the company John has formed.

According to John “the world is ready for a paradigm shift towards embracing sustainable technologies and the new business will take up this challenge.”

The credibility of the project has been endorsed by the CSIRO Department of Building, Construction and Engineering. Mr Harrison has disclosed all that he knows about alternative cements to CSIRO DBCE scientists with appropriate confidentiality agreements in place. The CSIRO have indicated a strong interest in undertaking research on the new cements based on their potential for greenhouse gas abatement (GGAP), toxic waste immobilisation and other commercial applications.

The company has also established a relationship with Tasmania’s Department of State Development which is providing a facilitation role intended to expose the project to potential research facilitiy, government and industry interests.

The project falls within the extended criteria of the Australian Greenhouse Office (AGO) and is potentially eligible for funding.

According to John the new cements use far less energy to produce and with a much higher level of incorporated wastes, reduce emissions of CO2 by an order of magnitude compared to conventional Portland cements. In a recent paper he has produced on the new business John claims the project could be worth millions, potentially billions in greenhouse gas credits under the clean development mechanism of the Kyoto protocol

Potential uses have already been found for the new cements based on problems with Portland based solutions. These include waste and toxic waste immobilisation, high chloride cements for the Middle East and bricks, blocks and pavers for the Chinese market where shortages of Limestone and Clay have been identified and strategic business alliances are being pursued

World cement markets are very large at around 1.5 billion tonnes and with a change in culture, that John says can only be catalysed by governments, many more uses are likely for alternative environmentally friendly cements. John says the more characteristic properties of Portland cements, and in particular the ability to set quickly, are not necessary for many applications such as, for example, road or curb and gutter making.

The report written by John emphasises the potential for improvements in building and construction technology to utilise wastes and significantly reduce greenhouse gas emissions and John claims that the project could take the lead in greenhouse gas abatement with national and international repercussions.

John believes that Government interests will recognise the broader project outcomes of environmental and social benefit including the creation of jobs, export earning and carbon credits and with the assistance of the Tasmanian Department of State Development a strong case for Federal governments funding under the Greenhouse Gas Abatement Program (GGAP) is being developed.

John commented that the route to early commercialisation and forming strategic private sector alliances will be through products and services that solve existing problems for customers within the cement industry and allied waste/toxic waste immobilisation/utilisation industry and that many such possible alliances are identifiable.

According to John solving problems equates to sales of product (Eco-Cements) and services (scientific consulting). In the longer term, as a predicted shift in acceptance occurs and the engineering properties have been quantified Eco-Cements and future derivates will target more generalised usages of Portland Cements, particularly where fast early setting is not mandatory.

There is excellent potential for the export of intellectual property, expertise and solutions based on alternative cements to take advantage of the Kyoto Protocol Clean Development Mechanism, potentially worth millions, even billions in greenhouse gas credits to Australia.

Correction to Figure for Fly Ash Production

In the last edition of my confidential memorandum I attributed to Dr Swee Mak of the CSIRO Department of Building Construction and Engineering a figure of 10 billion tonnes for the world output of fly ash. Dr Swee has kindly corrected this figure and yes I was very wrong. The figure should have been 600 million tonnes by the year two thousand and is attributable to a Malhotra, V.M. "Making concrete greener with fly ash" Concrete International, May 1999, pp 61-66.

Either way it is still a big figure and Coal fly ash utilisation rates world wide are very low as shown by the table below

Table 1 – Ash Utilisation Rates

State/Country	Utilisation Rate
Victoria	1%
NSW/Qld	20%
USA	12%
Europe	30%
Netherlands	100%
Japan	60%

The table is from a presentation by Dr. Christopher Black, Senior Research Scientist, HRL Technology Pty. Ltd. 677 Springvale Road, Mulgrave, Victoria, Australia, 3170. (, HRL Technology Pty. Ltd. took over the laboratories of the State Electricity Commission of Victoria.)

If anybody has better figures on production/utilisation of fly ash please communicate them to me.

I do not think our new cement is going to run out of flyash in a hurry.