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Time to consider new greenhouse gas solutions – Alumina Limited

Over the past 18 months Alumina Limited has supported and funded a highly prospective project using technology with the potential to contribute significantly to solutions for the greenhouse gas challenges facing Australia and the global community.

The project has the potential to significantly augment current industry efforts to limit carbon emissions through the adoption of cleaner production technologies. This could enable Australia to deliver on its international emissions reduction commitments without risking the closure of some of its most important value adding export industries.

The aim of the technology is to store large amounts of atmospheric CO₂ through the conversion of agricultural and plantation wastes to a charcoal product called biochar and is also expected to create renewable energy in the form of biogas and biooil. Forms of this technology have been used in Japan and the project's preferred pyrolysis technology is Australian, newly designed and potentially a breakthrough with respect to cost and efficiency. The project is proposed to be initially based in the Western Australian wheat belt with the potential to be implemented in a number of other parts of Australia.

Biochar is a fine grain, highly porous charcoal that helps soils retain nutrients and water. The biochar is made by pyrolysis which involves the high temperature heating of biomass in the absence of oxygen. Biochar has been used in Japan and South America to improve soil fertility and reduce fertiliser consumption. The project's expectation is that the production of biochar from plant waste would capture and store atmospheric CO₂ permanently and safely. The objective is that when the biochar is made from agricultural and plantation wastes that would otherwise decompose within a few years and release greenhouse gases to the atmosphere, the pyrolysis process captures and locks up the carbon in the biochar permanently, thereby preventing the release of carbon dioxide.

Australia's proposed Carbon Pollution Reduction Scheme (CPRS) does not currently recognise biochar as a legitimate carbon offset or credit. Carbon accounting for the biochar process is a simple, accurate process which is easy to audit and verify.

Alumina Limited recognises that the issue of emissions reductions is a major challenge for Australia and the aluminium industry. We continuously strive to improve direct emissions from our operations. In parallel, Alumina Limited is developing a carbon strategy with the aim of reviewing a range of projects which aim to generate carbon reducing credits to offset any limits in the ability to make internal improvements in the operations. One promising development within this overall strategy is the Alumina-funded biochar technology project. Alumina Limited CEO, John Bevan, commented, "The project's trials are still in the early stages of development, but the initial analysis indicates that biochar has the potential to substantially reduce Australia's net carbon emissions and create a major new and economically sustainable rural industry.

"Whilst the project's initial studies are promising, it is of vital importance to the future of the project that the carbon captured and stored by the system qualifies for carbon credits.

"The Alumina sponsored study suggests that mitigation of millions of tonnes per annum of CO2 may be achievable by 2020. The project is not aware of any other potential large scale mitigation option that could commence capturing and storing carbon in this way within several years. The theoretical longer term potential for Australia may be of the order of 100 million tonnes per annum of CO2 reduction by utilising biomass from existing cleared farmland.

"The project expects that large-scale biochar projects could bring other very important and timely environmental and regional benefits, including regional jobs, distributed renewable energy production, reduced fertilizer consumption, increased soil fertility and crop yields and reduced soil and biodiversity degradation.

"Energy intensive trade exposed industries in Australia are facing the very real threat of investment leaving Australia, and all the impact that would have on economic growth and employment, as a result of the introduction of a CPRS that disadvantages Australia relative to other economies. Alumina Ltd is an Australian company which invests world-wide in bauxite mining, alumina refining and selected aluminium smelting operations through our 40% ownership of AWAC, the world's largest alumina business. In our industry, we have made significant improvements in emissions over the past 20 years however the incremental improvements that can be made with the existing technology are unlikely to be sufficient to ensure sufficient carbon reductions in the short term. We must look to innovative solutions to supplement our efforts and we encourage Australian industry and policy makers to embrace an open minded approach where the carbon reducing projects need not be directly related to the carbon emitting side of the business. We are concerned that having a narrow range of permissible offsets or credits might stifle innovation and lead to Australian operations losing their competitiveness and result in Australia developing fewer carbon reducing projects than we could. We call upon policy makers to urgently consider a framework that would allow the potential of this biochar technology and a wider range of credits for large-scale carbon reducing projects be taken into account as Australia forms its response to the global greenhouse challenge".

Further information:

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