



# Company Presentation

November 2018

***“CLEAN CONVERSION of WASTE MATERIALS INTO ALTERNATIVE VALUE PRODUCTS”***

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**“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 WorleyParsons business),  
7 July 2016*



# 1. Introduction

- Australia's first demonstrable commercial industrial scale Tyre Reclamation Technology (conceivably world first)

Process consumes waste tyres and produces:

- **FUELS**
  - **CARBON CHAR**
  - **HIGH TENSILE STEEL**
  - **CLEAN GAS (ENERGY USE)**
- Proven technology
- E.P.A. – environmentally approved



Pearl site operations in Stapylton, Queensland  
Source: Pearl

# 2. The Business Model

Simple – linear – transparent

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## THE PEARL GLOBAL BUSINESS MODEL

1. Raw material is a profit centre! (Attractive Market)
2. High barriers to entry- I.P./ EPA approved
3. Raw Products have a market, but treating Level 1 products creates massive value uplift
4. Strong pricing power for reclaimed products
5. Low degree of operating difficulty
6. Low direct operating expense

Revenue without selling a product – high margin opportunity

# 3. The Issue

Currently no way to recycle tyres other than burning



**1.5 BILLION**

Tyres discarded annually globally

**56 MILLION**

Tyres discarded annually in Australia as at 2018

**63 PERCENT**

Of tyres landfilled, stockpiled, illegally dumped or 'lost'



## Fragmented market with no effective recycling solution

Businesses pay disposal fees for waste management companies to remove tyres

Governments tightening policy – communities increasingly seeking solutions for dealing with waste (China ban)

# 3. The Issue becomes Opportunity

A global market with a real solution

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## Opportunity / Solution

Pearl is paid a fee to remove and recycle tyres	Reduce landfill and toxic waste	Sell derivatives – fuel, steel & char
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Waste mining tyres being received at Pearl, 20 October 2018

Pearl is using science to extract the constituent products in an environmentally sound manner

# 4. Competitive Advantage

Multi-faceted approach where all participants win

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*Pearl is the only entity in AUSTRALIA that has received EPA approval to commercially process end of life tyres (ELTs) into fuels, char, steel*

**Innovative process** provides an in country solution and solves a global issue: effective disposal of ELTs

**First and only Australian EPA licence** issued to process ELTs into fuels, char, steel

**Scalability**: modest plant cost, modular design, global portability

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

**Patent** applications lodged

~400 electrical circuits ensure great process control (**negligible emissions**)



Government of Western Australia  
Department of Water and Environmental Regulation

- ✓ **Operating License Number: EA0000862**  
Issued by the QLD Department of Environment and Heritage Protection  
Environmental Protection Act 1994

Low emissions – no acids or additives used – no waste disposal required

# The Technology

## Pearl's Endothermic Desorption Technology



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

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Unique operating units modular / stand-alone



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



Patents lodged and pending approval



Locations designed to support min. 4 operating units



Each unit typically requires 2 F.T.E



Simple installation: commercialised in 30 days due to innovative design and portability

Simple engineering means simple operations – process driven by PLC

# Plant and operations

## Site Operations – Stapylton, QLD



Site operations, Stapylton QLD - Source Pearl 2017

Site commissioned, proven, 24/7

# 5. Commercial Business Model

Strong model with upfront revenue from raw material intake

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• Multi-revenue generation through

- Tyre disposal fees paid to PEARL to take tyres

- Sales of products:

1. FUELS
2. CARBON CHAR
3. CLEAN STEEL

• Raw material is shredded tyres:

Supply from Australian Tyre Processors and Tyrecycle  
multitude of opportunities to take tyres from retail, industrial, mine sites

• Infeed and offtake sales:

FEEDSTOCK:	\$ 75 per tonne
FUEL:	\$ 405 per tonne
CARBON CHAR:	~ \$ 175 per tonne
CLEAN STEEL:	\$ 280 per tonne



Multiple revenue generation

# Future potential – product improvements

Creating further value by product improvement

Hydrocarbons / Fuels

Clean Exhaust Gases

Carbon Char

FIRST LEVEL PRODUCTS PRODUCED AND READY FOR SECONDARY PROCESSING

Fuel Oil

70% of fuel

Industrial Solvents

30% of fuel

Electrical Energy  
(gas to energy)

Activated Carbon

50% of carbon  
char



Various fractions produced from Pearl hydrocarbons - Source Pearl 2017



Upgrade to products shows significant uplift in profitability

# 6. Partnerships – established expertise in delivering outcomes

## Commercial operators

### Capricorn Society Co-op Limited (mechanic and automotive co-op)

- Pearl cornerstone investor
- 18,000 automotive members, \$1.5 billion turnover
- Buys large volumes of industrial degreasers and solvents

### Remondis (world's 7<sup>th</sup> largest waste management company)<sup>1</sup>

- 30,000 employees, 800 recycling facilities, 200,000 commercial customers
- Pearl-Remondis discussions around collaboration

### University of Western Australia (Australian Research Council)

- UWA Department of Energy
- \$1.5 million grant to Pearl to further our products

### Tyre Stewardship of Australia (TSA)

- Federal government project to find solution to waste tyres
- Pearl represented on working committee
- Pearl has become 1<sup>st</sup> processing company to receive TSA accreditation

### Australian Tyre Processors Pty Ltd (“ATP”)

- Close association with tyre collection and processing company
- Focus on mining and earthmover tyres
- ATP currently pays Pearl gate fee of \$75 p/tonne



Queensland Government

# 7. Leadership Team

## Management Team



**Gary Foster**

Co-Founder & Executive Chairman

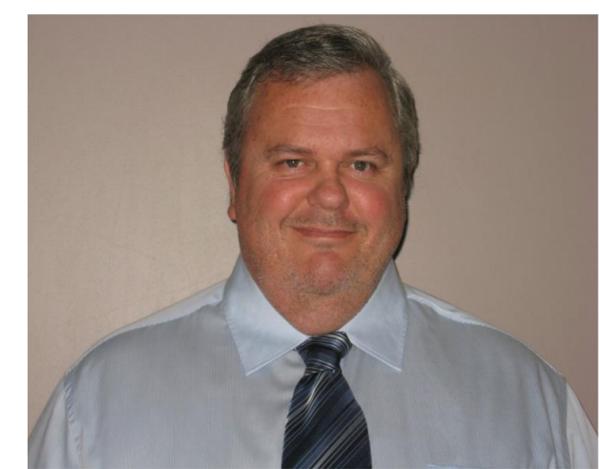
- Demonstrated entrepreneurial work history financial services, agriculture and environmental industries
- Former CEO of international commodities trading company (BWK LLC)
- Co-founder and current non-executive Chairman (ASX:TSN) a cybersecurity business
- Member of the Australian Institute of Company Directors



**Andrew Drennan**

Co-Founder & Managing Director

- Waste management specialist dealing with multiple stakeholders across corporate and operational teams
- Environmental Team Leader at BHP Billiton Iron Ore for 10 years
- Bachelor of Science in Environmental Science from Murdoch University, Perth
- Former Environmental Officer at WA Department of Mines and Petroleum



**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

# Pearl's Australian Expansion Strategy

## Site Selection

- Based on proximity to ELT's (logistics)
- Size of site to fit minimum TDUs (economics)
- Proximity to offtake markets (revenue per site)

## Implementation

- Low cost
- Replicable (16 week build)
- Easy to install

## Capacity assumptions of each facility

- 6 plants maximum
- 30,000 tonnes p.a.
- 2-inch feedstock
- 16 tonnes p/day 320 days p.a.



Site Operations - Stapylton QLD

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Active discussions ongoing with international strategics



Tyre tariff schemes in western jurisdictions provide greater profitability



International focus with countries having tip fees – incentives

- US
- Canada
- Western Europe
- Kuwait



# 8. Company Structure

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## Capital Structure

<b>Ticker</b>	<b>ASX:PG1</b>
Share Price (as at 30 October 2018)	<b>\$0.20</b>
Listed Shares Currently Tradable	57.2m
Escrowed Shares (January 2019)	48.2m
Escrowed Shares (January 2020)	31.8m
Total Shares On Issue	<b>137.2m</b>
<b>Market Capitalisation</b>	<b>\$27.4m</b>
Debt	<b>Nil</b>
Enterprise Valuation	<b>\$25.7m</b>
<u>Funds Outstanding &amp; Available</u>	
Cash at Bank	<b>\$1.7m</b>
<b>Options (Exp. 21/01/2021)</b>	
9.3m listed options exercisable @ \$0.30	
36.0m unlisted options exercisable @ \$0.30 (Escrow till 14/02/2020)	

## Stock Chart



## 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%

# Thank you



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