



LEAF RESOURCES LIMITED
Sustainable products from plant biomass

Australian Securities Exchange Announcement

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LEAF RESOURCES ENTERS RESEARCH AGREEMENT TO USE AGRICULTURAL WASTE FOR BIO PRODUCTS

A major agricultural group and Leaf Resources have signed a research agreement to create valuable bio-products from agricultural waste.

Many thousands of tonnes of agricultural waste from crops ends up as underutilized biomass in Australia. Should the research programme be successful, making use of this biomass will help generate additional revenue for farmers and processors and potentially boost regional employment through new industry development.

The research agreement funded by the other party contemplates testing the agricultural waste with Leaf's Glycell™ process and if successful, aims at working towards a feasibility study for a commercial operation using the Glycell™ process in Australia. The identity of the other party has not been disclosed at this time due to the confidential nature of the agreement.

Key to the programme's success is Leaf Resource's innovative Glycell™ process.

This unique, Australian-developed technology uses glycerol as a catalyst to make cellulosic sugars – the key component in bio-products – from biomass, such as agricultural waste. And it does so for a fraction of the cost of conventional technologies currently used as alternatives to fossil fuel-based industry processes

Leaf Resources announced on the 23rd June 2015 that their Glycell™ process can achieve a net cellulosic sugar cost of \$47 per tonne when taking in all co-product values including glycerol. This is around 60% less than the current industry standard.¹ Cheap, clean cellulosic sugars are an essential feedstock to the new world of industrial biology, which is enabling bio-based chemicals

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Compared to current net US corn starch cost of \$116 per tonne from wet milling operations
Sources: USDA, Agricultural Marketing Service, <http://marketnews.usda.gov/portal/lg>;
Economic Research Service, USDA, byproduct credits and net cost calculations. 13 July 2015.



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and bio-plastics to economically replace petroleum-derived products. The USA National Academy of Sciences in a 2015 report entitled the "Industrialisation of Biology" commented:

"The industrialisation of biology will be as important in the next 50 years as semiconductors have been to economic growth over the last 50 years."

Glycell™ has already proven its worth, producing world-class results when tested on biomass feedstock crop derived agricultural residues including, bagasse, eucalyptus, poplar, and agricultural crop wastes.

Leaf Resources Managing Director, Ken Richards, said the agreement with this major agricultural group gives Leaf Resources the opportunity to further expand the number of agricultural waste products that can be utilized with the Glycell™ process to create cellulosic sugars at an advantageous cost. Successful commercialization of the Glycell™ process with agricultural waste inputs could secure the future of many Australian agribusinesses and country communities.

"We are pleased to collaborate with partners in the agricultural sector seeking to invest in positive outcomes for their stakeholders in the rural communities where they operate," Mr Richards said.

Leaf Resources Ltd (ASX: LER)

Leaf Resources is commercialising the Glycell™ process.

The Glycell™ Process is an innovative technology that uses a low cost, recyclable, biodegradable reagent glycerol, in a simple process that breaks down plant biomass into lignin, cellulose and hemicellulose at low temperature and pressure. The cellulose is then converted to cellulosic sugars through enzymatic hydrolysis and the lignin, hemicellulose and glycerol become valuable co-products.

Cellulosic sugars are a major feedstock for green, renewable biobased chemicals, bioplastics and biofuels, products whose markets are multi \$billions and fast growing. Many biobased products can now economically replace petroleum based products.

The Glycell™ process produces cellulosic sugars up to 90% cheaper than its major rival, dilute acid and at competitive prices with raw cane sugar and sugars from grain starch. It also produces "clean" sugars i.e. sugars with negligible degradation products and therefore suitable as a raw feedstock for many biobased chemical and bioplastic production processes.

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