Secretary:.....

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22 AUG 2002

HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON
ENVIRONMENT AND HERITAGE

australian SUPERCONDUCTORS

SUBMISSION NO. 6

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12 AUG 2002

Ans'd.....

5 August 2002

The Hon Bruce Billson MP
Standing Committee on Environment and Heritage
House of Representatives
Parliament House
Canberra
ACT 2600

Dear Mr. Billson

**House Environment Committee Enquiry on the Creation of Environment Jobs**

We read with interest the press release issued on 3 July 2002 advising of the enquiry that the House of Representatives Environment Committee will be conducting into employment in the environment sector.

We would like to bring to your attention our efforts and plans in developing a new, environmentally friendly technology that promises to become a substantial business by 2010.

Our business is developing High Temperature Superconductors (HTS), a zero electrical loss conductor that will replace the copper wires in high power equipment such as transformers. HTS has significant potential for future growth in the provision of environmentally friendly goods and services. Some 8-10% of the electricity generated in Australia is lost in transmission and distribution. HTS devices will be able to save this energy wastage by gains in efficiency.

Present high power electrical equipment uses a huge volume of mineral oils, and this has significant environmental impact, spanning from its manufacture and use, to disposal problems and risks from fires and oil leaks. The current alternative insulator/coolant to oil for high power equipment is to use $SF_6$ gas, which is a much more detrimental greenhouse gas than $CO_2$. In addition, all $SF_6$ devices will have to be imported from Japan.

HTS devices use nitrogen instead of oil, which composes 80% of the air we breathe. Nitrogen is non-toxic, zero greenhouse gas producing, and has no risks from fires or disposal issues.

We have developed a business plan that would see an advanced HTS technology production facility based in Wollongong employing some 110 staff in its first stage. This would supply components for electrical equipment such as transformers based in electrical substations. This plant would have a very high export component.

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We have strong interest in out technology from Australian utilities, and have potential manufacturing partners and capital funders lined up. The key to the technology remains the siting and demonstration of an engineering prototype in the electricity grid before large sales can commence. It is at this point that we appear to have fallen through the cracks in the Australian grants system.

While we have a very high level of interest in, and enthusiasm for, HTS technology, no one it seems has any funds to help bring this technology to market in Australia. Our competitors in the USA, Japan, and Europe are able to access substantial financial support from their respective governments. Two recent examples are: (i) the US government is supporting US industry to develop HTS devices with a funding package of $US 57m; and (ii) the Korean government has recently announced a 10-year $US 100m plan to establish a Korean HTS industry.

We have invested approximately A$7m in HTS so far, and we have applied to several funding programmes to attract support for the development of an HTS transformer engineering demonstrator but have had no success. While organisations such as the AGO and SEDA accept that implementation of HTS technology in the Australian electricity grid has the capability of saving our nation hundreds of thousands of tonnes of $CO_2$ per annum, the feedback we receive is that funding is being targeted at renewable generation (and not energy efficiency) or at fossil fuel industries (and not new technology) because of a perceived lower-risk profile.

The apparent lack of government support for both HTS technology and small, high-tech start-up companies, such as ours, means that time is running out for us here in Australia. Despite being only a few small steps away from installing a fully working superconducting transformer demonstrator that has the support of electricity distribution utilities such as Energy Australia and Integral Energy, we are not able to continue to self-fund this development. We will be forced to either go offshore, compromising yet another Australian invention, or close down our facility, adding to the already high Wollongong unemployment statistics and forcing yet more graduate and post-graduate students to depart our shores to benefit another country.

We would be interested to hear your comments on the above, but more importantly we would appreciate your advice as to whether the Australian Government may develop support for emerging manufacturing businesses such as ours, and thus avoid having Australia disadvantaged by continued reliance on off-shore development and application of this exciting, globally important HTS technology.

Yours sincerely,

Murray Steele
Chief Executive Officer