

29<sup>th</sup> February 2016  
Australian Securities Exchange Announcement

## Joint Venture agreement with and Investment in US based biorefinery company, ZeaChem Inc.

### Highlights:

- Leaf and ZeaChem have signed a JV agreement to establish a Glycell™ based project in the USA
- Leaf Resources expands its equity stake in ZeaChem to 13% with the potential to increase to 45%, on a fully diluted basis, in the future
- ZeaChem has proven engineering experience from operating a demonstration scale bio-refinery in Boardman, Oregon since 2012
- The partnership provides Leaf with access to an attractive suite of processes for the production of renewable chemicals which can be materially enhanced by use of Leaf's Glycell™ process
- ZeaChem has 2 projects in the engineering design phase

Leaf Resources and ZeaChem, Inc. of Denver Colorado have signed a joint venture agreement to establish a Glycell™ based project in the USA. The agreement recognises the mutual benefits of combining ZeaChem's biorefinery engineering experience and renewable chemical technology, with Leaf Resources' proprietary Glycell™ process, and this combination should increase the opportunities available to Leaf Resources for the commercialisation of the Glycell™ process.

As a result of this agreement, Leaf Resources will invest AUD\$550,000 to increase its stake in ZeaChem to 13%. This investment comes from current cash resources. Leaf will also receive 5 year warrants, which if fully exercised would increase Leaf Resources' ownership in ZeaChem to 30%, based on the current capital structure.

Under the joint venture agreement, Leaf Resources retains full rights to all Glycell™ intellectual property and any associated royalties and upfront payments and ZeaChem retains full rights to its intellectual property and any associated royalties and upfront payments.

### Leaf Resources Joint Venture with ZeaChem

Leaf and ZeaChem have been in discussion with potential partners in the USA and have decided that a joint approach will be beneficial to both companies. Leaf has a proprietary Glycell™ process to break down plant biomass efficiently whilst ZeaChem have a number of pathways to take the sugars produced by the Glycell™ process through to renewable chemicals. In addition, ZeaChem's considerable engineering experience reduces the technical risk for any project. The ability to offer this comprehensive package presents a more compelling case to potential partners.

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Initially, the JV will be focused on the south east region of the USA where there are plentiful supplies of hardwood and opportunities with regional authorities looking for ways to stimulate regional employment.

Leaf Resources and ZeaChem can still pursue individual opportunities, should they choose.

### **Information on ZeaChem**

ZeaChem is a biorefinery company based in Lakewood, Colorado and has operated its 10 ton per day demonstration scale biorefinery in Boardman, Oregon since December 2012. The plant has provided over 4,600 hours of technical performance data that is being used to design ZeaChem's portfolio of commercial plants.

Although the Glycell™ process requires additional front end equipment to precondition the biomass, the core equipment for ZeaChem's plant is essentially the same as for a Glycell™ plant. Consequently, ZeaChem's engineering, operation and maintenance experience is directly transferable to Leaf's Glycell™ process.

It is planned that the demonstration plant will serve as an expansion arm for one of ZeaChem's first commercial plants for specialty bio-chemicals and fuel production.

ZeaChem has developed several biorefining product lines that enable it to produce a range of fuels and bio-chemicals. Its two carbon platform (C2) uses a combination of fermentation and conventional chemical synthesis pathways to produce ethanol, acetic acid, acetate esters, ethylene, and ethylene derivatives. Its three carbon platform (C3) changes the micro-organism used for fermentation, resulting in three carbon products such as propionic acid, propionate esters, propanol, propylene, and propylene derivatives.

ZeaChem is actively collaborating with 3<sup>rd</sup> parties on other biorefining product lines that enable it to produce additional biochemicals and fuels.

ZeaChem has a strong list of potential projects at various stages of development. The projects use a variety of feedstocks including forestry residues, agricultural products and residues, industrial co-product streams, etc. and will produce specialty chemicals and ethanol. Two of these projects have entered the engineering design phase.

Leaf Resources' Glycell™ process provides a strong technology platform for the production of cheap, clean cellulosic sugars that significantly enhances the economics of ZeaChem's production of renewable chemicals.

### **Boardman Plant**

ZeaChem is currently conducting engineering for the conversion of its demonstration plant in Boardman, Oregon into a commercial production facility for advanced/cellulosic ethanol and specialty chemicals.

To help address the cost of debt on the Boardman commercial plant, ZeaChem secured a USDA Loan Guarantee Conditional Commitment pursuant to the 9003 Advanced Biorefinery Assistance Program.

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## General

The Directors of Leaf Resources believe that this investment and the joint venture agreement will be beneficial to both companies and may be the forerunner to stronger ties in the future.

In addition to the current investment Leaf has also secured an option to purchase an additional 18% of shares in ZeaChem from an existing ZeaChem shareholder which is exercisable by Leaf before 31 March 2016. If this option is exercised together with the warrants detailed earlier then Leaf Resources would have a 45% equity stake, on a fully diluted basis, in ZeaChem.

From Leaf Resources' perspective, ZeaChem's engineering experience together with their various processes to take cellulosic sugars through to renewable chemicals are complementary to Leaf Resources' Glycell™ process. ZeaChem also have good relationships with value adding companies in the renewable chemical space. Their location in the USA is an additional positive.

### **Leaf Resources' Managing Director Mr Ken Richards commented:**

"We have developed a good relationship with ZeaChem over some 15 months now and the opportunity to become a significant shareholder was compelling. We operate in a world market and to have a close partner in the USA will bring Leaf Resources considerable benefits as it seeks to penetrate that market."

### **Tim Eggeman, President and CEO of ZeaChem, commented:**

"We have been impressed by the Glycell™ process and its ability to operate extremely effectively and produce clean sugars. The recent addition of the glycerol recovery step has added to an already strong process. We welcome Leaf Resources as a significant shareholder and look forward to working closely with them to further the biorefinery industry around the world. Leaf Resources has a significant technology, high quality staff and we look forward to a productive partnership."

**ENDS**

### **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.

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