



**INTEGRATED
GREEN ENERGY**

IGE Business Model Presentation

***FOYSON RESOURCES LIMITED
EXTRAORDINARY GENERAL MEETING
31st March 2015***

The IGE Project

- Overview
- Development Status
- Australian Feedstock Supply
- IGE Solution
- IGE Technology
- The Market
- The Business Model
- The First Project

Overview

- IGE was formed to realise the opportunity of converting waste products and plastics destined for landfill, into transport fuels meeting all Australian standards.
- **IGE expects to develop the first fully continuous waste plastic conversion facility in Australia.**
- This technology has been combined with other technologies to close the loop on waste recycling



Development Status

2013

- Constructed a 40tpd commercial plant demonstrating the conversion of used tyres, lubrication and waste plastics to fuel oil and high grade carbon char

2014

- Terms Sheet agreed to with Foyson Resources Limited
- Commenced construction of a 50tpd commercial plant at Berkeley Vale NSW.

2015

- 50 tpd module installed, with commissioning expected in April 2015
- Due to begin production May 2015

Australian Feedstock Supply

- **PACIA (Plastics & Chemicals Association – Australia) Market Statistics Report 2011 - 2012 states that Australia produces approximately 1.5 million tonnes of waste plastic each year, *however the import of plastics in other forms / products is difficult to quantify and has been consistently excluded from the study.***
- Industry sources claim the importation of plastics may account for an additional 1.5 million tonnes per annum, resulting in approximately 3 million tonnes per annum of waste plastics.
- Of plastics which are recycled in Australia, 30% of this is utilised in Australia with the remaining 70% traditionally shipped predominately to Asia. Recently China and other Asian countries have tightened the quality standards of waste plastic imports causing a reduction of off take, further increasing flow to our landfills.

Australian Feedstock Supply

IGE is seeking to take advantage of this waste stream and roll out several commercial plants placed within practical transportation distance of major population centres within Australia over the next few years.

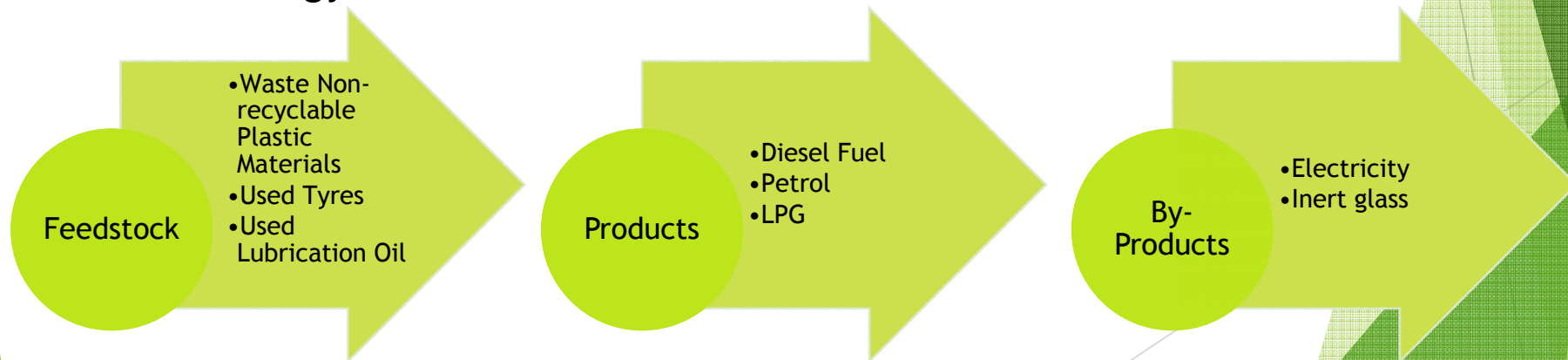
The majority of our feedstock will be diverted waste from landfill



IGE Solution

IGE has developed the solution for this ever-growing problem, by seeking to commercialise technology to effectively gather, recycle and re-use non-biodegradable plastics and convert them into useful energy sources such as Diesel fuels, LPG, Oil, and Electricity.

IGE has developed this solution through intensive, collaborative research and development of technologies that will assist Local Government Authorities and State / Provincial governments in reducing the dependence on landfill sites whilst producing valuable, sustainable and renewable energy sources.





IGE Technology

IGE's Technology is made up of two components:

1. CATALYTIC RE-STRUCTURING

This technology subjects waste plastic (polymers) to a high temperature heat environment in the presence of catalytic media. This causes the large molecule polymers to break down into smaller molecules forming gas and liquids. The liquids are fractionated into hydrocarbons in the form of petrol (gasoline), kerosene and diesel fuel.

2. INDIRECTLY FIRED GAS TURBINE (IFGT)

This technology utilises the non-condensable gases and any carbon char produced in the restructuring process to both generate electricity for the process (with surplus being sold to the grid) but also uses the waste heat from the turbine engine to power the Catalytic re-structuring process

IGE Technology

Indirectly Fired Gas Turbine
(IFGT)



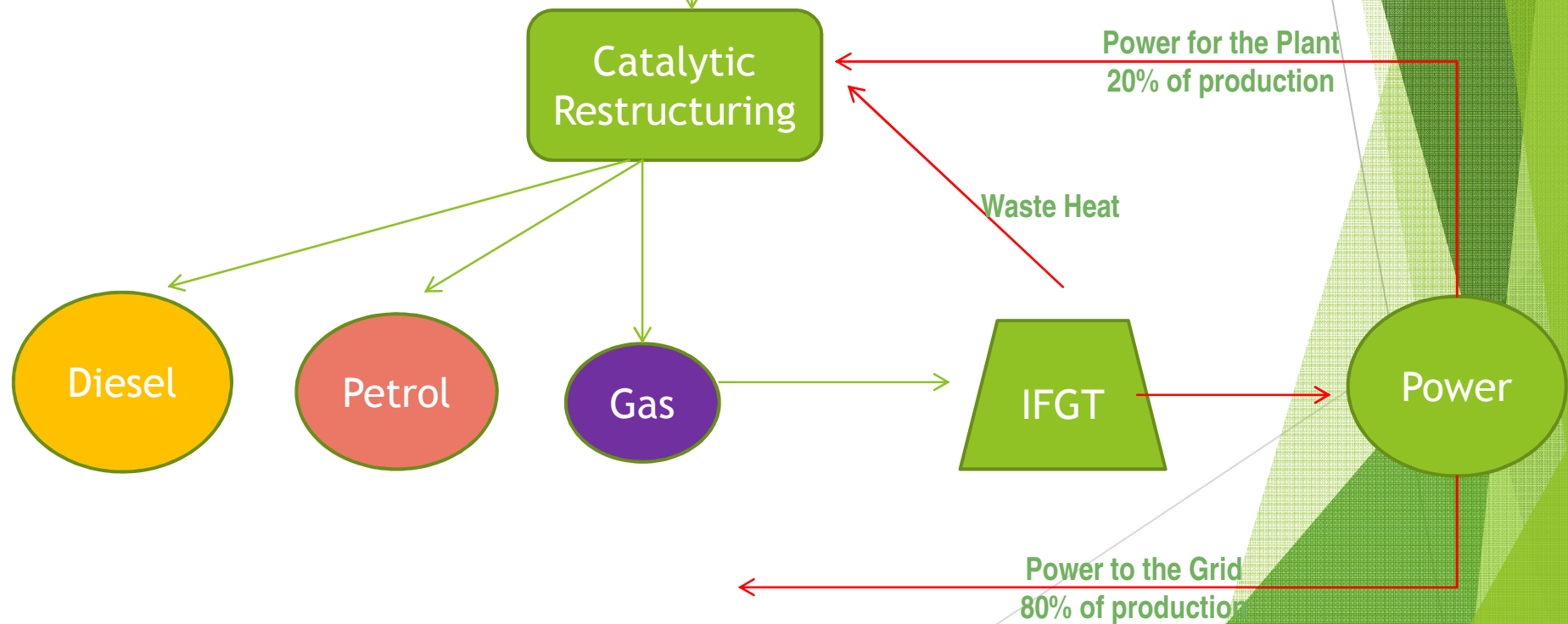
Catalytic Re-Structuring
Module



IGE Technology



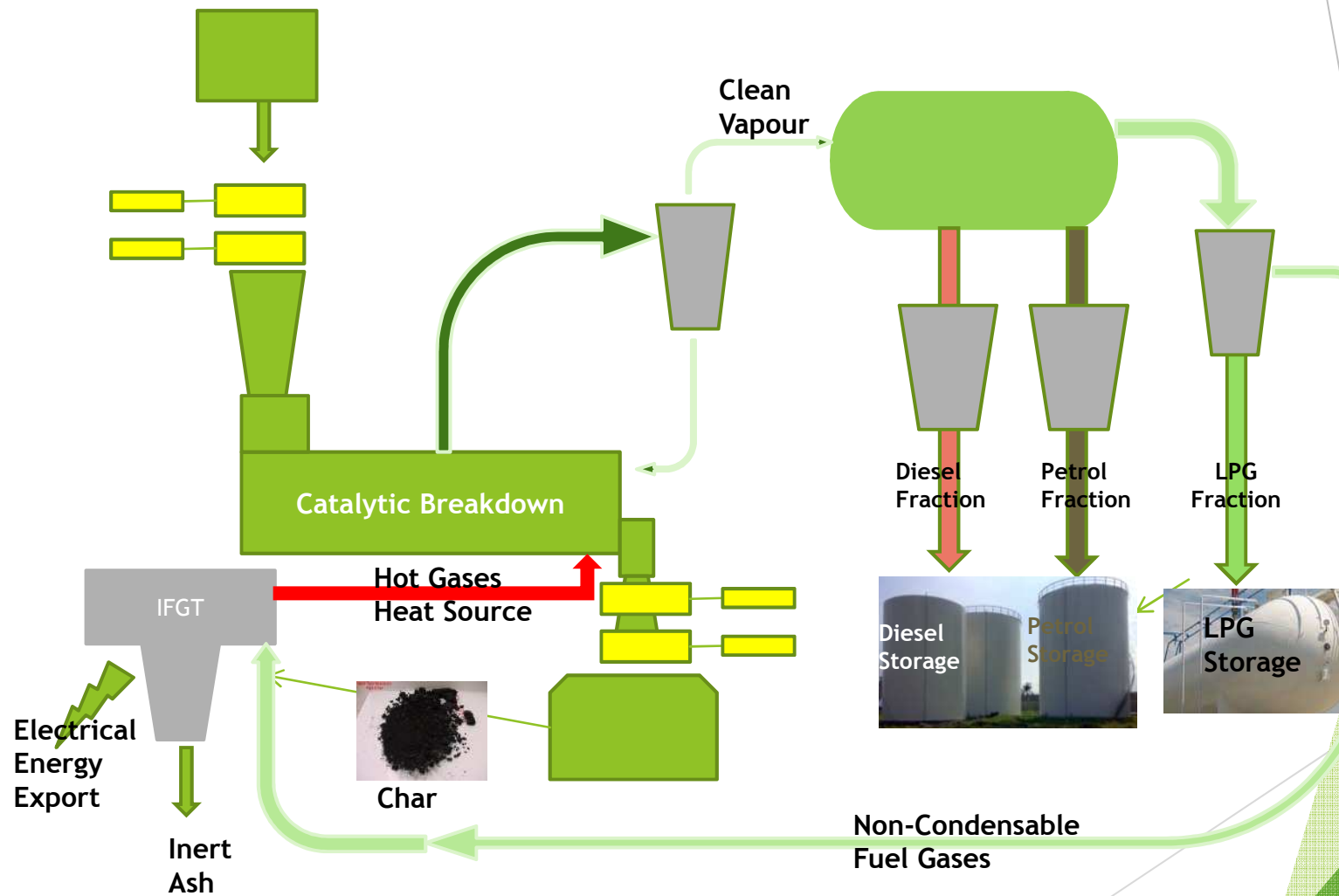
Waste Plastic
200 tons/day





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IGE Technology





IGE Technology Advantages

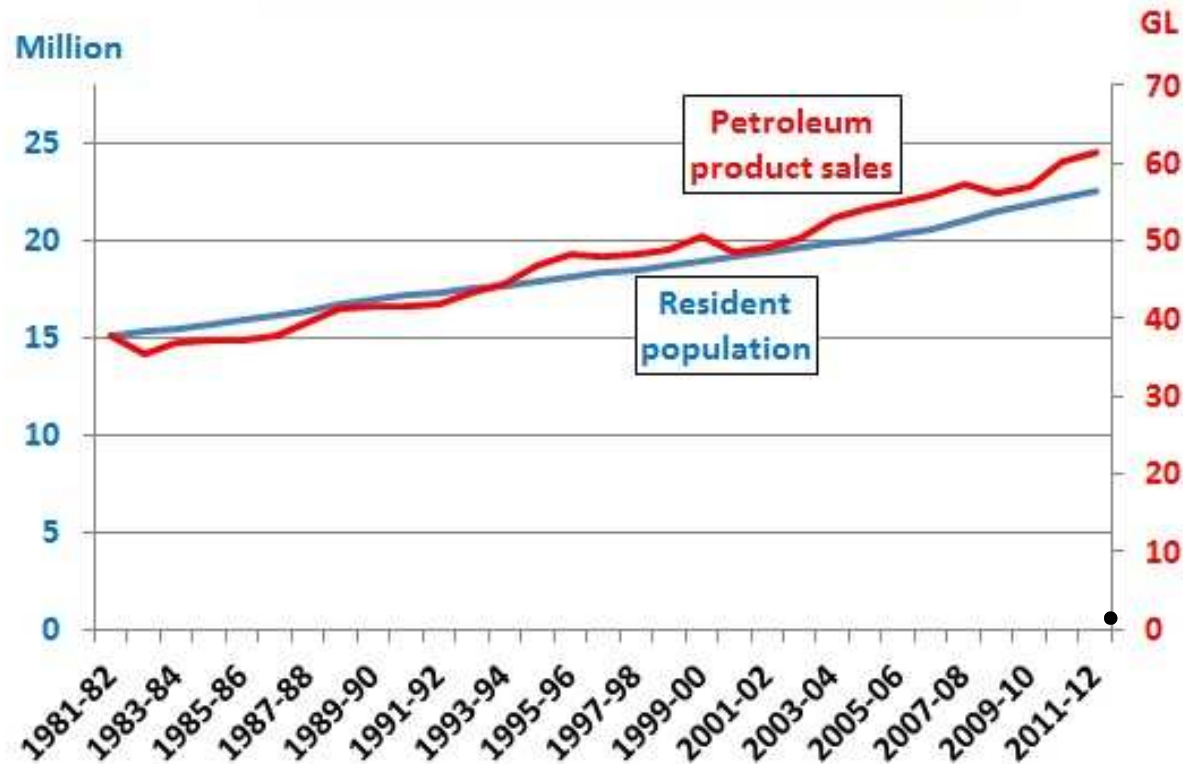
- Ability to process a highly contaminated feedstock (RDF derived plastics)
- Does not require external power
- Does not require external fuel
- Is highly efficient with yields anticipated over 80% liquid products by mass
- Is modular in construction leading to expected rapid development
- Utilises the extremely high temperatures developed in the IFGT to destroy any by-products

The Market



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Australia oil consumption and population



Data from: Australian petroleum statistics, ABS 310101



The Business Model

The IGE business model aims to achieve the following:

Feedstock	Divert waste plastic from landfill
Technology	Low cost, and high yield technology, net energy generator
Product	Fuel meeting the Australian diesel and petrol standards (Not Biodiesel)
Customers	Sophisticated diesel fleets users Sophisticated wholesale fuel blenders
Margins	Do not rely on tip fees Do not rely on government subsidies Do not rely on any “green revenue” Do not rely on oil majors to off-take product



The First Project

- First 50tpd feedstock module is scheduled for completion in April 2015
- First module has been lifted into place
- Currently the utilities are being connected and the Control System / Instrumentation installed
- Commissioning late April 2015
- Production May 2015
- Increase to 100tpd, with a second module, beginning July 2015
- Increase to 200tpd by mid 2016



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The First Project



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https://youtu.be/hZo07iDp_qc

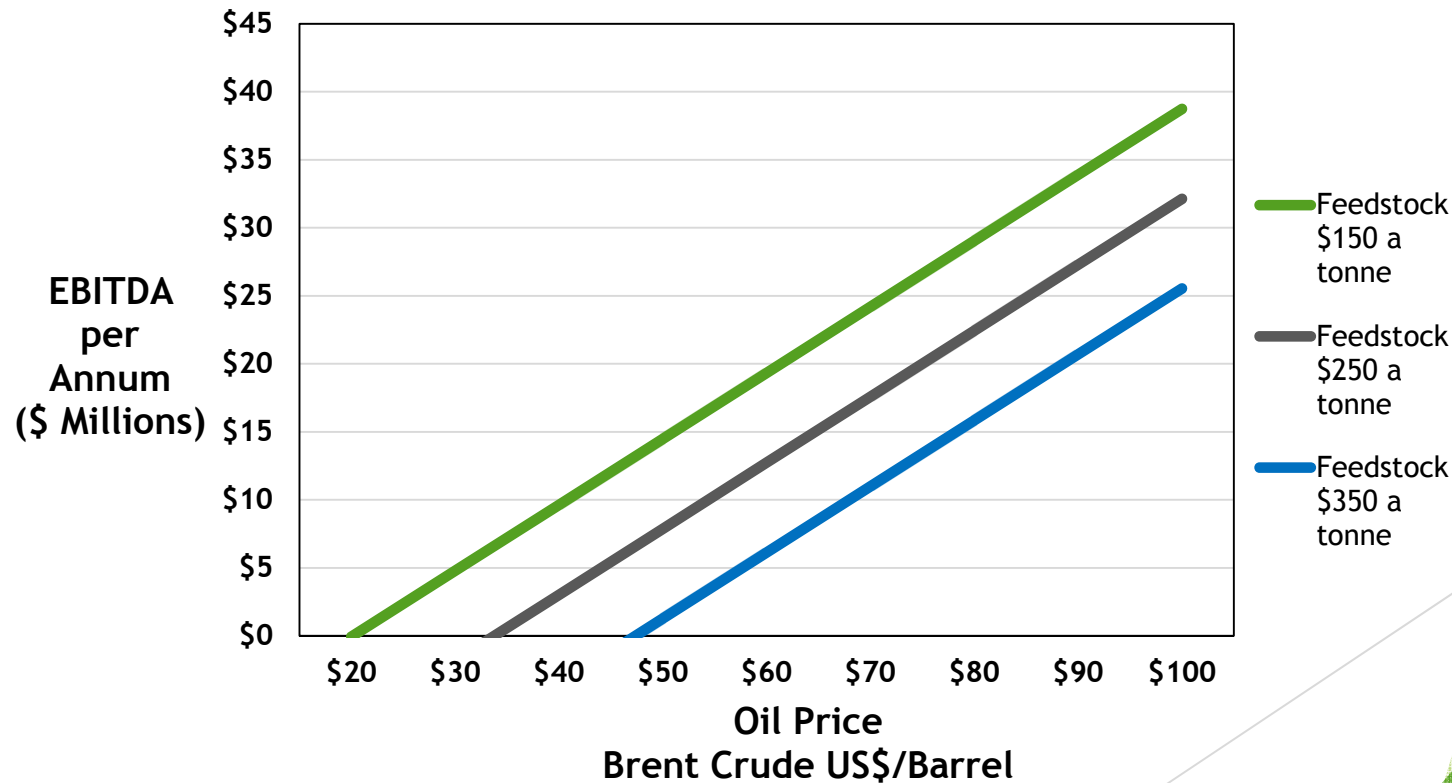
First Project Market Analysis

- IGE has completed detailed market analysis of the First Project and the expanded Project to 200tpd feedstock capacity
- The major variables in this market analysis are the price of feedstock and the international oil price
- IGE has concluded contractual arrangements for the supply of feedstock for the first year of operation at \$250 per tonne delivered
- Discussions with local feedstock suppliers indicate this price is likely to reduce significantly once the First Project is fully operational and guaranteed off take is available
- The international oil price has reduced significantly in recent months
- However the expanded commercial facility at Berkeley Vale, based on the First Project, is anticipated to remain competitive even if the oil price falls below US\$25 per barrel (Brent price) due to its inherent low operating cost and control of feedstock

Impact of Major Variables

The analysis below is indicative of the impact of the two major variables in the IGE process, being feedstock price and international oil price

Berkeley Vale Plant at 200 tpd Feedstock





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The First Project

Progress on the business model

- On Target for May 2015 start-up
- Feedstock supply contracts are signed
- Fuel off-take contracts under negotiation
- Gas off take contracts under negotiation



Future Projects

- Expand on the success of first plant and roll out new facilities within practical transport radius of major population centres in Australia
- Investigate other suitable locations off shore for construction or licence