



## LEAF RESOURCES LIMITED

Sustainable products from plant biomass

Australian Securities Exchange Announcement

13 April 2015

### **New Patent Application leads to commercial interest from the Paper and Pulp Industry**

#### **Highlights**

- **Leaf Resources has lodged a new patent application for Hybritech™ – a platform for the flexible production of pulp and/or cellulosic sugars**
- **The Hybritech™ platform addresses a strategic focus of paper and pulp producers**
- **A US focused business development campaign in the paper and pulp industry is currently underway**
- **2 Confidentiality Agreements for Hybritech™ have been signed in first month**
- **Leaf Resources now have a total of 10 agreements (Material transfer or Confidentiality agreements) signed**

Leaf Resources today launched its new Hybritech™ platform for the pulp and paper industry following the lodgment of a patent application for the process last month.

The Hybritech™ platform utilises Leaf Resources' Glycell™ process and allows for the switching of a common equipment train, as utilised in pulp production, between pulp production and the production of cellulosic sugars for bio-products.

The process can be externally or internally integrated into chemical pulp mills. In this way a paper and pulp producer has the option of producing cellulosic sugars for bio-products or pulp, thereby adding a new flexibility to their operations. Hybritech™ is particularly suitable for companies with chemical (Kraft) pulp mill operations.

The global pulp and paper industry are the largest aggregators of plant biomass in the world, utilising soft and hard woods for pulp, paper & fibre products. A Hybritech™ integrated mill can use the biomass supply available to pursue long-term sustainable and profitable strategies during ever evolving and cyclical markets in either pulp or cellulosic sugars.

Paper and pulp companies have a strong strategic interest in the emerging cellulosic sugars market. This is evidenced by recent transactions in the market such as:

- Stora Enso, a large European paper and pulp company acquired Virdia, for \$62m.
- Fibria, a large South American paper and pulp company, purchased the Lignol assets from the receiver.
- According to the receivers report to the court 19 paper and pulp companies expressed an interest in the Lignol assets.



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More and more pulp and paper companies are restructuring their businesses to include bio projects for future economic growth and sustainability. For example, UPM, a major forest products company, has restructured their organisation to what is termed Biofore, an integration of Bio and forest industries across all business sectors. This forward thinking is consistent with a strategic initiative by Leaf Resources, to introduce bio process solutions to the pulp & paper industry. Hybritech™ satisfies an emerging demand from paper and pulp companies and is a great platform for Leaf Resources to enter this sector.

Leaf Resources' US focused market engagement campaign will be headed by Dr. Marc Sabourin, Vice President, Business Development for the America's, who recently joined Leaf Resources after a 25 year career with Andritz (Andritz is a globally leading supplier of plant and equipment for the paper and pulp and other industries).

Over the last month, Leaf Resources has signed two Confidentiality Agreements relating to Hybritech™ with paper and pulp companies in North America. Such agreements allow for a comprehensive data pack to be exchanged. North America represents the first mover market for Hybritech™ as there are over 400 pulp and paper mills currently in operation. Many mills are looking for innovative solutions to add further value to their operations but which integrate and do not disrupt their main business. Leaf will present on the Hybritech™ platform at the Bioenergy Deployment Consortium (BDC) 2014 Fall Symposium in Denver, Colorado on the 5<sup>th</sup> May.

Leaf Resources Managing Director Ken Richards said "Hybritech™ is an innovative technology approach that addresses the paper and pulp industry's strategic requirements. It also leverages our recent executive appointment of Marc Sabourin, who has extensive experience and knowledge in the paper and pulp industry. The initial progress is really promising, with two companies engaged within a month of launching our new Hybritech™ strategy.

The Hybritech™ application is the third provisional patent application for the Glycell™ process. These applications cover:

1. The conversion of plant biomass into cellulose for cellulose fibre ,
2. the conversion of plant biomass to cellulose and then to cellulosic sugars,
3. the Hybritech™ patent which enables the production of either pulp or cellulosic sugars from the same equipment line.

All three patent applications are wholly owned by Leaf Resources and will enable it to commercialise the IP on a global basis. Leaf Resources has now signed a total of 10 Material transfer and/or Confidentiality agreements for the three processes which is evidence of the strong commercial interest in the Glycell™ suite of process technologies."

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### **About Leaf Resources Ltd (ASX: LER)**

In virtually every industry, consumer demand for greener more natural products is fuelling a surge of interest in bio-based alternatives to replace oil based products.

Leaf Resources is commercialising the Glycell™ pretreatment technology: This is the first essential part of the process on a path to bio-based products.

The Glycell™ Process is an innovative technology that uses a low cost, recyclable, biodegradable reagent glycerol, in a simple process. This process breaks down plant biomass into lignin, cellulose and hemicellulose at low temperature and pressure.

Cellulose, a critical building block for many bio-based products, produced by the Glycell™ processes can be used directly as cellulose fibre, chemically converted to cellulose derivatives or converted to cellulosic sugars using enzymatic hydrolysis. These cellulosic sugars can then be converted to bio-based materials, bio-plastics and green chemicals, the markets for which are extremely large and fast growing.

Leaf Resources commercialisation strategy is to partner with industry leaders across the breadth of product supply chains. This will bring synergies and speed to the commercial adaption of our production process technology in a capital-efficient manner. Leaf Resources sees this path as an effective means of deployment to multiple plants in diverse settings and the opportunity to further innovation in both product and process technologies.

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