



Leading the power play with clean energy and the circular economy



Acknowledgment of Country

We acknowledge the first and continuing custodians of this country, Tasmania, the ground upon which we collectively work, create, adventure, live and dream.

We recognise the continuing connection to lands, waters and communities. We pay respect to Aboriginal and Torres Strait Islander cultures; and to Elders past, present and future.

It's clear that the essence of the circular economy - understanding the interconnectedness of everything, and building cycles of continual regeneration - has long been found in Indigenous cultures.

There is much western organisations can learn from Indigenous businesses and communities, such as how to support relationships with living systems, transmit knowledge through generations, and think in systems for the long-term.



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Leading the power play with clean energy and the circular economy

Hydro Tasmania is leading the country when it comes to the clean energy business. Our partnership with Coreo demonstrates our appetite to experiment with circular economy design, using Coreo's proven ability to make a 'Circular Experiment' count.

Please enjoy this case study exploring the intersection between powering the people and empowering a regenerative economy.



HYDRO TASMANIA

Hydro Tasmania is Australia's leading clean energy business and largest generator of renewable energy. They employ over 1,200 people, operate 54 major dams, 30 hydropower stations, co-own three wind farms and power the Bass Strait Islands with two hybrid energy hubs.

Every year, Hydro Tasmania produces around 9000 gigawatt hours of clean electricity from hydropower – enough to power more than 900,000 Australian homes and small businesses.

The small town of Gowrie Park is one of the main hubs for their operations, located within the Mersey Forth region in North West Tasmania. The Gowrie Park hub services seven power stations within the area.

The hub comprises a receiving store (that stores orders for nearby power stations) and an administration building (approximately 20 staff members).



COREO

Coreo is a boutique circular economy consultancy. As a team, they are strategic advisors, project partners, and all-round doers who take the circular economy out of theory and put it into practice.

The circular economy is systemic and as such Coreo works at all key junctures of the global economy, creating circular economy outcomes for organisations right across the value chain, from BHP to L'Oréal, City of Sydney to Lendlease.

Coreo designs strategies for companies that are regenerative, efficient, effective and sustainable.

Their motto: transformation over transaction and collaboration over competition.

Where did it all begin?

GOWRIE PARK

Inspired by Coreo's Circular Experiment, the team at Hydro Tasmania approached Coreo to design and deliver a circular experiment for their operations at Gowrie Park.

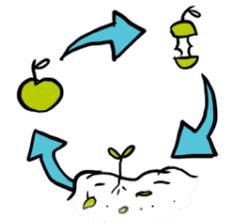
The objective was threefold and in line with the principles of the circular economy:



Identify opportunities to design out waste and pollution



Uncover how materials could be kept at their highest value for longer



Regenerate natural systems



THE CIRCULAR EXPERIMENT

Coreo's Circular Experiment gained attention and acclaim as Australia's first systems-based circular economy pilot project. Undertaken by Ashleigh and Jaine Morris, The Circular Experiment became a mission to catalyse the global transition to a circular economy. For six months, the team rolled up their sleeves and worked with 45 businesses on one city street in Maroochydore, Queensland, shifting old practices and designing out waste and pollution. From reverse logistics through to asset sharing, the team implemented six circular economy concepts dedicated to maximising the existing resources.

Among the 22 projects delivered, one was to find a pathway for coffee grounds, one of the heaviest materials entering waste streams. Coffee waste from nine cafes were collected for its rich nitrogen benefits to composting. A local farmer then sold pesticide-free micro herbs back to the cafes, closing the loop on coffee grounds.

Fundamentally, The Circular Experiment was a roaring success and gave rise to Coreo.



Before we dig deeper do you know much about the economy?

To understand the circular economy, it's essential to understand the economy we currently live in.

LINEAR ECONOMY

The current economic system is linear - take, make, waste. Resources are extracted, transformed into products via the use of labour, energy and capital, and soon after their use these products are thrown away. Every time a product ends up in landfill, its physical resources are lost, along with the time and energy that went into its creation and any value these could have had thereafter.

In the linear economic model, communities are divided up and all elements separated out, so as to focus on specific activities and achieve economies of scale. All housing is in the residential area, factories in the industrial zone, food production in farms and so on.

This disconnects the system and increases negative externalities such as increased costs and carbon emissions from lengthy logistics networks.

CIRCULAR ECONOMY

In contrast, the circular economy is about integration, so as to enable feedback loops and synergies. It is an economic model that is designed to be restorative and regenerative. This model recognises the importance of the economy needing to work effectively at all scales - for large and small businesses, for organisations and individuals, globally and locally.

The circular economy is a bigger concept than simply switching one material for another or increasing recycling. It's about creating systemic solutions to meet interconnected challenges such as climate change, biodiversity loss, waste and pollution. A circular approach to economic activity promotes a deliberate transformation in how companies source, provide, manage and use materials and products by gradually decoupling economic activity from the consumption of finite resources.

Instead of depleting environmental capital, a circular economy gives back to the environment, eliminating pollution, leveraging materials already in play and transitioning our energy to renewable sources.

Simply put, the circular economy is a new way of looking at the relationships between markets, customers and natural resources.

The circular economy distinguishes between technical and biological materials. Biological materials such as cotton, food and wood are treated as nutrients in a circular economy. These materials should be returned to regenerate our natural systems, such as our soils, to provide renewable resources for the economy.

On the other hand, technical materials, such as steel and oil-based plastics, are treated as hard durables that need to be recovered and

restored through strategies like reuse, repair, remanufacture or as a last resort, recycling.

The tighter the loop, the less value is slipping through the system.

The circular economy has three guiding principles and five supporting business models which provide a tangible and practical tool kit to achieve an impact across society, the economy and the environment. These are shown overleaf.

Simply put, the circular economy is a new way of looking at the relationships between markets, customers and natural resources.

“The circular economy isn't about one manufacturer changing one product, it is about all of the interconnected companies and governments that form our infrastructure and economy coming together... it's about rethinking the operating system itself”



Dame Ellen MacArthur
Ellen MacArthur Foundation



LINEAR MODEL



RECYCLING



CIRCULAR ECONOMY

THREE CIRCULAR ECONOMY PRINCIPLES



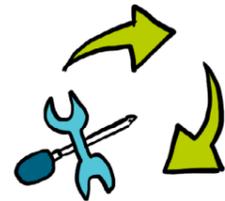
Design out waste & pollution



Keeping products & materials at their highest value for as long as possible



Regenerating natural & social systems



RESOURCE RECOVERY

Leverage technology to recover and reuse resource outputs. Aim to eliminate material leakage and maximise economic value.



CIRCULAR SUPPLIES

Replace traditional material inputs with bio-based, renewable, or recovered materials. Reduce demand for virgin resource extraction in the long run.



SHARING PLATFORMS

Sharing of under-utilised products can reduce the demand for new products and their embedded raw materials.



FIVE CIRCULAR ECONOMY BUSINESS MODELS



PRODUCT LIFE EXTENSION

Extend the life cycle of products and assets to ensure they remain economically useful.



PRODUCT AS A SERVICE

Customers use products through a lease or pay-for-use arrangement versus the conventional approach to ownership.

Exploring Circular Opportunities at Hydro Tasmania

TO UNDERSTAND THE VALUE A CIRCULAR ECONOMY COULD PROVIDE GOWRIE PARK AND ITS STAKEHOLDERS, COREO APPLIED ITS PROVEN AND ROBUST METHODOLOGY CONSISTING OF THREE PHASES OF WORK



PHASE 1

Understanding



Materiality assessment of Gowrie Park's key documents

Internal & external stakeholder engagement

GOAL

Understand enablers, barriers, opportunities and motivators that could either accelerate or impede Gowrie Park's transition towards a circular economy.

RESEARCH



PHASE 2

Exploring & Sharing

Visit Gowrie Park & its surroundings

Circular economy workshop & engagement with the team

GOAL

Identify opportunities, better understand Gowrie Park's unique context and deliver a circular economy workshop to the team.

CE WORKSHOP



PHASE 3

Refining & Implementing

GOAL

Establish a set of circular economy initiatives based on the previous phases.



RESULTS



Circular Economy Initiatives



PARTICIPATION IN THE PAINTBACK PRODUCT STEWARDSHIP SCHEME



PROCURING BETTER PRODUCTS FROM PURPOSE-LED BUSINESSES



REDUCTION OF CARDBOARD AND SOFT PLASTICS



REUSE & REPURPOSING OF PALLETS



REUSE & REPURPOSING OF PALLETS

CONTEXT

Deliveries happen twice a week at Gowrie Park resulting in an accumulation of wooden pallets. The team uses them internally but once their condition deteriorates, there is no defined end-of-life pathway.

HIDDEN VALUE

A lot of resources go into manufacturing a pallet: from labour to the material used. When pallets reach their end-of-life, their material (timber) is still valuable and can be used for many purposes.

OPPORTUNITY

Harnessing the second principle of a circular economy, there is an opportunity to redesign the excess material flows to add value by keeping the pallets and timber at their highest value for longer.

IN PRACTICE

REUSE AND REPURPOSE

Pallets at Gowrie Park are no longer wasted at their end-of-life. They are now provided for free to the Kentish Community Men's Shed for reuse or repurpose, which not only benefits the community but also provides better value for the timber.

Visiting the local community turned out to be a great driver for identifying opportunities for unwanted pallets. Several potential partners were identified including the Kentish Men's Shed, the Working Arts Centre and Sheffield State School. Of the three, the Kentish Men's Shed seemed to have the greatest need.



REDUCTION OF CARDBOARD AND SOFT PLASTICS

CONTEXT

Between July 2020 and March 2021, Gowrie Park procured over 47,700 products from its two main suppliers. That is an average of 9,975 products ordered each month and packed into either plastic and / or cardboard. With that in mind, it's no surprise that cardboard and soft plastics are the primary waste stream identified at Gowrie Park. Both streams are separated and collected by a waste contractor, then processed at a local materials processing facility, before being sent to the mainland (over 480 km away) to be recycled or offshored for recycling.

HIDDEN VALUE

Cardboard and plastics are resource intensive and often single use. Yet packaging is required to transport goods. Using stronger and reusable materials is one way to overcome this challenge.

OPPORTUNITY

Harnessing the first principle of a circular economy, the focus is on designing out cardboard and soft plastics by implementing reusable crates.

IN PRACTICE

COLLABORATION AND SYSTEMS CHANGE

At Gowrie Park, reusable crates made of recycled plastic are now used for orders with key suppliers, eliminating a considerable amount of cardboard and plastic wrap.

For remaining unbranded cardboard (e.g. small boxes), it is sent back to one supplier for reuse in a closed loop model.



PROCURING BETTER PRODUCTS FROM PURPOSE-LED BUSINESSES

CONTEXT

Toilet paper is a recurring purchase for any given organisation including Hydro Tasmania. At Gowrie Park, it was purchased as part of broader orders from one of their key suppliers.

HIDDEN VALUE

Traditional toilet paper companies use virgin trees, consume high energy and water, and rely on plastics in packaging. Emerging companies are finding new ways to produce this product using circular alternatives and contributing to the community.

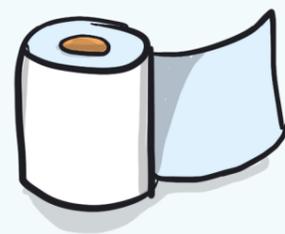
OPPORTUNITY

Harnessing the third principle of a circular economy, an opportunity was seen to use this recurrent expense to regenerate both natural and social systems by switching suppliers to [Who Gives a Crap](#) toilet paper.

IN PRACTICE

CHANGE OF SUPPLIER

Today, Hydro Tasmania as a whole has switched to Who Gives a Crap for their toilet paper and has opted for their auto-subscription model which removes the need for orders across the company, saving their teams both time and money.



PARTICIPATION IN THE PAINTBACK PRODUCT STEWARDSHIP SCHEME

CONTEXT

At Gowrie Park, empty paint tins on-site are currently sent to landfill.

HIDDEN VALUE

Paint tins are made up of different materials including a container and its content, generally pigments, binders and solvents. Containers are often recyclable and the paint itself can either be used to produce energy or in industrial applications.

OPPORTUNITY

While paint tins cannot be designed out, they can be recycled. This reduces waste going to landfill as well as the risk of harmful substances entering the environment, and provides a responsible way to manage leftover paints or old paint containers.

IN PRACTICE

RECYCLING

There is now a dedicated space at Gowrie Park for workers to deposit their empty paint tins which are then collected and dropped off at the Sheffield [Paintback](#) location significantly reducing landfill pollution.



The Path Forward

The Circular Experiment at Gowrie Park has planted the seed for systemic changes at Hydro Tasmania which is now eager to explore other circular opportunities for different sites throughout the state.

As of January 2022, eight more circular economy projects will be undertaken with the goal to further embed circular principles into Hydro Tasmania operations.



2022

Eight more circular economy projects



From little things... big things grow.