

23 April 2018  
Australian Securities Exchange Announcement

## Shareholder Quarterly Update

Leaf Resources (ASX: LER) ("Leaf" or "the Company") is pleased to provide a quarterly update for the period ending 31 March 2018.

### Malaysian biorefinery project

Leaf continues to make positive progress on its proposal to develop a biorefinery incorporating its proprietary Glycell™ technology at Segamat, Johor in Malaysia.

On 26 February 2018, Leaf announced it had executed a two-year option on land at Segamat. This site is highly suited to Leaf's proposed biorefinery, given its ready access to empty fruit bunch (EFB) waste from the palm oil industry which will be processed to produce industrial sugars, glycerol and lignin.

The site is well established and has major advantages for Leaf's proposed project:

- Excellent biomass availability given within an approximate 120 km radius of the site there are 52 palm mills that can provide 10,000 metric tonnes (MT) per day of EFB biomass (Leaf's first commercial requirements for EFB biomass is 600 MT per day);
- At scale EFB handling with established facilities adjacent to the site designed to handle up to 500,000 MT of EFB per annum;
- Key utilities established adjacent to the site;
- Excellent logistics via the Segamat Inland Port; both rail and truck transport to Johor and Kuala Lumpur ports, and;
- Income tax exemption as the land comes with "Less Developed Area" incentives including the potential for income tax exemption of 100% for up to 15 years. An application for this exemption has been lodged with the Malaysian Investment and Development Authority (MIDA).

The land is immediately adjacent to facilities operated by B&G, a company with extensive experience in aggregating and processing EFB. Leaf has signed a Letter of Intent with B&G, with the aim of entering into a binding commercial agreement to take supply of EFB as the key biomass input for the biorefinery project.

Considerable baseline work has been done in the last month following the signing of the option agreement on the site and a detailed feedstock supply specification has been forwarded to B&G (based on local EFB biomass) for evaluation and discussion.

In addition, B&G and Leaf have met with the State Government of Johor to discuss assistance for planning and relevant approvals and received a positive response from government officials.

## **Integrated demonstration study (IDS)**

Work on the IDS for Leaf's Glycell™ process technology is continuing, with an agreement now signed to proceed with phase 2 of an IDS in Holland in May.

The IDS is a financing requirement for the project and involves approximately 1,000 hours of run time to fine tune the process and provide further data and inputs for the final engineering study, the FEL3 study.

Leaf successfully completed Phase 1 of the IDS in December 2017 at Bio Processing Facility B.V.'s pilot plant in Delft, Holland. Phase 2 and 3 of the IDS will provide additional data for the FEL3 study as well as providing samples of all 4 products that Leaf's Glycell™ process will produce.

The IDS in Holland follows more than 350 hours of successful testing and work done at the Andritz Test facility in Springfield Ohio.

The phase 2 work will integrate the digestion phase of the process and the enzymatic hydrolysis phase of the process. It will also incorporate a continuous 72 hour run, producing a significant volume of Leaf's industrial C6 sugars and lignin which can be utilised for sample purposes with potential customers.

Approximately one tonne of C6 sugar samples will be produced and approximately one tonne of lignin samples will also be produced. Samples are expected to be available to send to potential customers by the end of April, some two months in advance of plan.

Planning for phase 3 of the IDS is almost complete and is scheduled to commence in September. This phase will see all three elements of the process integrated over a planned 900 hours of run time, producing samples of all four products: C5 and C6 sugars, Glycerol and Lignin.

## **Front End Loading 3 Study (FEL3)**

Leaf is on track to finalise by 30 June the appointment of the engineering company to undertake a detailed engineering study at FEL3 level. This work is planned to start after Phase 2 of the IDS and be completed following phase 3, in line with the timetable disclosed in the 31 January 2018 shareholder update.

## **Government support**

Leaf is still receiving very strong support from both the Federal Malaysian Government and the government of the State of Johor. Leaf's application for "Less Developed Area" status for the Segamat site is progressing, pending the application for a manufacturing license from the State of Johor.

## **Feasibility Study**

Aurecon, an international engineering company with offices in Singapore, Bangkok, Manila, Australia, New Zealand, Africa and Middle East. Aurecon has a long pedigree in infrastructure, resources and manufacturing projects, as well as experience in biorefineries. Aurecon has been appointed to undertake a feasibility study that will assess the technical aspects, model and validate the economics of the project to be located in Malaysia. The study is scheduled to be completed by the middle of the year. Aurecon's website contains further company details: <https://www.aurecongroup.com/>

## **LeafCOAT**

Several large potential customers have expressed strong interest in LeafCOAT, Leaf's biodegradable, renewable and recyclable coating for the packaging market.

Discussions are ongoing with eight companies across a range of opportunities within various target markets. Six of these companies have committed to receive samples for testing, which are being produced by a local toll manufacturer.

## **June quarter outlook**

Leaf's board and management expect another period of significant progress across the various segments of the business including the Malaysian biorefinery project and LeafCOAT. The anticipated milestones to be completed in the June quarter include:

- Sugar samples from EFB biomass: available to send to potential customers by end of April
- Appointment of FEL3 engineering company
- Binding commercial agreement for EFB biomass supply signed
- Secure Government approval for 'offset' financial package
- Finalise project ownership structure
- Continued work on feasibility study with results mid-year
- Testing of LeafCOAT for specific uses completed

## **Changes to board & management**

Several important changes were made to the Leaf Resources board and management team during the period.

Mr Doug Rathbone commences as Non-Executive Chairman of the Company to begin the new quarter. Mr Rathbone is a highly regarded figure in the global chemical industry given his long tenure as CEO and Managing Director of Nufarm Limited, where he led a period of outstanding growth in the business. Dr Jay Hetzel has resigned as Chairman and as a board member of the Company.

Further to the shareholder update on 31 October 2017, Mr Alex Baker was appointed as a Non-Executive Director of the Company during the period. Mr Alex Baker is an experienced executive with more than 20 years multi-sector experience in the life sciences, biopharma

and industrial biotechnology areas delivering product innovation, leadership and business management.

In March, Mr Jason Lowry was appointed Chief Operating Officer of Leaf, bringing 15 years' experience in senior management roles. Working with large multinationals in the sugar industry, such as Cargill and American Crystal Sugar, his expertise is in areas directly applicable to Leaf's Glycell™ process. As a result, Mr Lowry possesses a worldwide contact base of companies collecting biomass and exploring commercial opportunities.

### **Summary**

The March 2018 quarter has continued to see significant and positive progress in respect of the Company's proposed biorefinery project and market development of the LeafCOAT product. Leaf has achieved many target milestones in this period and is well positioned to continue this momentum into the next quarter.

**ENDS**

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

Leaf Resources is one of the world's leading companies in converting plant biomass into industrial sugars. Our proprietary process for converting biomass-to-functional industrial sugars enable a myriad of downstream technologies for the production of renewable chemicals and bioplastics that will substitute petrochemicals used in manufacturing today. With our project development and continued technical innovation we are building a robust global business centered on renewable carbon containing products to deliver environmental and economic benefits to our shareholders and our planet. More on [www.leafresources.com.au](http://www.leafresources.com.au)

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