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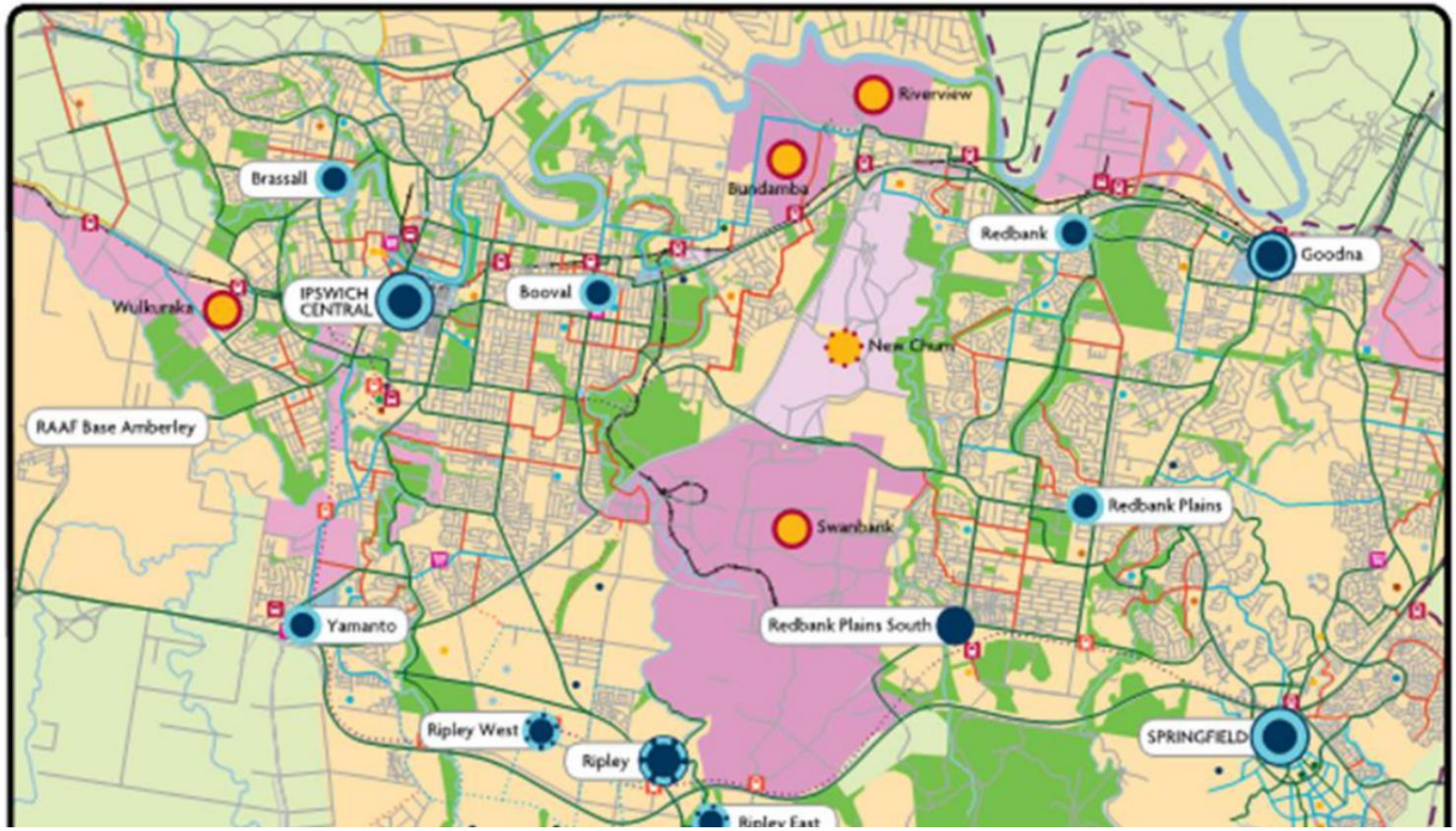
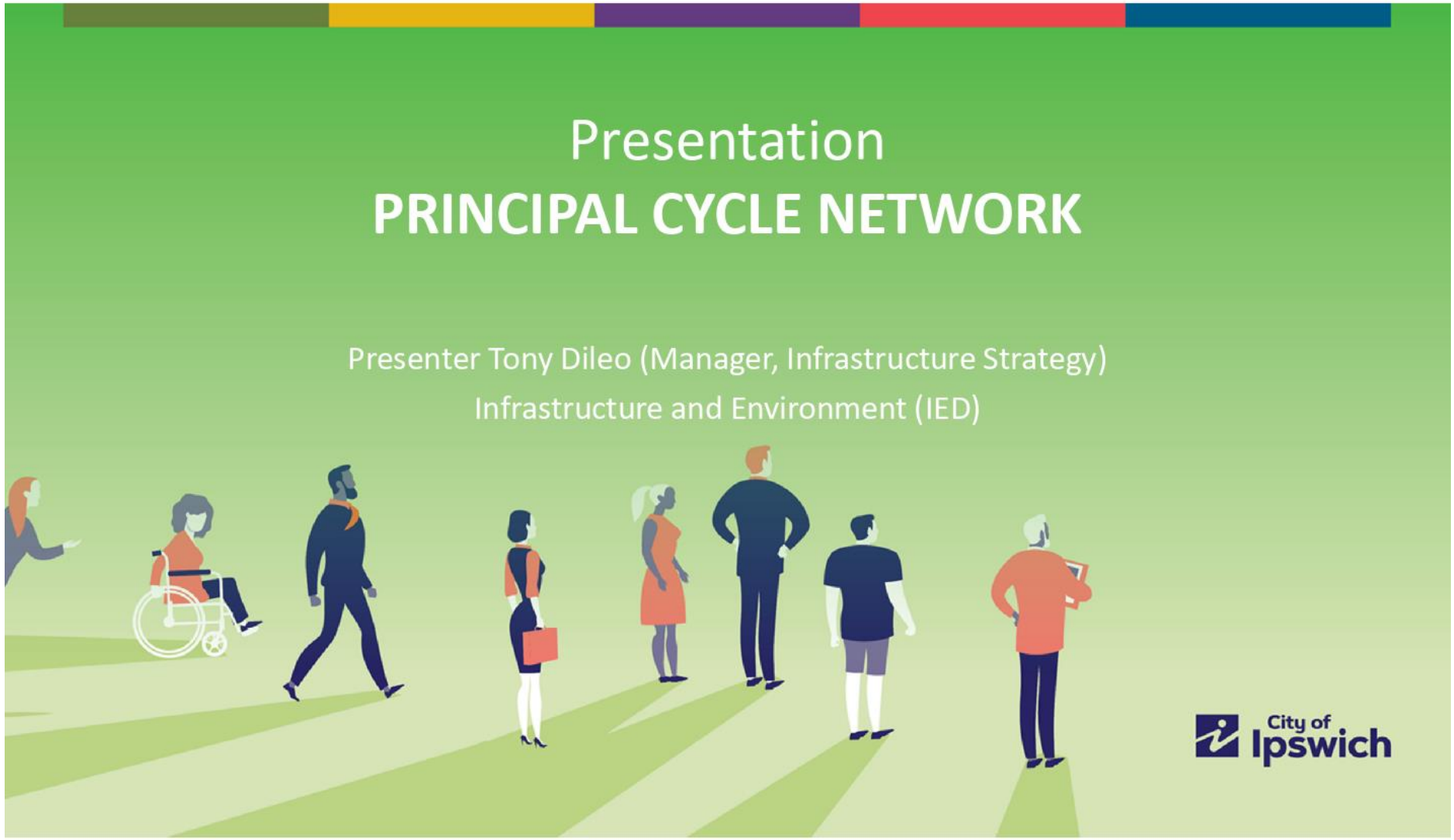
Moving Ipswich Forward

Cycle Network Snapshot Map




Presentation
PRINCIPAL CYCLE NETWORK
Presenter Tony Dileo (Manager, Infrastructure Strategy)
Infrastructure and Environment (IED)
City of Ipswich

Presentation Overview

1. Purpose
2. Policy Background
3. SEQ Principal Cycle Network Plan
4. Completed and Future Works
5. Mode Share
6. Key Gaps
7. Off Road and Segregated Bikeways
8. End of Trip Facilities
9. Data Count Cameras
10. Summary of Key Points

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Purpose

Overview of the Principal Cycle Network in Ipswich.

Understanding the mode share within Ipswich LGA for cycling now and in the future.

Delivery of cycle infrastructure, particularly through grant funding.

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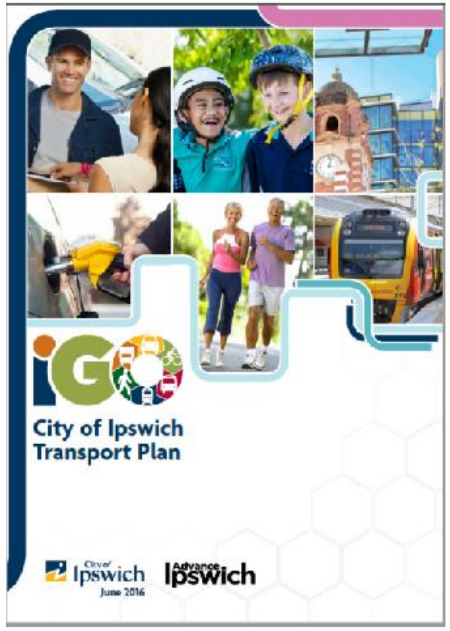
Policy Background



- The City of Ipswich Transport Plan (iGo) is Council's masterplan for Ipswich's transport future.
- iGO's aspirational mode share targets for cycling are set at 3% of all trips by the time our population reaches 435,000. Currently the cycling mode share is less than 1% of all trips.
- The City of Ipswich is part of the Principal Cycle Network Plan for South East Queensland.

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Policy Background (Cont)

- **iGO's Active Transport Action Plan (ATAP) is Council's guide to prioritise walking and cycling.**
- **This plan proposes to encourage more people to use active travel.**
- **ATAP provides for local cycle connections to the Principal Cycle Network.**

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SEQ Principal Cycle Network Plan

- **Ipswich is part of the SEQ Principal Cycle Network Plan administered by TMR.**
- **The PCPN aims to provide a fully interconnected network across the whole of SEQ**

Figure 1. Local governments within South East Queensland.

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Principal Cycle Network Plan

- **A Principle Cycle Network is comprised of principal routes designed to make it easy to use the bicycle within and across LGA's in SEQ.**
- **The Principal Cycle Network primarily identifies routes in urban areas within 5 km of a key activity centre (e.g. PT nodes, schools).**
- **A network of existing and future principal cycle routes has been planned - Principal Cycle Network Plan (PCNP).**
- **ICC has been delivering cycle infrastructure, in accordance with the PCNP, and primarily through TMR's grant funding.**

50/50 Funding TMR & Council

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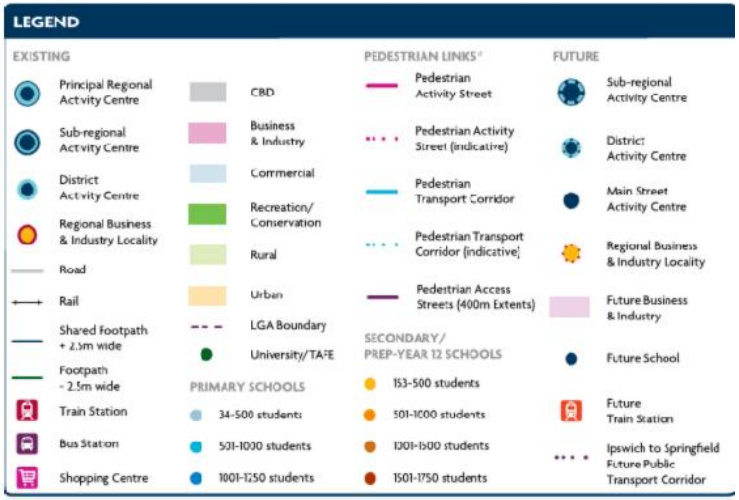
iGO ATAP Cycle Network supports TMR's Principal Cycle Network Plan

Moving Ipswich Forward

Cycle Network Snapshot Map



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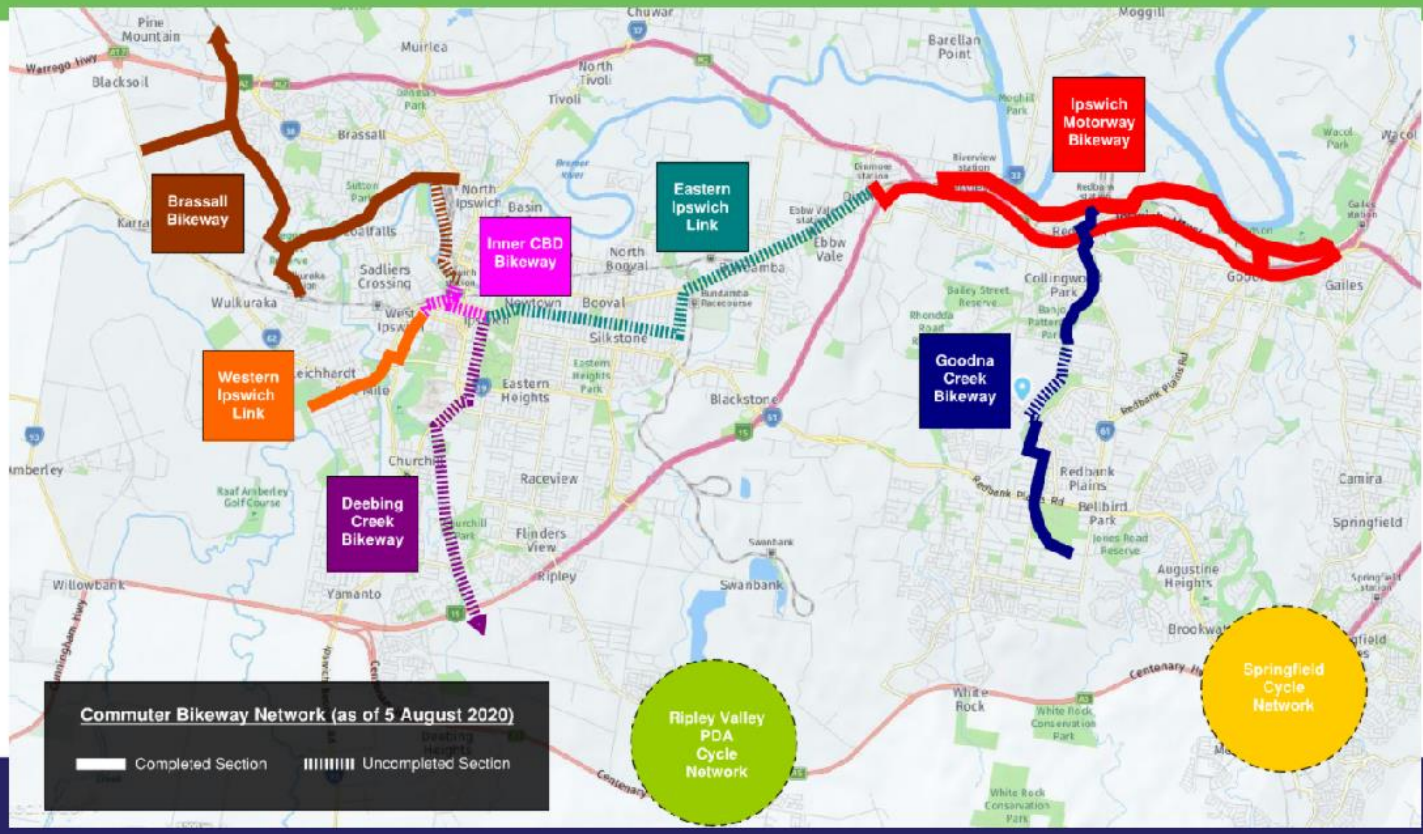
Commuter Cycle Networks Across Ipswich



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Principal Cycling Networks Completed

- **Brassall Bikeway (Stages 1,2,3,4 5 &7);**

Brassall Bikeway Stage 7 Connecting with the Brisbane Valley Rail Trail

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Principal Cycling Networks Completed (Cont)

Goodna Creek Bikeway – Collingwood Park to Redbank Plains

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Principal Cycling Networks Completed (Cont)

South St – East St to Ellenborough St

Western Ipswich Link – Ipswich Central to Leichhardt

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Principal Cycling Networks - Current Priorities

- **Eastern Ipswich Bikeway Link** - South St and Milford St (Thorn St to Limestone St) (Detailed design and construction commencing in 2020/2021)
- **Queen Victoria Parade Service Road Bikeway** - Queen Victoria Parade (Chermside Rd to Milford St) (Detailed design and construction commencing in 2020/2021)
- **Deebing Creek Bikeway Stage 2** - Warwick Rd and Deebing Creek (Carr St to Huxham St) (Detailed design in 2020/2021)

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Principal Cycling Networks - Current Priorities (cont)

- **Brassall Bikeway Stage 6** - Stage 1 to Bradfield Bridge (anticipated completion of detailed design and construction commencing in 2022/2023 – this is subject to successful grant funding)
- **Deebing Creek Bikeway Stage 1** - Thorn St and Barker St (South St to Carr St) (Detailed design complete)
- **Ipswich City Centre Bikeway Stage 1** - South St (Thorn St to East St) (Detailed design 2021/2022)
- **Ipswich City Centre Bikeway Stage 2** - Limestone St and Nicholas St (Omar St to Darcy Doyle Place and South St) (Detailed design in 2021/2022)

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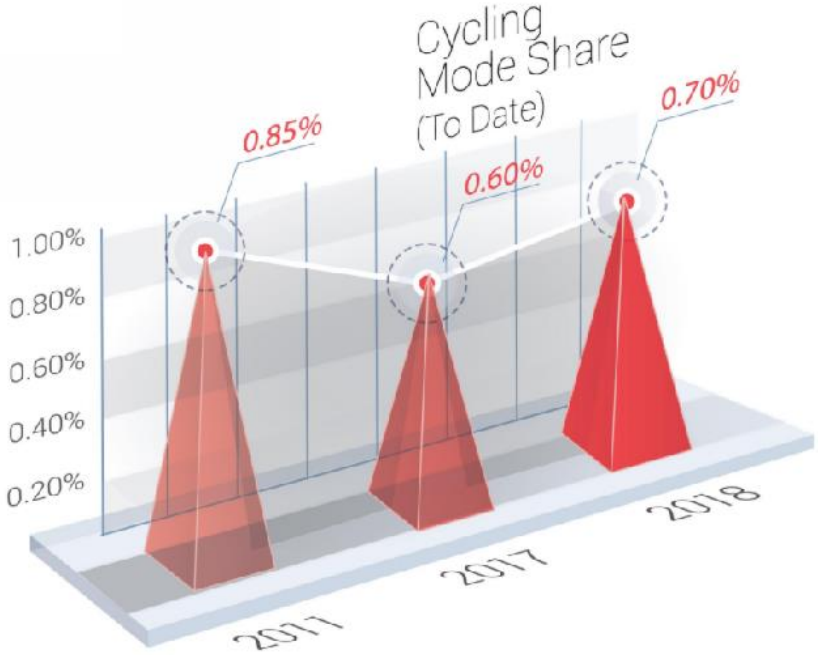
Cycling Mode Share – Current and Target

- **Our mode share to cycling is currently is under 1% of all trips**
- **Our current Mode Share Target for cycling is 3%, when our population reaches 435,000**
- **A recent count in May 2020 (during COVID 19), on the Brassall bikeway at Workshops Street, showed 315 cyclists on a weekday compared to a typical 50**



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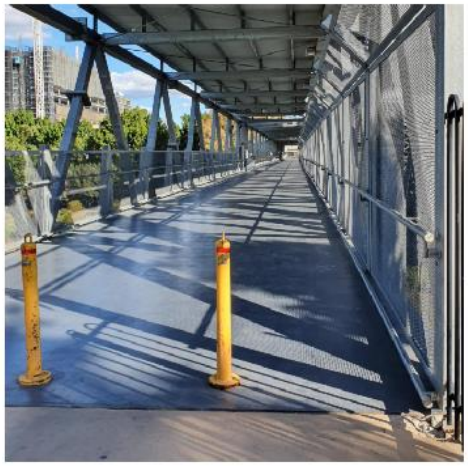
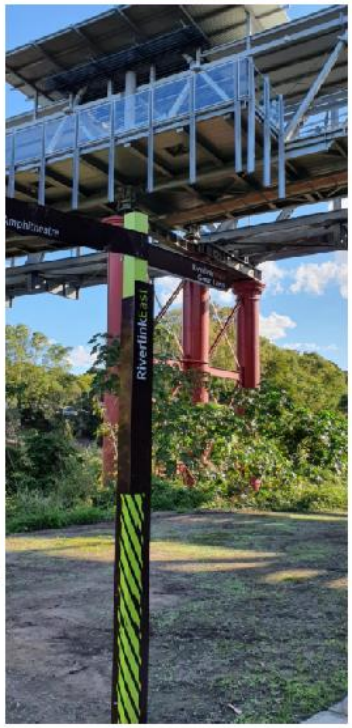
Key Gaps

Link to Bradfield Bridge





Brassall Bikeway from Railway Museum to Riverlink, across former railway land.

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Off Road and Segregated Bikeways

Safe Off Road Bikeways

Increasingly the attention is to provide safer off-road and bike routes segregated from traffic for user safety.

Soft Line Segregation on Road

Physical Segregation from Traffic

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Data Count Cameras

- **In 2020/2021 new data cameras are being installed to count cyclists along the Ipswich Motorway Service Road, parts of Redbank Plains and Springfield.**

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End of Trip Facilities

Bike Storage

- If we are to have a successful network of bikeways and encourage increased patronage, we need to provide good end of trip facilities like lockers and showers
- Ipswich CBD and the Mall currently have no public end of trip facilities
- End of trip facilities are being planned for staff at the new Administration Building.

Helmet and Clothing Lockers

Showers

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Summary of Key Points

1. Ipswich is part of the SEQ **Principal Cycle Network Plan (PCNP)**
2. Council's Active Transport Action Plan prioritises walking and supports the PCNP
3. Currently less than 1% of all trips are by cycling and the iGO target is 3%
4. Council has delivered a number of Principal Cycle Network links and has plans for many more
5. Connected, safe and good end of trip facilities are key success factors for Council's Principal Cycle Network

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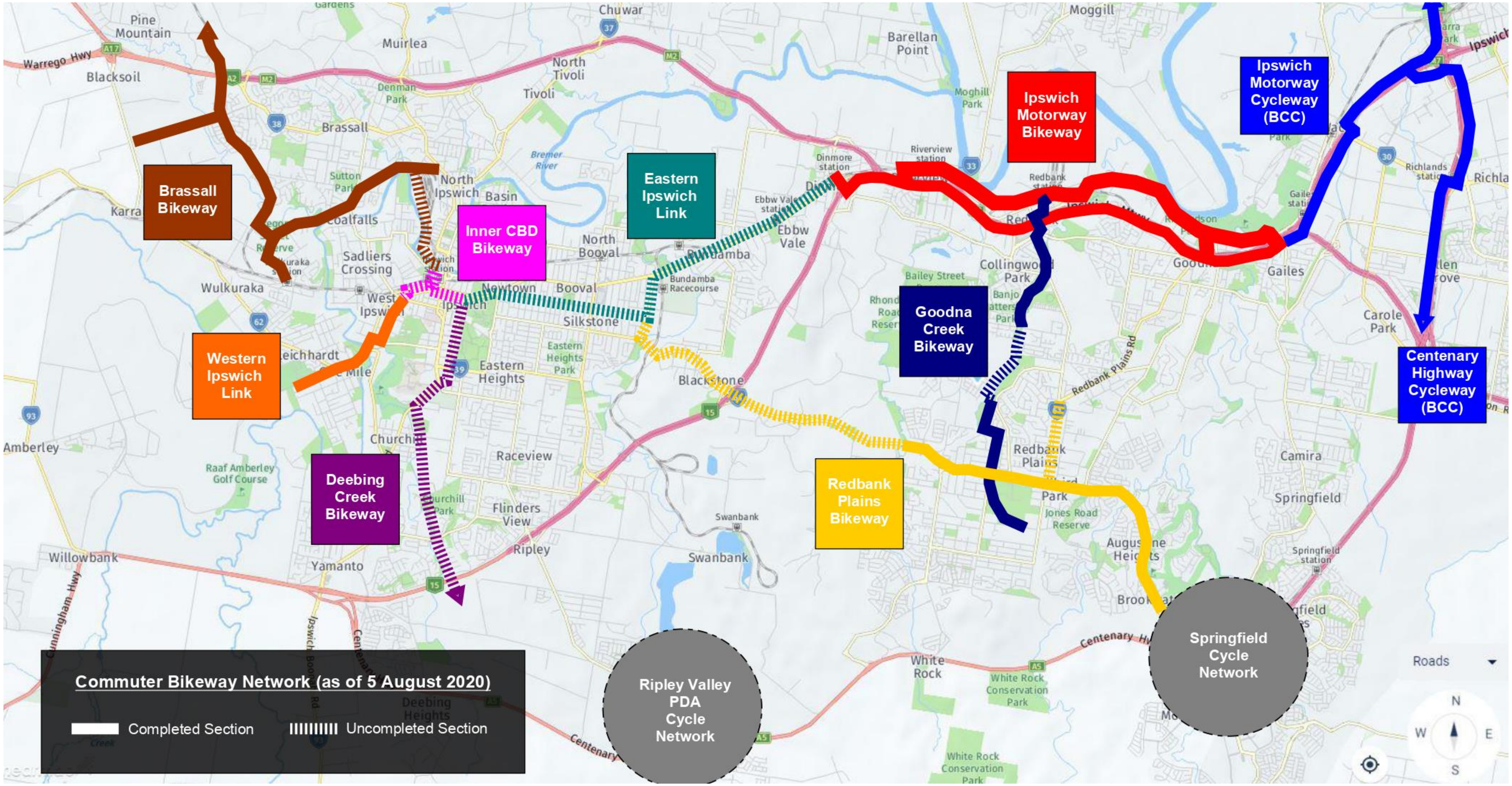

Brassall Bikeway
Inner CBD Bikeway
Eastern Ipswich Link
Ipswich Motorway Bikeway
Ipswich Motorway Cycleway (BCC)
Western Ipswich Link
Goodna Creek Bikeway
Centenary Highway Cycleway (BCC)
Deebing Creek Bikeway
Redbank Plains Bikeway
Springfield Cycle Network
Ripley Valley PDA Cycle Network
Commuter Bikeway Network (as of 5 August 2020)
Completed Section
Uncompleted Section

Waste to Energy:

Information Session for Ipswich City Council

Daniel Roberts | 13 August 2020

Australia's National Science Agency

Overview

Background

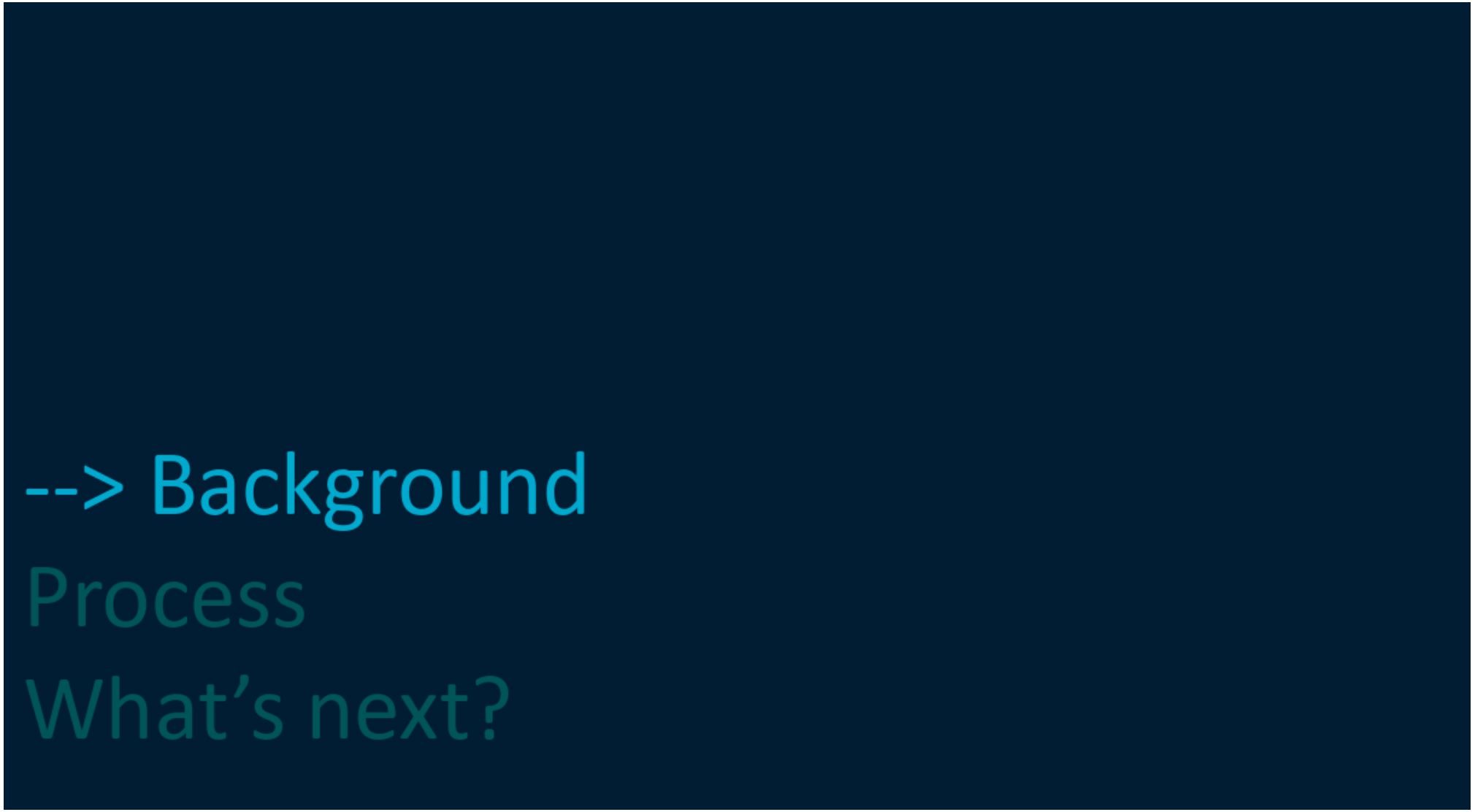
- Definitions and terms
- Drivers
- Australian and international context

Process

- Combustion-based waste-to-energy

What's next

- The Circular Economy
- Advanced technologies


--> Background
Process
What's next?

Definitions for today

Waste-to-energy, energy-from-waste

- Combustion of waste to produce heat which is used to raise steam and generate power, as well as a domestic or industrial heat source.
- Flue gases are cleaned and are readily able to meet the strictest EU emissions requirements.
- Produces an ash residue

Spittelau plant in Vienna

https://pixabay.com/photos/vienna-spittelau-1549922/

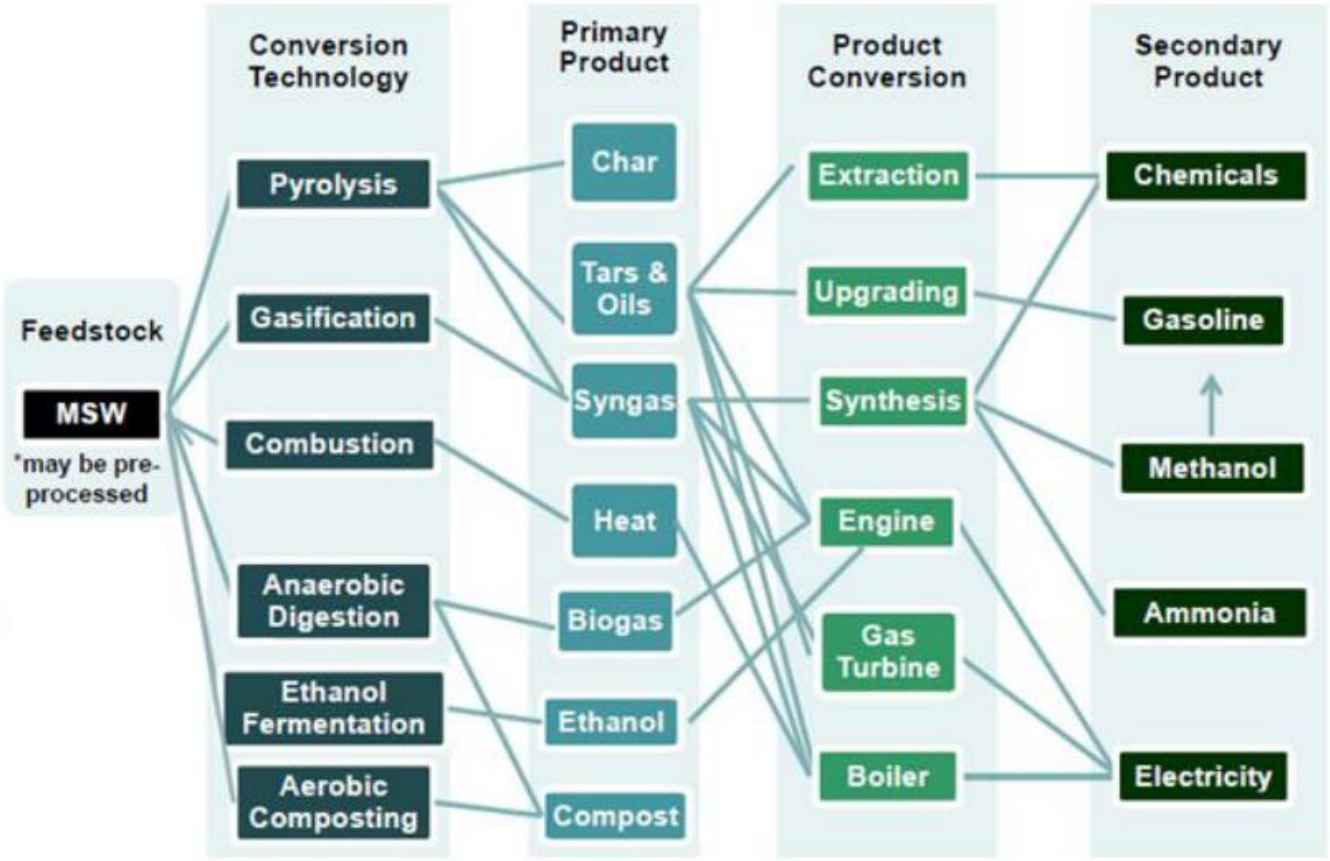
Advanced Technologies

- Gasification -> waste to power, fuel, natural gas, etc …
- Pyrolysis - > waste to oils, char, fuel gas.

Enerkem plant in Canada

https://enerkem.com/

This is why it gets complicated:



https://www.wastetodaymagazine.com/article/conversion-technology-pathways/

Drivers for energy recovery from waste

Diversion of waste from landfill

Reducing greenhouse gas emissions

- Methane emissions from landfill vs CO_2 emissions from combustion
- Offsetting fossil-fuel-based energy with renewable* generation

Moving towards a circular economy

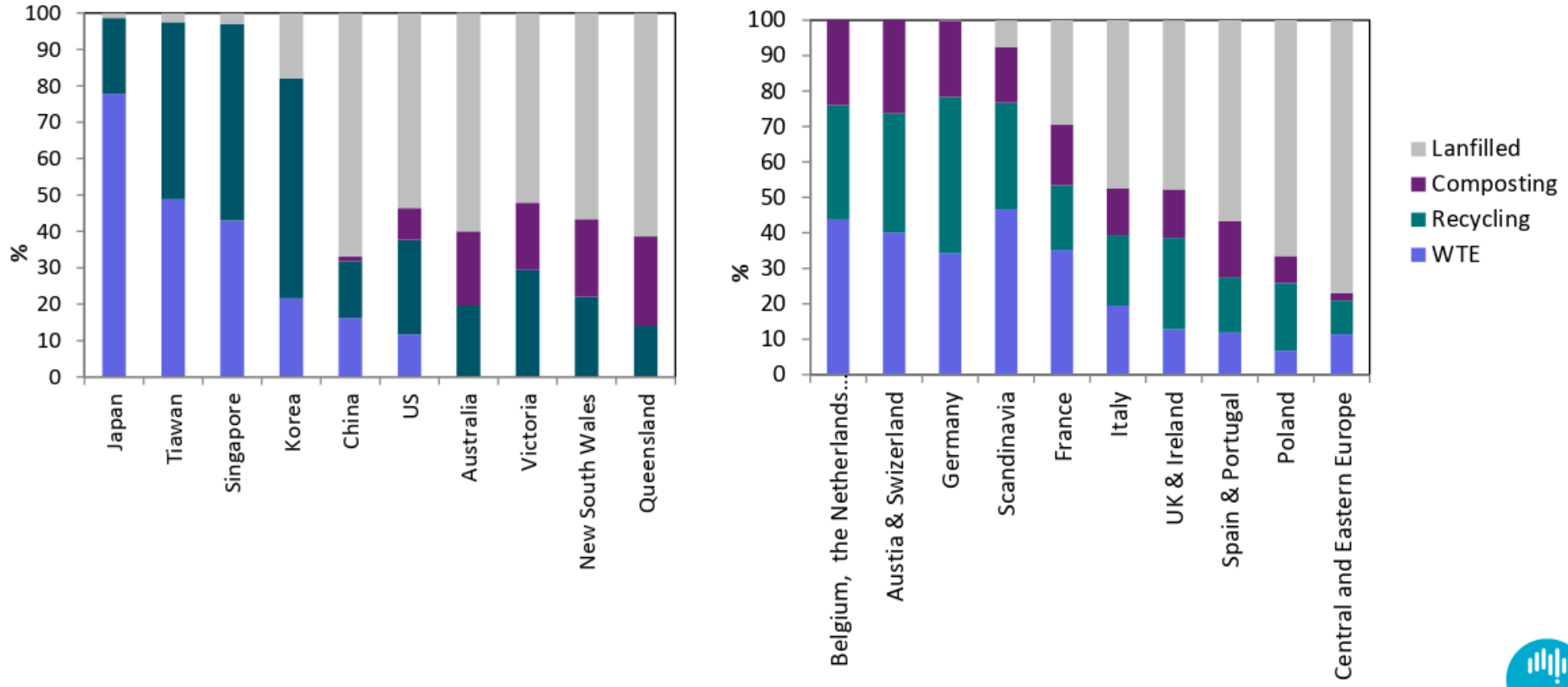
- Combustion-based WtE a small first step
- Advanced technologies offer greater opportunities

https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/warr-strategy/the-waste-hierarchy

* The extent to which a municipal waste stream is renewable depends strongly on composition and definitions

Energy Recovery from Waste

Time for Australia to Catch Up?



S S Hla, A Cousins, and D G Roberts, *Waste-to-Energy: Review of Thermochemical Waste Conversion Technologies*, CSIRO 2014

Some Australian Projects

Eastern Creek (NSW)

- NSW government opposed approval.
- Public consultation was cited as a failure

Kwinana (WA)

- 400 kT/yr post-recycling waste, 36 MW_e
- Construction underway

East Rockingham (WA)

- 300 kT/yr, 29 MW_e
- Construction underway May 2020

Australian Paper (Victoria)

- Continues with SUEZ and SMBC joining project and EPA approvals gained

Cleanaway (NSW)

- Up to 500 kT/yr, ~45 MW_e
- EIS work underway - due early next year
- Cleanaway, Macquarie, Ramboll, ARUP

https://www.acciona.com.au/projects/construction/others/kwinana-waste-to-energy-plant/

An international benchmark

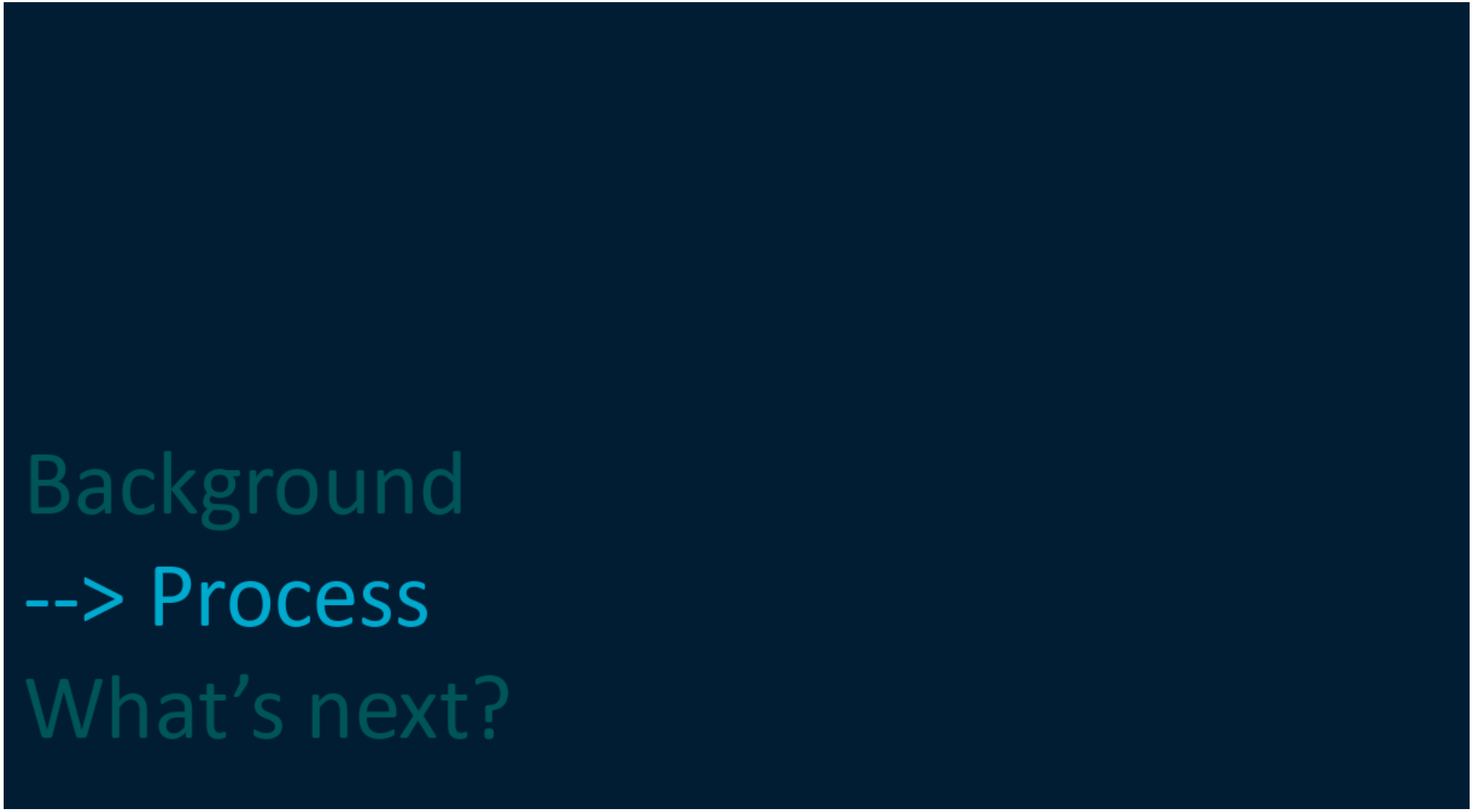
Amager Bakke, Copenhagen

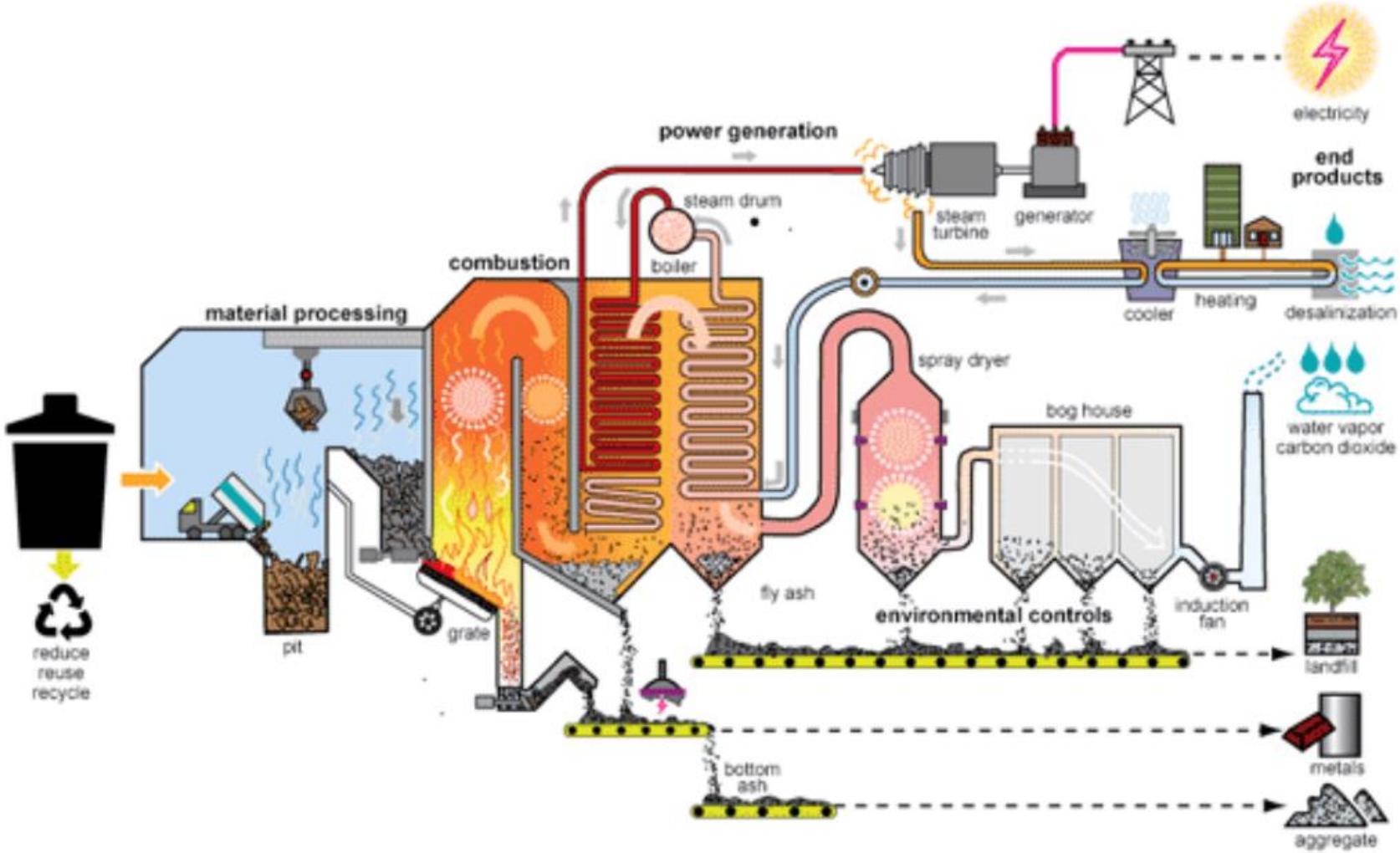
- Opened in 2017
- 400 kT/yr household and commercial waste
- Supplies 50,000 households with power (57 MW_e)
- Supplies 120,000 households with district heating (190 MW_{th})

Community

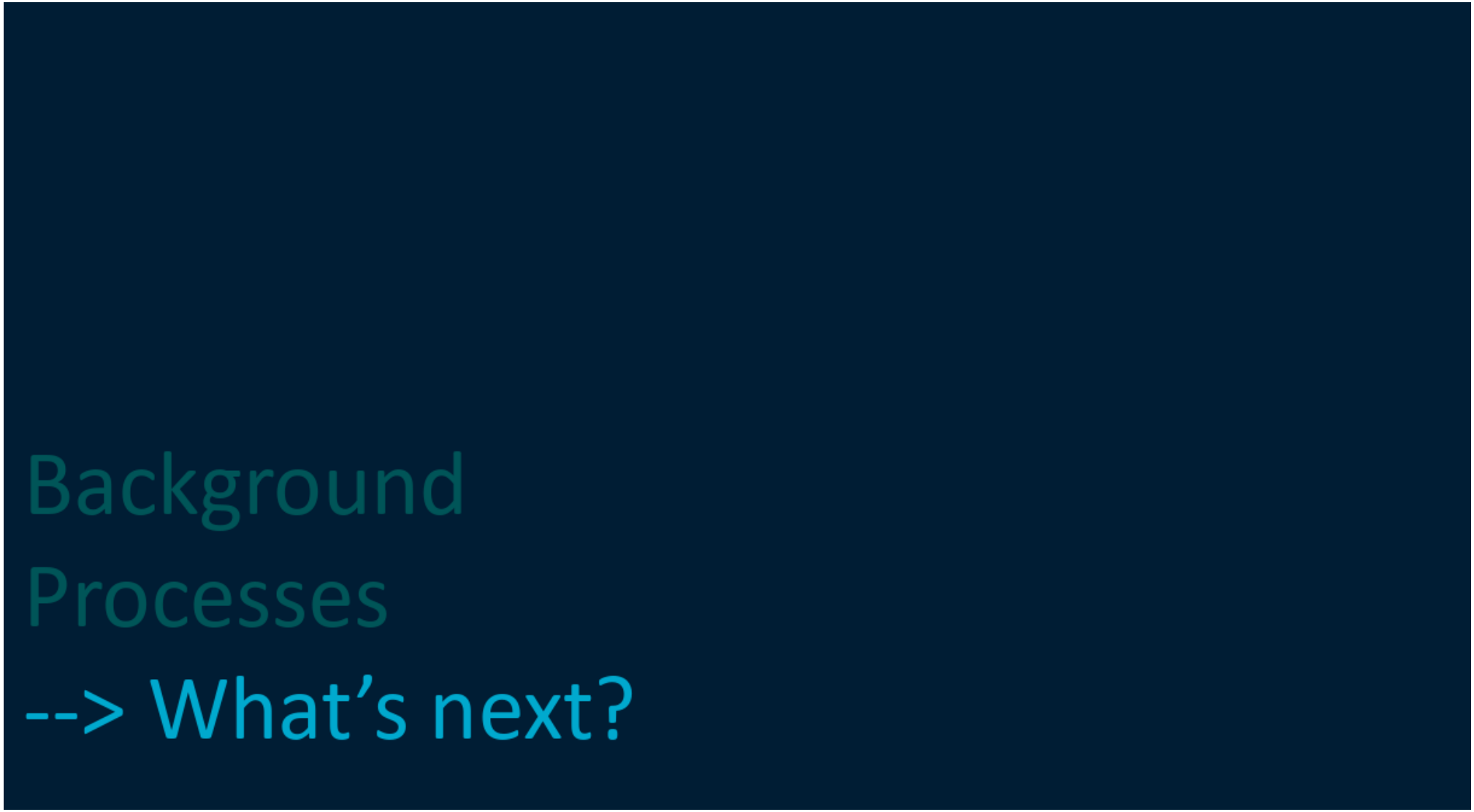
- All-season ski slope
- 1.6 km from Danish royal palace

http://www.volund.dk/Waste_to_Energy/References/ARC_Amager_Bakke_Copenhagen


Background
--> Process
What's next?



https://www.eia.gov/energyexplained/biomass/waste-to-energy-in-depth.php

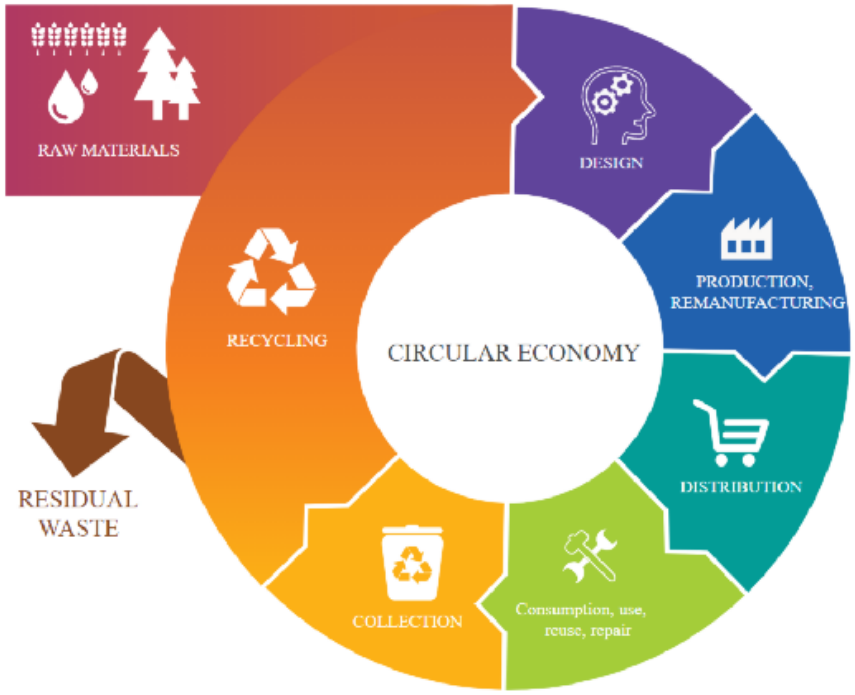

Background
Processes
--> What's next?

The Circular Economy is gaining momentum

A shift in the production-consumption model.

Keeping products (or their components) in use for longer – thereby reducing waste.

Aspects across manufacturing and supply chains – including the way we design and make things.



https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits

CE principles are becoming embedded

- Corporate strategies
- Government policies
- System development

Gasification – keeping molecules in use for longer

An established and advanced technology

- For large-scale coal to chemicals, fertilisers, power, gas, etc
- Considerable experience with biomass to power, and more recently to products

Much less advanced in the context of waste

- Many concepts and demonstrations, and many with technical success
- Challenges with project economics
- Some technology-specific challenges with scaling up

Valmet 140MW CFB gasifier for biomass and waste

www.valmet.com/energyproduction/gasification/

Pyrolysis

Feedstock is important

- Best suited to homogeneous, well-defined materials
- Tyres, plastics

Product stream can be complex

- Gas phase can be a fuel to drive some of the process
- Liquids usually require stabilisation and refining
- Solid char may be suitable for agricultural applications

https://arena.gov.au/projects/logan-city-biosolids-gasification-project/

In Summary

Combustion-based waste-to-energy is an established, proven technology.

- It has a long and successful global track record at diverting landfill-bound waste and using it for the production of heat and power.
- Modern plants can meet the strictest of EU emissions standards.
- Such plants are now being constructed and proposed around Australia

There is more to waste to energy than combustion for heat and power

- Anaerobic digestion
- Advanced thermal technologies (gasification, pyrolysis, hydrothermal processes)

Adoption of circular economy principles will impact the way waste streams are managed and used:

- Energy recovery processes are expected to align with CE philosophies
- This is now having impacts in Europe and elsewhere.

Thank you

Dr Daniel Roberts
Director, Hydrogen Energy Future Science Platform
CSIRO Energy

Daniel.Roberts@csiro.au | 07 3327 4521

Australia's National Science Agency

Drs Andrea Walton and Rod McCrea, CSIRO

Sustainability Victoria

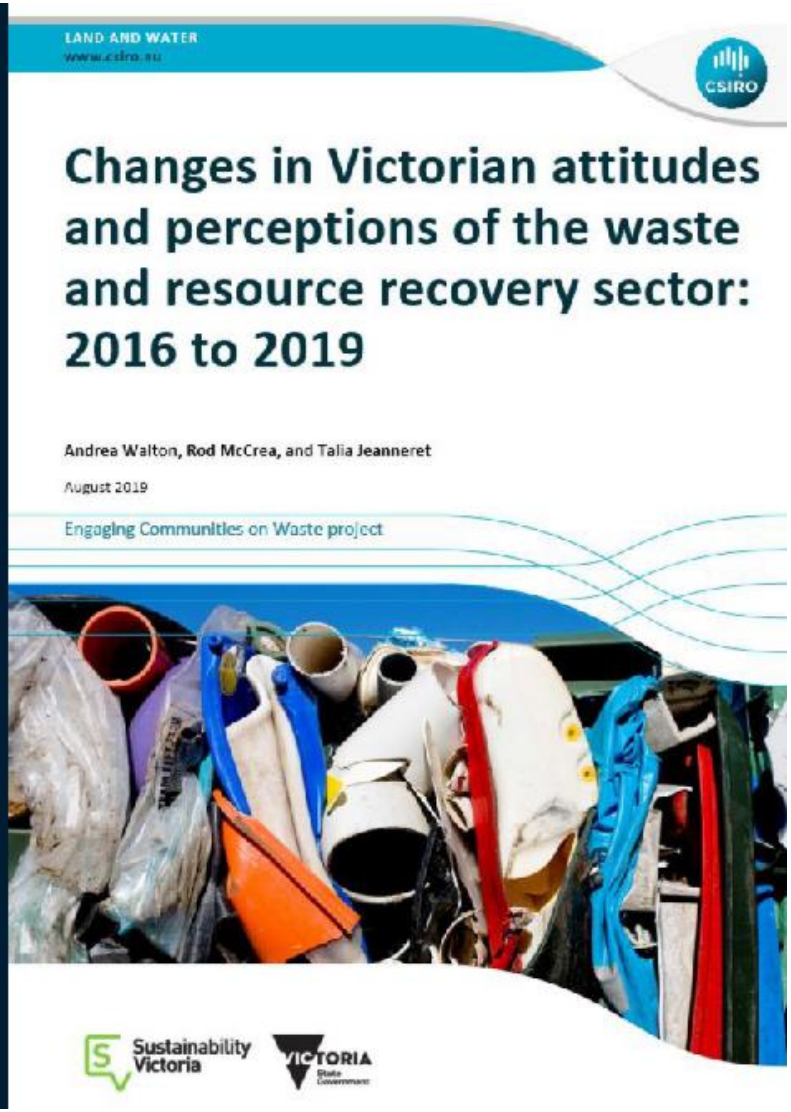
VICTORIA State Government

Recent 2019 research

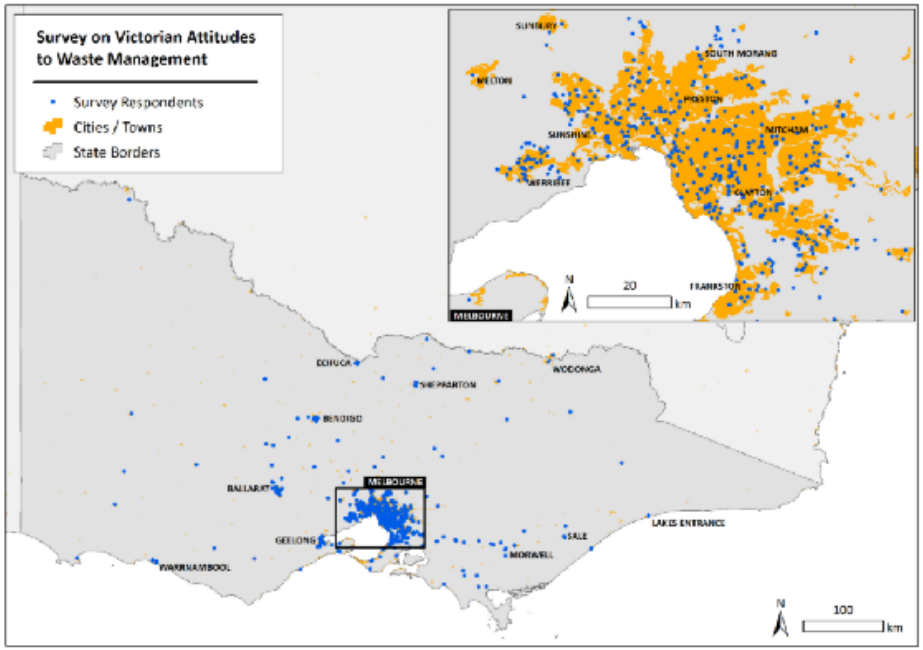
Statewide attitudes

Research partnership with Sustainability Victoria since 2016

Report available at https://www.sustainability.vic.gov.au/About-us/Research/Engaging-communities-on-waste



Conducted March 2019



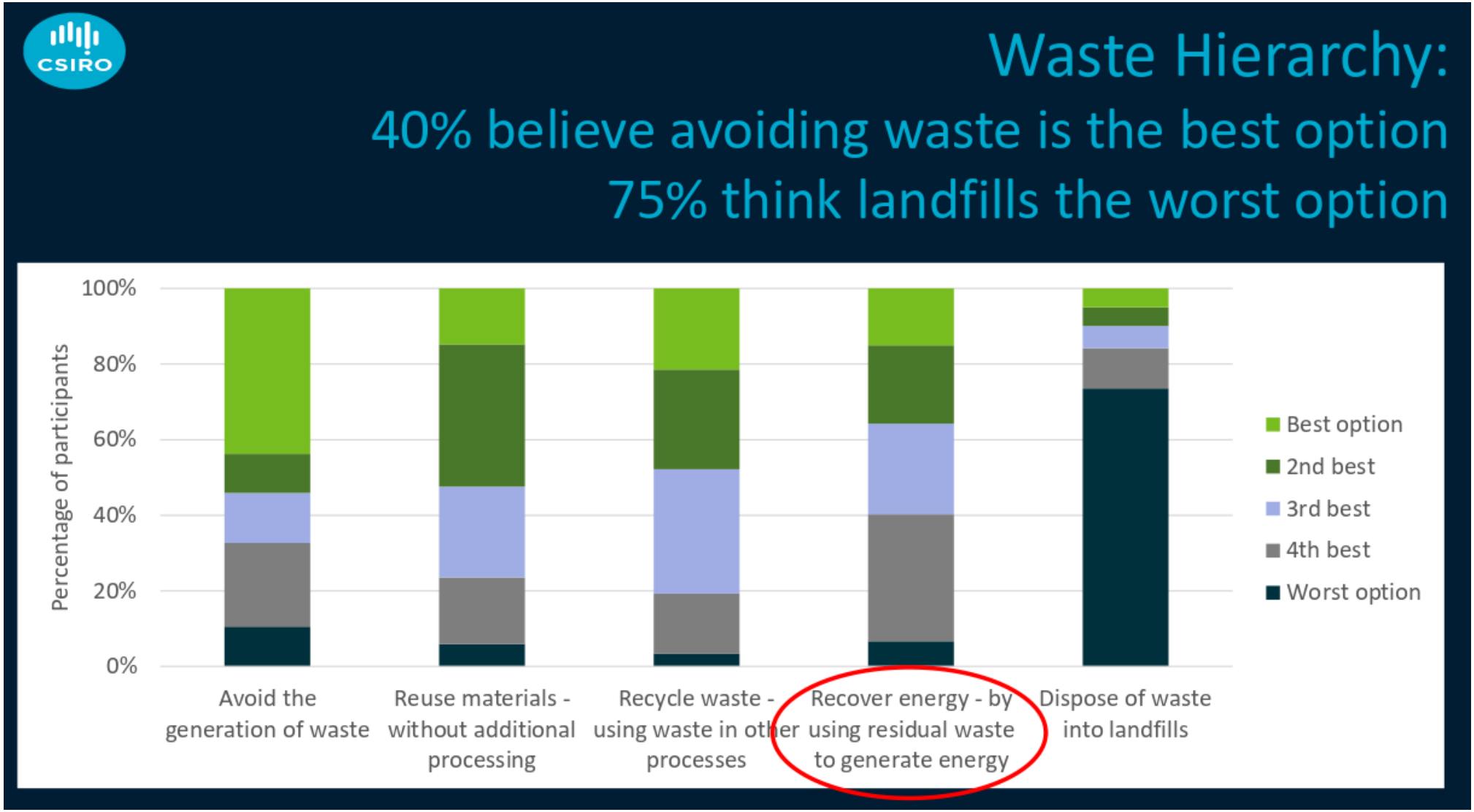
SAMPLE

N = 1,244

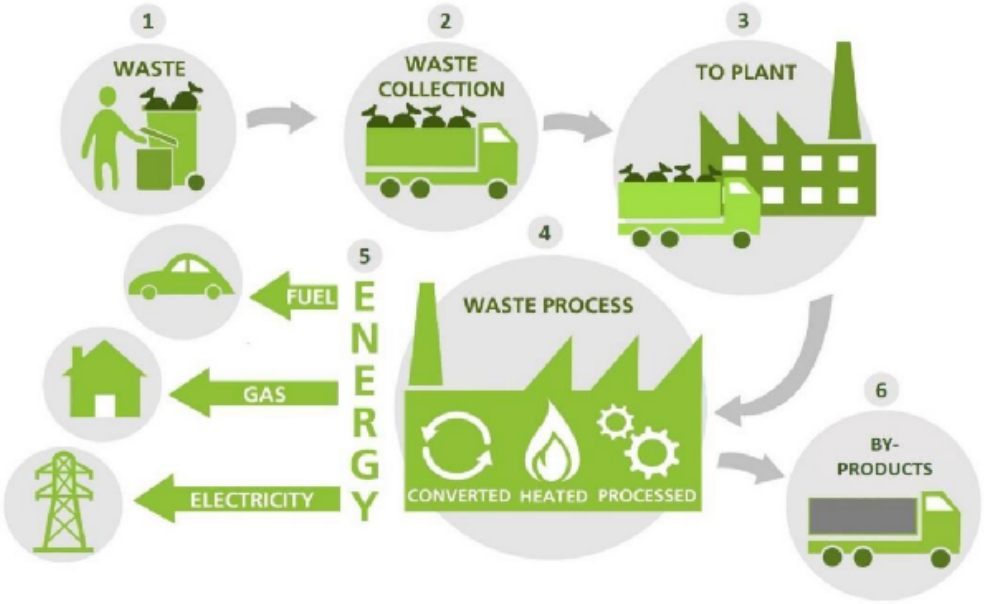
- Targeted postcodes = 610
  Other postcodes = 634
- 'Impacted' = 'non-impacted'

ABS representative: age, sex, and geography for Victoria (ABS 2016)

- Metro Melbourne – 68%
- Regional Vic - 32%

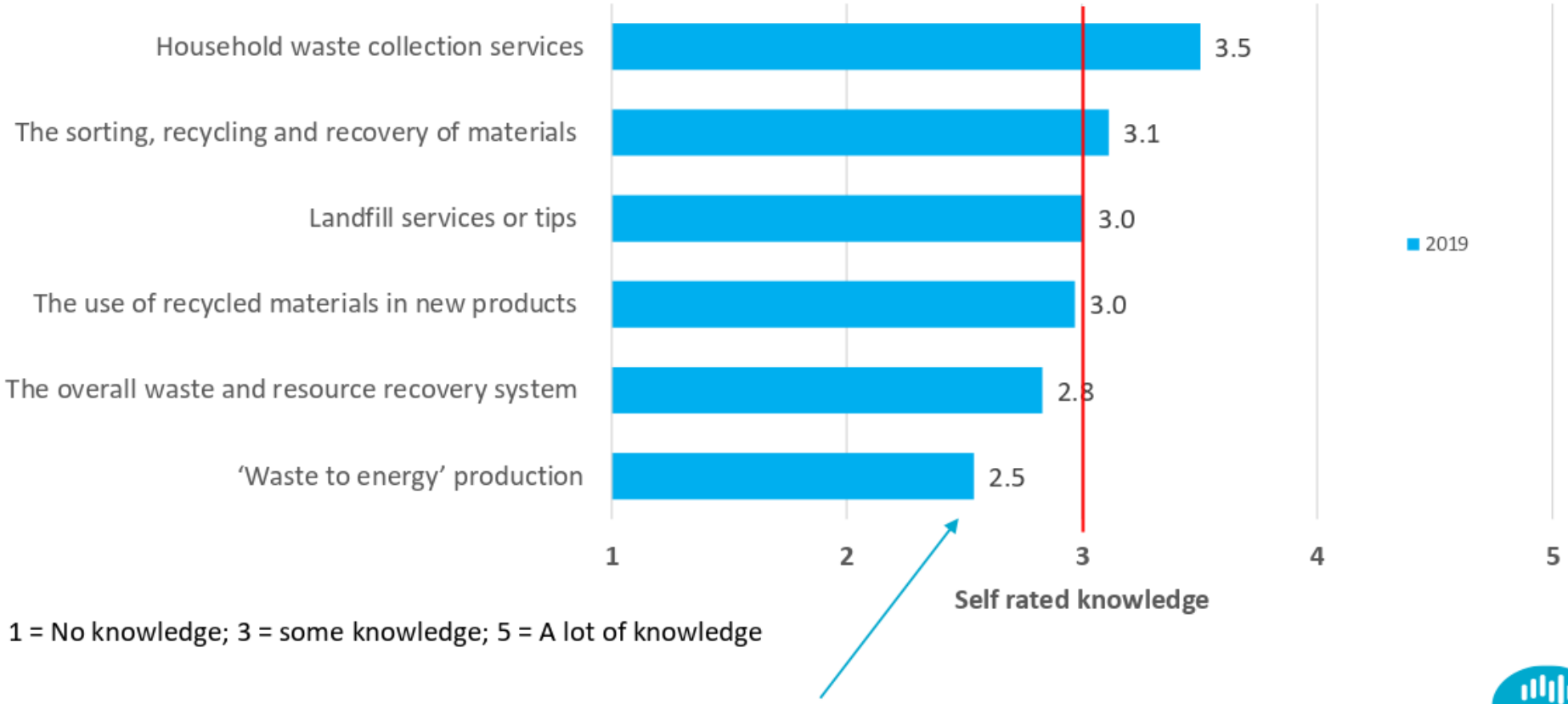

CSIRO
Waste Hierarchy:
40% believe avoiding waste is the best option
75% think landfills the worst option
Percentage of participants
100%
80%
60%
40%
20%
0%
Avoid the generation of waste
Reuse materials - without additional processing
Recycle waste - using waste in other processes
Recover energy - by using residual waste to generate energy
Dispose of waste into landfills
Best option
2nd best
3rd best
4th best
Worst option

Scenario



- Living within 2 kms from
  - Waste complex (landfill) OR
  - Waste to Energy plant
- Provided brief information

Knowledge of the waste sector

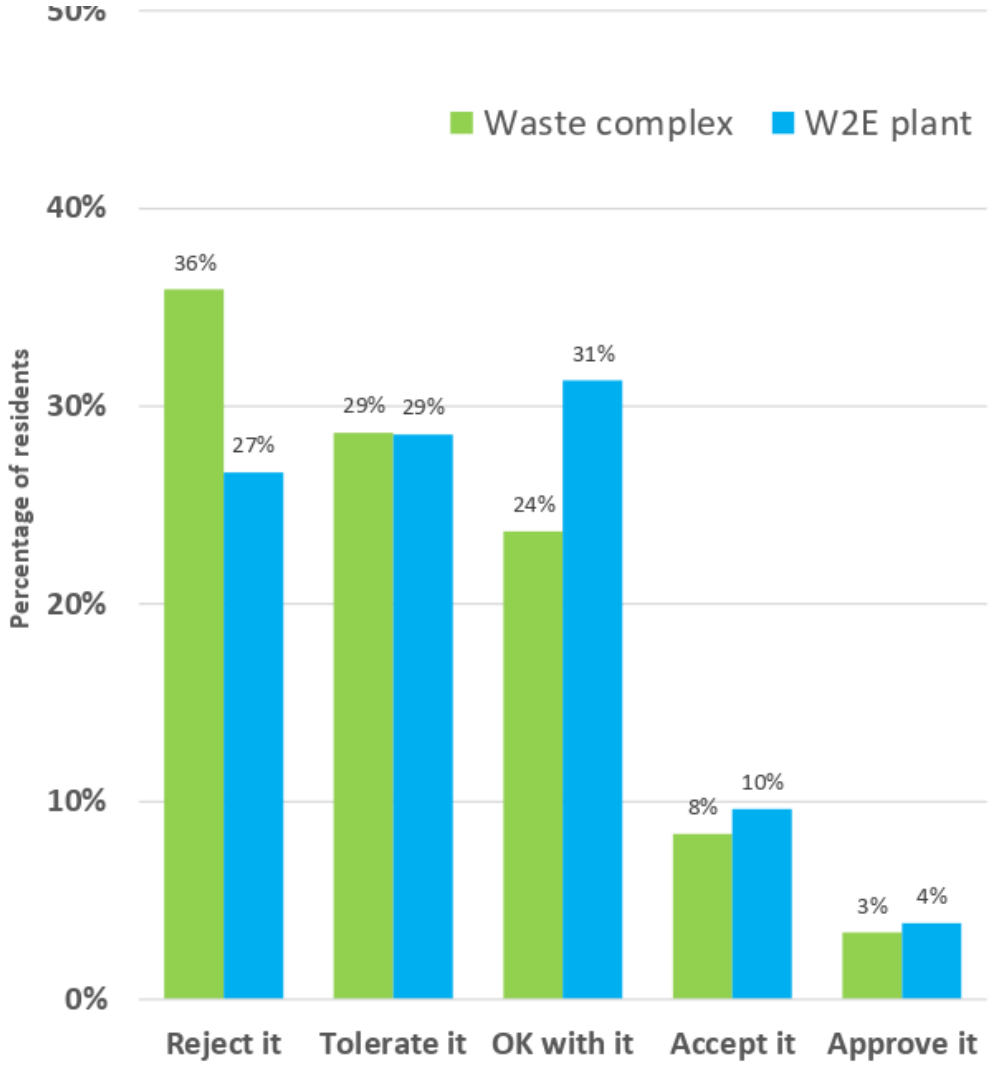


Note: 1 = No knowledge; 3 = some knowledge; 5 = A lot of knowledge

How accepting of living within 2 kms

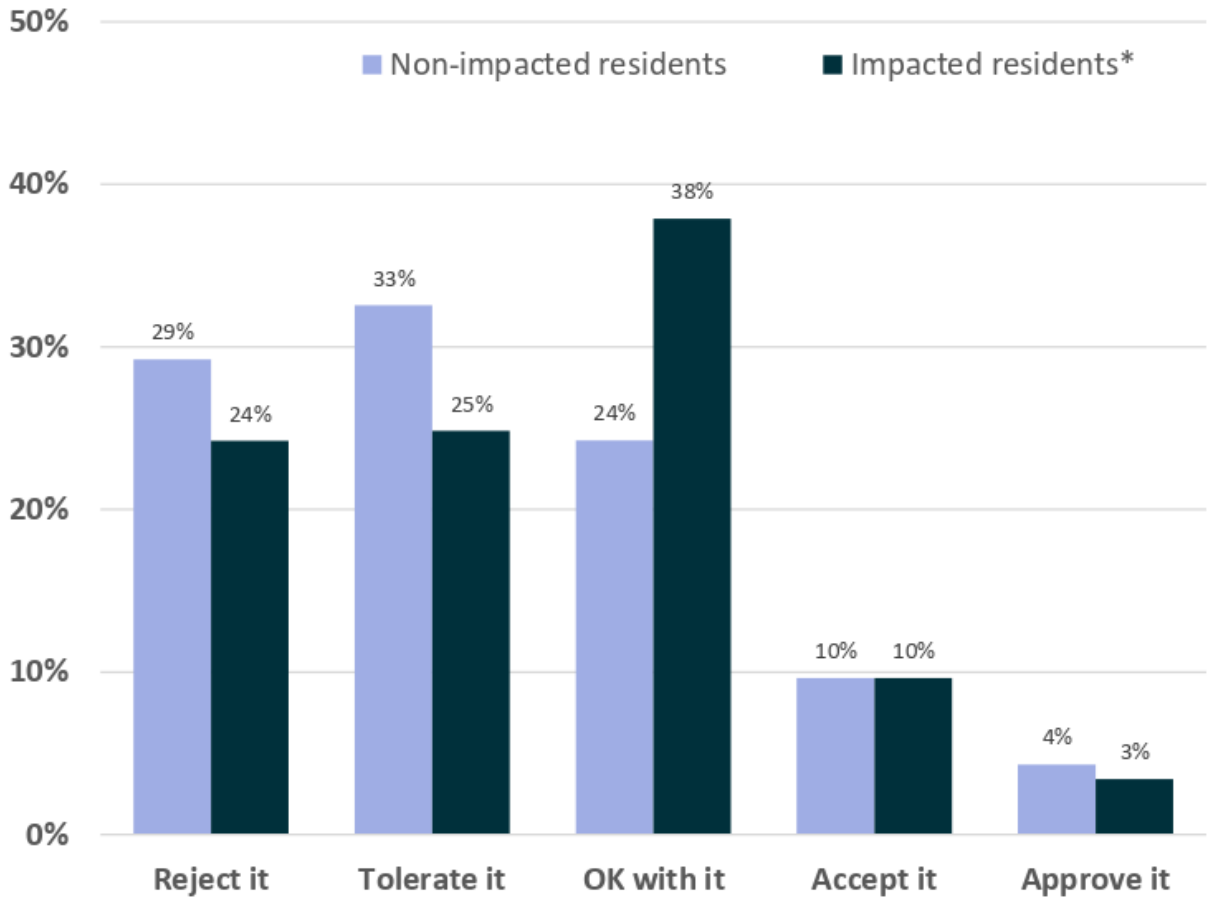
Compared to living near a waste complex

- Higher percentage of residents were OK with living near a waste to energy plant, with fewer rejecting the notion.

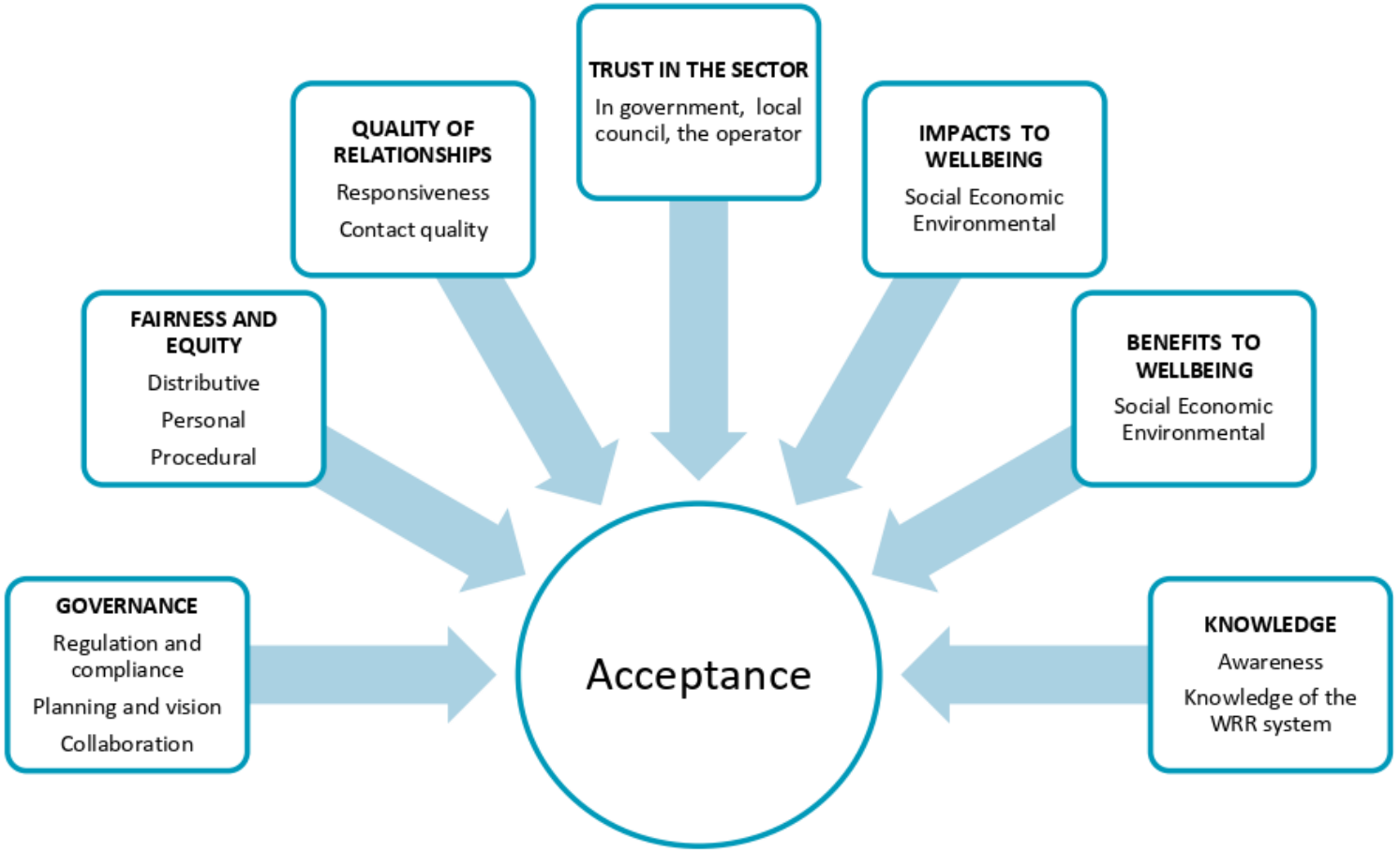


Impacted v Non-impacted residents

- Those living near a waste and resource recovery (WRR) facility were significantly more likely to accept living near a W2E plant



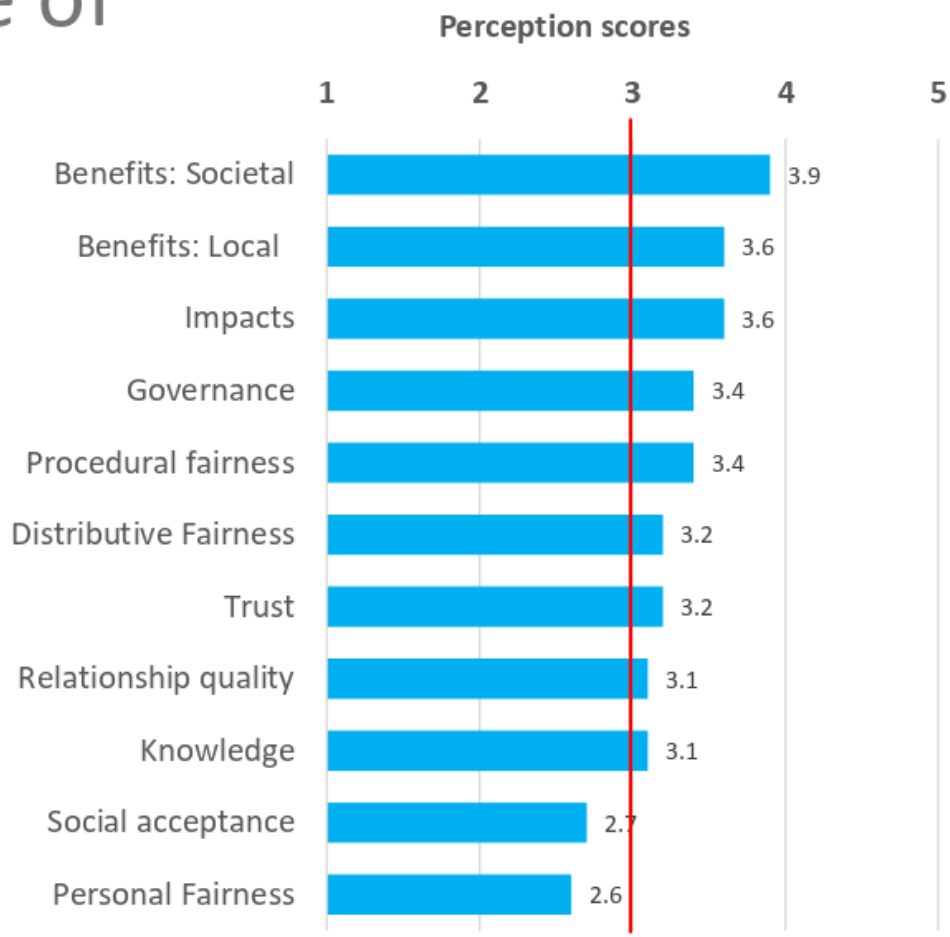
Drivers of social acceptance in the waste domain



Drivers of acceptance of W2E plants

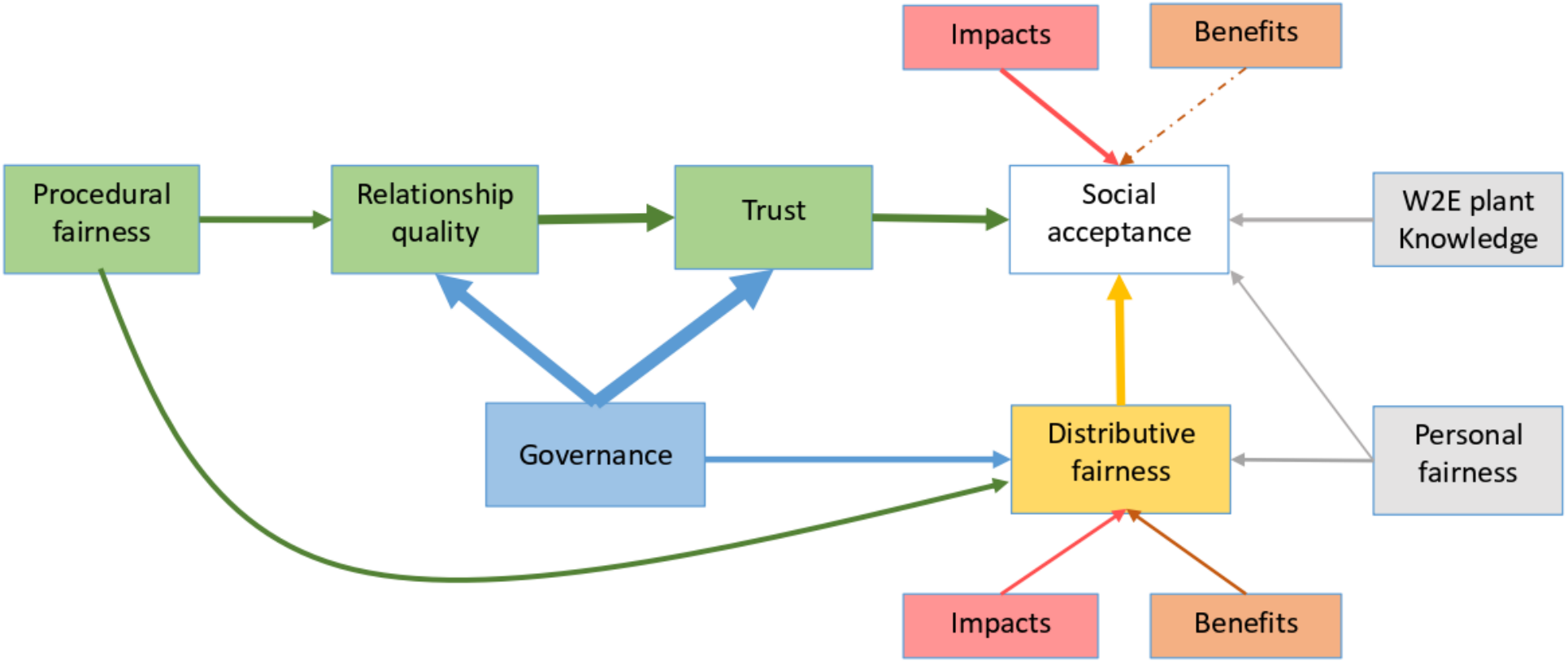
Community perceptions of W2E

- Societal benefits high
- Local benefits and impacts similar
- Governance OK
  - regulations, planning and collaborations
- Procedural and distributive fairness OK, but personal fairness (NIMBYism) problematic
- Community relationships with industry and trust in the sector marginal
- Overall social acceptance low

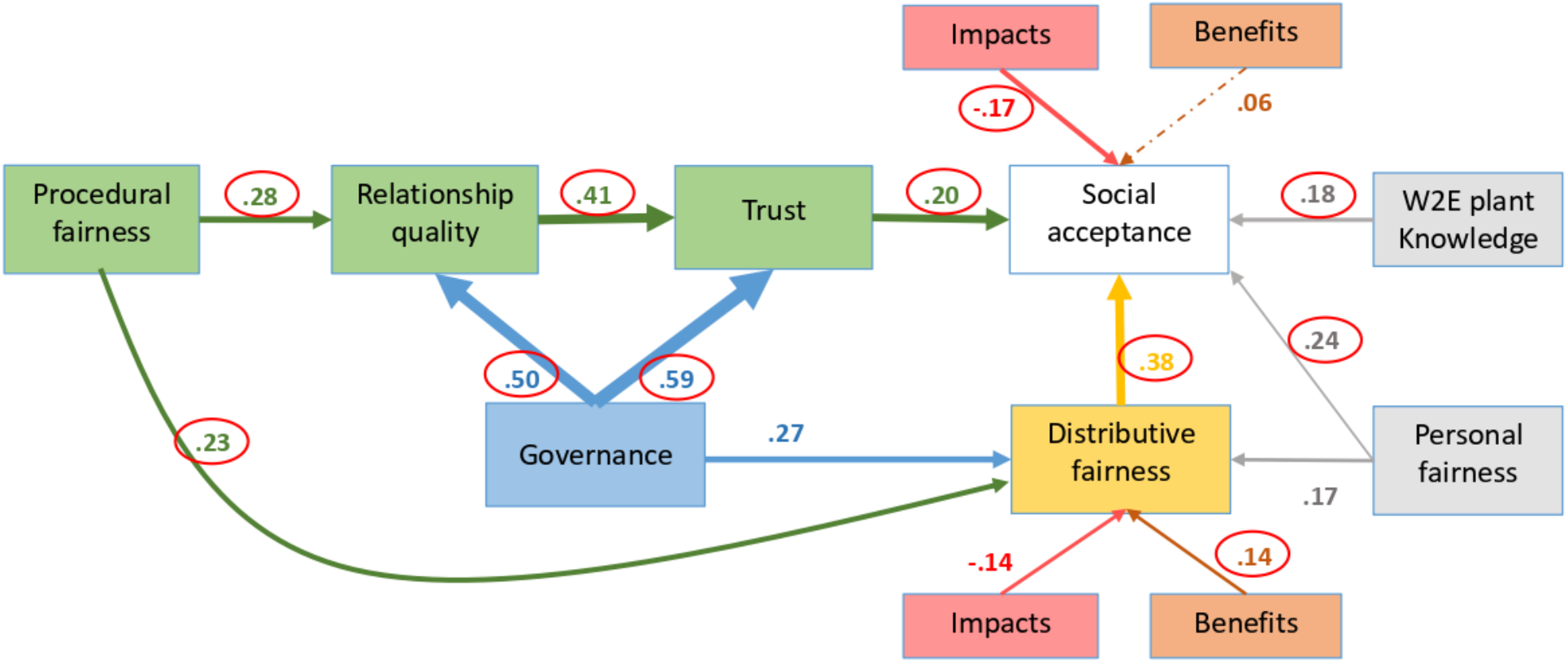


Note: 1 = Strongly disagree; 5 = Strongly

CSIRO Model of Social Acceptance of W2E plant



CSIRO Model of Social Acceptance of W2E plant



Some key messages for 'bringing people along' with W2E

- People are more accepting of living near a W2E plant than a waste and resource recovery hub
- Knowledge reduces perceptions of risk associated with W2E plants and enhances social acceptance
- Residents presently impacted by a waste and resource recovery facility have more favourable attitudes toward the waste sector
- Perceived benefits relate to social acceptance by enhancing perceptions of distributional fairness
- Perceived personal fairness is low and somewhat problematic
- Good governance supports good community relationships with the industry, trust in the sector, distributional fairness, and overall social acceptance
- Demographic differences are less important than how people perceive underlying drivers of social acceptance

Walton, A., McCrea., and Jeanneret, T. (2019). *Changes in Victorian attitudes and social acceptance in the waste and resource recovery sector: 2016 to 2019.* CSIRO, Australia.

Thank you

Dr Andrea Walton
Team Leader
Resources and Communities

CSIRO Land & Water

Australia's National Science Agency