

30 November 2020

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

Dear Sir/Madam

Presentation FY21 Cleanaway Investor Series – Energy From Waste

Attached is a presentation to be made by the CEO and Managing Director later today.

This announcement was authorised by the Company Secretary.

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 6,000 highly trained staff are supported by a fleet of over 4,000 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 for all our stakeholders.



FY21 Cleanaway Investor Series

Energy from Waste

Presenters:

Vik Bansal – CEO and Managing Director

Frank Lintvelt – EGM, Strategy and M&A

James Pearce – Project Director, Energy from Waste

30 November 2020

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- This presentation has not been subject to review or audit.

Agenda

	Presenter	Page
❖ Introduction		
❖ Snapshot of Cleanaway		4
❖ Value Creation Story – “Making a sustainable future possible “	Vik Bansal	5
❖ Footprint 2025		6
❖ Energy from Waste Strategic Rationale		7
❖ Video Animation		8
❖ Energy from Waste Project Overview		
❖ Policy and Market Context and Feedstock Strategy		9-12
❖ Location and Technology		13-17
❖ Community Engagement		18
❖ Energy and Residuals	James Pearce	19-20
❖ Value Creation, Structuring and Funding		21-23
❖ Nest Steps		24
❖ Summary	Vik Bansal, James Pearce,	25
❖ Questions	Frank Lintvelt	

Snapshot of Cleanaway

Australia's leading total waste management, industrial, environmental and health services company.

Vertically integrated from collection, to resource and energy recovery, to waste treatment and landfill.

ASX100 listed with a \$4.9 billion market capitalisation.



6,000+
Employees



5,300+
Vehicles



250+
Sites Australia wide



125+
Prized infrastructure
assets



134mkWh
Renewable energy
generated



ASX100
Listed
company



100+
Municipal Councils



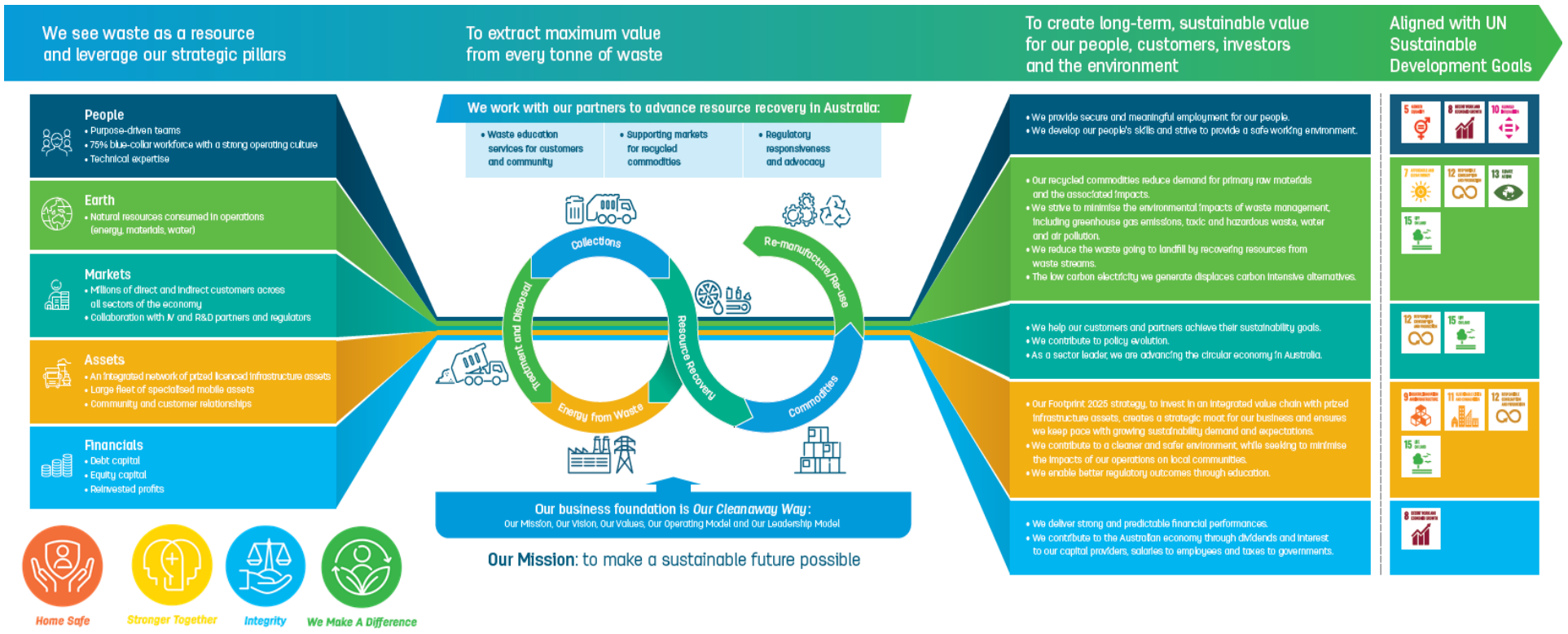
140,000+
Commercial & Industrial
customers



~10,000
Medical waste
customers

Cleanaway's Value Creation Story

- Our Value Creation Story is based on our strategic pillars of **People, Earth, Markets, Assets** and **Financials**.
- Focus on strategic pillars are transformed through our business activities, applying **Our Cleanaway Way**, to create outcomes for our stakeholders.
- Foundation of our Value creation story is our mission statement : **“making sustainable future possible for all”**.
- Outcomes are aligned to UN Sustainable Goals and enables a future world of circular economy.



Delivering Footprint 2025 – Acquisitions and Greenfield to continue



Collections

Resource recovery

Energy from Waste

Treatment and Disposal

- ✓ Perth MRF*
- ✓ 2 x WA transfer stations
- ✓ SE Melbourne transfer station
- ✓ QLD Transfer station
- ✓ VIC organics resource recovery
- ✓ QLD Paper recycling facility
- ✓ NSW CDS sorting line
- ✓ Western Sydney transfer station and resource recovery
- ✓ ResourceCo PEF facility

- ✓ Doubled electricity generation at Melbourne facility

- ✓ Planning permit for Melbourne Landfill until 2046
- ✓ Height rise extension approval for Adelaide landfill
- ✓ VIC organic waste treatment facility

Statewide Collections

- ✓ 1 x Transfer station
- ✓ Regional Victoria Collections



NSW C&D Acquisition

- ✓ Grasshopper



Plastic pelletising



NSW/Vic Glass beneficiation

Western Sydney MRF

Western Sydney Energy from Waste facility



Potential Brisbane and Melbourne Energy from Waste facilities

VIC Regional Landfill



Height extension in QLD & New Landfill

Extension of Erskine Park Landfill

NSW Medical Autoclave

✓ ToxFree (May 2018) - Significant acquisition of prized assets across the value chain



SKM (Nov 2019)



- ✓ 3 x Material recycling facilities
- ✓ 2 x Transfer stations

✓ Personal Sharp containers and insourcing manufacturing of Sharp Smart containers from China to Sydney



Greenfield delivered

Greenfield WIP

Acquisition and Integration WIP or completed

Acquisition and Greenfield to align with strategy

Energy from Waste Project Rationale

Resource Recovery



- EfW is a key element in NSW meeting its **resource recovery and landfill diversion targets**
- **Superior environmental outcome** to landfill – higher in the waste hierarchy

Need



- >2 million tonnes of waste from Sydney is currently sent to landfills
- These **landfills are filling up** and are the least preferred method for disposal

Environment



- **~390,000 tonnes of CO₂e avoided**, equivalent to ~79,000 cars off the road
- **Low emissions** - equivalent to 4 semi trailers travelling on the M7 + reduced transport of waste over long distances

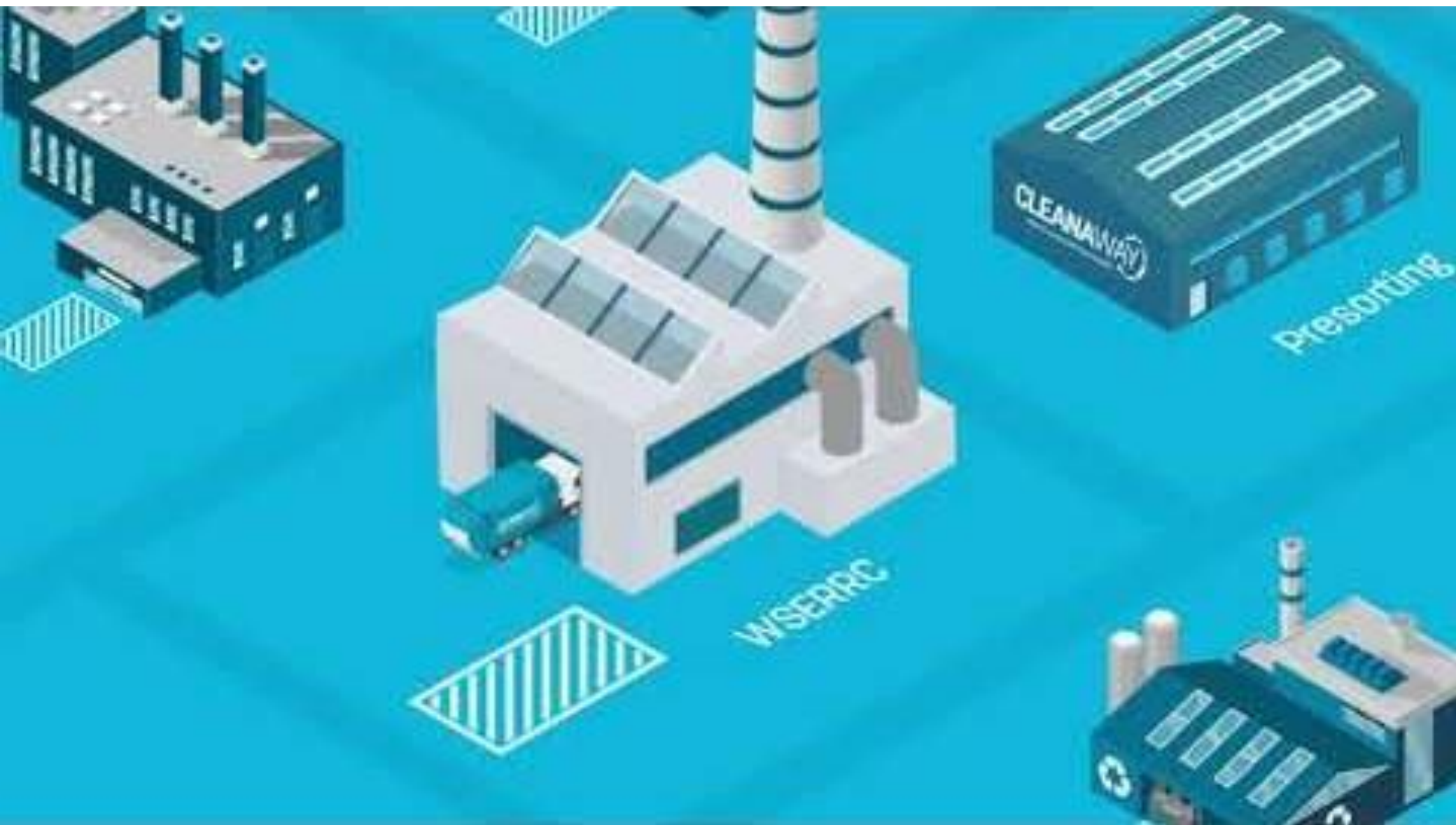
Investment & Local Jobs



- \$700m investment for the project and the surrounding communities
- **~900 direct jobs and 1,200 indirect jobs** during 3-year construction of the facility with a further 100 construction roles for related developments
- **50 ongoing new highly skilled jobs at the facility**, >100 jobs to service facility

Savings

- **EfW in NSW is cheaper** than landfills for residual waste
- Potential for **attractive savings** for councils, residents and the local business community





Our Partner: Macquarie Capital Experienced EfW developer and investor



Macquarie Capital through its Green Investment Group has invested in over 35 waste and bioenergy projects, including Avertas Energy, the first to commence construction in Australia.



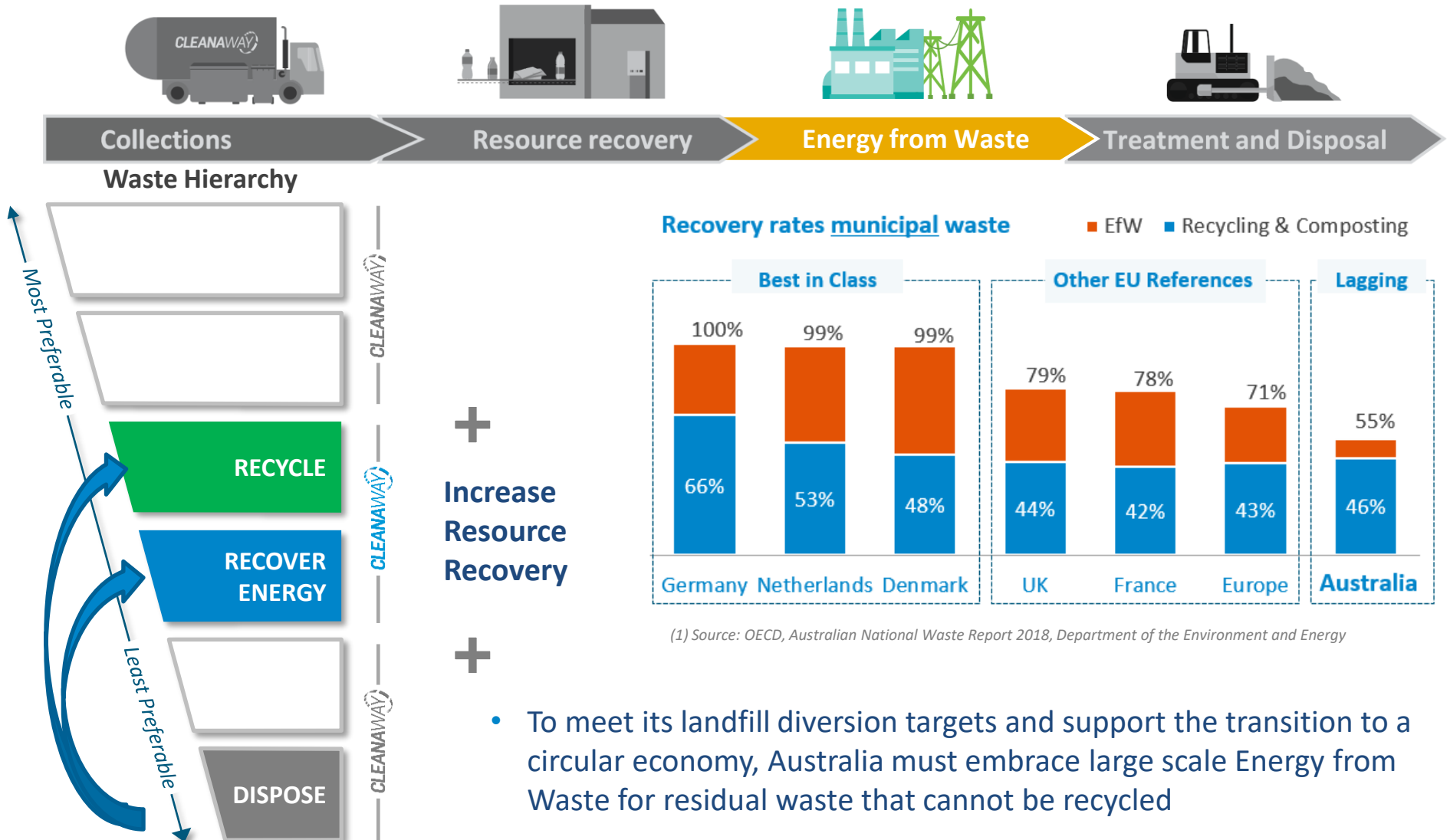
Avertas, Perth, energy-from-waste



Covanta, Dublin, energy-from-waste

Selected projects	MW	Transaction Type	Transaction Value
WSERRC	55	Development	~A\$120m
Avertas energy-from-waste	36	Development	~A\$110m
Earls Gate energy-from-waste	21	Development	~£16m
Dublin energy-from-waste	60	Equity	€136m
MGT Teesside	299	Development	50% of project equity
Tilbury Green Power	40	Development	~£35m
Belfast energy-from-waste	15	Equity	~£47m
Ferrybridge Multifuel 2	68	Debt	~£38m
Kemsley	50	Debt	~£80m
Cramlington	28	Equity	~£21m
Derbyshire	14	Debt	~£195m
Evermore Biomass	16	Equity	~£18m
TOTAL (across all projects)			>A\$1,800m

Policy Context: Achieving waste diversion targets



(1) Source: OECD, Australian National Waste Report 2018, Department of the Environment and Energy

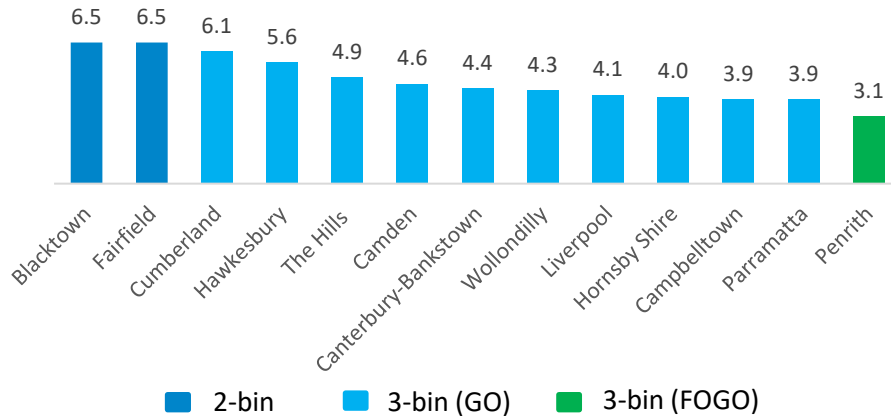
- To meet its landfill diversion targets and support the transition to a circular economy, Australia must embrace large scale Energy from Waste for residual waste that cannot be recycled

Market Context: Food Organics Garden Organics (FOGO)

FOGO reduces Red Bin Waste...

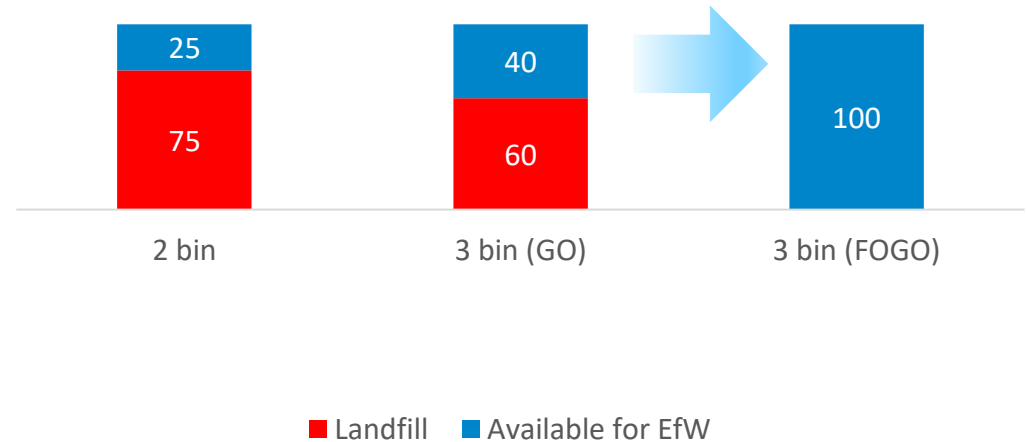
...and reduces the amount sent to landfill under EfW policy

Residual Waste Generation Per Capita kg/ca/wk



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

Red bin volume & destination (assuming 100ktpa)



- >40% of Sydney's Red Bin waste could be recovered through a FOGO bin
- Our philosophy is to maximise recycling and resource recovery at the source. Once waste has been placed in the red bin, it becomes contaminated and there are limited environmental or economic drivers to 'unscramble the egg'
- FOGO recycling, when implemented along with EfW, provides a more sustainable & cheaper alternative than landfill
- Cleanaway will support Councils in the transition to FOGO and invest in infrastructure.
- By implementing EfW + FOGO, all remaining residual waste can be processed directly by EfW in compliance with the NSW EfW policy.
- FOGO is aligned with reducing emissions from organics to zero by 2030

WSERRC feedstock strategy



Commercial and Industrial (C&I) waste

- Comes from a variety of sources including offices, schools, shopping centres, warehouses and manufacturing.
- Much of the waste resembles residual MSW, with some harder to recycle items such as hard plastics and MDF.
- The Western Sydney Energy & Resource Recovery Centre (WSERRC) will source a higher percentage of C&I waste in the short term



Municipal Solid Waste (MSW)

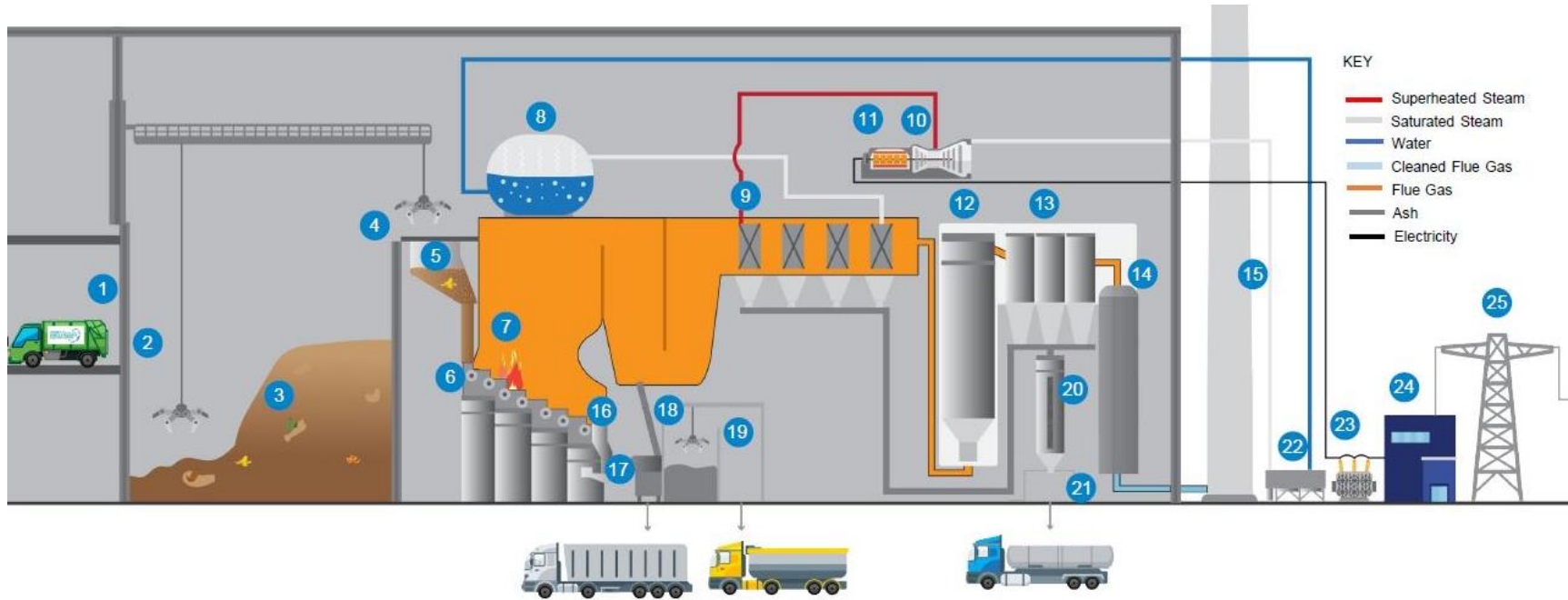
- The WSERRC will secure household red-bin waste disposal contracts from Western Sydney councils.
- MSW contracted to WSERRC will increase over time as current disposal contracts conclude and FOGO is implemented.



Project Location: Eastern Creek



Facility technology: Moving grate – leading, proven & safe



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	

Reference Facilities

The WSERRC has reference facilities that:

- have similar waste streams,
- have same moving grate technology, and advanced flue gas treatment systems: Selective non-Catalytic Reduction (SNCR); Semi-dry Flue Gas Treatment (FGT); Wet scrubber,
- are a comparable size.



WSERRC, Sydney

Size: 500,000 tonnes per year

Waste Streams: Municipal solid waste, commercial and industrial



Filborna, Sweden

Size: 200,000 tonnes per year

Waste Streams: Municipal solid waste, commercial and industrial



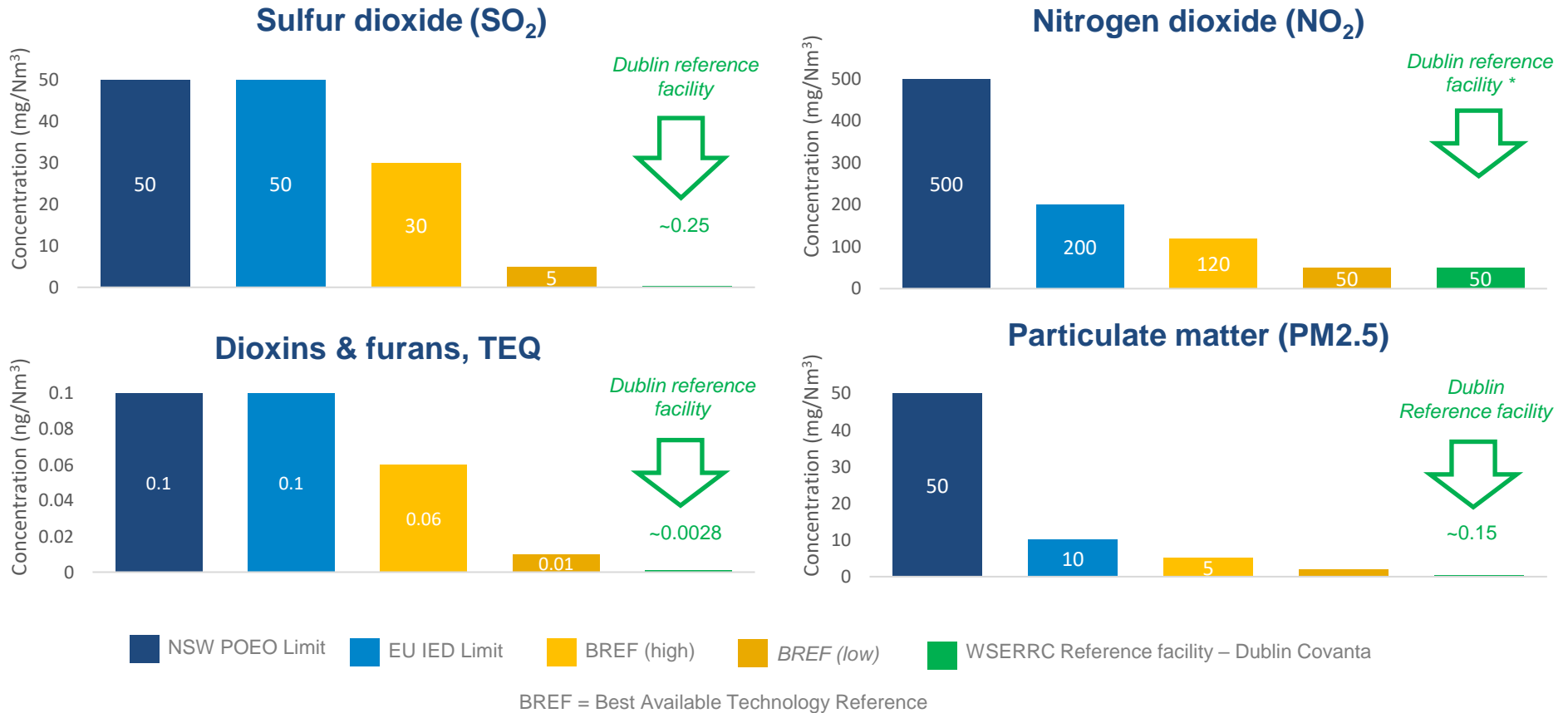
Covanta, Dublin*

Size: 600,000 tonnes per year

Waste Streams: Municipal solid waste, commercial and industrial

Emissions Management - Pollutants

Emissions will be in line with world's best practice ensuring it is safe. Proven reference facilities with similar technology and waste streams are used to provide empirical evidence of the outputs of our facility.

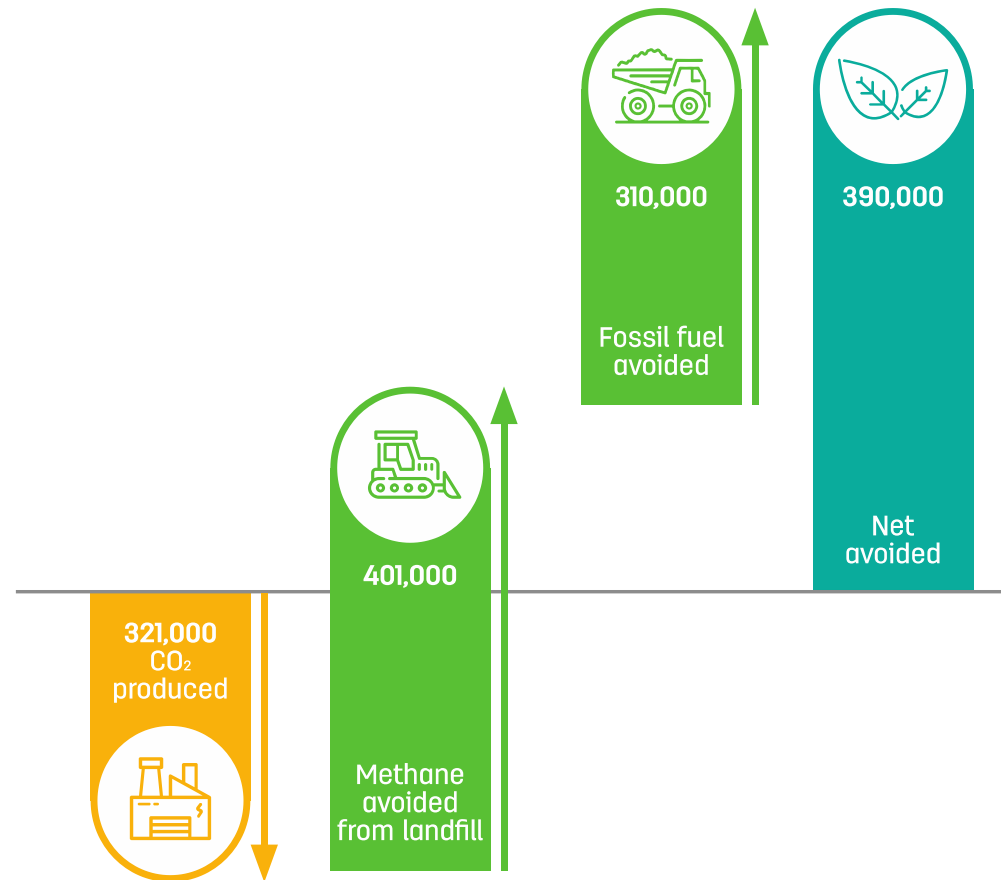


Emissions Management – CO₂-e

ANNUAL CO₂E NET REDUCTION IN GREENHOUSE GAS EMISSION (TONNES PER ANNUM)

- WSERRC has a net CO₂e reduction (carbon benefit) of ~390,000 tpa
- Methane produced as waste decomposes in landfills is 25-28 times more potent than carbon dioxide
- Constant baseload electricity generated from EfW displaces fossil fuel generation in the National Electricity Market

Calculations based on National Greenhouse Account Factors and National Greenhouse and Energy Reporting methodologies



Stakeholder and community engagement...

Objectives

This research was undertaken by Newgate Research in July 2020 on behalf of Cleanaway and Macquarie Capital that have proposed the Western Sydney Energy and Resource Recovery Centre (WSERRC).

Methodology



ONLINE SURVEY

15-minute survey, with participants sourced from a professional market research panel, Dynata.



REPRESENTATIVE SAMPLE

1,121 participants across all of Sydney, comprising 513 local residents living within the three LGAs closest to the WSERRC project and participants in other parts of the greater Sydney metropolitan area ('rest of Sydney'). All aged 18yrs+.

Quotas set on gender, age and location and the data has been weighted on those variables to align it to ABS Census proportions for each of the three LGAs as well as four broad regions across the rest of Sydney.



SAMPLE BREAKDOWN BY LOCATION

Location	PROJECT AREA				Rest of Sydney	All of Sydney
	Blacktown	Fairfield	Penrith	Sub-total		
Sample (n)	263	87	163	513	608	1,121
MoE (+/-)	6.0%	10.5%	7.7%	4.3%	4.0%	2.9%

MoE = Margin of error at the 95% confidence level



In summary

This research demonstrates that, when positioned within the circular economy and alongside other waste reduction and recycling initiatives, energy from waste is viewed as positive and highly acceptable.

- The majority of people liked and agreed with the principles included in the NSW 20-year Waste Strategy.
- In the Project Area one in three people were aware of WSERRC and 66% of these people felt positive based on what they already know. 16% feel negative.
- When presented with a package of recycling initiatives that included EfW 90% in the local area responded positively.
- Following more information on how the WSERRC fits into the circular economy and benefits it provides, sentiment was re-tested, resulting in a 89% positive reception across both Sydney and Project Area, with around 2-3% feeling negative.

Why did participants feel this way?



Jobs



Seen as being an option that provides better environmental outcomes



Creation of renewable energy



Large investment in community education



State of the art designed centre, reflecting world's best practice in a good location

....Critical in providing comfort to the local community and developing the social licence to operate.

Power Market

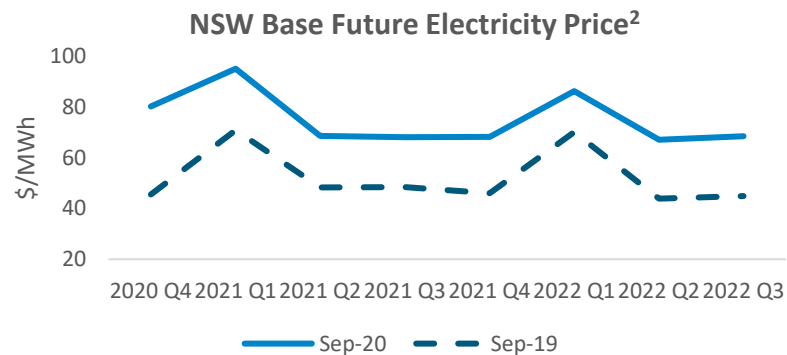
NSW Electricity Market Dynamics

Demand and Supply

- Highly interconnected electricity market
- Peak Summer Demand ~14,000 MW
- Annual average consumption ~70 TWh
- > 3,320 MW¹ of generation capacity expected to close in the next decade
- Majority of committed and announced generation supply is from renewables

Pricing

- NSW base futures prices have increased reflecting Supply-Demand dynamics



Project Considerations

Electricity and heat contracting options

- ~55MW/460 GWh p.a. output
- Energy and heat supply mix
- Behind the meter (direct supply to nearby customer)
 - Avoids transmission and distribution charges
- Long-term off-take agreement/ Power Purchase Agreement
 - Lock in long term volume for fixed prices reducing electricity price exposure
 - Firm supply output improves price outcome prospects
- Futures/ Over-the-counter markets
 - Medium term price and volume certainty with re-contracting price exposure (upside/downside)
- Spot market
 - Volatile market but always available for any potential excess supply
- Carbon credits
 - Eligibility to be evaluated

Note 1: AEMO: NEM Generation information November 2020

Note 2: AER: Comparative Base Futures Prices - www.aer.gov.au/wholesale-markets/wholesale-statistics/comparative-base-future-prices



New ash
processing and
metals recovery
facility



Metals Recovery

- We will be recovering from the ash both ferrous and non-ferrous metals for recycling.
- These metals would otherwise end up in landfill. Recovering these will contribute to recycling targets and circular economy principles.

Ash Re-use

- Overseas, Incinerator Bottom Ash (IBA) is commonly reused in construction applications i.e. in road-base, pavers and bricks.
- We intend to do the same thing with the Facility's IBA, which will require the development of a new pathway for IBA reuse in NSW.
- Achieving ash re-use will result in over 95% of waste coming into the WSERRC being diverted from landfill.
- These supporting developments will also create another ~100 jobs for the waste industry in Sydney.

Flue gas treatment residue

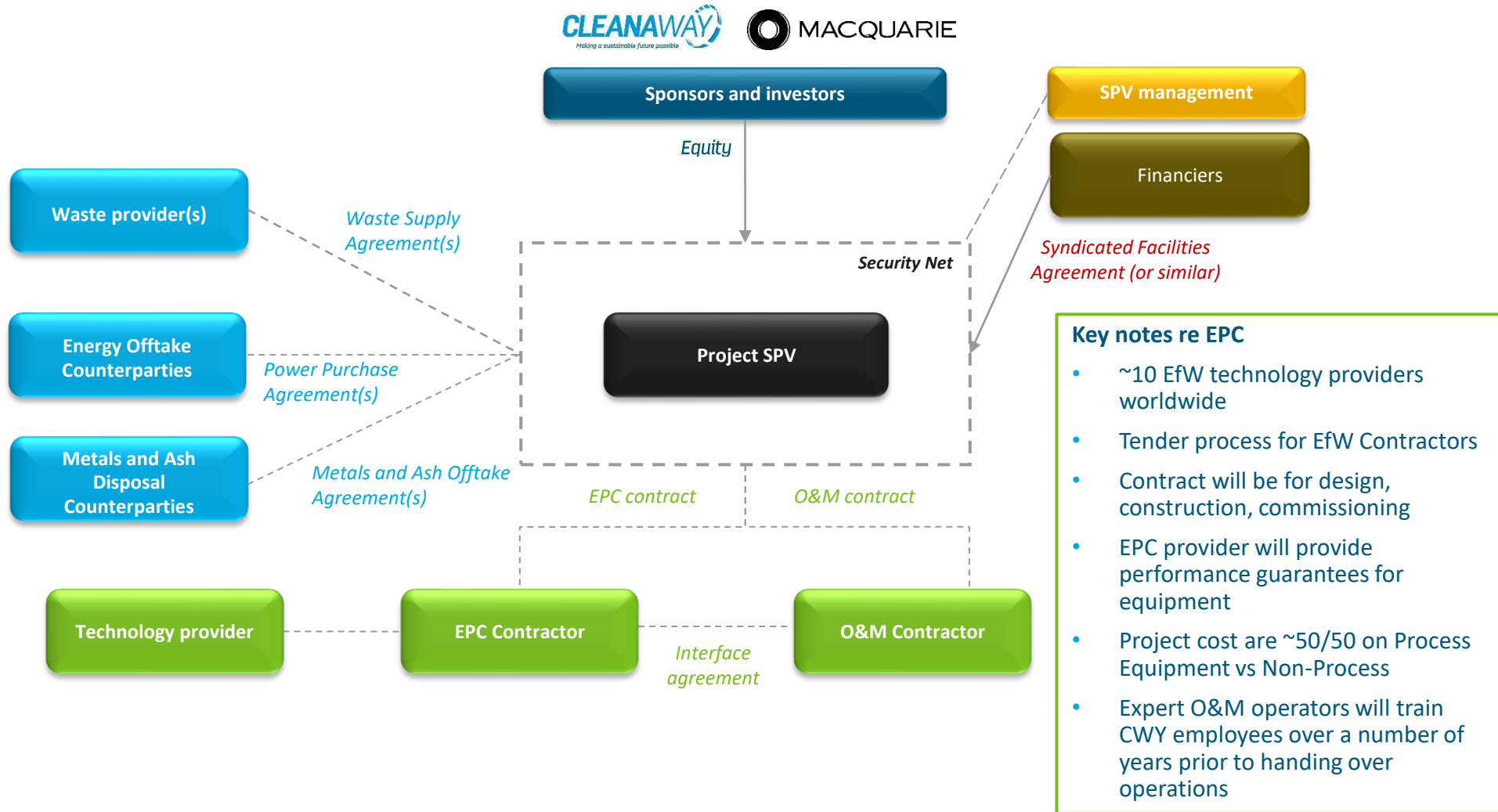
- Treated and disposed at landfill

Cleanaway Revenues, Expenses and Returns

CWY ROLE	<input type="checkbox"/> Waste Supplier <input type="checkbox"/> O&M provider	<input type="checkbox"/> Energy from Waste Facility equity owner
Revenues		
	✓ Operating and maintenance fees	✓ Gate fees – Cleanaway and third-party
		✓ Electricity/Heat Supply
		✓ Potential carbon reduction benefits
		✓ Metal recovery/ Ash beneficiation
Operating Costs		
	- Energy from Waste gate fee	- Plant operating and maintenance fees
	✓ Avoided Landfill gate fees	- Residual sorting & treatment costs
	✓ Avoided Landfill levies	- Residual disposal costs
	- Operating and maintenance expenses	
Financing costs		
		- Interest and hedging expense
Value accrued	100% to Cleanaway	51% to Cleanaway

- Cleanaway will generate three sources of value - Targeting double digit post-tax equity returns for the Energy from Waste Facility based on reasonable price and cost assumptions that will be firmed up through the commercialisation phase.

Typical Structure for Large EfW Projects – SPV



Equity funding

Joint Venture

- Cleanaway (51%)
- Macquarie (49%)



Long-term ownership

- Cleanaway currently intends to retain its equity interest over the long-term as the owner-sponsor and be the long-term operator of the facility
- Macquarie's GIG will invest and be involved in the management of construction risk, into early operations

Expected Debt Financing

Funding Type

- Project Finance
- Non-recourse debt

Potential Sources

- Domestic and international lenders
- Superannuation funds

Gearing and amortisation

- Gearing level will reflect debt service coverage ratio (DSCR) of contracted and uncontracted cash flows
- Debt amortisation profile will reflect the facility's operational life

Timetable

Milestone		Progress
Cleanaway & Macquarie JV	May 2019	
Site acquisition	Oct 2019	
Scoping Report submission	Nov 2019	
Development and Commercialisation		
EIS public display completed	Nov 2020	
Development approval		
Target Financial Close	2021/2022	
Construction	~3 years	
Commissioning	2024/2025	

Next steps

Environmental Impact Statement

- Public display ended 16 November 2020
- 630 total submissions
- >50 submissions received objecting to the proposal => the Independent Planning Commission is the consent authority for the application
- Further information to support submission allowed until 14 December 2020
- Project has 3 months to respond to issues raised in submission

Independent Planning Commission

- Expect 3-6 months assessment period

Commercialisation

- Source additional feedstock supply
- Negotiate electricity offtake agreements
- Further community & stakeholder engagement

Energy from Waste: Summary



People



Construction

- ~900 direct jobs
- ~1200 indirect jobs

Operations

- ~50 direct jobs



- Joint Venture with Macquarie
- EIS exhibition complete
- ~3-year construction period
- 30+ year operation period

Earth



- ~95% landfill diversion
- ~390k t CO2-e avoided
- Industry leading emissions scrubbing technology



- Equivalent to 79,000 cars off the road

Markets



- ~500k t municipal and C&I waste diversion
- ~55MW / 460 GWh baseload electricity
- Recovered metals
- Residual waste solution



- One in three people in local area were aware of the project and 2/3 felt positive based on what they knew
- Following provision of information about the project 89% of respondents in the Sydney and project area were positive

Assets



- Moving grate technology
- Proven, safe and reliable in over 500 facilities



- Proven reference facilities with similar technology and waste streams are used to provide empirical evidence of the outputs of our facility.

Financials



- ~\$650-700m Capex
- NSW Landfill Levy ~\$143/t



- Investment Into Western Sydney
- Cheaper and more environmentally friendly alternative to landfill

Questions

