

7 June 2022

Company Announcements Office  
ASX Limited  
Exchange Office  
Level 4, 20 Bridge Street  
Sydney NSW 2000

Dear Sir/Madam,

**BluePrint 2030 Update – Strategic Infrastructure Growth Pillar**

Please find attached a presentation by the Company at an investor day today.

This presentation was authorised for lodgement by the Board of Cleanaway.

Yours sincerely



Dan Last  
Company Secretary

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Cleanaway Waste Management Limited is Australia's leading total waste management, industrial and environmental services company. Our team of more than 6,600 highly trained employees are supported by a fleet of over 5,000 specialist vehicles working from approximately 250 locations across Australia. With the largest waste, recycling and liquids collections fleets on the road - and supported by a network of recycling facilities, transfer stations, engineered landfills, liquids treatment plants and refineries - we are working hard to deliver on our mission of making a sustainable future possible together for all our stakeholders.



Making a sustainable future possible together

# Cleanaway Waste Management Limited

Australia's leading total waste  
management services provider

Blueprint 2030  
Strategic Infrastructure Growth Pillar  
7 June 2022

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**Forward looking statements** – This presentation contains certain forward-looking statements, including with respect to the financial condition, results of operations and businesses of Cleanaway Waste Management Limited (“CWY”) and certain plans and objectives of the management of CWY. Forward-looking statements can generally be identified by the use of words including but not limited to ‘project’, ‘foresee’, ‘plan’, ‘guidance’, ‘expect’, ‘aim’, ‘intend’, ‘anticipate’, ‘believe’, ‘estimate’, ‘may’, ‘should’, ‘will’ or similar expressions. All such forward-looking statements involve known and unknown risks, significant uncertainties, assumptions, contingencies and other factors, many of which are outside the control of CWY, which may cause the actual results or performance of CWY to be materially different from any future results or performance expressed or implied by such forward-looking statements. Such forward-looking statements apply only as of the date of this presentation.

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Unless otherwise stated, all earnings measures in this presentation relate to underlying earnings.

Underlying earnings are categorised as non-IFRS financial information and therefore have been presented in compliance with ASIC Regulatory Guide 230 – Disclosing non-IFRS information, issued in December 2011. Refer to CWY’s Directors’ Report for the definition of “Underlying earnings”. The term EBITDA represents earnings before interest, income tax, and depreciation, amortisation and impairments and the term EBIT represents earnings before interest and income tax expense.

This presentation has not been subject to review or audit.



# Agenda

1. **BluePrint 2030**
2. **Greenhouse Gas Emissions**
3. **Energy-from-Waste**
4. **Construction & Demolition**
5. **Organics**
6. **Landfill Optimisation**
7. **Core Infrastructure Expansion**
8. **Innovation**
9. **Capital Allocation, Funding and Returns**
10. **Wrap up**

# BluePrint 2030

BluePrint 2030 is our **customer led** evolution of the Footprint 2025 strategy.

In BluePrint 2030 we will create superior shareholder value by **integrating and extending our leading network of infrastructure assets to provide high circularity, low-carbon solutions, seamless customer service and value for money** for our customers.

Our goal is to be recognized by our customers as the most innovative and sustainable waste management company, with a **foundation of zero harm** to people and the environment.

## Today's presenters:

Mark Schubert, *MD and CEO*

Paul Binfield, *CFO*

Frank Lintvelt, *EGM Strategy and M&A*

James Pearce, *Project Director, Energy-from-Waste*

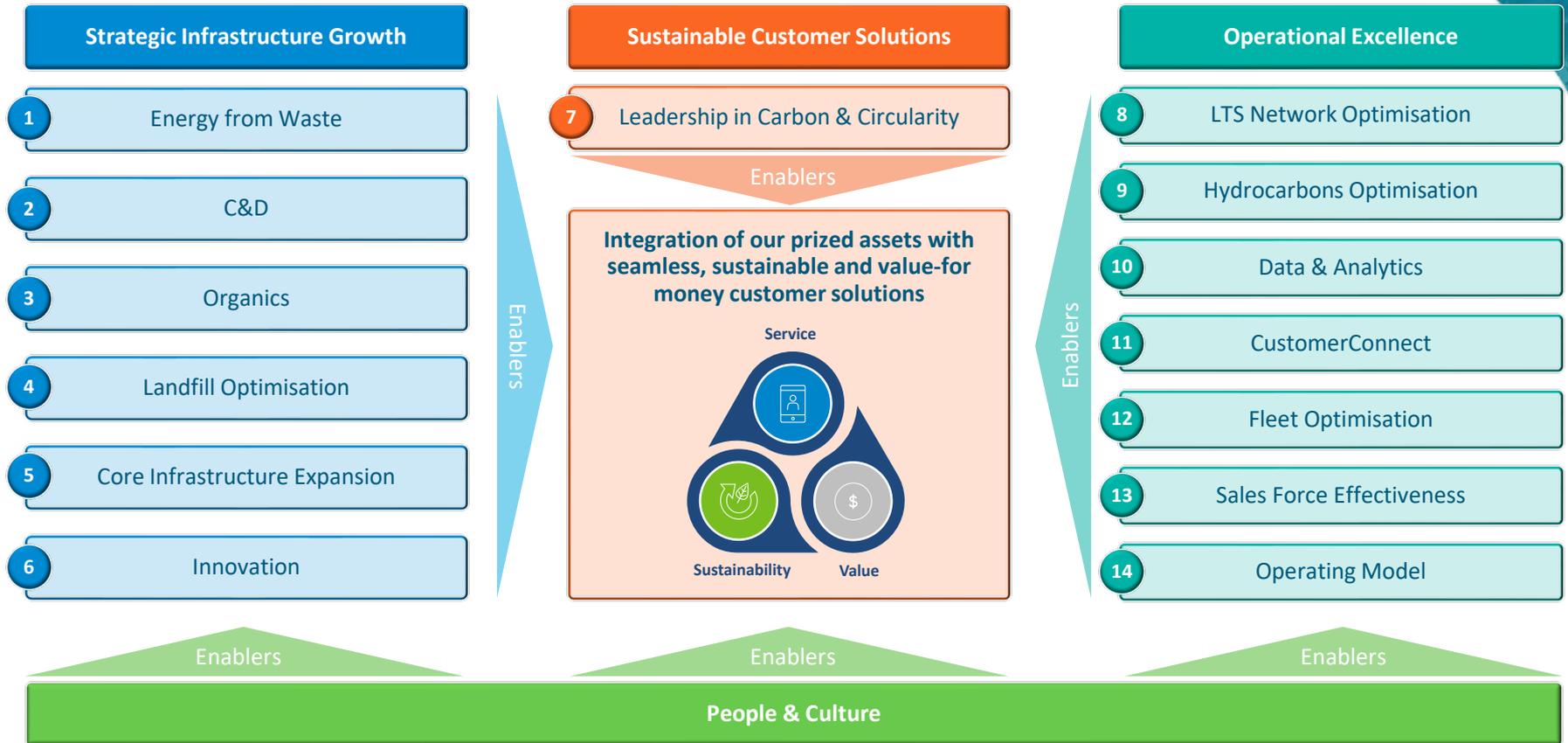
Taku Ide, *Head of Carbon*



# Strategy Evolution – BluePrint 2030



# Our 14 BluePrints – How we deliver our strategy



# Our 14 BluePrints – How we deliver our strategy



# National & State Policies - Strategic tailwinds

Less waste, higher landfill diversion & greater domestic reprocessing and reuse...



## NATIONAL WASTE POLICY ACTION PLAN



## Waste Delivery Plan



## Recycling Victoria A new economy



## SEQ Waste Management Plan

FINAL REPORT 2021

Council of Mayors  
South East Queensland

### National Waste Policy Key Actions

- Waste export ban started in 2020
- Phase out problematic and unnecessary plastics by 2025
- By 2030:
  - Reduce total waste generated by 10% per person
  - 80% average recovery rate from all waste streams
  - Halve the amount of organic waste sent to landfill
- Significantly increase the use of recycled content by governments and industry
- Make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions

..with state plans aligned to or more ambitious than the national plan

# Resource Recovery – Policy tools

Supported by state based waste levies, diversion targets and source separation initiatives...

	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Landfill levy increasing	✓	✓	✓	?	✓	✓	✓	✗
Waste reduction target	✓	✓	✓	✓	✓	✓	✓	✗
Landfill diversion target	✓	✓	✓	✓	✓	✓	✓	✗
Resource Recovery target	✓	✓	✓	✓	✓	✓	✓	✗
Container deposit scheme	✓	✗*	✓	✓	✓	✗*	✓	✓
FOGO policy	✓	✓	trial	✓	trial	✓	pilot	✓

EfW policy	Y	Y	Y	Y	N	N	Y	N
Medium term capacity need	✓	✓	✓	✗	✗	✗	✗	✗
Proximity of sites to waste	Far	Near	Near	Near	n/a	n/a	n/a	n/a
Location rules	4 regional sites only	Merit-based via cap	Proximity principle	Buffer zones	n/a	n/a	Not permitted	n/a

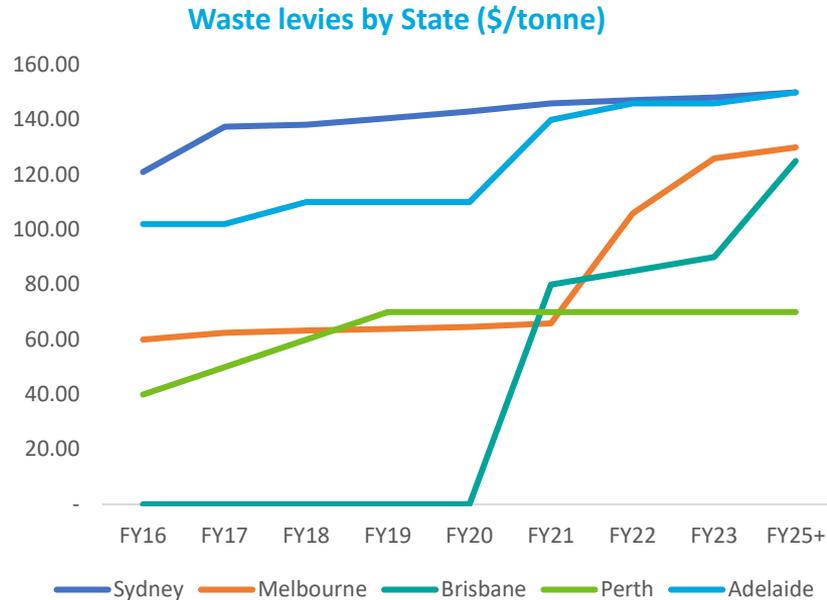
Sources: Australian National Waste Report 2020, State Energy from Waste policies, Cleanaway assessments

\*VIC and TAS have container deposit schemes planned

**..with supportive Energy-from-Waste settings in VIC and QLD**

# Resource Recovery – Landfill levies expected to increase

Metro areas of most states will have landfill levies in excess of \$125 per tonne by 2025



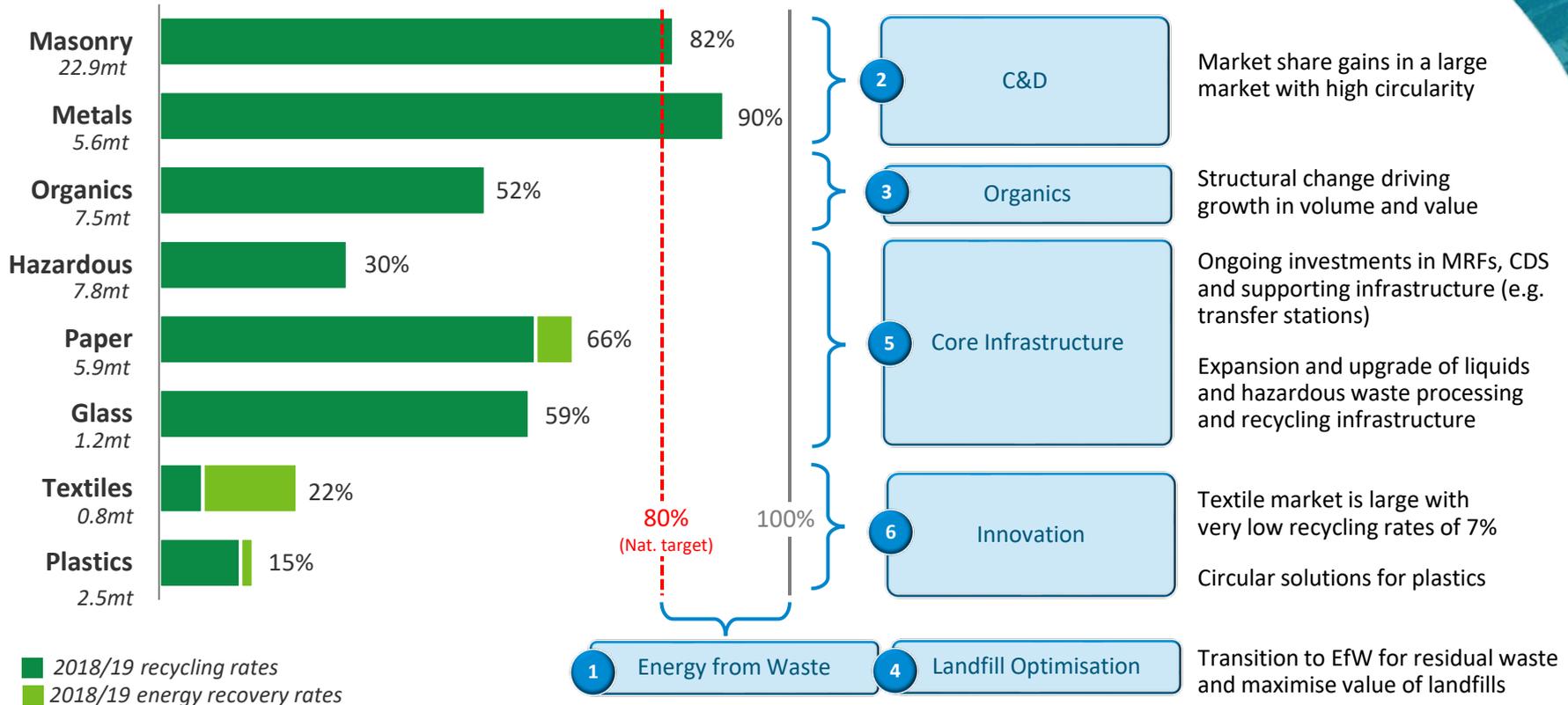
- Waste levies are the primary driver of landfill diversion prize
- Increasing levies offset volume growth flattening
- Improves economics of harder to recycle waste streams

Source: Actual historical levies (metro). Cleanaway forecast estimates based on stated policies



# Resource Recovery – Market Context

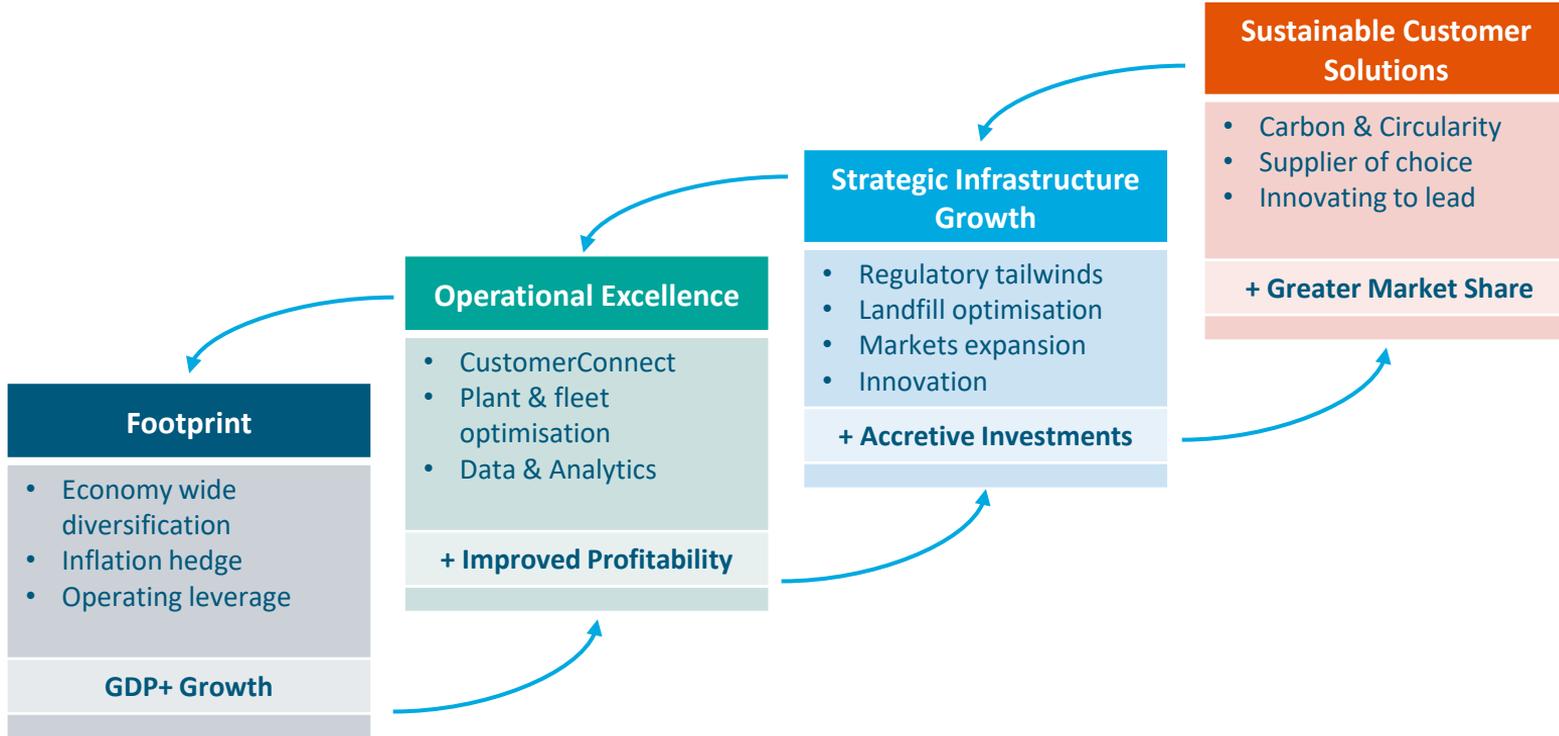
Market development and market leadership opportunities exist



■ 2018/19 recycling rates  
■ 2018/19 energy recovery rates

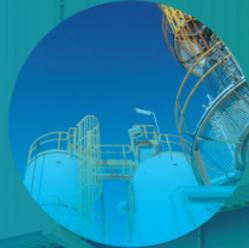
# Blueprint 2030 – Growth Framework

Our strategic pillars build upon each other to generate superior shareholder value .....



...while providing customers with great service and value for money sustainable solutions

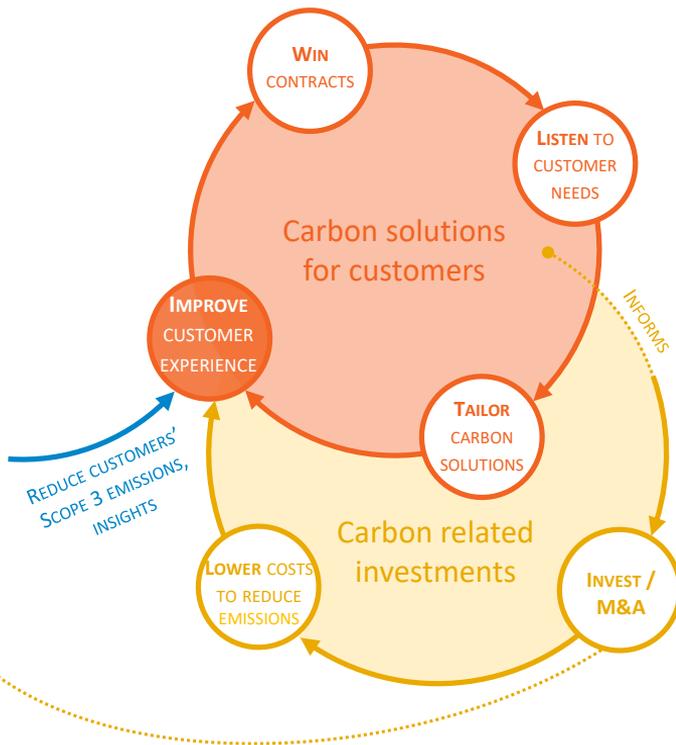
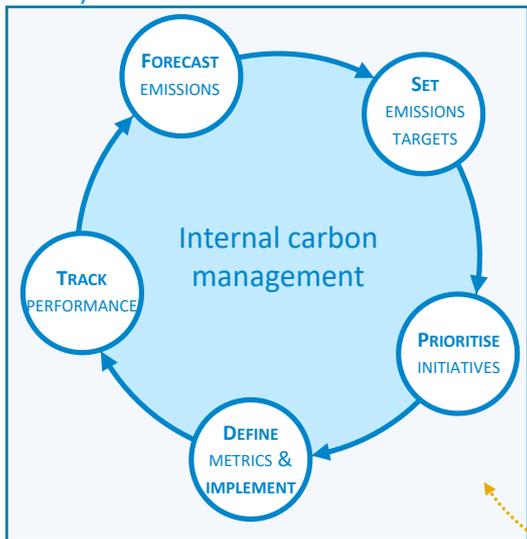
# Greenhouse gas emissions



# Climate – Leadership in Carbon

Setting emissions targets consistent with climate science will drive investment and customer solutions

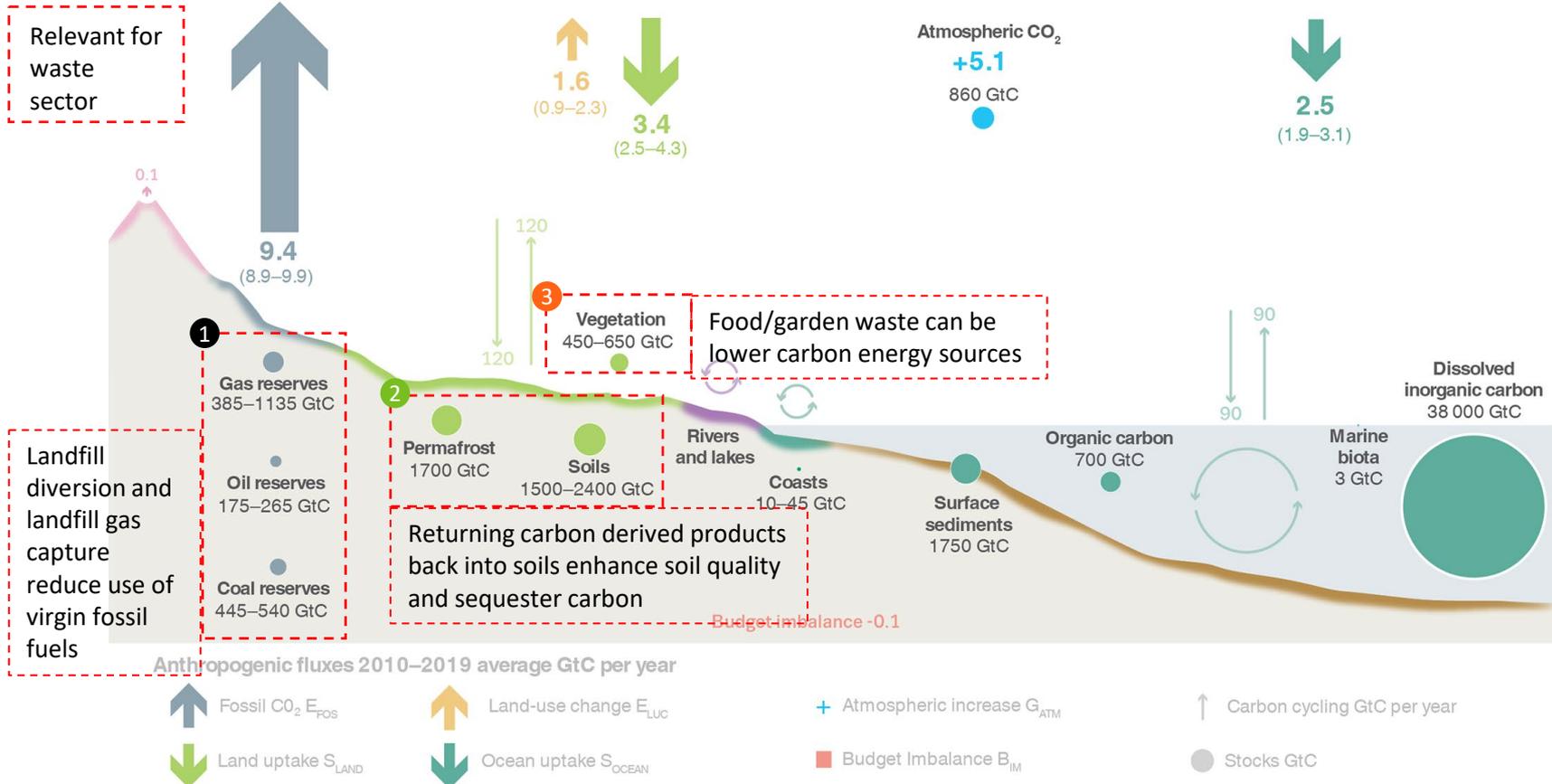
Today's focus



APPLY TO REDUCE CWY'S SCOPE 1 AND 2 EMISSIONS

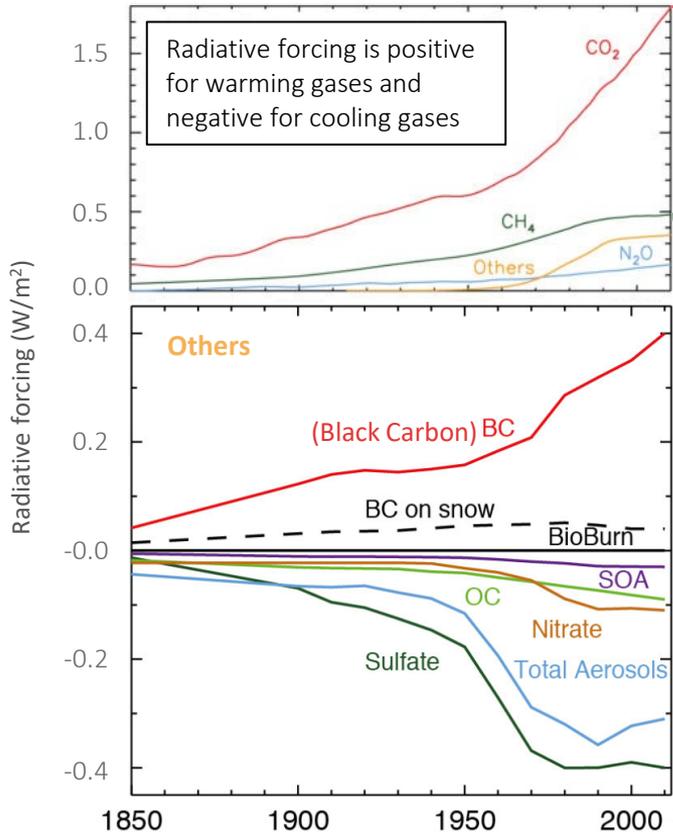
- Build capability and maturity in internal carbon management
- Set 2030 and 2050 targets with FY22 Full Year Results
- Build and refine marginal abatement cost curve (MACC) for Cleanaway and identify and develop investment opportunities to decarbonise
- Capture decarbonisation opportunities with uniquely positioned strategic infrastructure
- Develop carbon solutions that are aligned to customers' aspirations

# Global Carbon Cycle – Waste Sector Relevance



# Greenhouse Gases – CO<sub>2</sub> and CH<sub>4</sub>

## Reducing methane can delay peak warming but cannot prevent climate change



- Net CO<sub>2</sub> increases is the main contributor to global warming
- CO<sub>2</sub> curve would flatten at net-zero, but not decrease, as CO<sub>2</sub> is stable in the atmosphere for centuries
- Carbon storage initiatives would be required to help reduce CO<sub>2</sub> concentrations in the atmosphere and reverse climate warming

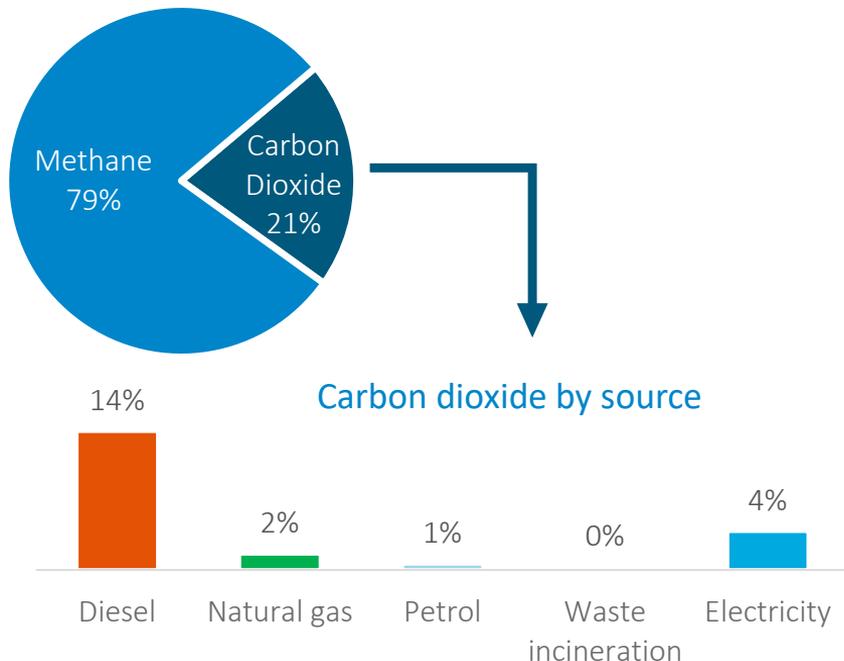
- Methane (CH<sub>4</sub>) has also increased over time, but levels have stabilized as CH<sub>4</sub> is broken down in the atmosphere

- Main sources of greenhouse gas emissions in the waste sector include:
  - CH<sub>4</sub> from landfills
  - CO<sub>2</sub> from electricity and from fossil fuels use in fleet and facilities
- Reducing CH<sub>4</sub> emissions has an immediate cooling effect, **but climate change is only preventable by net-zero CO<sub>2</sub> emissions**
- **Each gas requires a specific target due to differing impacts on warming**

# Greenhouse Gases – CO<sub>2</sub> and CH<sub>4</sub>

Cleanaway's greenhouse gas emissions are heavily weighted towards methane from landfills

Total emissions (CO<sub>2</sub>-e)



- CH<sub>4</sub> from landfills is nearly 80% of our emissions footprint
- Emissions from landfills are distributed across 10 closed and operating landfills
- CO<sub>2</sub> emissions make up approximately 21% of our emissions footprint
  - 14% of this comes from emissions associated with electricity consumption
  - Remaining emissions primarily from fleet and natural gas use in facilities

# Greenhouse Gases – International Targets

Cleanaway to adopt scientifically rigorous targets for CO<sub>2</sub> and CH<sub>4</sub> consistent with global commitments



CO <sub>2</sub> <sup>i</sup>	2030	15 to 72% reduction vs. 2020 (Median 44%)	48% reduction vs 2020 <sup>iii</sup>	August 2022
	2050	74 to 128% reduction vs. 2020 (Median 2%)	Net zero emissions <sup>iii</sup>	
CH <sub>4</sub>	2030	12 to 62% reduction vs. 2020 (Median 34%)	30% reduction vs 2020 <sup>iv</sup>	August 2022
	2050	35 to 77% reduction vs. 2020 (Median 52%)	N/A	

i. CO<sub>2</sub> emissions here refers to emissions that result from burning fossil fuels or from cement production. It does not include CO<sub>2</sub> that results from burning biogenic gas, including landfill gas. Burning landfill gas does not add to the natural atmospheric carbon cycle. [2006 IPCC Guidelines for National Greenhouse Gas Inventories — IPCC](#)

ii. Data source IPCC WGIII, AR6: [IXMP Scenario Explorer developed by IIASA](#)

iii. The pledge in the Glasgow Climate Pact is 45% CO<sub>2</sub> emissions reduction by 2030 compared to 2010 ([COP26 cover decision \(unfccc.int\)](#))– which translates to 48% CO<sub>2</sub> emissions reduction by 2030 compared to 2020, when comparing the median 2020 CO<sub>2</sub> emissions to median 2030 CO<sub>2</sub> emissions, and net-zero by mid-century.

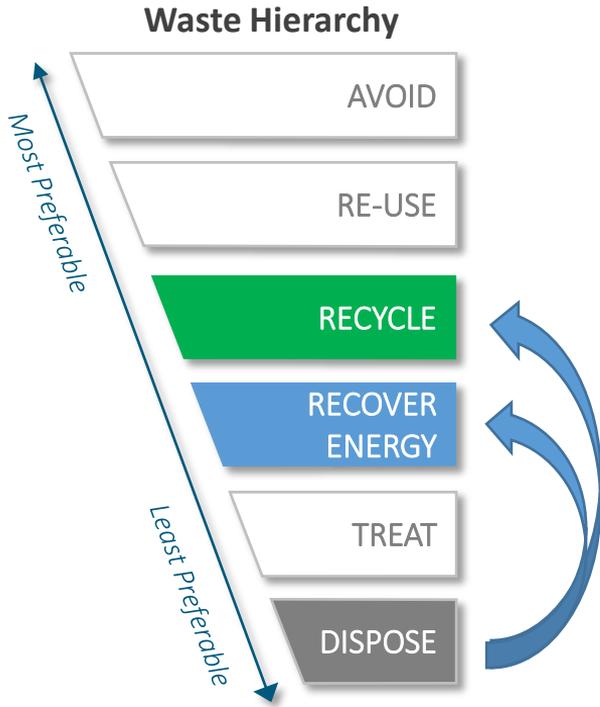
iv. [Global Methane Pledge | Climate & Clean Air Coalition \(ccacoalition.org\)](#)

# Blueprint One Energy-from-Waste



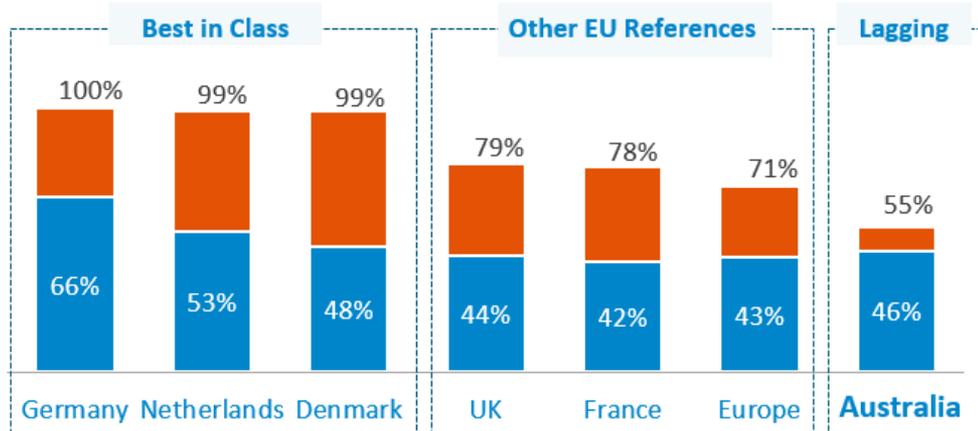
# Energy-from-Waste – Diversion Targets

To meet landfill diversion targets Australia must embrace large-scale EfW for residual waste



Recovery rates municipal waste

■ EfW ■ Recycling & Composting

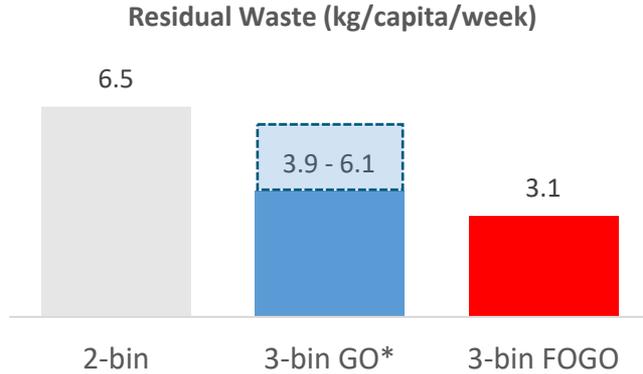


Source: OECD, Australian National Waste Report 2018, Department of the Environment and Energy. EfW includes landfill gas

- Improving recycling rates will only do so much to increase landfill diversion
- Resources that cannot be practically or economically recovered can have their embodied energy recovered through EfW
- EfW does not preclude continuous improvement to resource recovery

# Energy-from-Waste - Feedstock

When FOGO is implemented only hard-to-recycle residual waste remains as Energy-from-Waste feedstock



Source: NSW EPA, Local government waste and resource recovery data report 2018-19

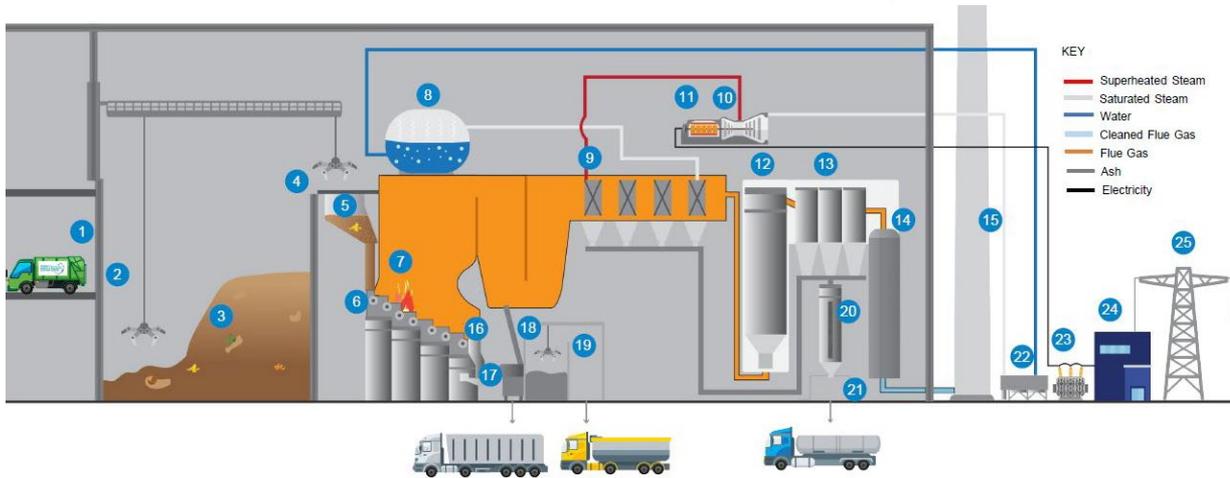
\* 3.9 to 6.1 represents the range of residual waste outcomes across councils

- >40% of Red Bin waste could be recovered through a Food Organics Garden Organics (FOGO) bin
- Once waste has been placed in the red bin, it becomes contaminated and there are limited environmental or economic drivers to 'unscramble the egg'
- Feedstock to come from Municipal Solid Waste and Commercial and Industrial (C&I) waste only



# Energy-from-Waste - Technology

Moving grate system that we intend to use is leading, safe and proven technology



KEY

- Superheated Steam
- Saturated Steam
- Water
- Cleaned Flue Gas
- Flue Gas
- Ash
- Electricity

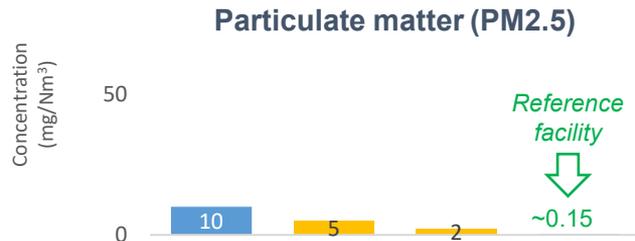
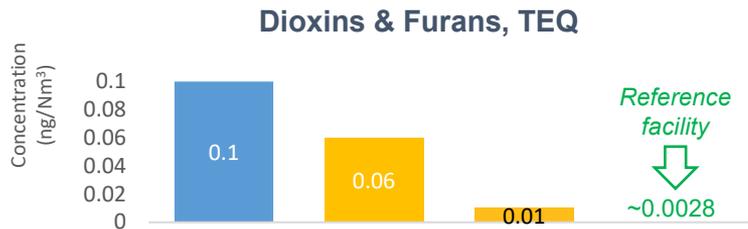
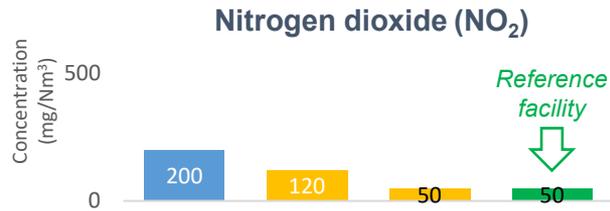
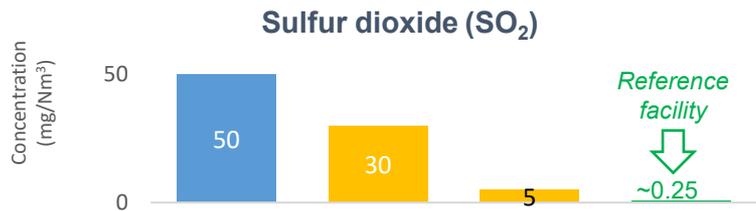
## LEGEND

1 Waste Receiving hall	7 Boiler	13 Bag filters	20 Flue gas treatment residues (FGTr) and boiler fly ash silo
2 Tipping bay	8 Steam drum	14 Wet scrubber	21 FGTr and boiler fly ash collection for treatment and disposal
3 Waste bunker	9 Superheaters	15 Stack	22 Air cooled condenser
4 Waste crane	10 Steam turbine	16 Incinerator bottom ash (IBA) handling	23 Transformer
5 Feed hopper (chute)	11 Generator	17 Ferrous metals recovery	24 Substation
6 Moving grate	12 Semi dry reactor	18 IBA bunker and separate metals bunker	25 Local electricity grid
		19 IBA collection and separate metals collection	

- **Used at our reference facilities in Filborna (Sweden) and Dublin (Ireland)**
- **Reference facilities have**
  - ✓ similar waste streams
  - ✓ same proven moving grate technology
  - ✓ same proven advanced flue gas treatment systems
  - ✓ comparable throughput size
  - ✓ operational data and experience

# Energy-from-Waste – Pollutant Management

Reference facilities are used to provide empirical evidence of pollutant outputs of proposed facilities



BREF = Best Available Technology Reference  
TEQ = Toxic Equivalent

# Energy-from-Waste - Victoria

Project planning well underway with site secured and supportive regulatory environment



- ~82-hectare site
- ~10 hectares required for EfW
- Strong buffers and adjoining neighbours (quarries, power station, brick making)
- Site Investigations completed -> Permit documentation underway
- Good transport and road access (with future upgrades planned)
- Strong electricity network access
- Favourable offtake opportunities with nearby businesses / industry

## Project

- Substantial site acquired in Wollert
- Facility size to be optimised subject to cap (~400 ktpa)
- 100% Cleanaway owned
- Stakeholder briefings ongoing
- Exploring complementary activities to develop precinct

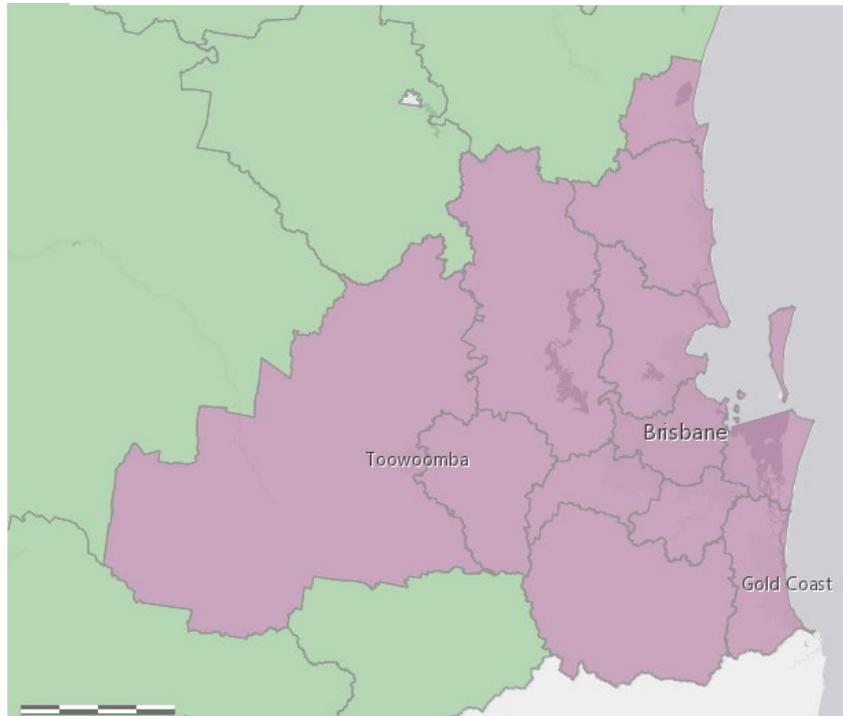
## Policy

- Merit based cap (1mtpa to 2030) – excludes facilities operating or had planning permit as of 28 June 2021
- Licences under cap awarded by cap regulator in 2022



# Energy-from-Waste - Queensland

Option currently being secured over a site located in South East Queensland



- Site is zoned for heavy industry (Note: it is not in Ipswich)
- Strong buffers and heavy industrial neighbours
- Good transport and road + rail access (with future upgrades planned)

## Project

- Secured exclusivity over a site in the Qld Metro levy area
- We are finalising an option over the 10-hectare site
  - Settlement is subject to Regulatory and Environmental Approvals, and Financial Close
- Facility size to be optimised (~500 ktpa) for Brisbane and Gold Coast feedstock streams
- 100% Cleanaway owned

## Policy

- Seven Energy-from-Waste policy outcomes consistent with Cleanaway's philosophy
- Precautionary and proximity principles apply
- Facilities cannot be located within or near sensitive land uses in the urban footprint such as (but not limited to) residential, aged care or child care facilities.

# Energy from Waste – Timetable for Queensland and Victoria

Milestone	Indicative Timing <sup>#</sup>
Site identification	Complete
Secure site	Complete/ In progress
Scoping Project Definition development	~3 months
Planning document preparation / submission	~5 months
Public display	~2 months
Development approval	12 months +
Development and Commercialisation (concurrent with other activities)	~12 months
Target Financial Close	2023/24
Construction	~3 years
Commissioning	2026/2027 +

# varies by State – approximate



Image: Covanta Energy-from-Waste, Dublin

# Energy-from-Waste – Project Economics

Investment and funding will have regard to our commitment to a strong group credit profile

## Capex range

- \$700m - \$1b for 300-500 ktpa facility

## Capex phasing

- Over 3 years - “S - curve” profile

## Revenue

- 85-90% Gate fees
- 10-15% Electricity sales

## Operating costs

- Approximately 50:50 fixed to variable
- Fixed costs comprise overheads, insurance, utilities, lifecycle and operating costs
- Variable costs comprise maintenance, consumables and ash treatment and disposal costs
- Shut down interval typically 4 weeks p.a. (usually spread across 2 events per year)

## Other benefits not included in investment case

- Co-location/Precinct
- Resource recovery/commodity sales

## Waste supply considerations

A blend of:

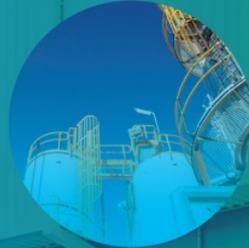
- Long-term municipal contracts
  - Contracted C&I
  - Uncontracted volumes
- Contracted base volumes will underpin financing
  - Optimise base volumes with exposure to market pricing for uncontracted volumes

## Debt funding

- Strong lender appetite for development of infrastructure assets including from current capital providers
- Core infrastructure nature of EfW assets means project gearing will be higher – targeting 60% plus
- Opportunity to further optimise EfW gearing as additional and longer dated contracted volumes and associated cash flows improve debt servicing coverage ratios

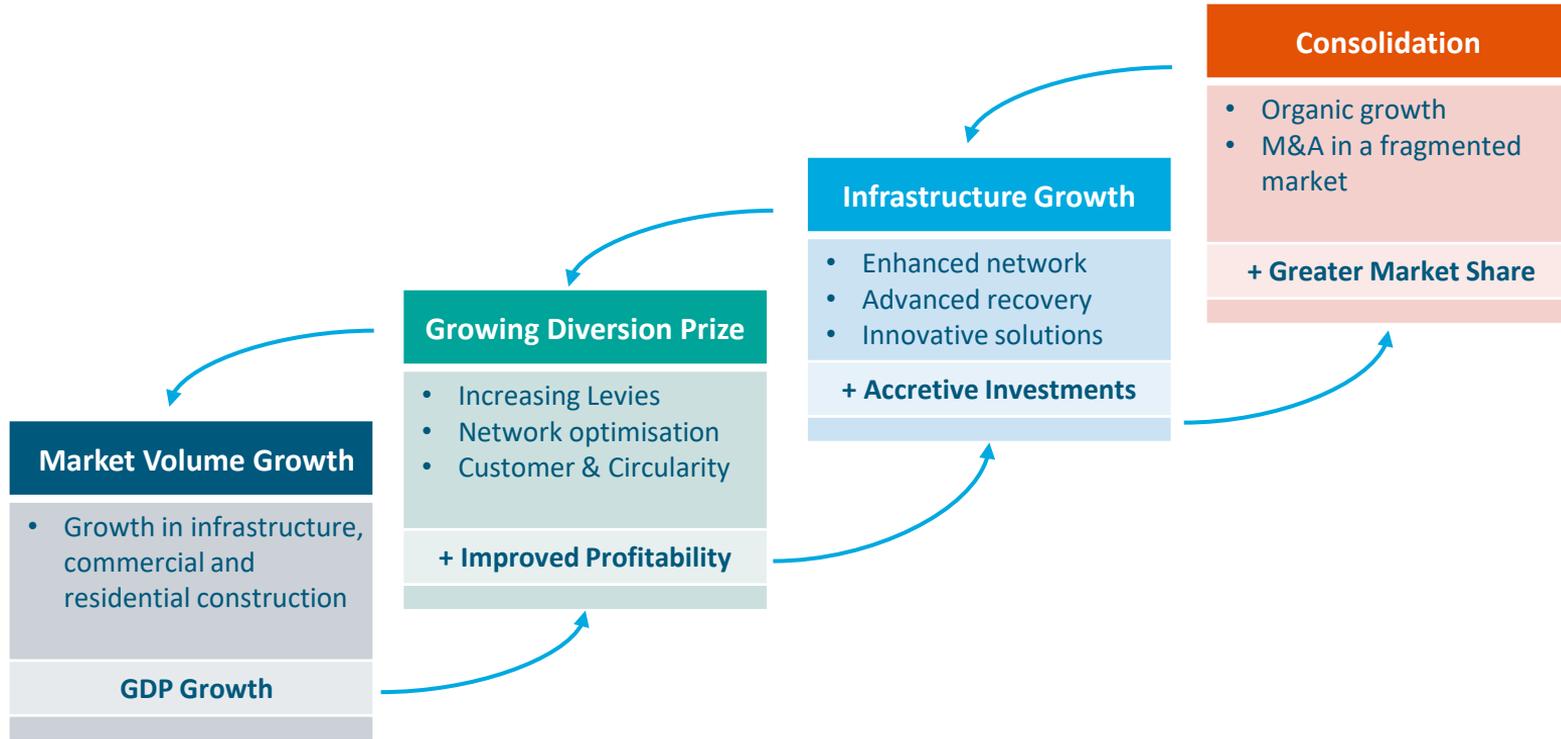
*Cleanaway's strong municipal customer relationship together with its supporting infrastructure, logistics and an ambition to deliver sustainable waste solutions to our customers gives us a competitive edge in delivering Energy-from-Waste*

# Blueprint Two Construction & Demolition



# Construction & Demolition – Market Opportunity

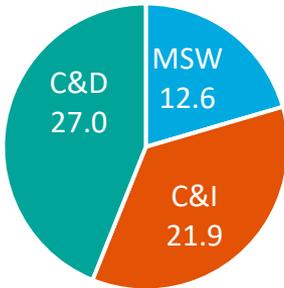
Underlying volume growth complemented by an increasing diversion prize and resource recovery



# Construction & Demolition - Market Overview

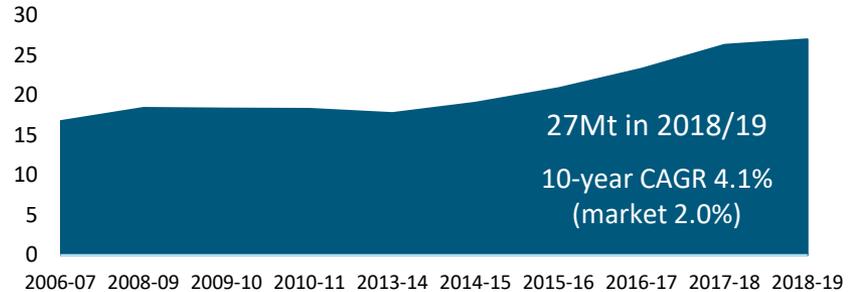
Cleanaway's focus is on key markets with a growing diversion prize

Waste by category (Mt)



Source: Australian National Waste Report 2020 (represents 'Core waste' definition)

C&D waste generated (Mt)



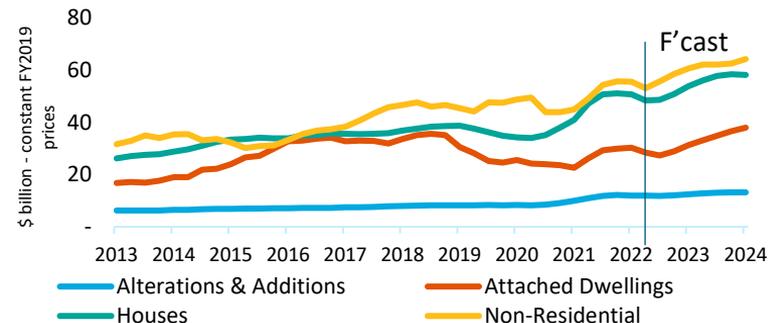
Source: Australian National Waste Report 2020

2018-19 C&D Waste by State (Mt)



Source: Australian National Waste Report 2020

Australia Building commencement by sector



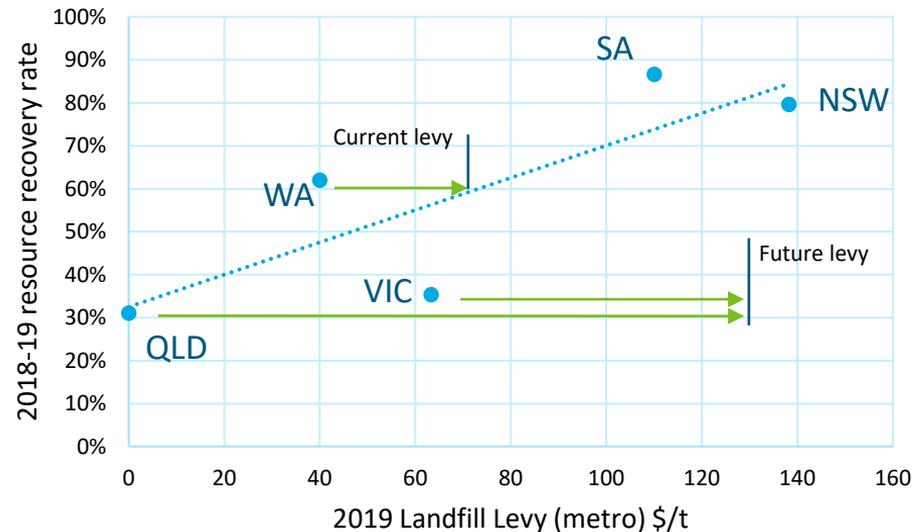
Source: BIS Oxford Economics

# Construction & Demolition – Growth opportunity

Cleanaway's focus is on key markets with a growing diversion prize

- Strong correlation between recovery rates and landfill levy rate
- Substantial opportunity in key states to lift recovery rates further
- QLD levy was introduced in FY20 with an observable market response
- VIC and QLD levies to be >\$125/t by 2025

Landfill levy (metro) and recovery rates



Source: National Waste Report 2020

# Sustainable Customer solutions in C&D

Integrated network to internalise volumes and create high quality products back to customers

## Demand for recycled content

**BORAL**

**Our Products**  
Lower carbon and recycled products  
Sustainable infrastructure and services

**JamesHardie**

UP TO  
**15%**  
recycled content  
in our fiber  
cement products

UP TO  
**50%**  
recycled content  
in our fiber  
gypsum products

**BRICKWORKS**

Target	<b>Sustainable Products</b> By 2025 we will double our volume of products sold in Australia that hold leading sustainable qualities.
	<b>Circular Economy</b> Year on year increase in recycled material use.

**mirvac**

Strategy 2:  
Procure reused, recycled, and rapidly renewable materials

**OUR TARGET: Procure 25% recycled content**

**lendlease**

## Enabling circular, low carbon solutions



**Materials and services we buy**  
SCOPE 3

- Collaborate with suppliers & designers to eliminate embodied carbon
- Set annual embodied carbon standard using circular economy principles
- Request embodied carbon reduction & elimination from suppliers
- Measure and report scope 3 emissions

# Our approach

Reliable customer service, transparency in leading resource recovery outcomes and value for money

## Diversified Customer Segments

- Coverage across infrastructure, commercial and residential construction sectors
- Targeted solutions to suit different customer requirements

## Vertically integrated, High Circularity

- Maximise internalisation of waste collected through Cleanaway resource recovery facilities
- Ensures transparency and control over product quality and resource recovery outcomes

## Dedicated Focus

- Establish focused and specialised C&D teams
- Dedicated management, operations and sales and customer teams

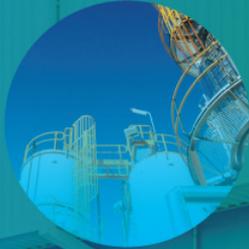
## Leverage Existing Infrastructure

- Expand and optimise Cleanaway's existing C&D collections and resource recovery business
- Leverage our related infrastructure, including transfer stations and landfills

## Organic Growth and Acquisitions

- Growth across the value chain from collections to resource recovery
- Combination of green/brownfield and selective acquisitions (e.g., Vins Bins)

# Blueprint Three Organics



# Organics Overview

- Cleanaway will target food and garden organics (and grease trap waste via existing Liquids business)
- We will develop a vertically integrated business with collections, processing and product sales
- Volumes are sourced from long term council contracts and from commercial & industrial customers
- Various processing solutions will be considered depending on the feedstock, volumes, location and customer preferences, which could include:
  - In-vessel composting
  - Anaerobic digestion
  - Bioconversion through black soldier flies



**CLEANAWAY**



# Organics growth opportunity

- The current organics market is 7.5mt, with recycling rates relatively low at circa 52%
- Recycling rates are expected to increase significantly driven by mandated targets and customer demands for higher resource recovery outcomes
  - Organics is the largest opportunity to increase landfill diversion and resource recovery
- If national recycling rates of 80% were achieved the market would increase 55% to 11.7mt
- At the same time, the price per tonne is expected to rise with a shift to more advanced, higher cost technologies to process food and garden organics ('FOGO')

## Organics recycling rates 2018-2019



Source: Australian Organics Recycling Industry Capability Assessment 2020-21

# Changing regulations to drive organics growth

Vast majority of households will be offered FOGO collections by 2030 with current levels sub 20%

State	Organics Policy	% Households with access to FOGO and Targets
NSW	<ul style="list-style-type: none"> <li>FOGO by 2030</li> <li>C&amp;I food by 2025</li> </ul>	17%
VIC	<ul style="list-style-type: none"> <li>FOGO by 2030</li> <li>C&amp;I food by 2025</li> </ul>	23%
QLD	<ul style="list-style-type: none"> <li>Proposed staged landfill disposal ban 2027 – 2032</li> </ul>	1%
SA	<ul style="list-style-type: none"> <li>FOGO in metropolitan councils by 2025</li> <li>Proposed regulatory intervention for C&amp;I</li> </ul>	20%
WA	<ul style="list-style-type: none"> <li>FOGO in Perth &amp; Peel by 2025</li> </ul>	3%
ACT	<ul style="list-style-type: none"> <li>No recoverable waste to landfill by 2025</li> <li>FOGO and C&amp;I food by 2025</li> </ul>	0%
TAS	<ul style="list-style-type: none"> <li>25% reduction in organics to landfill by 2025</li> <li>Proposed state and local gov policy changes</li> </ul>	5%
NT	<ul style="list-style-type: none"> <li>EPA to support and facilitate organic waste recovery</li> </ul>	0%
Australia	<ul style="list-style-type: none"> <li>50% reduction in organics to landfill by 2030</li> </ul>	14%

Source: State policies, Australian National Waste Report 2020

# FOGO processing requires new infrastructure

## Transition away from open windrow composting to new in vessel composting facilities

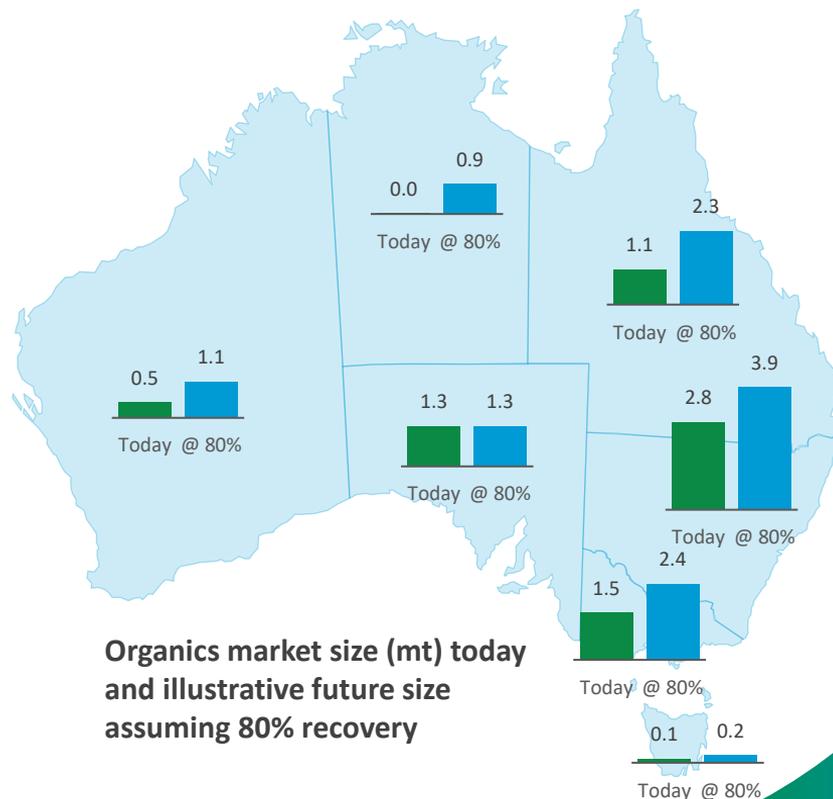
- Most garden organics are currently processed at open-windrow composting facilities
- Open-windrow is less suitable to process more odorous FOGO especially near sensitive receptors
- Transition is expected to lead to the development of in-vessel composting facilities
- Enclosed nature facilitates developments in or near metropolitan areas for in/outbound logistics benefits
- Regional areas served by smaller in-vessel composting facilities and other technology solutions
- Development of facilities would be underpinned by long term council contracts



# Market opportunity

Very limited FOGO processing capacity to date – need for significant new infrastructure

- New South Wales transitioning away from processing mixed waste organics to FOGO, requiring a change in existing infrastructure
- Victoria currently has one FOGO facility in Melbourne – need for more capacity
- Queensland, Western Australia and Tasmania currently have no dedicated FOGO processing capacity
- South Australian market already high organics penetration and well served
- Various opportunities in regional markets



**Organics market size (mt) today and illustrative future size assuming 80% recovery**

# Opportunity for Cleanaway

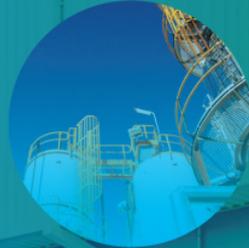
## **Organics is developing into an attractive market**

- Large opportunity driven by volume and unit value growth
- Many incumbent operators would need to upgrade from open windrow composting
- Alignment with our strategy to create more circular, lower carbon solutions

## **Cleanaway is well placed to capture the growth opportunity**

- Existing in-house capabilities
- Strong relationships with councils and integrated offering to win long term organics contracts
- Opportunity to expand offering into our >100k C&I customer base
- Leverage existing sites and infrastructure, e.g. Lucas Heights in Sydney, EfW site in Melbourne
- Access to deeper pools of capital to support development of sophisticated infrastructure
- Strong reputation to provide confidence in product

# Blueprint Four Landfill optimisation



# Optimising the Value of our Airspace...

...through pricing and operating efficiencies, along with expanding our landfill licences

- Notwithstanding further increases in resource recovery, landfills are expected to remain critical infrastructure
- We will explore ways to extend the life of existing sites, and selectively invest in new capacity to ensure there is sufficient airspace
- In addition, we will look to maximise the value of our existing airspace through:
  - More sophisticated pricing models to better reflect the varying cost of disposal
  - Better compaction to increase the volumes per cubic meter of airspace
  - Expanding licenses to tap into high value waste streams
  - Optimising day-to-day operations



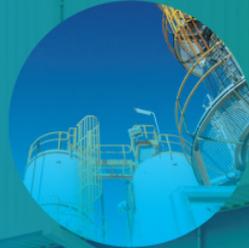
# Optimising Gas Recovery Infrastructure

Improving landfill gas capture rates to minimise carbon emissions and generate renewable energy



- Internal carbon management is the first step towards creating Sustainable Customer Solutions for residual waste
- Currently exploring optimal ways of reducing emissions from landfills and maximising the economic benefits of the landfill gas produced
- Expand existing, and develop new, investment options including generating renewable energy, producing compressed natural gas for vehicles etc. that will be built into our marginal abatement cost curve

# Blueprint Five Core Infrastructure Expansion



# Core Infrastructure Expansion

- Footprint 2025 saw significant investment in the expansion and upgrade of our resource recovery infrastructure
- We will continue to expand our existing core business across all segments to build on our competitive advantage and capture efficiencies

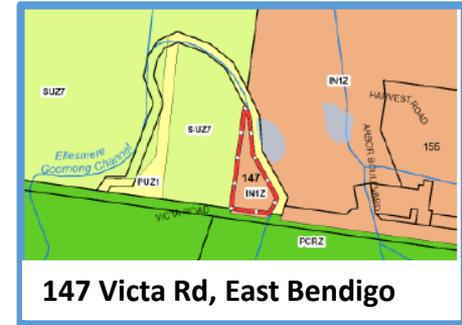


# Core Infrastructure Expansion - Examples



## Blacktown MRF development

- SSDA public exhibition closed
- Site preparation underway, including demolition of existing structures
- Builder engaged



147 Victa Rd, East Bendigo

## Bendigo Transfer Station development

- Local landfill closing down towards the end of 2023
- Land due diligence and purchase transaction complete
- c. 15ktpa capacity



## Autoclave expansion and enhancement

QLD: 2 recently commissioned  
TAS: 1 under construction  
NSW: Site mobilisation underway  
VIC: New site identified

# Container Deposit Schemes

## New South Wales - Contract Extension

- Network Operator Agreement has been extended for four years, ending in late 2026
- Seeking to drive higher recovery rates and greater community access to the scheme
- Will support further investment in the collections and processing network over time



## CDS - Victoria and Tasmania

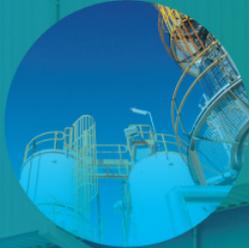
### Victoria

- Scheme expected to commence mid-2023
- Two stage procurement process - final appointments due October 2022
- Split responsibility model - a Scheme Coordinator & one or more Network Operators
- Procurement process allows bids for one of, or up to all of 6 Network Operator zones (the 7 zones in NSW are all operated by Tomra-Cleanaway).

### Tasmania

- Scheme expected to commence mid-2023
- Two stage procurement process commenced in April 2022, final appointments expected late 2022
- Same split responsibility model as NSW (and VIC) – there will be a Scheme Coordinator and one Network Operator for the whole of the State

# Blueprint Six Innovation



# Innovation - to lead in circularity and carbon

- The energy transition and other structural changes are giving rise to large, new waste streams that need new technologies to be recycled
- Technological advances will also enable increased resource recovery and greater circularity
- We will invest in proven technologies and support the development of emerging technologies
- We will be able to offer our customers sustainable solutions that will make us a supplier of choice
- Our national footprint and capabilities in collecting and sorting materials are key competitive advantages to enable these investments
- Our success will be driven by partnerships across the value chain and working with technology providers



# Innovation - Mechanical Recycling

Lowering risks and capital commitments through joint ventures...



Circular Plastics Australia (PET) is a joint venture between Pact Group, Cleanaway, Asahi Beverages and Coca-Cola Europacific partnerships.

To date, two PET recycling facilities have been announced. The first, in Albury NSW, has been built and commenced operations in December 2021. The second facility will be located in Altona North VIC. Each facility will recycle more than 20,000 tonnes (or equivalent of 1 billion 600 ml PET plastic bottles) each year.

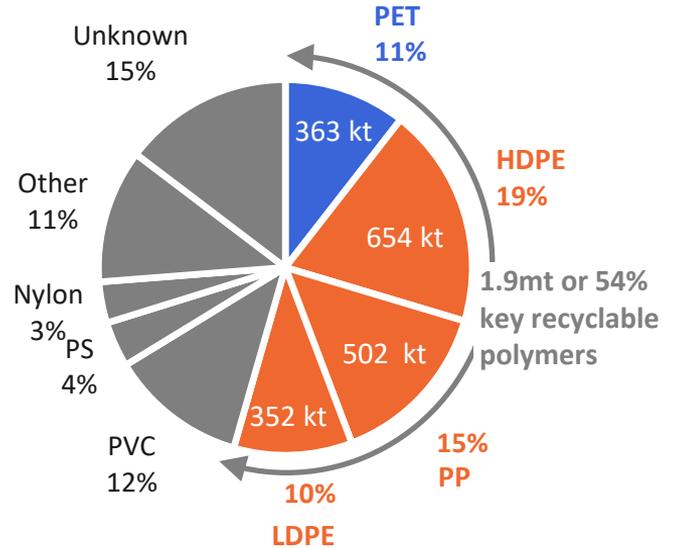
**CLEANAWAY** 33%



Circular Plastics Australia (PE) is a joint venture between Pact Group and Cleanaway.

This state-of-the-art facility will process more than 20,000 tonnes of HDPE and PP plastic milk bottles, containers and food tubs (approximately half a billion packs each year).

**CLEANAWAY** 50%



Source: Envisage Works - 2018-19 Australian Plastics Recycling Survey (March 2020)

...while preserving first rights to sell feedstock into the facilities

# Innovation – Feasibility studies

Looking at frontier opportunities with stage gates to mitigate risk...

## Soft Plastic Chemical Recycling

- Australia has set ambitious targets for packaging circularity by 2025, including 50% average recycled content in packaging (10% soft plastics)
- Mechanical recycling techniques alone will not be sufficient
- Qenos and Cleanaway partnering in feasibility study into chemical recycling of polyethylene
- Targeting plastics not suitable for mechanical recycling
- Circular polyethylene has identical chemical properties to virgin polyethylene



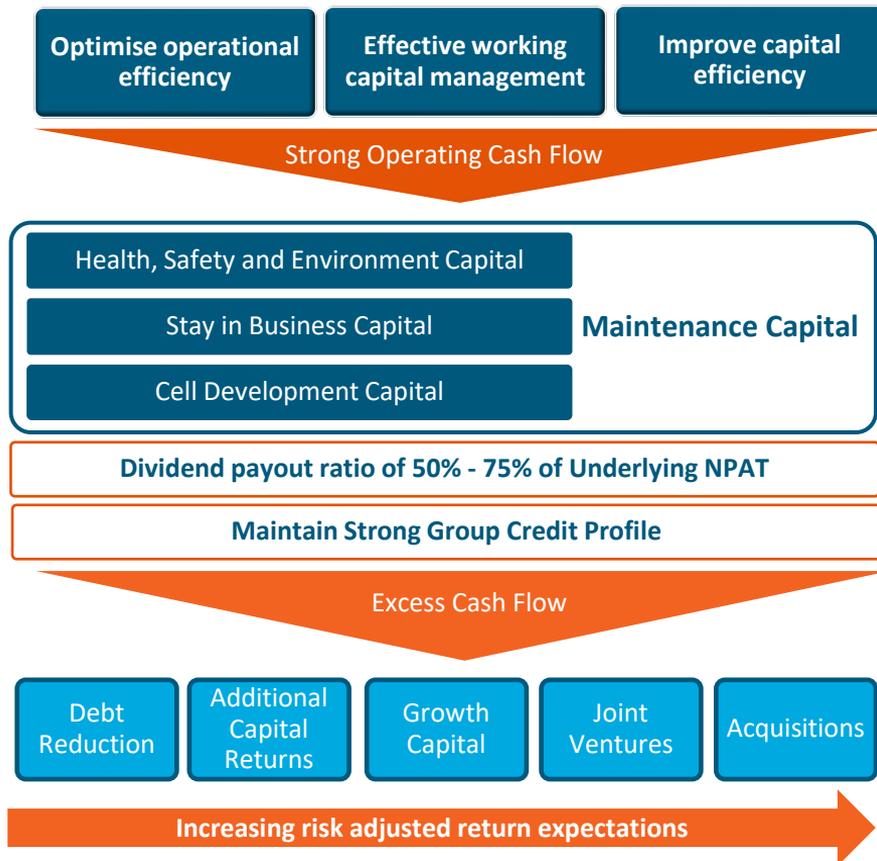
## Fat, oil and grease processing

- The grease trap waste we collect in our Liquids business is currently processed with residuals mostly sent to composters
- Exploring an opportunity to convert processed grease trap and other fats and oils into sustainable fuels and other industrial products utilising our partner's proprietary process
- Early stage feasibility study with ambition to develop production trial

# Capital Allocation



# Disciplined Capital Allocation Framework to Drive Improved Returns



- Commitment to maintaining a strong balance sheet
- Applying a disciplined approach to capital expenditure to drive improved returns
- Improving processes to support capital allocation decision making
- Greater visibility over our pipeline of Blueprint 2030 opportunities – capital will be allocated to maximise returns
- Expect in future there will be capex related to carbon emissions reduction

# Capital deployment and returns

Capex expectation reflective of current and developing opportunities, but timing is fluid

	EfW	C&D	Organics	Landfill Optimisation	Core infrastructure expansion	Innovation
Capex (equity share)	\$\$\$\$	\$\$\$	\$\$\$	\$ to \$\$\$	\$\$	\$
Technology	Proven	Proven	Proven & Emerging (trial)	Proven	Proven	Proven & Emerging
Ownership structure	100% and Potential JV	100%	Potential JV partners	100%	100%	100% and Potential JV

- Timing around Energy-from-Waste and Organics is uncertain. Capex will be under-written by contracted volumes and certain cash flows
- Quantum and nature of capex for core infrastructure expansion, landfill optimisation, innovation and C&D expected to be similar to recent years
- Accretive M&A will be considered where it is consistent with our strategy and meets our return hurdles
- Returns from these projects and opportunities are all assessed against our capital allocation hierarchy with regard to their risk-adjusted return profile

# Closing remarks

