Decarbonisation Pathways

Options for now and the future

Robert Cavicchiolo

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Agenda

- Who are Viva Energy
- Decarbonisation – the market is changing
- Emissions Terminology
- What's available today and coming?
  - Renewable Diesel
  - Energy Hub
  - Co-Processing
- Potential options in the future

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Supporting Australia's Economy

Viva Energy Australia

~$4.1B
invested in local wages and services

1,400ML
Total refined products storage, including **90ML** strategic storage at Geelong commissioned 2H 2024

We supply **~1/4**
of Australia's fuel needs

$8.1B
Total tax contribution (2023: $8.0B) including **$87.4M** of net income tax paid (2023: $207.5M)

On average, we refuel **~2.6M** trucks, buses, cars, and motorcycles every week across the Convenience & Mobility network

Viva Energy Australia employs **15,000+** people across all our businesses[3]

Commercial & Industrial

Viva Energy supplies:

~33%
of jet fuel nationally

25–30%
of the mining diesel market

~45%
of the marine fuel oil market

Network of **60** fuel import terminals and depots[1]

Fuel to the **Australian Defence Force** (sole supplier)

Over **70** airports and airfields[2] across Australia

Convenience & Mobility

~135M
transactions in 2024[4]

~5.1BL
of fuel supplied in 2024

25,000+
businesses served with Shell Card

Working with **1,100+** supply partners[5]

Reddy express

OTR group

Liberty

Total network of over **~1,000** stations

Energy & Infrastructure

Viva Energy Hub:

Proudly supporting local manufacturing at our Geelong Refinery –
1 of 2 refineries in Australia

~1,000 people (employees and contractors) work at the Refinery[6]

H_2 Renewable hydrogen at Viva Energy Hub

Launching in 2025:

Ultra Low Sulphur Gasoline (ULSG) and aromatics production

Plans:

Co-processing and waste recycling

Gas Terminal

Solar Farm

Only Australian manufacturer
of Avgas, hydrocarbon solvents, polypropylene, F-44 (Avcat), low aromatic fuel (LAF) and bitumen

1. Includes 25 fuel import terminals and network of 39 active depots (Including 29 Liberty Rural depots). 2.Including 19 airports/airfields in the Skyfuel network. 3.Includes Viva Energy Australia and all companies owned by Viva Energy. 4.At our Convenience & Mobility sites. Fuel transactions only.
5. Our data now reflects the acquisition of the OTR Group of businesses, which were acquired on 28th March 2024. 6.The number of people employed at Geelong refinery includes employees and an average number of contractors employed across the year.

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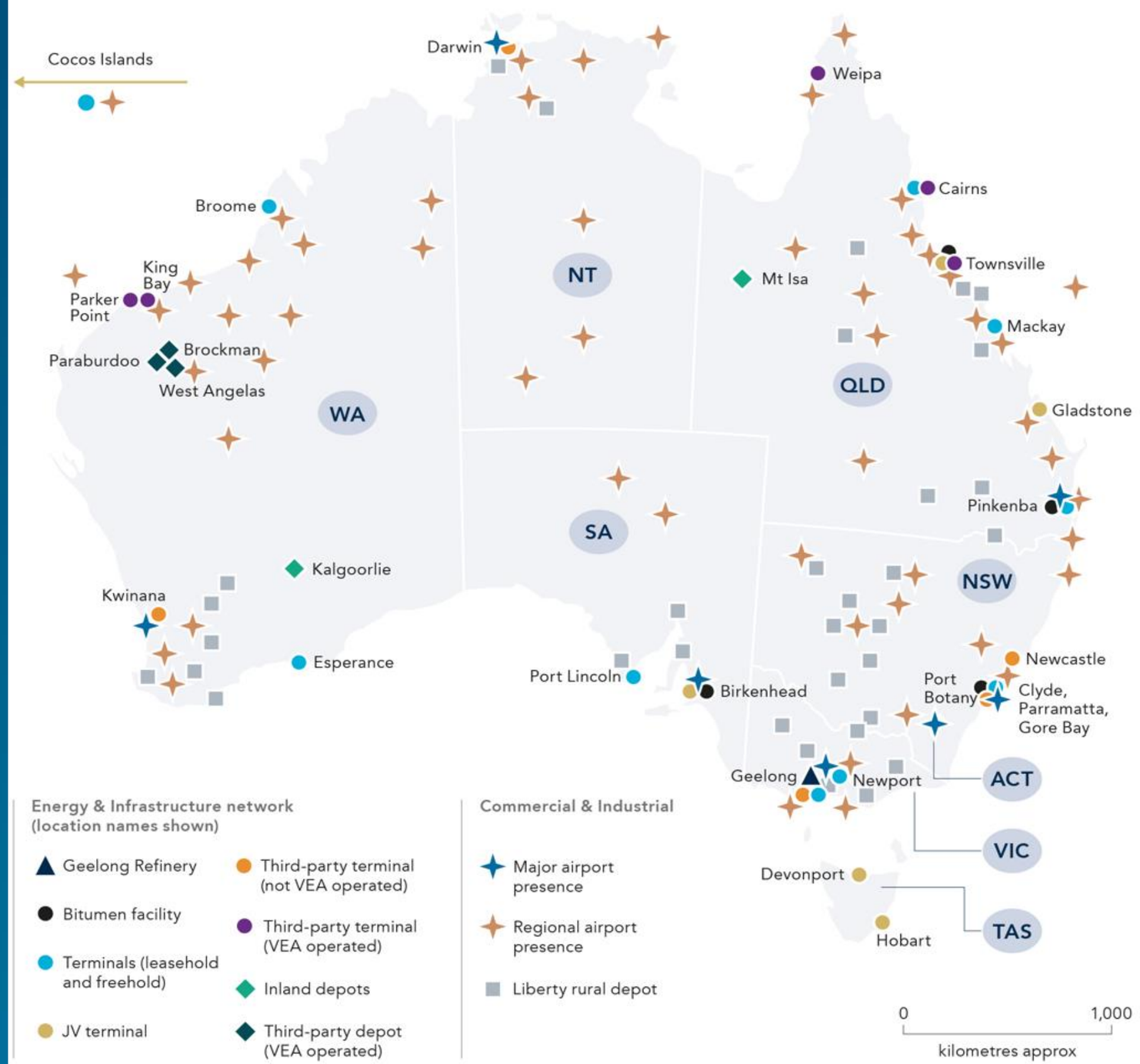
Comprehensive Supply Network Storing Local & Importing Hydrocarbons Across Key Markets



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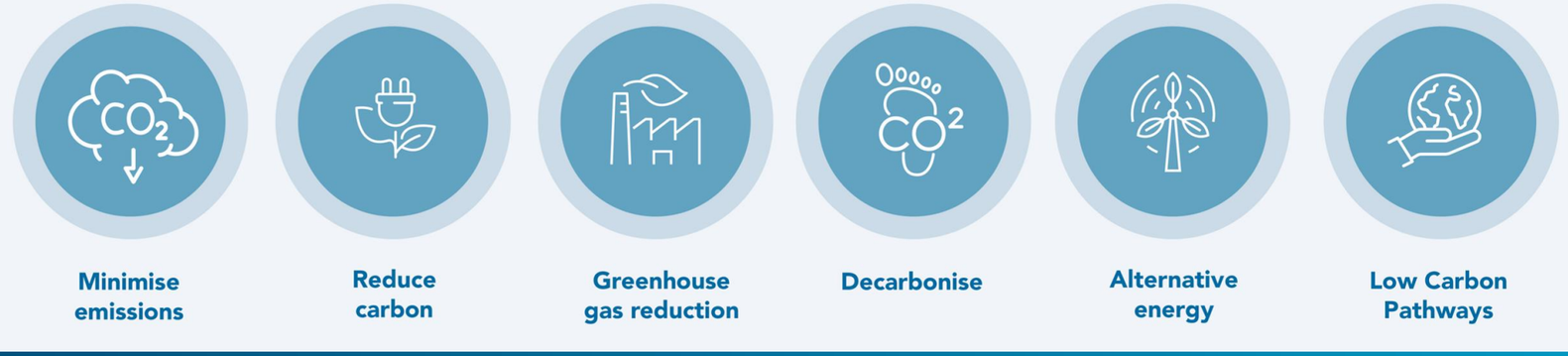
Sustainability & Decarbonisation

The Market and Companies Expectations have Changed



Global Warming – Paris Accord - limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C
For Australia 43% by 2030 which now has been extended out to 62-70% by 2035
– ultimately to reach net zero by 2050

In Australia Safeguard Mechanism – Federal Government Policy in place that requires over 210 or so industrial facilities (sites/companies) who produce >100K tonnes of CO2 per year - to reduce their emissions up to 4.9%* year on year out to 2030*

Company voluntary targets – net zero by 2050 but shorter term emission reductions at 2030 of 20-50%

Consumers and many of your customers want lower carbon products and services
Corporates/companies – need to address it to remain relevant – but how / by when / at what cost?

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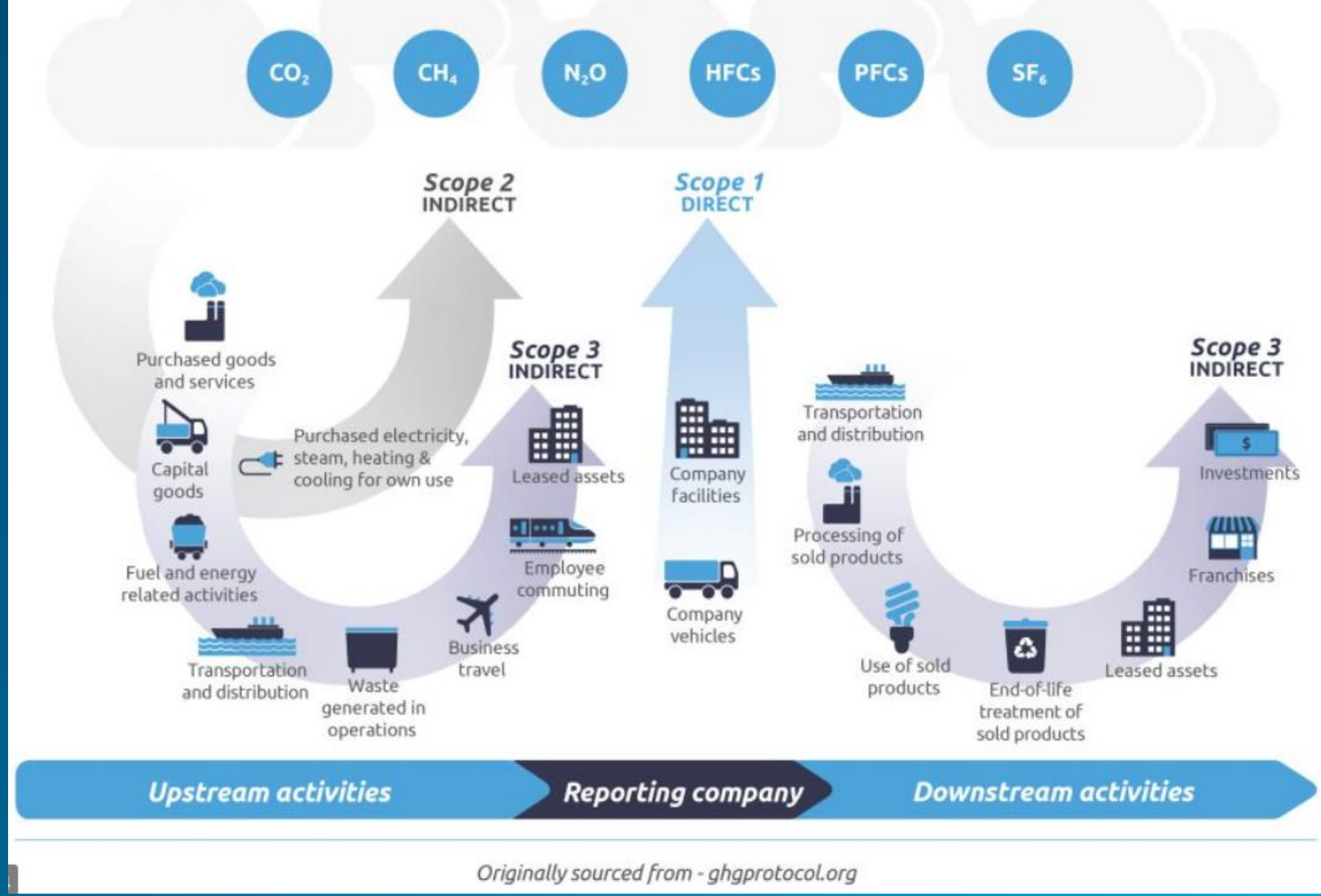
What Emissions are we talking about – some industry terminologies

Scope 1 example: Fuel (liquid/gas) use by companies for company assets

Scope 2 = Typically Electricity used by companies

Scope 3 = Upstream and Downstream activities to create, move, distribute and use our products

Fuel Example – Viva Scope 3 emissions is our customers combusting our fuels -



Transport Customers Scope 3 – Supermarket who use 3rd Party transport operators to move their goods – falls under scope 3 emissions (but for the transport operator it is scope 1 (company owned)

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Viva Energy Emissions* (2024 Report)

- We need to help our customers

Breakdown of Total Scope 1, 2 & 3 Greenhouse Gas emissions[3]

Scope 3 (Indirect) tCO_2-e	Scope 1 (Direct) tCO_2-e	Scope 2 (Indirect) tCO_2-e	Scope 3 (Indirect) tCO_2-e
Purchased goods and services **6,342,597**	Our operations **1,073,592**	Electricity for our operations **323,815**	Combustion of sold products **39,283,939**
Upstream Transportation and Distribution **447,534**			Convenience & Mobility sites **699**
Business Travel **3,528**			Downstream Transportation and Distribution **85,780**
Employee Commute **6,557**			
Upstream activities **14%**	Viva Energy (Scope 1 and 2) **3%**		Downstream activities **83%** of total Greenhouse Gas emissions

Our customers are a major contributor to our scope 3 emissions:

- Transport
- Mining operations
- Power Generation
- Rail
- Marine
- Aviation

Requirement to find solutions for Transport Companies Scope 1 and 3 emissions

Transport Companies will need to record your Scope 1, 2 and 3 and start to demonstrate to your customers

But what options are there?

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Decarbonisation Pathways

A "Stepping Stone" Approach to help customers reach their sustainability objectives.

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CARBON SOLUTIONS

Decarbonising with Renewable Diesel

Lowering your emissions with a 'drop-in' solution

Why choose Renewable Diesel?

- Renewable and sustainable alternative with lower carbon emissions based on life cycle analysis[1]
- Traceability and certification of feedstock origination via ISCC Plus framework[1]
- Transition is simple with no modification to assets, storage and equipment required
- Long storage life
- Potential for tailpipe emissions to be significantly reduced when compared to traditional diesel[2]
- High Cetane Number promotes a cleaner and more efficient combustion
- Good low temperature properties[3]
- Approved by a wide range of equipment manufacturers when used in either neat form or blended with diesel

1. The ISCC is a voluntary scheme recognised by the European Commissions under the Renewable Energy Directive (EU) 2018/2001 (RED II) that assesses operators along the supply chain as to whether they meet the sustainability and greenhouse gas emissions savings criteria of the RED II. ISCC is also recognised by the United Kingdom under the renewable transport fuel obligations, under the Japanese Government biofuel mandate and under the Liquid Fuel Supply Regulation of Queensland. For more information see ISCC EU – ISCC System (iscc-system.org) 2. For more information on reductions in regulated emissions as a result through use of HVO see: Frontiers | Evaluation of a Hydrotreated Vegetable Oil (HVO) and Effects on Emissions of a Passenger Car Diesel Engine (frontiersin.org) 3. See www.neste.com/sites/default/files/attachments/neste_renewable_diesel_handbook.pdf

Its not same as the Biodiesel

i.e."FAME biodiesel"

Blending component

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RENEWABLE DIESEL - Customer Examples

Resources - Rio Tinto Pilbara Ops – Australia's largest import 10ML to date

- Bulk Import via shipping and Co-blended into storage

Rail - V/Line – use across high-speed rail services

- First trial in Australia in continuous service

Marine - ADF Navy MV Sycamore

- Blended trial of R30 into vessel

Stationary Engines – 2025 Formula 1 Event

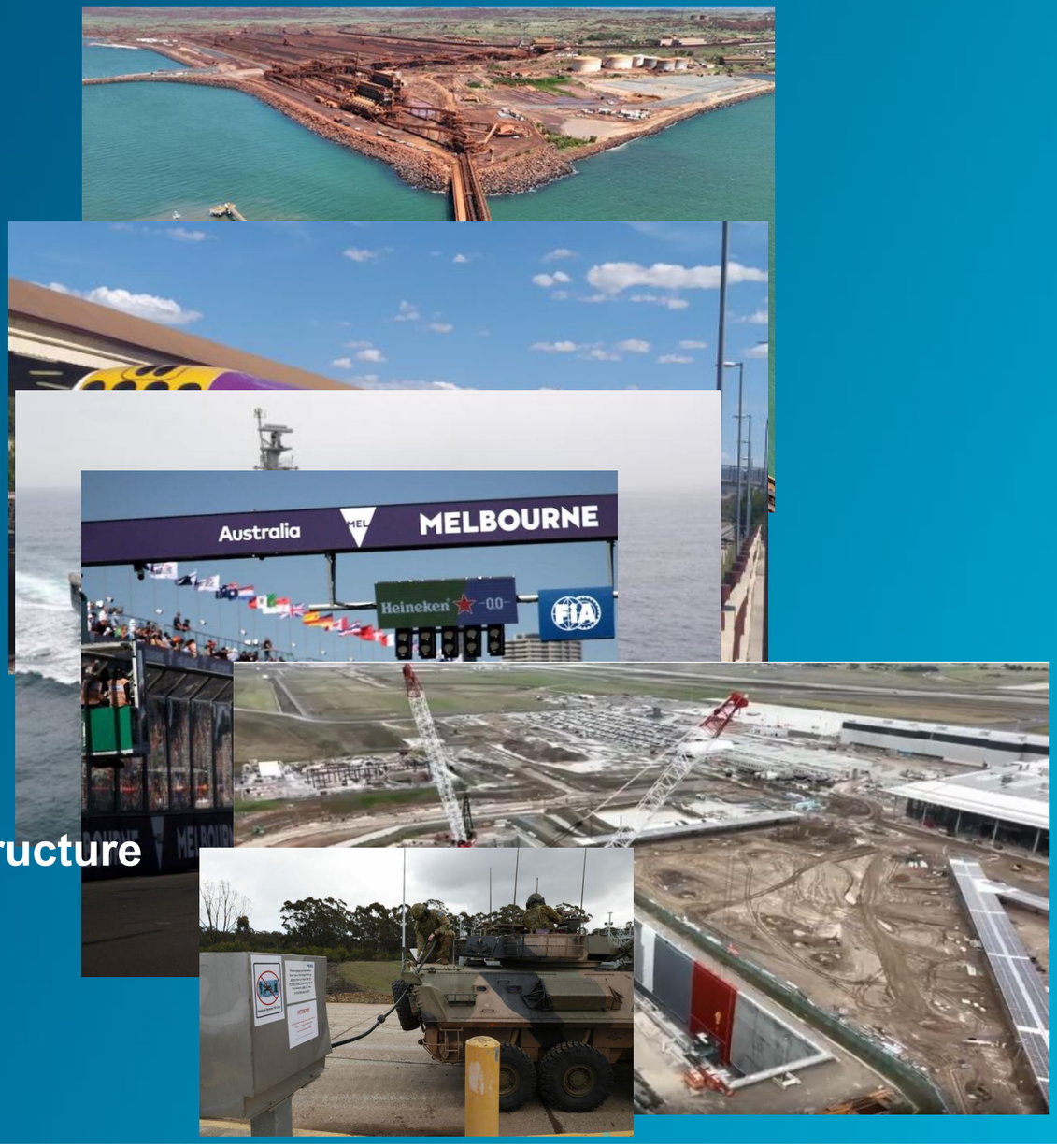
- Used in over 150 gensets with no change over process

Off-Highway – Western Sydney Airport / VIC Infrastructure

- Cranes / Telehandlers / Mobile Fleet

ADF Armoured Personnel Carriers

- Ground forces applications



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Viva Energy Hub
– Hydrogen, EV, Diesel & Adblue

Fast Facts

- Australia's Largest Mobility Project
- $34M in ARENA funding and $1M in Vic Govt Funding - $61.2M Project
- 2.5MW proton exchange membrane electrolyser
- Recycled Water used to produce renewable hydrogen – 1,000kg per day
- Fast filling hydrogen dispensing allowing back to back refuelling
- 350KW EV Charging Infrastructure
- Diesel at the pump
- 24-hr site operation

Viva envisages that Australia's first publicly accessible, commercially-scaled hydrogen refuelling station will pave the way for a network of similar sites servicing the countries busiest road freight routes

Co-Processing at the Geelong Refinery

Displacing Crude with Alternative Feedstocks

- Co-Mingled final product – no segregation
- Currently potential up to 5%

Feedstock Types So Far

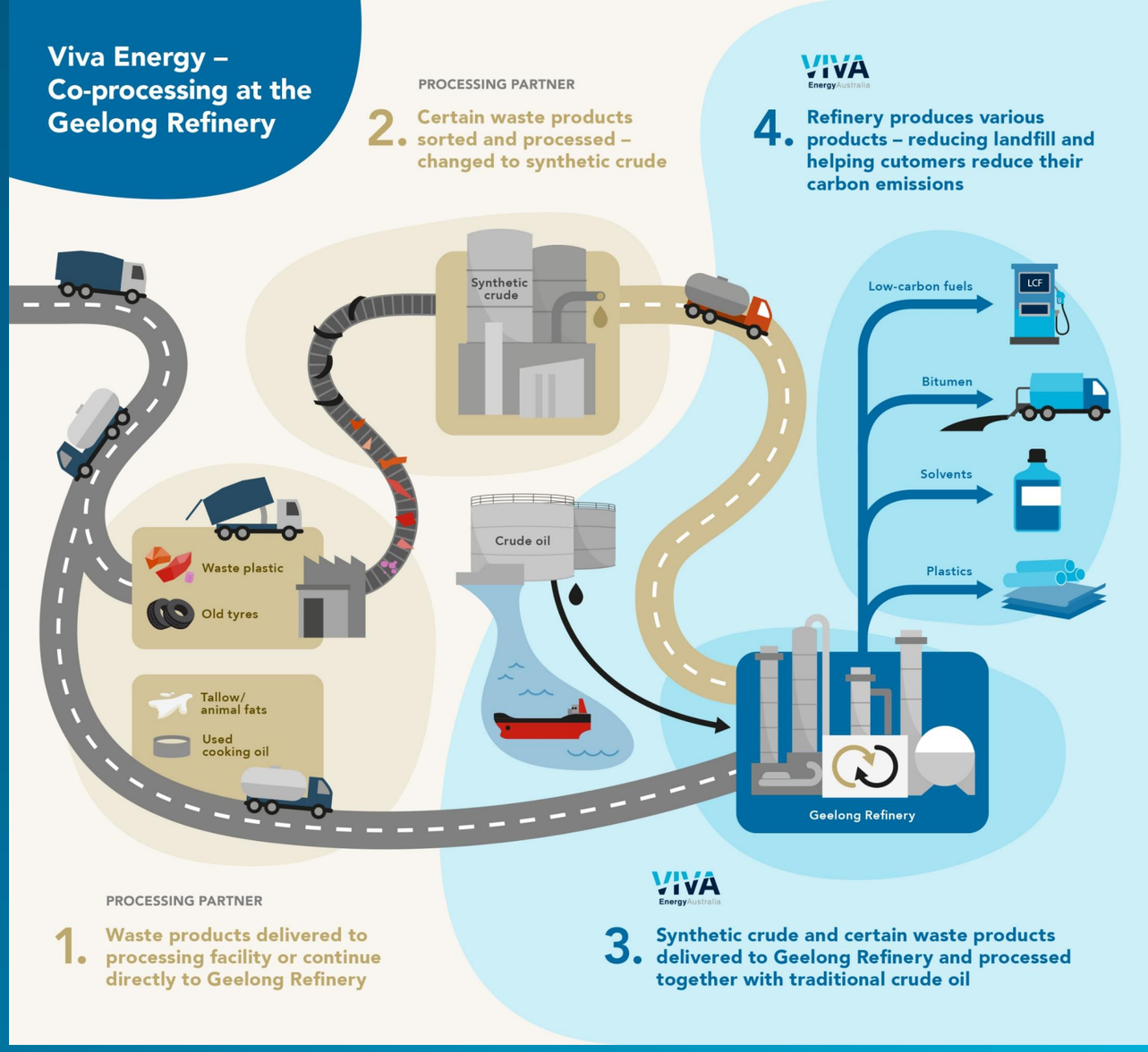
- Used Cooking Oil (UCO) - SnackBrands
- Tyre Pyrolysis Oil (TPO) - imported
- Plastic Pyrolysis Oil (Syn Crude) from plastics - Kit Kat

Emissions

- Certificate based scheme
- Decoupling physical molecule and the emission benefit
- Policy development still in play with Federal Government

The Future

- Biogenic Feedstocks – Canola / Animal Fats / Other Ag crops
- Increase use of circular materials
    - Tyre Recycling and Plastic pyrolysis oils
- Increasing existing feedstocks and increase in % Co-Processing allowed



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End of Life Tyres - Example

Playing our part in the circular economy

Existing Infrastructure, skills and employees

Potential future transition of what the refinery make look like

Using local available feedstocks rather than exporting overseas

Fuel Security

Other Examples

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So Where To From Here? – It's complex

Lots of options BUT……..

Timing, Adoption and Scaling

- Shorter Time Frame - Renewable Diesel / Biodiesel / Low Carbon Liquid Fuels
- Physical supply – blend / neat - national footprint
- Balancing our Storage Infrastructure and Fuel Mix (Conventional vs Renewable)
- OEM's – releasing some great new products but have not cot it covered
- Long Haul / High Energy Density HD applications – Diesel, Renewable Diesel,
- Short Haul / LCV/MD vehicles – Hybrid, EV, but need charging infrastructure
- Transition overlap - mix of energies - Diesel still here for a long time

Opportunity

- Repurposing local feedstock – not sending overseas
- Agriculture Opportunities / Novel Crops
- Local Manufacturing "Greenfield sites" – its expensive and again needs to scale
- Traceability and Provenance of feedstock's/products
- Government Policy – some great work being done but still requires more to be done

Retail network

- Crowded Forecourt – balance options
- Heavy Duty Vehicle Freight EV Charging Hubs
- Energy Hub Concept

Competition

- Other Industry sectors - Mining, Aviation, Marine, Power, Agriculture,
- Using same feedstocks to make other fuels, Sustainable Aviation Fuel / Green Methanol

Cost & Sustainability

- Mandates / Subsidies / Local Incentives?
- Cant blend at every terminal if you mandate
- Physical vs. Emission Certificates – you will not always need to get the physical product (paper based – Green Electricity)
- Emission compliance/ Reporting
- Additional Challenge Tax Credit vs. Road User Charge
- Who Pays – companies starting to put a carbon price on goods delivered "pass through"

- Complex for Viva Energy – what pathway and which industries

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Thank you

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