

## **Inquiry into developing Australia's non-fossil fuel energy industry**

Sir/Madam

### **Introduction**

I am responding to the request for submissions regarding 'Renewable energy in Australia' and the inquiry into the relative state of development of selected renewable energy sectors in Australia.

As a businessman and simply just a human being alive in the year 2007 I am passionately concerned about the 'depleted energy' position we find ourselves in today.

In the last 250 years we have plundered the earth's resources and trashed its environment at an increasingly faster rate and dramatic remedial action is needed now, if it is not already too late, to save the planet in a form where we happily continue to live on it. The alternative is simply not an option.

First, with the advent of cheap oil and now with its expected depletion as peak production is reached, as the book says – 'the party is over'. Now, to address this issue in a serious and responsible way in order that we do not fall back to a pre-industrial existence, selected clean and renewable energy sources must be developed and brought on line quickly.

At one extreme, planting trees and at the other, building nuclear power plants are no where speedy enough to get the result we need in the time we need it. For all manner of reasons nuclear power is not an option in the Australian context. Indeed other countries may not have a choice, we do and besides no one wants a nuclear power plant near their coastal backyard (these need heaps of water to run) and for 60 years mankind has failed to find a satisfactory answer to nuclear waste and besides all this a nuclear power plant is totally uninsurable.

Clean, no waste solutions needs to be quickly brought to the forefront of our thinking and then into mass production in the next 18 months to 2 years at the most.

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### **Clean alternative energy sectors available right now**

Our immediate options to replace heavily polluting fossil fuels (there is no such thing as 'clean coal') with renewable alternatives that we can quickly get to the national grid means we can just have three (3) –wind, solar power and tidal/wave power.

**Wind power** - is well documented and wind turbine 'farms' are popping up everywhere in Europe and now in Australia. Migrating birds flying into them is an issue but if this can be addressed and resolved it is probably the only downside apart from the physical look of them that offends some people and some noise.

**Solar** – Australia is often referred to as the Saudi Arabia of sunshine and solar cells 'farms', sometimes several kilometres across, can capture huge amounts of energy from the sun to power whole towns.

**Wave and tidal power** – the sea holds access to fabulous and untold power through 'wave buoys' and particularly tidal power (moon power). Unlike wind, solar or even waves, tidal power does not need the wind to blow nor for the sun to shine to work. Tidal power provides constant pure 'base' energy. We just need to harness it efficiently.

**Clean alternative energy sectors available soon** and there are two of these.

**Hydrogen power for road transport** – or more specifically 'aluminium-enabled hydrogen technology' to run the internal combustion engine. The basis of this new and exciting technology is that hydrogen is generated spontaneously and on demand when added to pellets of aluminium mixed with gallium and water, inside the internal combustion engine at the moment you need it.

As one could imagine the cost of making on-site power is much lower if you do not need to transport it or distribute it. No oil companies, oil rigs, pipelines and refineries (and no OPEC as a result either). Just aluminium pellets, gallium and water.

**Geothermal power** - For totally clean, unlimited and vast amounts of base power with no waste look no further than beneath our feet. Work is currently and urgently progressing to produce electricity via Kalina Cycle Power Generation from high temperature hot fractured rock (HFR) or 'hot rocks' located in granite formations situated 4 to 5 kilometres beneath South Australia at Cooper Basin, close to the border with Queensland. Geothermal energy is a naturally occurring, sustainable source of energy.

Final proving of the technology has still to be done (this year) but if successful and proven in commercial quantities – water is pumped down an injection well into the high heat-producing granites where it is heated to up to 300 degrees Celsius before being circulated back up to the surface through a production well and heat exchanger. The water then goes back down the injection well in a closed-loop system without consuming any water and without producing emissions - it will, if proven, produce sufficient quantities of electricity to power all of Australia's needs for hundreds of years.

High voltage DC transmission lines, similar to those used in the Basslink Interconnector between Tasmania and the mainland, can transmit power over long distances (it is estimated at a one off cost of about \$1m per kilometre) to cities such as Adelaide, Brisbane and Sydney.

#### **In conclusion**

Speed and access to production and the national grid for power generation is essential. Wind, solar, wave and tidal power is proven and will work today. Hydrogen power for road transport via aluminium-enabled hydrogen technology will be available soon and has fabulous worldwide potential. And if proven this year, electrical power generation from 'hot rocks', will provide Australia with all its power needs perpetually and cleanly, for many generations to come.

Australia, once again, will be the lucky country.

Peter Foster-Bunch

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