

Australian Securities Exchange Announcement

17 October 2017

## **Leaf Resources presents at the 8<sup>th</sup> Annual Australian Microcap Investment Conference**

**Leaf Resources Limited (ASX: LER)** ("Leaf Resources") is pleased to announce that its Managing Director, Ken Richards, will present at the 8<sup>th</sup> Annual Australian Microcap Investment Conference ("Microcap Conference") on Tuesday, 17<sup>th</sup> October 2017 at 12.15pm.

The Microcap Conference is being held in Melbourne, over two days at the Sofitel Melbourne on Collins, in the 'Arthur Street on Auditorium'.

Leaf Resources' presentation for the Microcap Conference is attached.

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

Leaf Resources is one of the world's leading companies in converting plant biomass into fermentable sugars. Our proprietary process for converting biomass-to-functional industrial sugars enable a myriad of downstream technologies for the production of renewable chemicals 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)

#### **Contacts:**

Ken Richards (Managing Director)  
Jay Hetzel (Chairman)

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# MICROCAP PRESENTATION

October 2017

# DISCLAIMER: FORWARD LOOKING STATEMENTS



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Certain statements made in this presentation are forward-looking statements. These forward looking statements are not historical facts but rather are based on Leaf Resources current expectations, estimates and projections about the industry in which Leaf Resources operates, and its beliefs and assumptions. Words such as “anticipates,” “expects,” “intends,” “plans,” “believes,” “seeks,” “estimates,” “guidance” and similar expressions are intended to identify forward-looking statements. and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the endeavour of building a business around such products and services. These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of Leaf Resources, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements. Leaf Resources cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of Leaf Resources only as of the date of this presentation. The forward-looking statements made in this presentation relate only to events as of the date on which the statements are made. Leaf Resources will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this presentation except as required by law or by any appropriate regulatory authority.



*Leaf Resources  
enables the  
replacement of  
petroleum derived  
chemicals*

- Leaf's Glycell™ process breaks down waste plant biomass **producing cellulosic sugars**
- Cellulosic sugars are a feedstock for the production of **renewable chemicals**
- Renewable chemicals markets are **growing quickly** as the world shifts away from petroleum based products.
- The Glycell™ process **delivers on price, performance and environmental benefits**

# KEY INVESTMENT CONSIDERATIONS



**Market**

**Huge market opportunity**

**Clear Pathway**

**To first commercial facility in Malaysia**

**Advantaged Finance**

**Potential for Leaf to retain a substantial share of economic profit**

**Biodegradable packaging**

**Supports/enhances Glycell™ core strategy**

**Strong Validation**

**World leading companies  
National & State governments**

# THE WORLD WANTS RENEWABLE CHEMICALS



**84** USA consumer goods companies have signed a pledge to eliminate petroleum sourced products from their supply chain

*"We are working to completely eliminate the use of non renewable fossil fuels in our plastic bottles"*

*Coca-Cola*



*"Using 100% renewable or recycled materials for all our products and packaging"*



*"Green, that's what we would like the world to be"*



**25%**

of chemical sales by 2020 from renewable sources

*"There will be more plastic in the sea than fish by 2050"*



*US\$770 billion market by 2020*

Biotechnology Innovation Corporation – Advancing the Bio-based economy



The background of the slide is a close-up photograph of tall, thin grass stalks with reddish-brown seed heads. A semi-transparent white rectangular box is centered horizontally across the middle of the image, containing the text "WHERE ARE WE COMMERCIALY?".

# WHERE ARE WE COMMERCIALY?



# CLAERIS LLC – 5 PROJECT DEAL

- 15 year successful renewable project development experience.
- Prior projects generating IRRs >300% and creating >\$800m equity



## Commercial and investment banks



## Financial sponsors

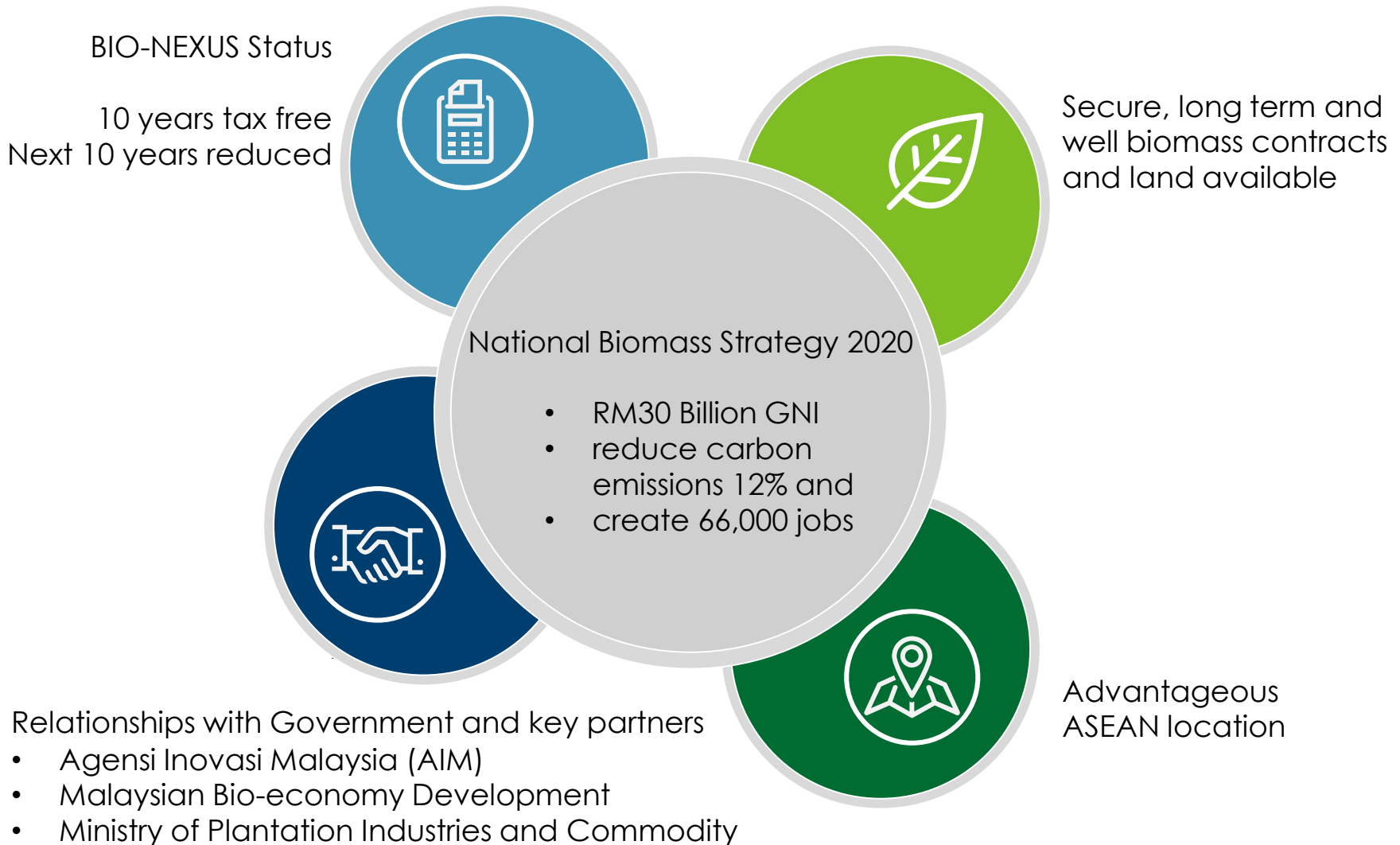


## Strategic partners

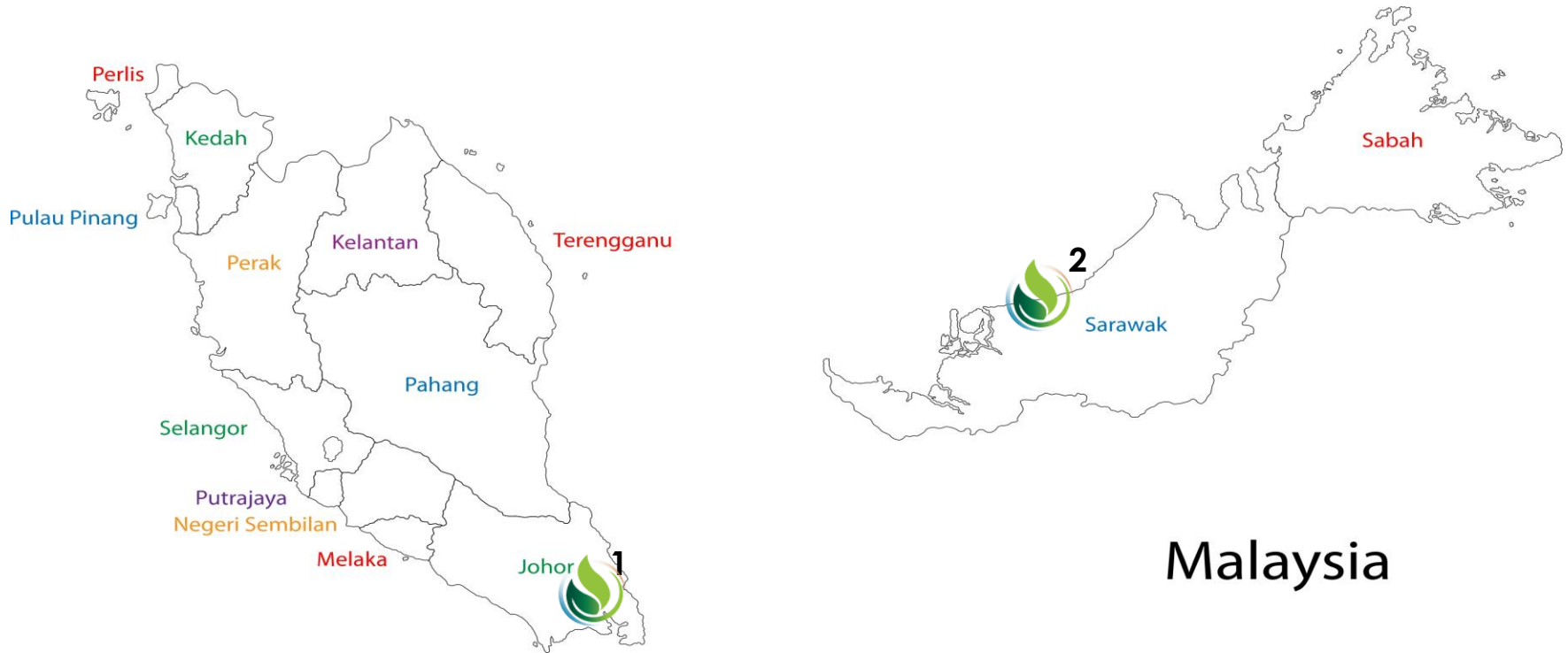




# MALAYSIA – IDEAL PLACE FOR THE BIO-ECONOMY



# MALAYSIAN PROJECTS



## Malaysia

1. **Johor, Malaysia** Bio-park in Johor which includes existing utilities as well as an established supply chain of empty fruit bunch (palm oil waste). Excellent logistics. Most likely first site.
2. **Sarawak, Malaysia** Bio-hub being developed by the state government in Sarawak. Government supports to the establishment of a 2G sugar facility utilising Leaf's Glycell™ process. Very large project being developed from scratch and therefore will take a little longer than Johor

# QUEENSLAND BIO- FUTURES 10 YEAR ROADMAP



“This is world-leading technology which has the potential to contribute to the creation of future high-skilled jobs and investment opportunities in regional Queensland,”

Honourable Annastacia  
Palaszczuk Premier of  
Queensland

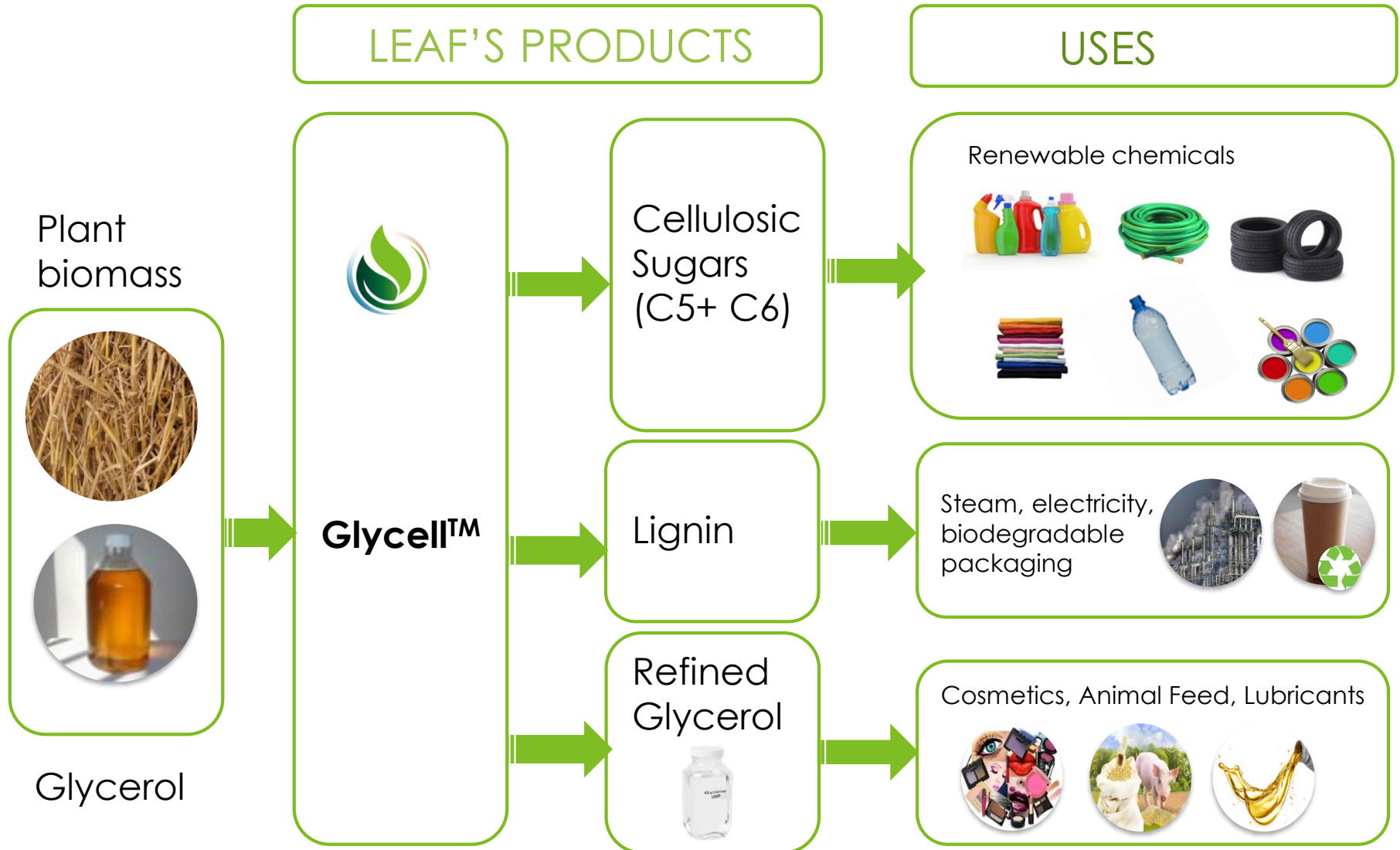
- Leaf selected for the Bio-futures program.
- Feasibility study for a bio-refinery site
- Looking at advantages and synergies with existing industry infrastructure
- Working with Government on agreement.

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# THE PROJECT – HOW WE MAKE MONEY



# A BIO-REFINERY PROJECT



# LODGE PARTNERS PROJECT VALUATION\*



| Plant Size | Refined Glycerol sales ktpa | NPV (@10%) US\$ | Annual NCF pretax US\$ |
|------------|-----------------------------|-----------------|------------------------|
| 100k bdt   | 60                          | \$442m          | \$48m                  |

## Sales:

- **C6 sugars:** World commodity with market price and history.
- **C5 sugars:** Used with C6 - same price. Different uses higher prices
- **Glycerol:** Refined glycerol is a commodity in large market
- **Lignin:** Model assume burning for power

**Capital:** AMEC: US\$133 million excluding utilities, SE USA

\*Table assumes 100% ownership. Leaf's percentage of the project is subject to negotiations & financing.  
Extracts from report. Please read the whole report available at [www.leafresources.com.au](http://www.leafresources.com.au)



# FIRST PROJECT: MALAYSIAN PATHWAY

## Site

- **Land:** Negotiations advanced on a Johor site for a 100,000 BDT plant

## Inputs

- **Biomass:** Negotiations advanced. Strong Government support (MPIC and AIM)
- **Glycerol:** Negotiations advanced with International glycerol brokerage company for supply of raw glycerol.

## Engineering

- **FEL2:** AMEC: US\$133m capital in US - conversion to Malaysian costs underway.
- **FEL3:** Full engineering design, site specific. Next step once site decided

**Feasibility study:** Underway – needs Malaysian FEL2 costs

**Government incentives:** Bio-nexus status application under way (needs site).

***“There is a clear move towards sustainable chemical production and we believe the combination of Claeris and the GLYCELL™ process will help further enable the industry.”***

**Michael Burns, Head of Biorefining Business Development for North America, Novozymes**

# FINANCING – ADVANTAGED & OFF BALANCE



- Leaf Malaysia is closely aligned with AIM's National Biomass Strategy 2020, resulting in strong federal government support
- The Technology Depository Authority (TDA), under the Ministry of Finance, has a strong Industrial Collaboration Programme (ICP offset funding) tied to large scale commercial and defense procurement contracts, which exceed RM50m;
- The ICP fund supports growth, local SMEs and technology transfer in strategic sectors;
- TDA currently has \$US11.2 billion of ICP credits in system, target of US\$17.5b by 2020;
- As a primary funding source in Leaf's first project, it is expected that:
  - A classic finance project structure will be used, with equity (offset) and debt;
  - Offset funder returns are capped, think debt return for equity participation;
  - Multipliers for 'strategic' projects are available, incentivising offset funders;
  - Offsets funding can minimise the need for a large corporate raise by Leaf to fund the first plant
  - Leaf will still share a healthy percentage of economic return of the plant
- Claeris is handling negotiations, which are progressing positively



# BIODEGRADABLE PACKAGING LICENSE



**Biodegradable, renewable and recyclable:** What the packaging market wants

- Leverages and enhances Leaf's Malaysian Glycell™ strategy - uses lignin & glycerol
- Low capital - Initial production can be toll manufactured
- Leaf personnel possess the technical knowledge, skill and contacts
- Licensing strategy with minimum order volumes could deliver short term cash flow
- Biodegradable packaging market is US\$5b and growing to US\$14b 2022 (17%CAGR)

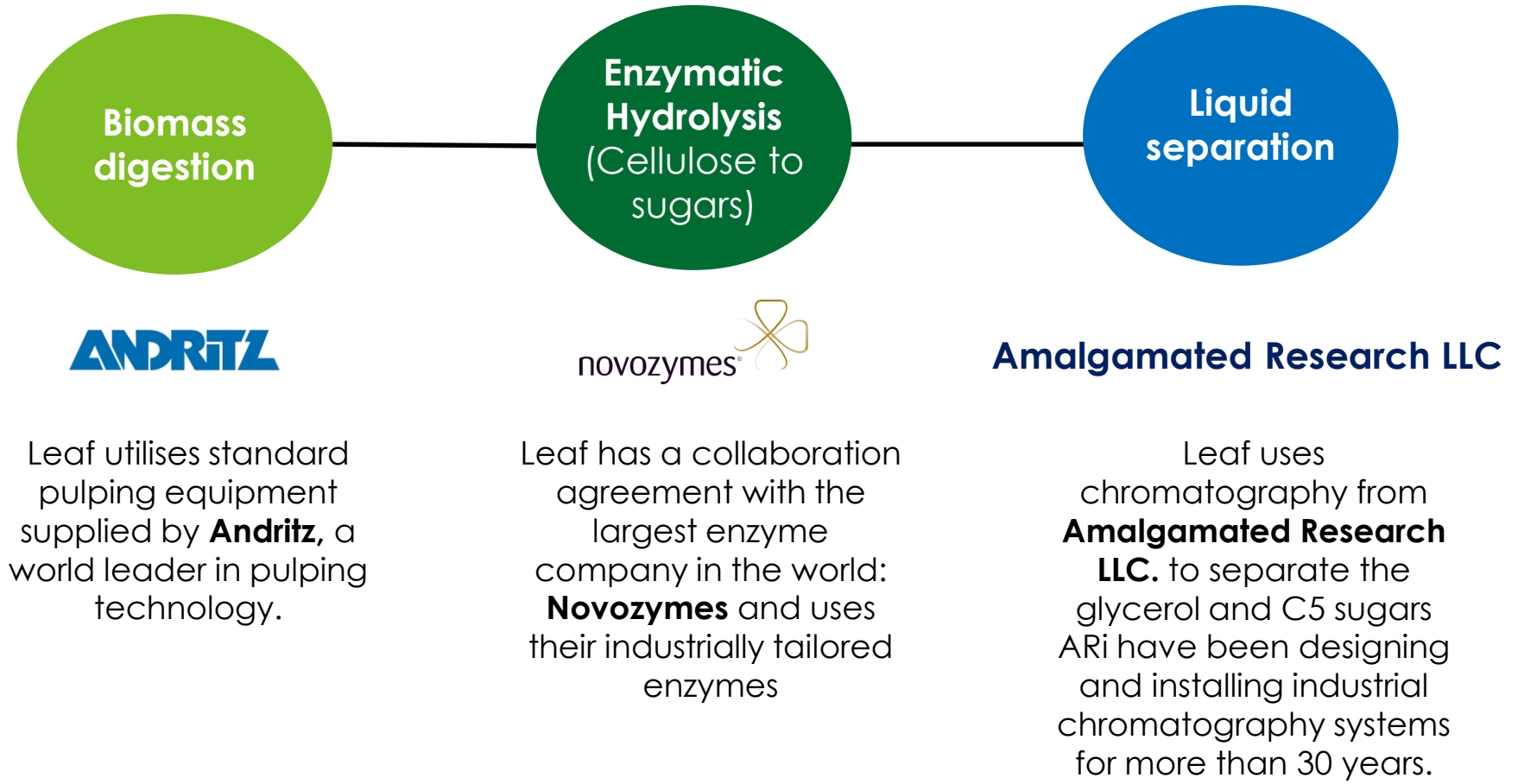


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# GLYCELL™ PROCESS VALIDATION

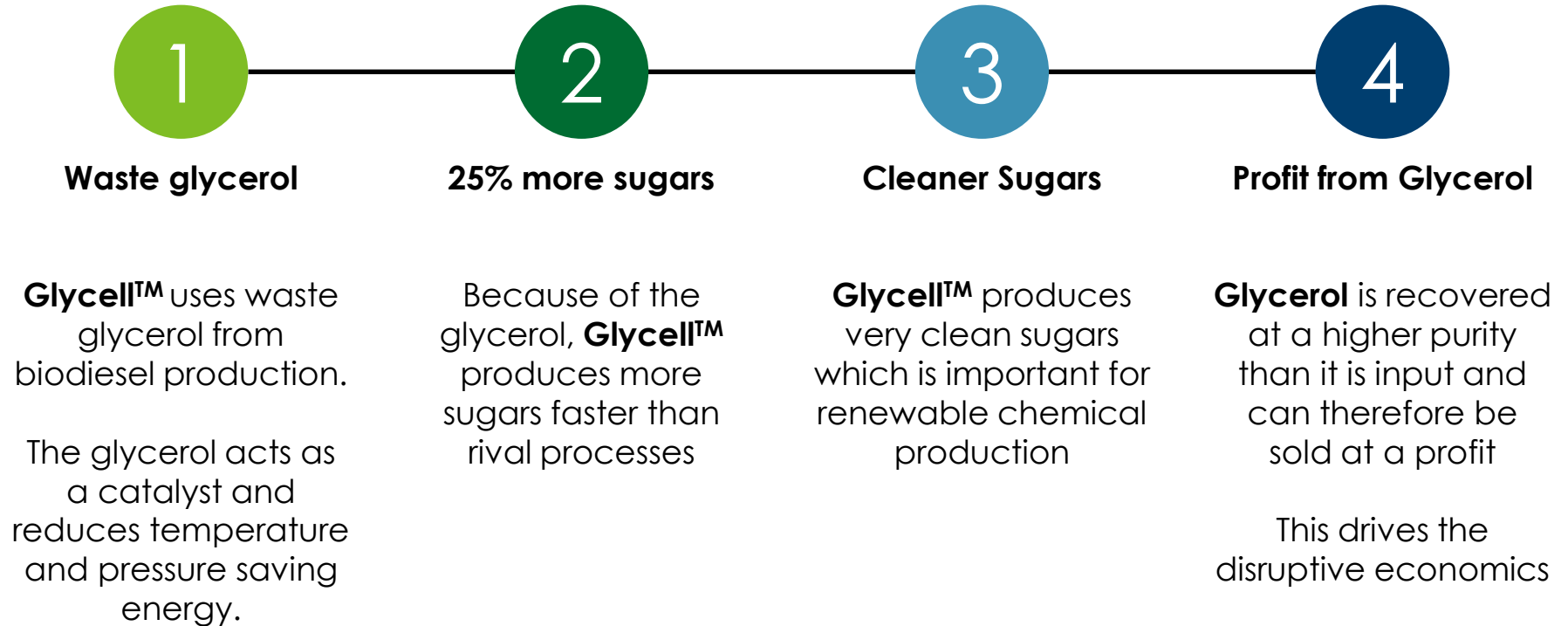


# VALIDATION THROUGH THIRD PARTY PEERS



#4 OF THE 40 HOTTEST SMALL COMPANIES IN THE ADVANCE BIO-ECONOMY 2016/2017

# GLYCEROL IS THE KEY





# GLYCELL™ PROCESS IS TESTED & READY TO GO



## Independent Engineers report:

**Leidos Engineering** confirmed that Leaf has demonstrated process feasibility of producing cellulosic sugars and recovering glycerol for recycling or sale



## Comparison to rival process's

**BPF** in Holland ran a control against dilute acid and reported 25% More sugar.

Dilute acid and its variant steam explosion are the major incumbent processes



## Sugar fermentation testing

Fermentation test on 2 common yeasts and a bacteria showed excellent fermentation results.

Individual testing has been carried out by a number of potential customer



## FEL2 Engineering Study

**AMEC Foster Wheeler** undertook a review of the project and estimated total direct costs at US\$133M based on building a plant in SE USA.



# PEOPLE

# STRONG BOARD OF DIRECTORS



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## Dr JAY HETZEL Chairman

Jay has had a distinguished scientific career with CSIRO for over 20 years in the field of animal genetics and genomics. In 1998 he co-founded Genetic Solutions Pty Ltd to commercialise genomics technology in livestock and the company was sold to Pfizer Animal Health in 2008. Jay has served on a number of industry and government advisory groups including the Queensland Biotechnology Advisory Council, Australian gene technology technical advisory Committee and the Life Sciences Queensland steering committee. Jay is a fellow of the Australian Academy of technological Sciences and Engineering and a Fellow of the Australian Institute of Company Directors.

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## Doug Rathbone Director

Doug is a chemical engineer by profession, served as Chief Executive Officer and Managing Director of Nufarm Limited from 1982 to 2015. Under his leadership Nufarm transformed itself from a \$20m business to one with more than \$2 billion in sale as it became one of the world's leading crop protection and seed companies. He is currently Chairman of Rathbone Wine Group, a director of cotton seed distributors and AgBitech and a member of the Rabobank Advisory Board. He is a former Director of the CSIRO

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## MATTHEW MORGAN Director Chairman of Audit Committee

Matthew has over 10 years of executive management experience in private equity funded portfolio companies and 7 years as a venture capitalist at Queensland Investment Corporation. He is experienced in capital raising, mergers and acquisitions. He is the principal of Millers Point Company, an advisory business that provides consulting and advisory services to emerging companies with high growth or turnaround objectives.

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## BILL BAUM Director

Well known in the bio-based industry throughout the USA, Asia & Europe having executed \$500m of biotech and renewable product deals. Bill brings extensive chemical and energy industry experience from across the globe, to Leaf having worked as an independent consultant in bio-based chemicals and fuels with companies such as Triton Nutrition, Sirrus Chemicals, Sapphire Energy, Liquid Light, Yulex and SBI BioEnergy. He has also worked in executive roles with Genomatica, Gevo and Verenium

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## Ken Richards Managing Director

See the Leaf Team slide 24

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# THE LEAF TEAM – HIGHLY SUITED TO PURPOSE



- **The Leaf team is world class:**
  - **Ken Richards (MD):** Track record in managing, growing and transitioning high growth companies, including several start-ups.
  - **Alex Baker: (COO):** Experienced C level manager who has a keen scientific brain but importantly also is very commercial with lots of business development experience in relevant fields.
  - **Dr. Les Edye: (R&D):** Internationally recognized in this field, Les heads up the Australian task force to the International Energy Agency task 39: Biomass to advanced fuels. He has several patents to his credit in related fields, is a former professor of chemistry at QUT and has worked for 15+ years in the sugar industry.
  - **Helen Pennisi: (CFO)** Helen is a CPA and holds a Bachelor of Business (Accountancy) from QUT, a Diploma of Financial Services (Financial Planning) and is a Chartered Tax Advisor.
- **International consultants: a vital part of the Leaf team who bring relevant expertise and contacts:**
  - **Bill Baum:** Well known in the bio-based industry throughout USA and Europe. Executed \$500m of biotech and renewable product deals.
  - **Brian O'Neil:** Project engineer who designed, built and operated similar demonstration plant, to Leaf's proposed plant.
  - **Dr. David Humbird:** Process Engineer who worked for NREL in USA and co-authored 2011 study on dilute acid, a seminal work in the field on a major rival process. Also designed, built and operated plant similar to Leaf's proposed plant
  - **Dr. Marc Sabourin:** 29 years professional experience in research & development, process engineering and project execution in the pulp & paper industry, including senior roles at Andritz.



# NEXT STEPS



## Malaysia:

### Progress project:

- Secure Bio-Nexus status
- Select engineering company for FEL3
- Commence Integrated study and FEL3
- Secure financial package from Malaysia Government

### Biodegradable packaging

- Commence negotiations with potential licensees
- Finalise negotiations with toll manufacturers

## Malaysia:

### Finalise construction plan

- Complete FEL3
- Bankable feasibility
- EPC contract

## Malaysia:

### Bed down Project:

- Option on land
- Option on Biomass
- Glycerol purchase and sale
- Convert FEL2 USA costs to Malaysian costs

July to October 17

November 17 to March 18

Post April 2018

\*BFS: Bankable Feasibility Study



# STRONG STRATEGY UNFOLDING



## Malaysia

### Malaysia is happening

- Ticks all the boxes
  - Land
  - Biomass
  - Government support
  - Financing
  - Right partners
  - Technology validation
  - Strong economics

## Biodegradable packaging

### Shorter term opportunity

- Potential for earlier sales
- Supports/enhances key Malaysian strategy
- We have right product
- Large growing market
- Low cash strategy for implementation

## The Future growth

### 5 project deal with Claeris

- Another Malaysian site
- Queensland
- Europe
- USA





# THANK YOU

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# APPENDIX 1: CAPITAL STRUCTURE (AUD\$)



|                             | 15 <sup>th</sup> August 2017 |
|-----------------------------|------------------------------|
| Ordinary shares on issue    | 202.9m                       |
| Options/ performance rights | 24.0m                        |
| Current Price               | \$0.075                      |
| Capitalisation              | \$17.0m                      |
| Top 20 Shareholders         | 50.75%                       |
| Board and Management        | 12.1%                        |
| Cash                        | \$1.5m <sup>1</sup>          |
| Enterprise Value            | \$15.5m                      |
|                             |                              |

<sup>1</sup>Based on 30<sup>th</sup> September cash + refund due from R&D Oct 2017

# APPENDIX 2: AWARD-WINNING PROCESS



#4 OF THE 40 HOTTEST SMALL  
COMPANIES IN THE ADVANCE  
BIO-ECONOMY 2016/2017

Awarded at Advance  
Bio-economy Leaders  
Conference in San Francisco  
Nov 2016



NOMINATED AS ONE OF 3  
FINALIST 'BREAKTHROUGH BIO-  
BASED TECHNOLOGY  
PLATFORM'

March 2016  
World Bio Markets Bio Business  
Awards



FINAL 5 SOFFINOVA  
RENEWABLE CHEMISTRY START-  
UPS AWARDS 2015

Bio World Congress  
(Montreal)



FINALIST BANKSIA SUSTAINABILITY  
AWARDS 2014

Innovator of the Year (Australia)



WINNER CONSENSUS  
GREENTECH AWARDS 2014

(Australia)



PATENTS

PCT applications lodged  
June 2014