

**2 May 2016**

## **Australian Securities Exchange Announcement**

### **Shareholder update**

#### **Overview**

Leaf Resources has had a very busy and productive year to date, working around the world to deliver economical projects producing renewable chemicals from plant biomass based on our proprietary, award winning Glycell™ process.

Recent trips to the USA have progressed potential projects in the region as Leaf Resources' personnel continue negotiations with several potential partners in addition to working on the previously announced JV with ZeaChem. In Europe the Joint Venture with Monaghan Bioscience has delivered excellent first stage results and has now progressed to the second stage.

In Asia, plans are being made to utilize the excellent results from the recent testing of Empty Fruit Bunch (EFB) at Andritz's demonstration plant at Springfield Ohio. The results were good enough for Andritz to state that Glycell™ is now a preferred process to convert this waste biomass into commercial sugars.

In Australia our first stage of the project with a large international agricultural company have delivered positive results creating increased focus on the potential of Glycell™ within that company.

Since the last update we have had success in international awards with Leaf Resources being nominated as a finalist in the World Bio Markets 'Breakthrough Bio-Based Technology Platform' section of their Bio Business awards and also being voted as one of the "40 Hottest Small Companies in the Advanced Bio-economy" at the Advanced Bio-economy Leaders Conference in San Francisco last November.

#### **United States of America**

Potential customers are demonstrating interest in the forthcoming 'Biomass to Biobased Products' project to be developed in the US by Leaf Resources.

In the first instance we are, in conjunction with ZeaChem, our JV partner, pursuing a project in the southeastern industrial heartland of USA. The project will harness the proven technology of Leaf Resources' Glycell™ process and the engineering experience of ZeaChem to develop a range of biobased products.

To further strengthen the partnership, Leaf Resources' Managing Director, Ken Richards, was recently welcomed onto the ZeaChem Board.

The JV partners have already received initial non-binding expressions of interest from potential customers located in the target geographic region. Interest has been for supply of the C6 and C5 sugar streams as well as for the technical grade glycerol generated by the Glycell™ process.

A JV plan has now been agreed and Leaf Resources' Marc Sabourin, Executive Vice President for Business Development the America's, and ZeaChem staff are now working on a scoping study for the project. This study is the precursor of a more detailed feasibility study suitable for financing the project.

The announcement on 29 February 2016 also detailed an option to acquire another parcel of ZeaChem shares from an existing shareholder. Leaf Resources has extended that option to acquire further shares until 30 June 2016.

## Europe

The first stage of the joint development program under the MOU with Monaghan Biosciences has been successfully completed. The combination of a Monaghan Biosciences' enzyme mix and Glycell™ pretreatment produced vastly superior results to that of a dilute acid process by producing 25% more cellulose than dilute acid at the 24-hour time point of the process.

Based on these positive results, Leaf and Monaghan have agreed the plan for stage 2 and are now implementing that plan. This stage will include tonnes per day pilot scale testing at the Andritz facility in Springfield Ohio.

Leaf Resources is now also considering the attractiveness of various options for the renewable chemicals to be produced from the cellulosic sugars the Glycell™ process produces. Leaf Resources has had contact with the companies willing to license their technologies that convert the cellulosic sugars produced by the Glycell™ process and we will now commence evaluating the various options

## Asia

Leaf Resources recently announced that Andritz has nominated Leaf Resources' Glycell™ process as one of its preferred pretreatments of Empty Fruit Bunch (EFB) Biomass. EFB is an abundant, low cost feedstock in palm oil producing countries like Malaysia, Indonesia, Thailand and others. Approximately 20 million metric tons are "generated" annually by palm oil mills in Malaysia, between 22-23 million metric tons in Indonesia and over 2 million tons in Thailand.

Asia also has strong chemical markets and a demand for renewable chemicals. The availability of cheap biomass and the demand for renewable chemicals means that projects based on Leaf's Glycell™ process will be attractive and we are now working to attract potential partners to help develop projects.

## Technical

The successful pretreatment of EFB and spent mushroom compost continues to validate the effectiveness and versatility of the Glycell™ process. The Glycell™ process has now produced superior results on: EFB, sugar cane bagasse, wheat straw and various hardwoods including Eucalyptus Globulus, Poplar and American mixed hardwoods. Work continues on softwood species but is of a lower priority at this time.

## Awards

Leaf Resources continues to build its reputation, position and profile in the world Bio-economy with two recent successes in awards.

At the Advanced Bio-economy Leaders Conference held in San Francisco in November 2015, Leaf Resources was voted number 32 in the 2015-16 "40 Hottest Small Companies in the Advanced Bio-economy" rankings, published by *The Digest*, the world's most widely-read advanced Bio-economy daily.

The Hot 40 recognizes companies with fewer than 100 full-time employees and \$20 million or less in annual revenues. The rankings recognize innovation and achievement in biobased chemicals, materials and fuels by emerging companies, and are based 50 percent on votes from an invited panel of distinguished international selectors and 50 percent on votes from subscribers of *The Digest*.

Leaf Resources was also nominated as a finalist in the World Bio Markets 'Breakthrough Bio-Based Technology Platform' section of their Bio Business awards.

In its 11<sup>th</sup> year, World Bio Markets is the leading global gathering of the strategic decision makers driving growth and innovation throughout the bio-economy. 650 plus delegates from the world's leading bio-economy companies attended the World Bio Markets conference.

Leaf Resources was nominated as one of three finalists in its section alongside Avantium and Whitefox Technologies. Both of these companies are developing ground breaking technologies, albeit in different fields. The winner was Whitefox Technologies, a UK company with advanced membrane separation technologies.

## Going forward

Our priority remains to secure projects for our Glycell™ process. We are focusing on the identified projects in the USA and Europe and working to bring them to fruition together with adding an Asian project over time.

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**About 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 can produce cellulosic sugars at under \$50 per tonne when co-products are included. This compares with \$220 per tonne for sugars produced from the conversion of corn starch, the cheapest alternative and \$280 per tonne for raw sugar.

By dramatically reducing the cost of the main feedstock for bio based chemicals, plastics and biofuels, the Glycell™ process has the potential to change the face of global renewable production.

**Contacts:**

Ken Richards (Managing Director)  
Jay Hetzel (Chairman)

M: +61 403 385 051  
M: +61 413 045 478