A wide-angle landscape photograph showing rolling green hills in the foreground and middle ground. A thick layer of white fog or mist fills the valleys between the hills. In the distance, a coastal town and a body of water are visible under a clear blue sky. A bright sun is positioned in the upper right corner, creating a lens flare effect.

**A Circular Economy:
The Future is Now, Let's Shape It**



EARTH OVERSHOOT DAY



Linear vs Circular Economy

Linear Economy



Technical & biological materials mixed up

Energy from finite resources

Cradle to *Grave*

Waste to Landfill

Single use - Disposable

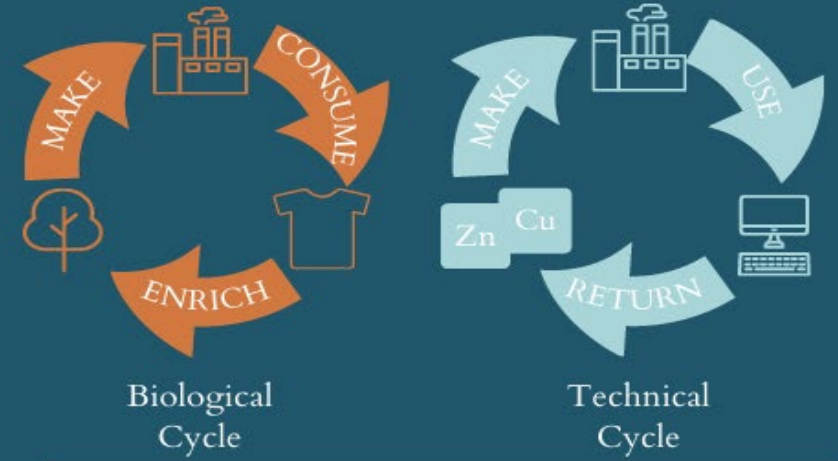
Thinking in *silos* - eg: GDP, \$\$

Short term *efficiency*

Powered by *fossil fuel*

Revenue = Volume + *Consumption*

Circular Economy



Energy from renewable sources

Cradle to *Cradle*

Design out waste

Cascade - multiple *cycles*

Thinking in *systems* - eg: SDG, IR

Long term *Resiliency*

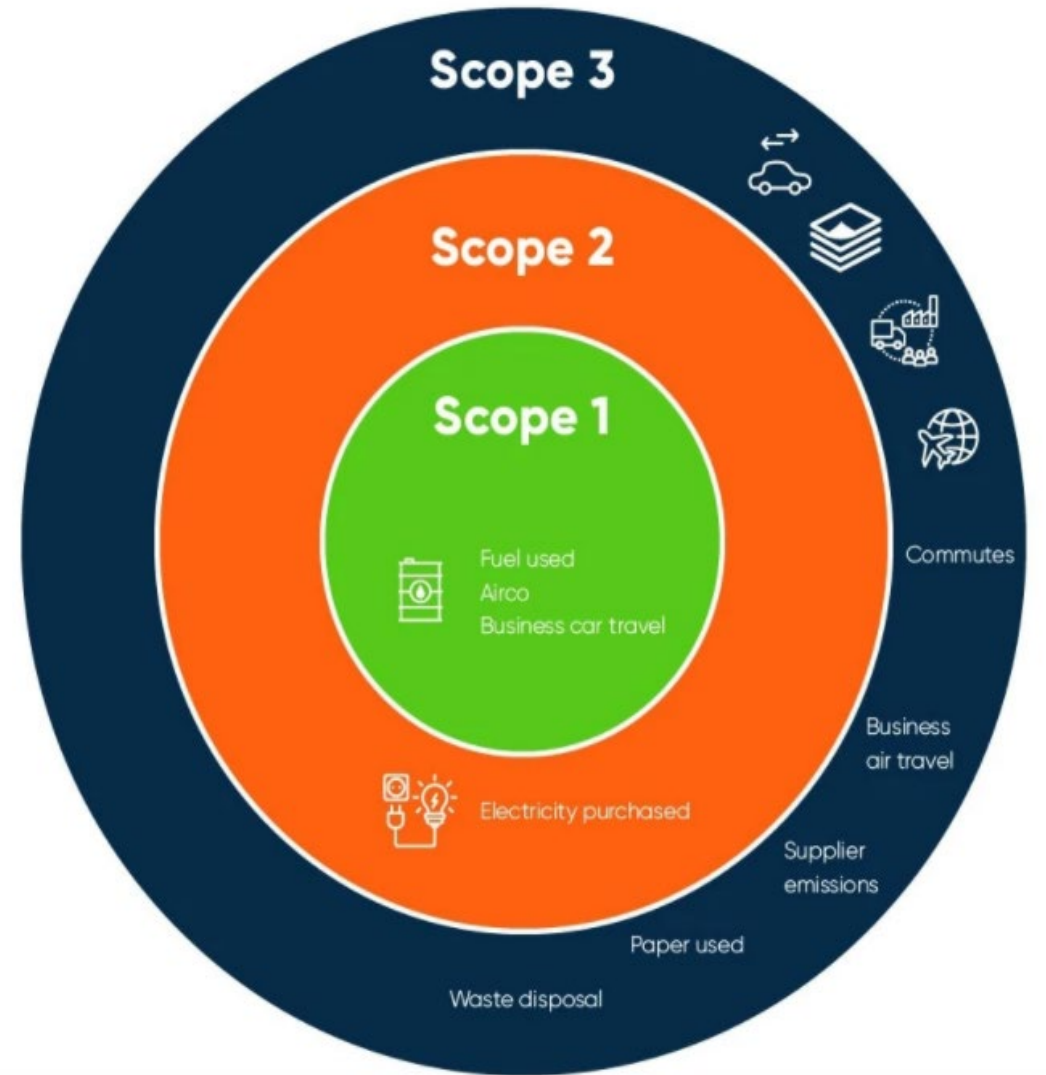
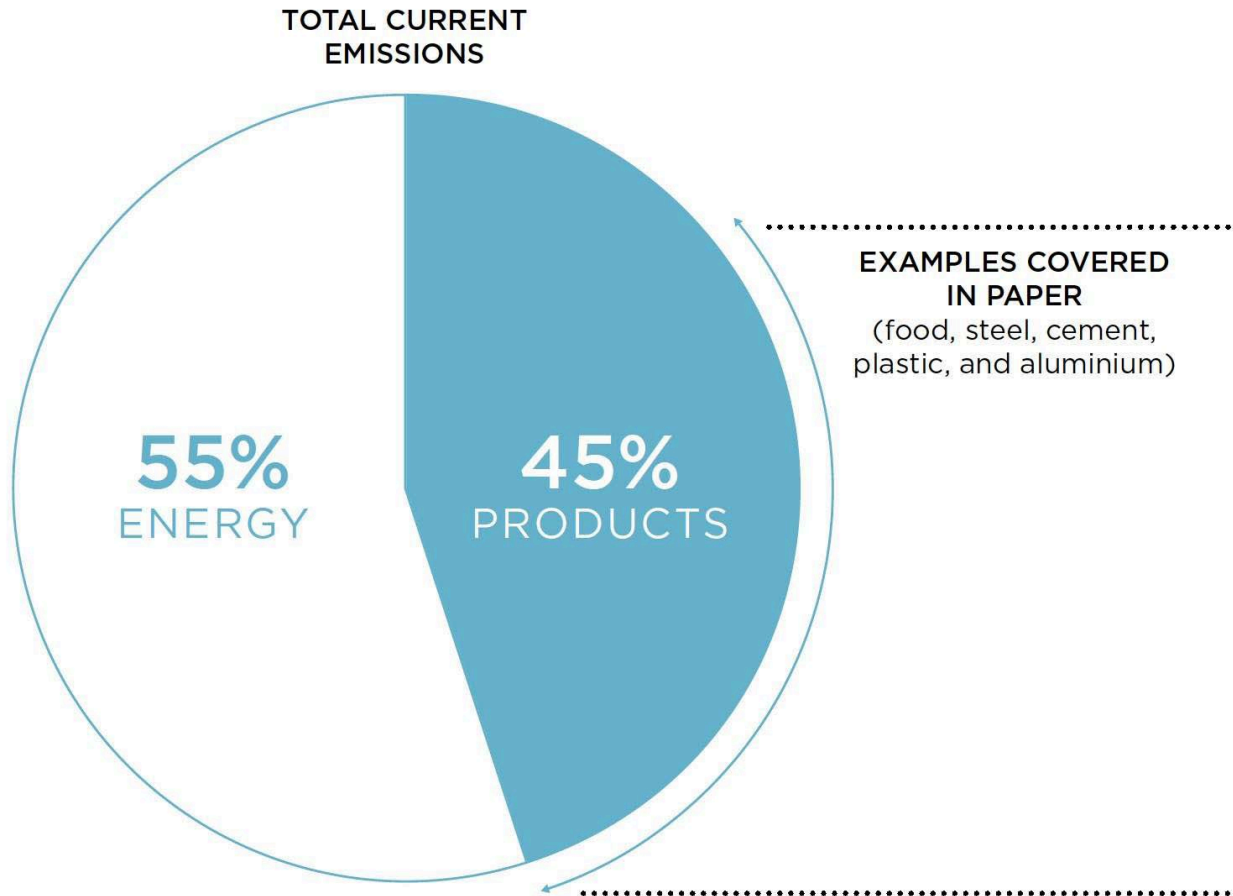
Powered by *Renewables*

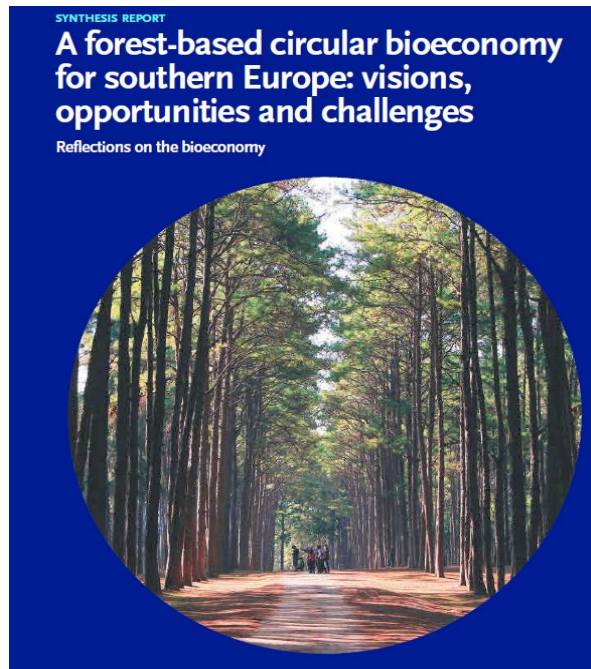
Revenue = Value + *Performance*

Come back stronger by adopting circular economy principles



COMPLETING THE PICTURE: TACKLING THE OVERLOOKED EMISSIONS





earthscan
from Routledge

Circular Cities

A Revolution in Urban Sustainability

Jo Williams

Routledge Studies in Sustainability

THE TRANSITION TO CIRCULAR CITIES



Circular Economy Guidebook for Cities

Malaysia's Circular Cities Blueprint

A vision and action plan to inspire transformation

Adaptive Circular Cities

Design principles for health-supporting green infrastructure

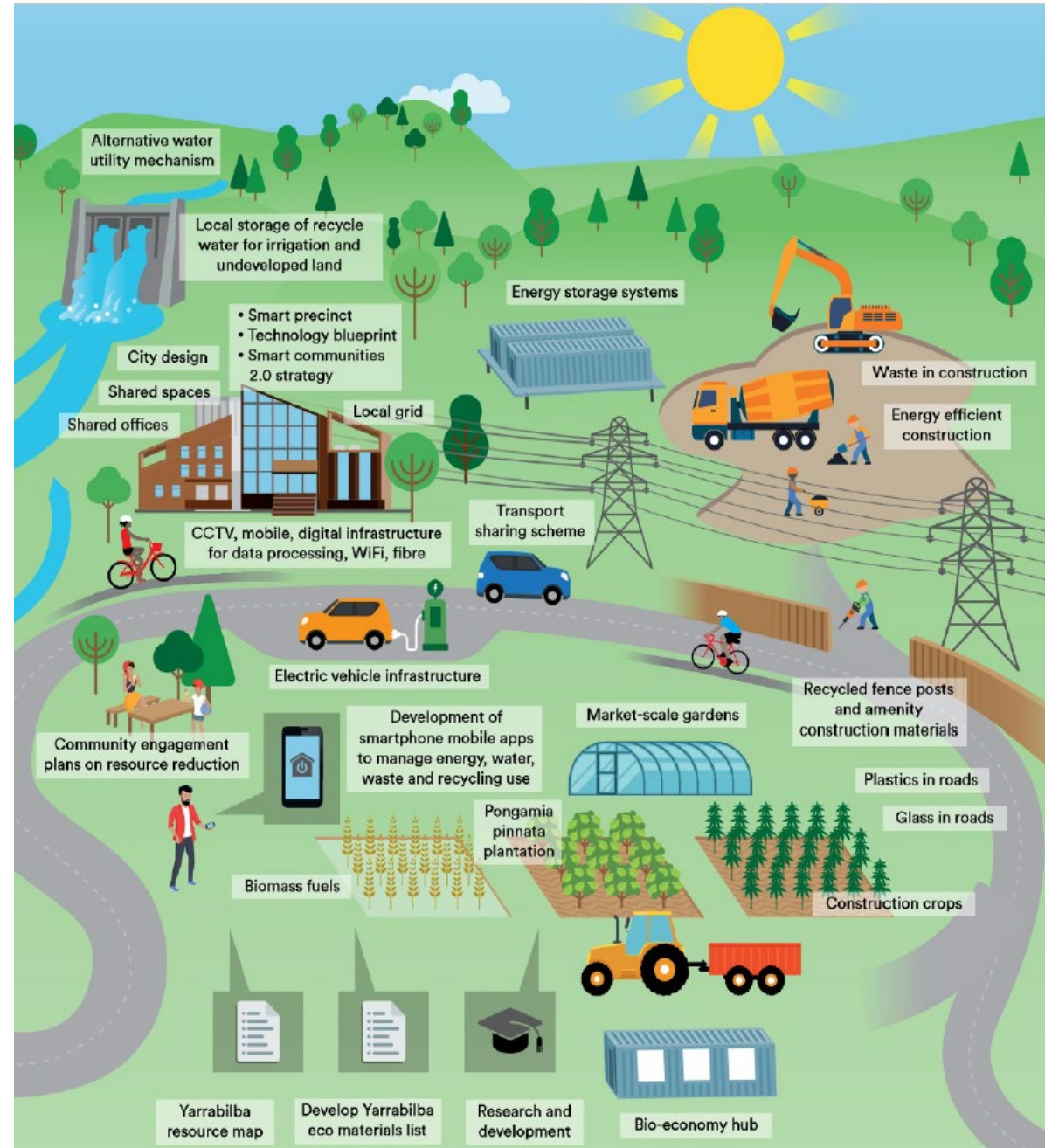




“

Yarrabilba will be Australia’s first circular economy community that integrates social, economic and environmental values to provide a dynamic and empowered community that fosters sharing, access, connection, diversity and control.

”



Meet the world's first 'minister for future generations'

The Welsh government has given Sophie Howe statutory powers to represent people who haven't yet been born



National Drivers

OUR GOALS

Aotearoa has a circular economy with a thriving bioeconomy by 2050.

Te hau mārohi ki anamata

Towards a productive, sustainable and inclusive economy

AOTEAROA NEW ZEALAND'S
FIRST EMISSIONS REDUCTION PLAN



Te rautaki para Waste strategy

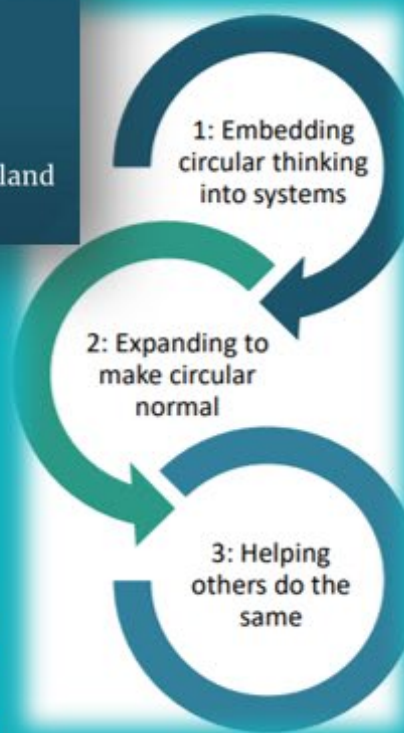
Getting rid of waste for a circular Aotearoa New Zealand

Advanced Manufacturing Industry Transformation Plan

Consultation Draft – Thematic Workshop

Priority 5: Creating a leading sustainable circular net-zero emissions sector

Circular economy and bioeconomy Strategy



NEW ZEALAND
INFRASTRUCTURE
COMMISSION
Te Waihanga

Rautaki Hanganga o Aotearoa

New Zealand
Infrastructure Strategy

Moving to a Circular Economy is one of 5 key focus areas – including strengthening partnerships with Māori

Significant MBIE RFP underway looking at 4 key workstreams:

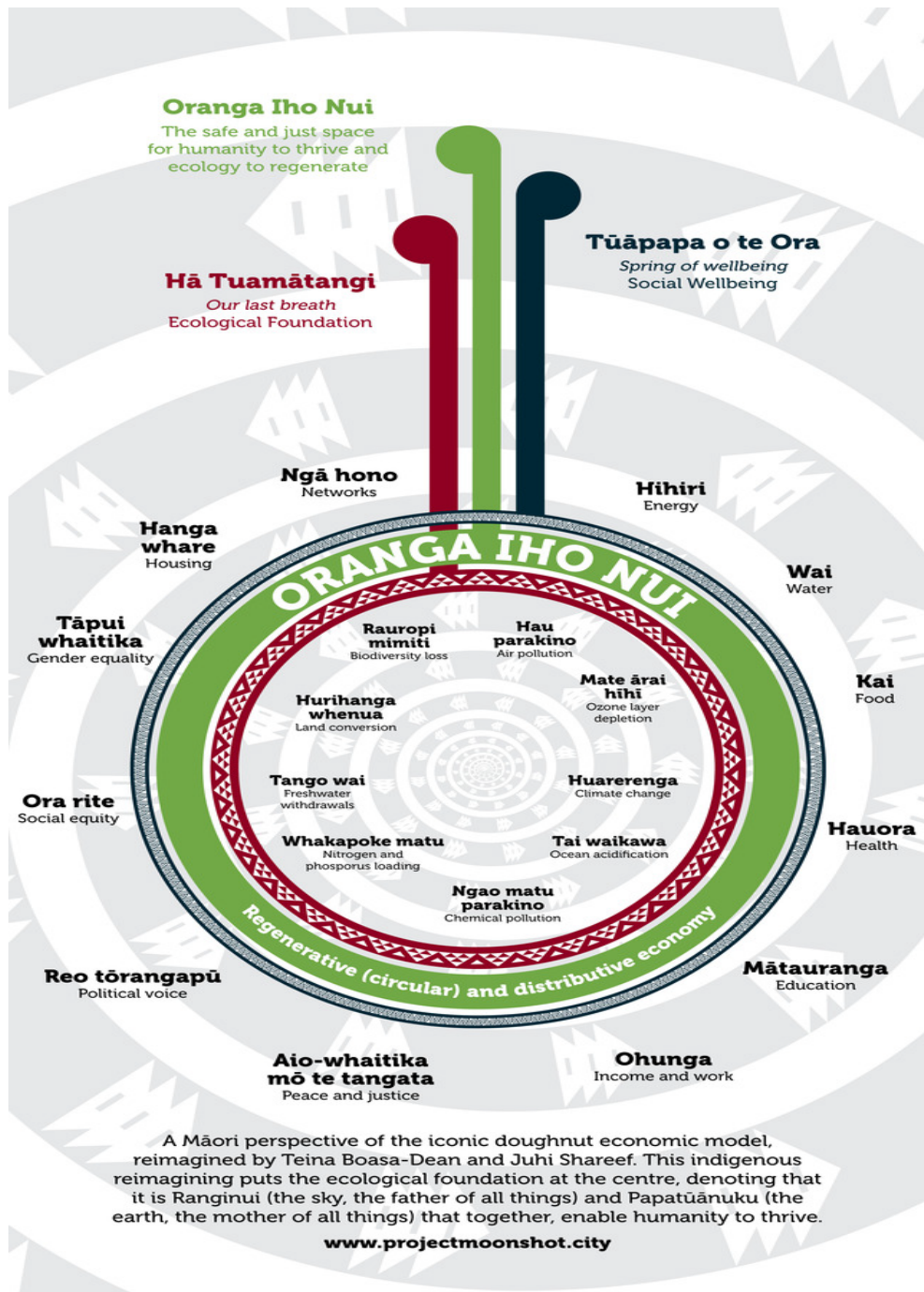
1. Emissions impacts of transitioning to CE
2. barriers and incentives to catalyse change
3. international policy/reg instruments
4. digital tools including twins.

Our Goals

Aotearoa has a circular economy with a thriving bioeconomy by 2050

Circular - 106 mentions in the ERP document

Commence	Commence a circular economy and bioeconomy strategy
Move	Move to a more circular public sector
Enable	Enable Māori to shape & benefit from transition to a circular economy and thriving bioeconomy
Integrate	Integrate circular practices across government, communities and businesses
Support	Support businesses moving to circular economy models
Investigate	Investigate a circular economy hub
Accelerate	Accelerate sustainable and secure supply and uptake of bioenergy in Aotearoa
Co-create	Co create “circular missions” or climate innovation platforms that use mission-led innovation



Ōhanga āmiomio Circular economy



Ministry for the Environment
Manatū Mō Te Taiao

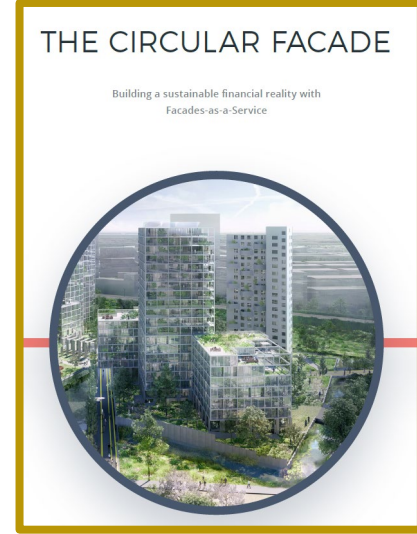
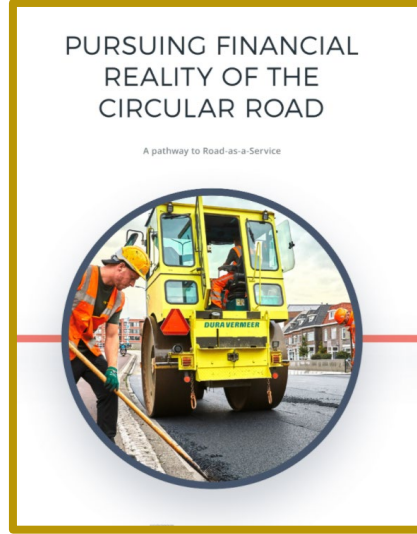


A circular economy for the wellbeing of Aotearoa New Zealand

Circular Infrastructure: the road towards a sustainable future



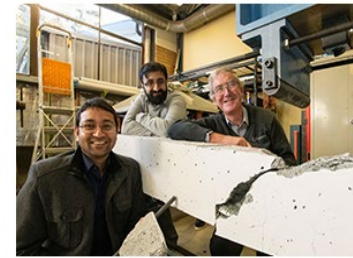
How Asset Management Can Enable the Circular Economy



A century without maintenance – Geelong's everlasting bridge

Posted on December 5, 2019 by Holly Keys

The City of Greater Geelong's 100-year maintenance-free bridge tender process is highlighting the public sector's ability to incentivise commercial scaling through procurement.



While new billion-dollar projects dominate public attention and government budgets, more than \$30 billion is required to renew and replace Australia's existing infrastructure, according to the Australian Local Government Association's 2018 State of the



Wavin, a Dutch maker of plastic pipes, has announced that it will begin production of its modular plastic road technology early next year.

Wavin's PlasticRoad has undergone 18 months of testing, including the construction of two 30m-long bike paths, and is now available to be ordered.



How Asset Management Can Enable the Circular Economy



"The emerging circular economy will call upon the discipline of asset management to design and deploy asset systems that are regenerative by design, innovate to increase asset resilience, reduce reliance on global supply chains, and create the need to grow strategic, local, and regional capabilities, whilst also meeting or exceeding organizational and global sustainability targets."

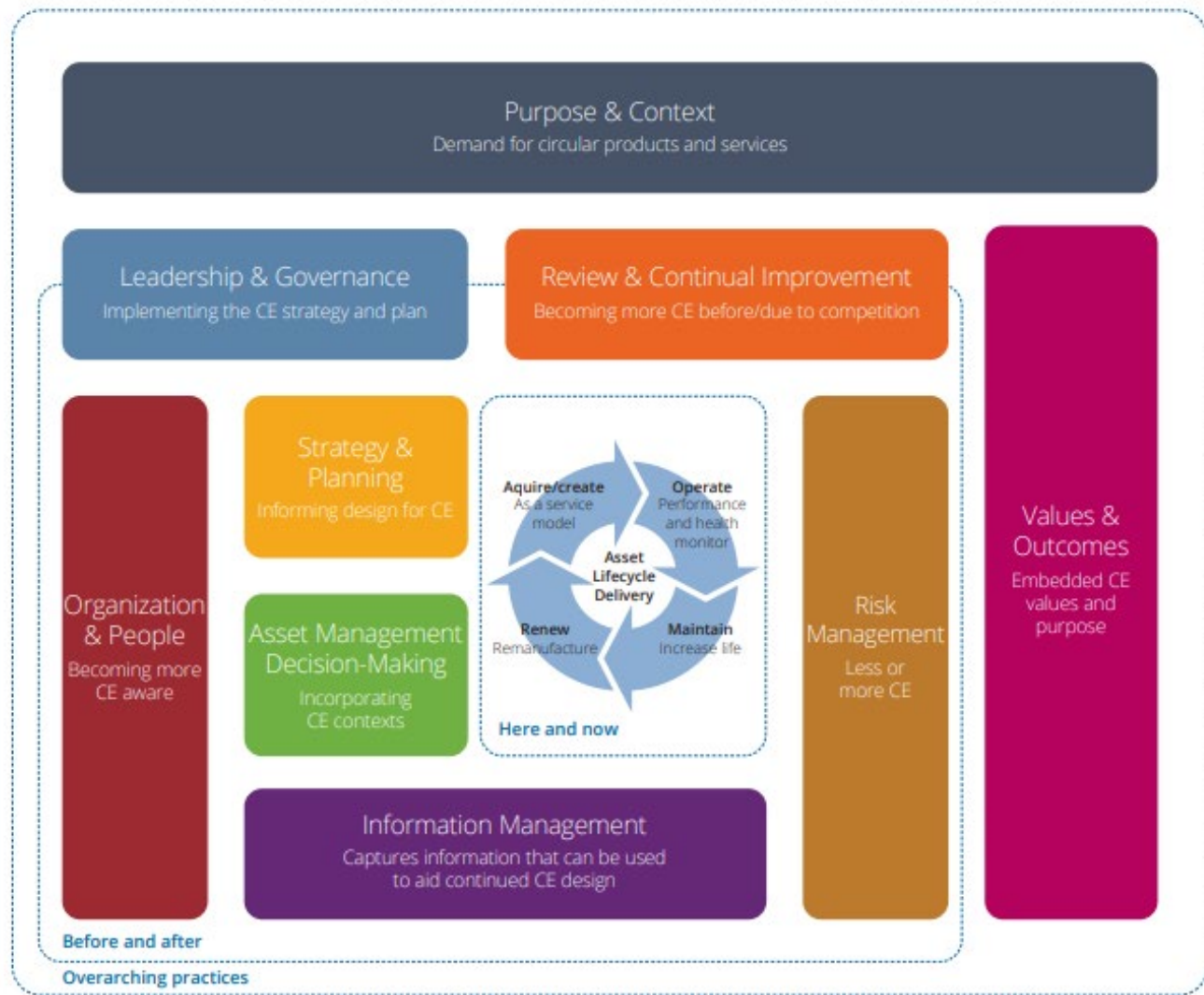


Figure 3-2: Circular Economy Alignment with the IAM's Asset Management concept model (Management, 2022).



HOLLAND CIRCULAR HOTSPOT
sharing innovation

AUSTRALIAN CIRCULAR ECONOMY HUB
PLANET ARK

Holland Circular Hotspot

Australian and New Zealand Tour to the Netherlands

Eijk

WORLD CIRCULAR ECONOMY FORUM 2023

HELSINKI, FINLAND

30 MAY - 2 JUNE



THE EU CIRCULAR ECONOMY ACTION PLAN

- Sustainable product policy framework: *“Changing the way we make and consume products”*
 - designing sustainable products
 - empowering consumers
 - sustainable production processes



- Key product value chains



Electronics and ICT



Batteries and vehicles



Packaging



Plastics



Textiles



Construction and buildings



Food, water and nutrients

- Less waste, more value

- refocusing waste policy, toxic-free environment, waste exports

- Circular economy for people, regions and cities

- Skills and job creation
- Cohesion policy, Just Transition Mechanism & urban initiatives
- Stakeholder engagement



Learn more about Dutch circular construction



Circular Buildings:
constructing a sustainable future



Circular Infrastructure:
the road towards a sustainable future

De circulaire bouweconomie

Home Actueel Topics Sectors Aan de slag Bibliotheek

Circular Construction Economy

The Circular Construction Economy Transition Agenda describes the Netherlands strategy for achieving a circular construction economy by 2050. It builds on the 'A Circular Economy in the Netherlands in 2050' programme (Circular Circular in 2027) and 'The Raw Materials Agreement' (' grondstoffenakkoord'), entered into in January 2027, in which a large number of organisations commit to the goals set in the national CE programme.

Transition team Circular Construction Economy

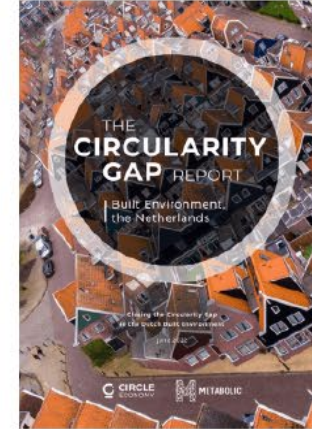
At the end of 2018, a transition team Circular Construction Economy (CC2), which comprises representatives from government (public authorities and the housing and civil engineering sectors), was established. These professionals, in a personal capacity, direct the execution of the implementation programme, supported by a transition bureau. They convene at least five times a year.

Transition Agenda Circular Construction Economy

A Circular Economy in the Netherlands by 2050

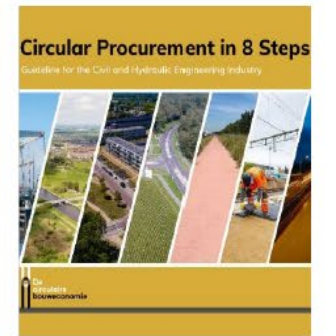
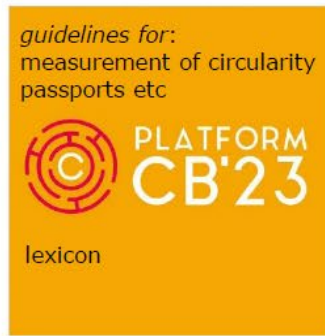
Netherlands Integral Circular Economy Report 2021

Photo: Pieter Baer



Integral Circular Economy Report 2023
Assessment for the Netherlands

18-04-2023 | Rapport
Topic: [Circular Economy](#)



Netherlands National Bridges Bank

- As major clients for infrastructure projects, the cities of Amsterdam and Rotterdam have joined forces with Rijkswaterstaat (Netherlands Directorate-General for Public Works and Water Management) and the Bruggenstichting (Dutch Bridge Foundation) to establish an **independent platform for reusing bridges and bridge components**.
- The objective is to **provide all infrastructure authorities with an accessible means of reusing bridges**. The integral reuse of bridges that are still in good condition is fully compatible with the **Dutch government's ambition to be climate neutral and to establish a circular economy by 2050**.

The screenshot shows the website interface for Nationale Bruggenbank. The header includes the logo and navigation links: BRIDGES CURRENTLY AVAILABLE, ADD A BRIDGE, BRIDGE WANTED?, CONTACT, ABOUT US, and OUR APPROACH. A Dutch flag is in the top right corner.

GIESSENBRUG

Location	Rotterdam
Function of the bridge	road bridge
Material of superstructure	steel
Components	
Year of construction	1970
Length of bridge	-
Length of main span	-
Width of roadway	12.66

GEMEENTE GRONINGEN

Location	Municipality Groningen
Function of the bridge	bicycle bridge
Material of superstructure	steel
Components	complete brug
Year of construction	-
Length of bridge	70 m
Length of main span	54 m

BRUG 2274, DE RUIJTERKADE TE AMSTERDAM

Location	Amsterdam
Function of the bridge	road bridge
Material of superstructure	steel
Components	Complete bovenbouw
Year of construction	2005
Length of bridge	31 m
Length of main span	31 m

A red stamp with the text "HERBESTEMD" is overlaid on the image of Brug 2274.



<https://www.nationalebruggenbank.nl/en/>

Bio-based, moveable bridge

- For the first time in history, a bio-based movable bridge for cyclists was built in the province of Friesland, the Netherlands.
- The bridge, which is 66 metres long and 4 metres wide, has been open since early 2020. It was created to carry primarily cyclists but also the occasional car safely across the Van Harinxma channel. The channel is important for commercial shipping, so the solution called for a swing bridge to let ships with up to 17m width pass.



- The bridge is made out of flax and resins derived from plants and it's the first time this bio composite material is used on this scale. Compared to the old concrete bridge of 400 tonnes, this bio-composite bridge is only 30 tonnes.



<https://online-learning.tudelft.nl/articles/bio-based-bridge/>

KEY TAKEAWAYS FROM EUROPE

- The CE transition is underway
- Momentum is only going to get stronger
- EU is shaping future markets thru CE principles

“The future will be circular, the future will be green or there will be no future” Janez Potocnik, former EU Commissioner

“We can’t recycle our way out of a linear economy” Valerie Hickey, World Bank

“49% of emissions will come from the built environment” Vivianne Heijnen, MoE Netherlands

“EU will make circular projects the norm” Astrid Schomaker, EU Commission

“data will become increasingly important to counteract green-washing” Carmen Ene, CEO 3 Step IT

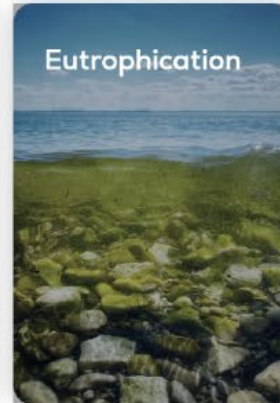
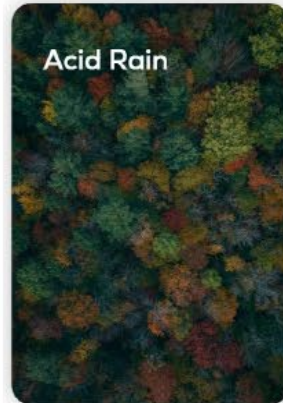
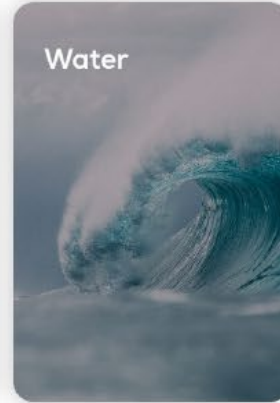
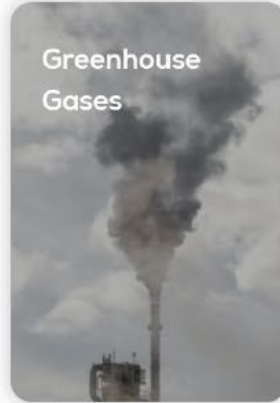
“Biodiversity will be centre stage within 5 years the way climate change is now” Jyrki Katainen, President, Sitra

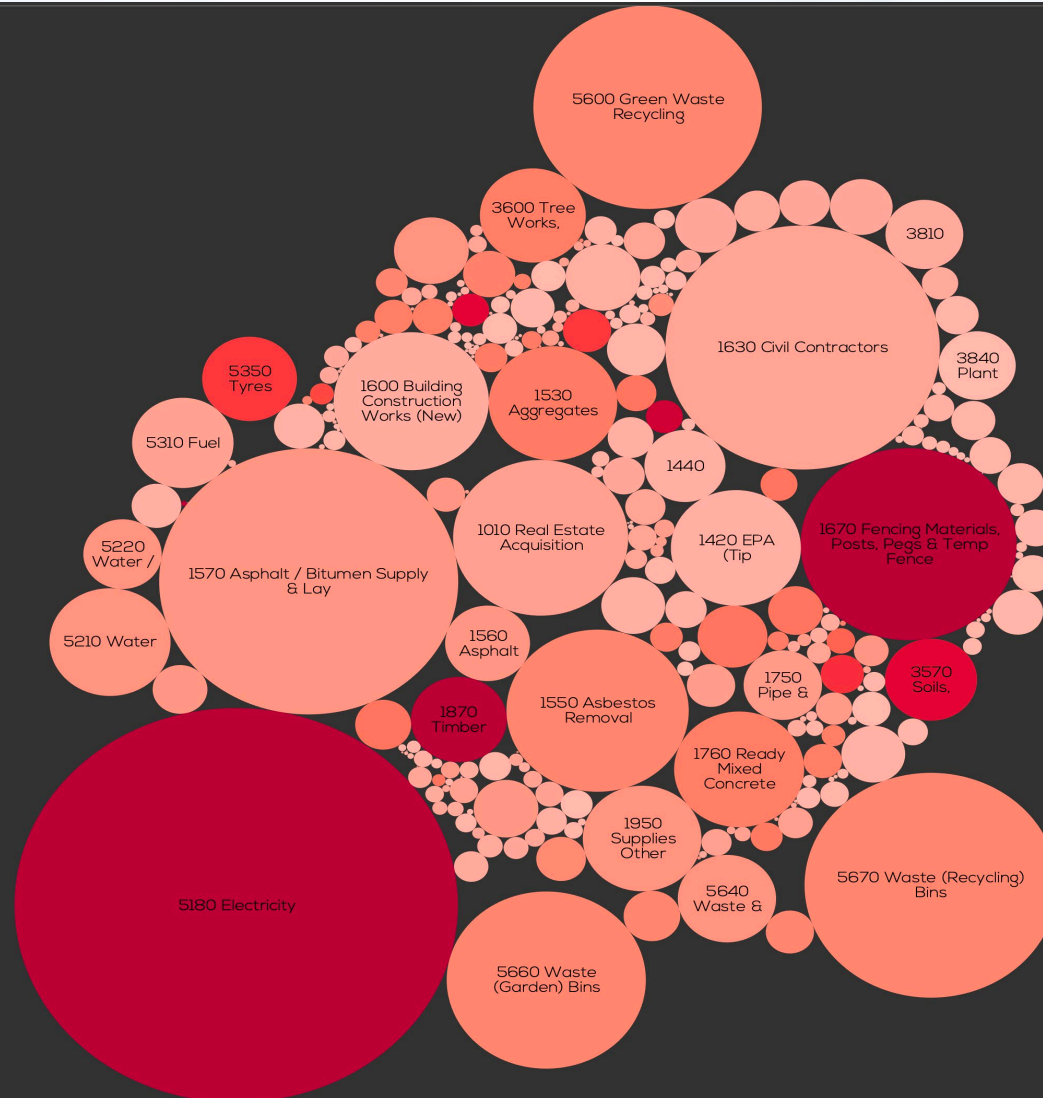
CO₂ and Beyond

Multiple Planetary Boundaries



Measure GHG emissions and many other critical planetary boundaries





Green road analysis project

Case study

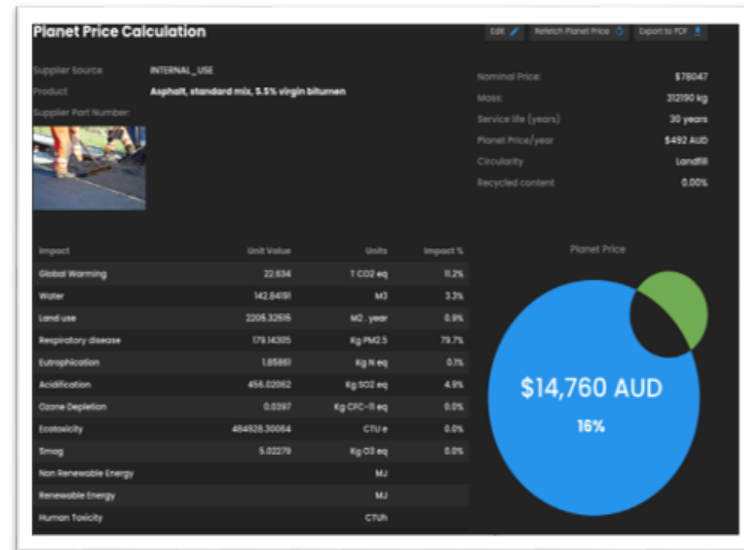
6 local councils in Australia

Beta-testing Planet Price

Identified road base as key "material recipe"

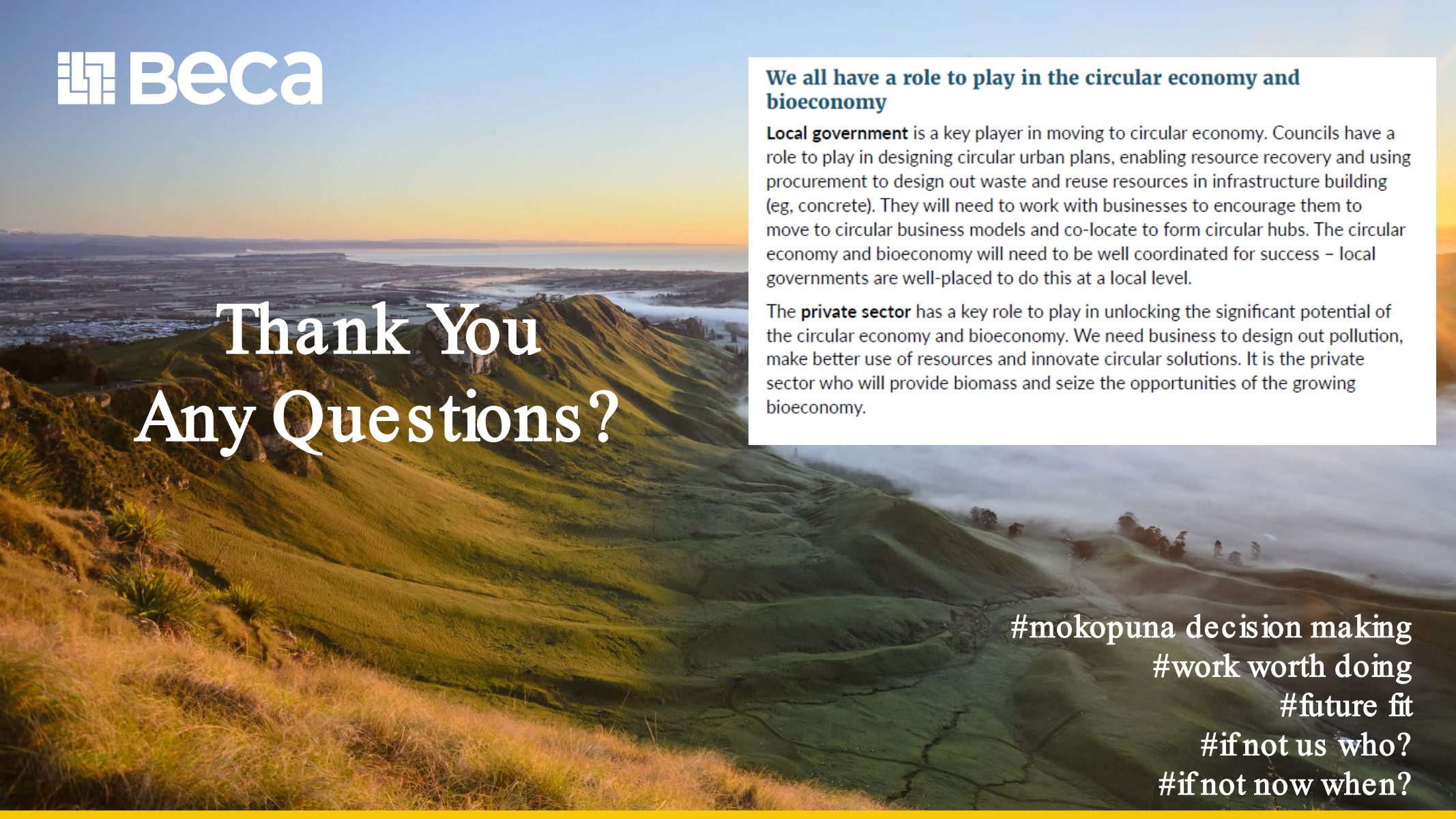
Modelled Planet Price for various asphalt products

Analysed impact of using recycled materials
(glass, rubber, plastic) on cost and Planet Price



Product List

Product ID	Product Name	Supplier	Type	Nominal Price	Planet Price \$	Planet Price %	Mass	Recycled Content	Changed On
4452	Asphalt		Product	\$35	\$35	29%	0000	0%	2022-03-16
4452	Asphalt 5.5% virgin bitumen		Product	\$35	\$35	29%	0000	0%	2022-03-16
4452	Asphalt 5.5% recycled		Product	\$35	\$35	29%	0000	0%	2022-03-16
4452	Asphalt		Product	\$35	\$35	29%	0000	0%	2022-03-16
4452	Asphalt (with 5.5% recycled content)		Product	\$35,000	\$35,079	29%	0000	0%	2022-03-16
4452	Asphalt		Product	\$35	\$37	29%	0000	0%	2022-03-16
4452	Asphalt		Product	\$35	\$36	29%	0000	0%	2022-03-16
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The background of the slide is a scenic landscape featuring rolling green hills in the foreground, a valley with a winding road, and a coastal area with a bay and mountains in the distance under a clear sky.

Thank You
Any Questions?

We all have a role to play in the circular economy and bioeconomy

Local government is a key player in moving to circular economy. Councils have a role to play in designing circular urban plans, enabling resource recovery and using procurement to design out waste and reuse resources in infrastructure building (eg, concrete). They will need to work with businesses to encourage them to move to circular business models and co-locate to form circular hubs. The circular economy and bioeconomy will need to be well coordinated for success – local governments are well-placed to do this at a local level.

The **private sector** has a key role to play in unlocking the significant potential of the circular economy and bioeconomy. We need business to design out pollution, make better use of resources and innovate circular solutions. It is the private sector who will provide biomass and seize the opportunities of the growing bioeconomy.

#mokopuna decision making
#work worth doing
#future fit
#if not us who?
#if not now when?