



Pearl Global Limited (ASX:PG1) Company Presentation

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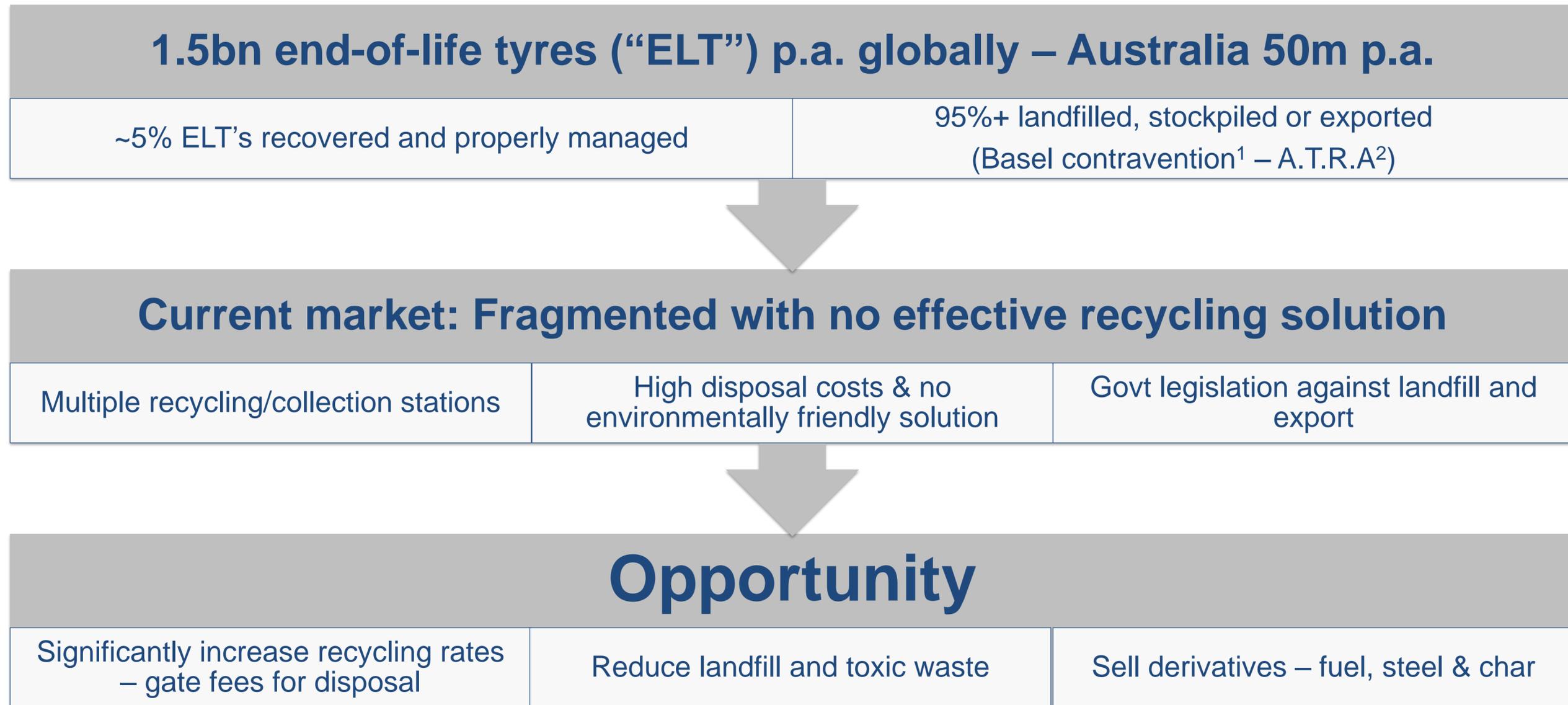
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1. Company Overview

A real market opportunity – reducing waste profitably

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¹ Revised technical guidelines for the environmentally sound management of used and waste pneumatic tyres’, available on www.basel.int

² Australian Tyre Recyclers Association, www.atra.org.au

1. Company Overview

About Pearl Global



What We Do

Apply our unique, next-generation technology to cleanly convert end-of-life tyres (ELT's) into high value products

“A cleaner alternative to the way we live”

Our Purpose

- Purpose 1:** Reduce reliance on virgin resources (reducing GHG emissions) by reclaiming economic value from waste
- Purpose 2:** Focus on profitability through innovative sustainable developments while always meeting Purpose 1

Australian Technology and Innovation

- Unique Intellectual Property:** first and only entity in Australia EPA approved to operate (2 Licenses: QLD and W.A.)
- Pricing Power:** multiple revenue lines: tyre disposal fees, hydrocarbons, char, steel, clean gas (energy)
- Business Stability:** innovative process solves a global issue: effective disposal of ELTs – plentiful input supply
- Pearl Protection:** worldwide exclusive perpetual license and sub-licenses over I.P.



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1. Company Overview

“...a unique offering to the market...”

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EPA Approval for thermal processing	Y
Production of Saleable Derivative	Y
Low Capex	Y
Fast Installation	Y
Modular Design	Y
Easily Transportable	Y
Energy Efficient	Y
No Hazardous By-products	Y

“The facility and technology offered by Pearl Global presents a unique offering to the market in its mobility and functionality to process waste tyres.”

*‘An analysis on the Australian tyre recycling industry’
by Advisian (a Worley Parsons business),
07 July 2016*

Pearl is an Industrial Technology Company using used rubber feedstock to create high value secondary products

1. Company overview

The Competitive Landscape



- Thermal desorption: no chemicals/acids required
- E.P.A. approved 2 states (focus on first commercial operations QLD)
- Small modular plants with low capex ~\$2 million per TDU
- Easy transport - rapid installation
- De-centralised strategy (reducing feedstock transport costs)



- ✓ **Operating License Number: L8982/2016/1**
W.A. Department of Water and Environmental Regulation
- ✓ **Operating License Number: EA0000862**
QLD Department of Environment and Heritage Protection



- Destructive distillation – uses chemicals/acids to break down tyres
- Not E.P.A. approved – Application pending since 14 May 2015
- High comparative capex
- Strategy of large plants on generous acreage
- Centralised model (higher feedstock supply transport costs)



Applicant:	GREEN DISTILLATION TECHNOLOGIES PTY. LTD.
Premises:	WARREN, NSW, 2824
Application type:	New licence
Application status:	Pending
Activity type:	Energy recovery from hazardous and other waste
Received:	14 May 2015
Pollution incident plan:	No

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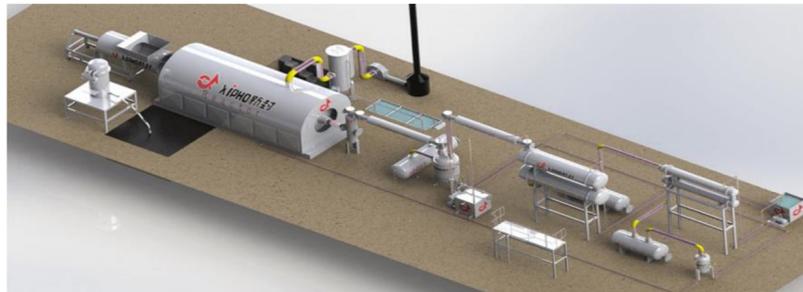
1. Company overview

The Competitive Landscape



Stawell Tyre Dump, Victoria

- June, 2015 - UTRC purchased tyre dump
- UTRC intent: purchase Pyrolysis/carbon plant from China
- No E.P.A. approval
- August 2017 - EPA seizes control after “no obvious activity to recycle the used tyres” (Nial Finegan - E.P.A)



Indirect Competition Tyre Collection/Recycling Industry

- One of the larger tyre collectors from retail stores
- Generally shreds and uses rubber for athletic tracks, matting surfaces
- Large component exported for use as tyre derived fuels typically to Asia
- ATRA and TSA member – well respected
- Strong management



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2. The Technology

What we learnt about existing solutions

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Batch pyrolysis = massive toxic **emissions**



Dangerous operating labour conditions – unstable plant conditions



Lack of focus on plant energy use or **economics**



Immobile under engineered approach



Little consideration on **environmental impacts**



Typically Asia built – focus on reusing contaminated fuels produced

2. The Technology

Achievements to date

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▶ **Pearl is the only entity in AUSTRALIA that has received EPA approval to commercially process ELT's into fuels, char, steel**



Innovative process: solves a global issue: effective disposal of ELT's



First and only Australian EPA licenses secured to process ELT's into fuels, char, steel



Multi revenue generation opportunity through **disposal fees**, fuels, char, steel



Long term raw material and offtake agreements in advanced discussions



Scalability: modest plant cost, modular design, global portability



Innovative solution that creates **no hazardous by-products**



Patent Applications lodged



Experienced management team



Government of **Western Australia**
Department of **Water and Environmental Regulation**

2. The Technology

Pearl's Endothermic Desorption Technology



Pearl TDU on location Mogumber, W.A. - Source Pearl Global 2016



Unique operating units modular/stand-alone



Unit housed in 40 foot iso-frame: portable & scalable



Patents lodged & pending approval



Locations designed to support min 4 operating units



Each unit: typically 2 F.T.E



Simple installation: commercialised in 1 week due to innovative design and portability aspect

3. Plant and operations

Site Operations – Stapylton, QLD

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Site operations, Stapylton QLD - Source Pearl Global 2017

4. Pearl's Australian expansion strategy

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- Focus on revenues in QLD

- negotiate income from feedstock (gate fees for waste)
- economies of scale through multiple plants on one site
- development of secondary products (solvents)

- Site Locations

- Locations identified based on proximity to ELT's (economics) and where tyre collection depots typically reside

- Feedstock Availability

- 56 million waste tyres generated p.a.¹
- Approx. 560,000,000kg for Australia to handle



Site Operations - Stapylton QLD

4. International expansion strategy

reliance on JV partners in each jurisdiction

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 Active discussions ongoing with international strategics

 Tyre tariff schemes in western jurisdictions greater profitability

 International focus with countries having tip fees – incentives

- US
- Canada
- Western Europe
- Kuwait



5. Economics – emissions – environment

• Economics:

- ❖ Each processing units reside in a 40 foot ISO frame (sea container size)
- ❖ Low operating costs versus valuable secondary product outputs
- ❖ Fully transportable and not requiring any external power source
- ❖ Focus on multiple revenue streams

• Emissions:

- ❖ Process converts contaminated gases into clean burning gases (~LNG)
- ❖ Co-generation to power the TDU is possible under license
- ❖ Low operating costs versus valuable secondary product outputs
- ❖ Fully transportable and not requiring any external power source

• Environment:

- ❖ E.P.A. approvals granted reflecting high environmental acceptance
- ❖ Gases produced for energy are well below Euro 6 standards
- ❖ Focus on reducing waste movement – reduced GHG emissions
- ❖ UWA Report: “...able to operate in a low/no emission environment”



Image of Pearl's TDU in operation Mogumber, W.A. - Source Pearl Global 2016



Various fractions produced from Pearl hydrocarbons - Source Pearl Global 2017



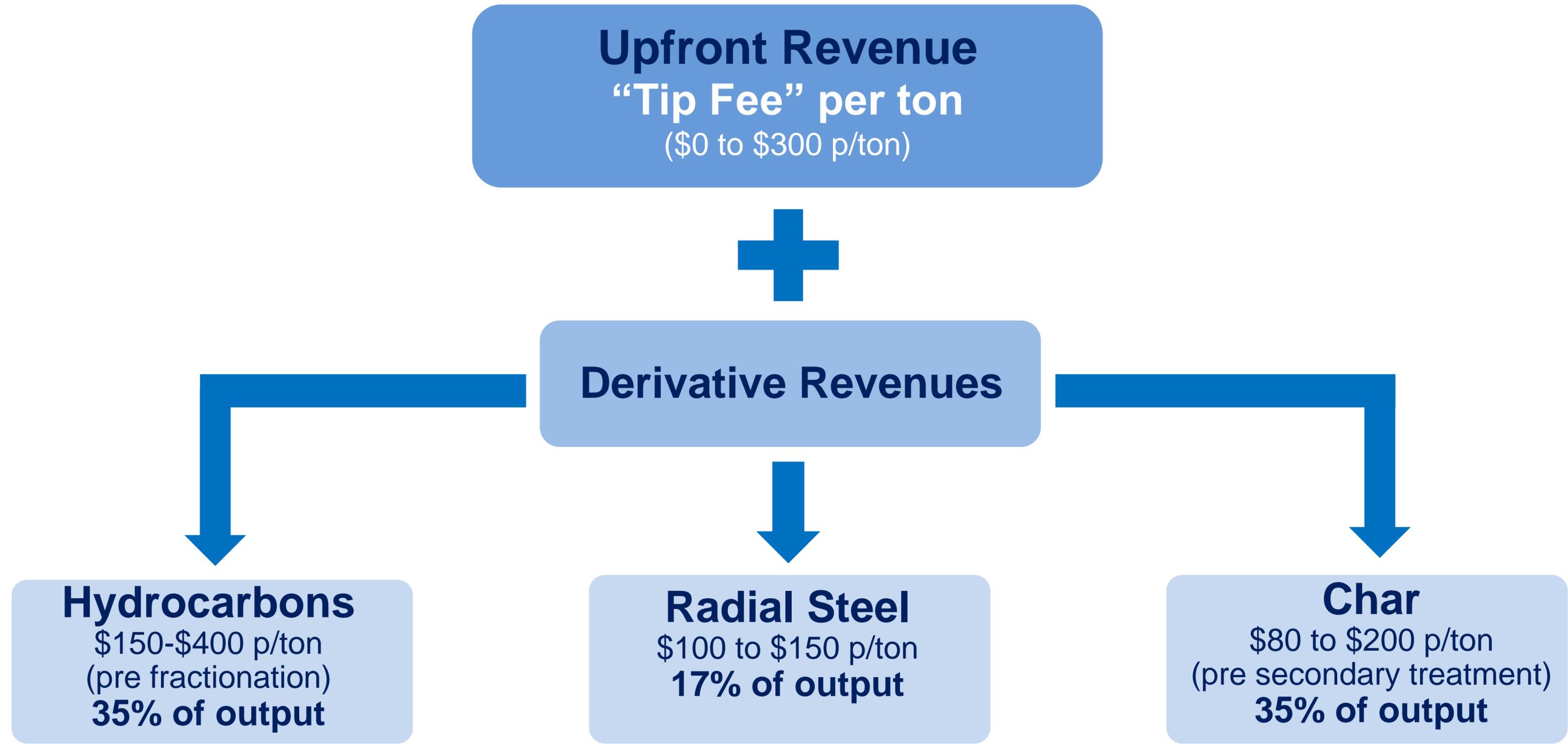
THE UNIVERSITY OF
WESTERN AUSTRALIA



Australian Government
Australian Research Council

5. Economic opportunity — typical pricing in the market (raw outputs) raw material as a revenue source?

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5. High value constituents produced (lab scale)

Pearl's process has shown ability to convert and utilize 100% of the disposed tyre

Hydrocarbons (350L TYRE DERIVED)

- Significant volumes
- Used in manufacturing
- Heavy Fuel Oil or Distillate Fuel Oil #6
- Fractioning = specific high value solvents
- Heavy Fuel Oil to Carbon Black

Char to Activated Carbon (350KG)

- Refined powder substance
- High global demand
- University of W.A: proven suitable for production of Activated Carbon (US\$800-3,000 per tonne)
- Energy use



Radial Steel (170KG HIGH TENSILE)

- Discharged as clean, rubber free product
- Used in manufacturing & steel industries
- Sold to recyclers for reproducing steel

Clean Gas (13% NON-CONDENSABLE)

- Re-used as an energy source
- Self power Pearl plants



Various fractions produced from Pearl hydrocarbons - Source Pearl Global 2017

5. Environmental licenses and scientific validation

1st Australian licenses to operate secured!

✓ Operating License Number: EA0000862

QLD Department of Environment and Heritage Protection, Environmental Protection Act (1994)

✓ Operating License Number: L8982/2016/1 ★

W.A. Department of Water and Environmental Regulation Environmental Protection Act (1986)



Consolidation of Operations

Pearl is not renewing its W.A. license as it is no longer required.

The W.A. license was acquired after a successful commercialisation and research program.

The TDU from the Mogumber site has been consolidated with our Stapylton, QLD operations (2 TDUs now on site).

Detailed value add R & D Program



Australian Government
Australian Research Council

University of Western Australia independent report validation of Pearl's process and valuable reclamation of products confirms that:

1. Pearl is able to operate in a low/no emissions environment
2. Hydrocarbons: mix of gasoline and diesel therefore has a use as liquid fuel, petroleum feedstock, or refined chemicals ("solvents")
3. Carbons: high carbon content of 77% indicating ability to be used as commercial grade activated carbon, or solid fuel as its calorific value is twice that of coal
4. Carbons verified to be suitable for Activated Carbon production

6. Corporate information

Management Team



Gary Foster

Co-Founder & Executive Chairman

- Former CEO of International commodities trading company (BWK LLC)
- Former founder and current non-executive Chairman (ASX:TSN)
- Graduate Certificate in Management and a Certificate III in Agriculture & a member of the Australian Institute of Company Directors



Andrew Drennan

Co-Founder & Managing Director

- Former Environmental Officer at WA Dept. of Industry and Resources
- Environmental Team Leader at BHP Billiton Iron Ore
- Bachelor of Science in Environmental Science from Murdoch University, Perth



Bert Huys

Chief Technology Officer

- Responsible for R&D and commercialisation of Pearl
- 25 years+ experience in mining, industrial processing and R & D
- 10 years as Environment Manager for BHP Billiton's West Australian Iron Ore operations
- Honorary Research Associate with University of Western Australia - School of Mechanical and Chemical Engineering

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6. Corporate Overview

Capital Structure

Ticker ASX:PG1

Share Price (as at 21 February 2018)	\$0.265
Listed Shares currently tradable	57.2m
Escrowed Shares (January 2019)	48.2m
Escrowed Shares (January 2020)	31.8m
Total Shares On Issue	137.2m
	\$36.4m

Capitalisation

Debt	Nil
Enterprise Valuation	\$31.4m
<u>Funds Outstanding & Available</u>	
Cash at Bank	\$5.0m

Options

- 9.3m listed options exercisable @ \$0.30
- 36.0m unlisted options exercisable @ \$0.30 (2 year escrow)

Share Holder Breakdown – Ordinary shares on issue

- Management team (2 yr escrow) holds 23%
- Top 10 holds 54%
- Top 20 holds 66%
- Top 50 holds 85%



Part of the Thermal Desorption Unit Staplyton, QLD – source Pearl Global 2017

Thank you



Gary Foster
gf@pearl-global.com.au



Cameron Low
cameron@cadmon.com.au



Andrew Drennan
andrew.drennan@pearl-global.com.au