

A person wearing a cap and dark clothing stands in a rural landscape at sunrise. Two dogs are present: one is lying down on the left, and another is standing on the right, looking towards the person. The background features rolling hills, a misty valley, and a wooden structure with hay bales on the right. The sun is low on the horizon, creating a warm, golden glow.

Together for a  
*Stronger Bega Valley*

A community's vision for circularity in the Bega Valley  
The 'Bega Circular Valley 2030 Program': Together for a stronger Bega

## Imagine if you will...

The pristine Bega Valley is now home to a regionally based economy. It is an innovation hub with diversified industry activities, a mixed farming program that supports biodiversity and is dealing with climate change through carbon neutrality and zero waste to landfill, and is admired by residents and visitors.

A place that attracts tourists, students, entrepreneurs and investors to experience and participate in this uniquely circular valley.

A place where the community through a cooperative vehicle owns core infrastructure and high value add industry assets that support transition to circularity.



*“Our goal is to create a legacy for the future generations of the Bega Valley, and be an example for other regions to follow as the most circular valley in Australia.”*

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**Barry Irvin AM**

Bega Cheese Executive Chairman

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# A circular economy in the Bega Valley

- The way of the past is linear economies, the way of the future is circular economies
- Circular economies represent a system change that minimize the impact on all natural resources
- This is a vision not only for the Bega Valley but for regions throughout Australia
- A ten-year project bringing together federal, state and local governments, large and small businesses, universities, international expertise, community organisations – all with a common purpose of creating a circular economy
- The Bega Valley is an ideal pilot for a circularity project. Its contained location facilitates measurement of the impact on all natural and man-made resources
- The project is a jointly funded \$100m initiative between private enterprise, community and government with many initiatives already activated and falling within current government programmes and policies
- We request \$7.5m of government funding to launch the programme and support key priority enabling projects, including:
  1. Establishment of Bega Valley circular co-operative
  2. Bega biodiversity and carbon trading desk
  3. On farm smart water storage network
  4. Bega smart food and logistics programme
  5. Regional circularity baseline assessment of material flows
- Additional flagship and supporting projects will seek to access existing government funding programs, alongside industry co-contributions.
- The Bega Circular Valley project is investment ready today and seeking funding for commencement of the 2022 financial year.



# Strong, Stronger, *Strongest*



Honouring the past and embracing the future for a stronger Bega Valley

The people of Bega Valley Shire imagine a future where the region is famous for more than its pristine forests, waterways and beaches. Where the Shire is not economically dependent on a few major sectors but supports a diversified and innovative mix of sustainable enterprises. The people of this region are prepared to do all they can to honour their past and celebrate a brighter future.

## **Together for a stronger Bega: the time is now.**

Bega Valley is a special corner of Australia. This is a community that has burnt together, has stood shoulder to shoulder against some of the most intense and devastating bushfires (nearly two thirds of the region was burnt in the 2019-2020 Black Summer fires), has suffered significant economic loss through the impact of the COVID-19 pandemic restrictions on local tourism and travel into the region, and is facing into the challenges that climate change and climate variability present to agriculture, aquaculture, tourism and the environment.

The region has responded to the Black Summer Bushfires by significantly increasing their focus on climate resilience. COVID-19 is giving us the opportunity to work remotely potentially attracting talent back into the region. A perceptible sustainability conscience is also gaining momentum and spreading throughout the community.

The confluence of these shifts requires to re-think how recovery can be accelerated, resilience in rural areas developed and a smarter region built back smarter. It requires us to bring together the various existing initiatives driven by communities in the Shire, by large, and small to medium enterprises, and by local, state and federal government into a cohesive multi-year regional development program with the single purpose of creating a more liveable Bega Valley Shire and setting a benchmark on which other agricultural communities can aspire to. Our vision is to establish Bega Valley Shire (BVS) as the most circular regional economy by 2030 that will inspire other regions to follow through a proposed program that will support vibrant regional industries and communities through collaborative and engaging initiatives.

## **The Circular Economy: a latent opportunity in the Bega Valley**

Currently the world is only 9% circular in its use of resources. This means 91% of the resources are being used for a single purpose or are being wastefully consumed. Left unabated, this linear resource use mindset is resulting in economic and environmental losses and creating social tensions. Communities like Bega are impacted by the take-make-dispose linear use of resources that pressures jobs, environments and communities. Solutions are already in place (e.g. sustainable oyster farms teaming up with kelp farmers to breed complementary algae and composting oyster shells).

The Bega Circular Valley group imagines a future where Bega is a lighthouse model for regional Australia, a model for how economic, environmental and social resilience can thrive.

We imagine a pristine valley is now home to a regionally based economy. It is an innovation hub with diversified industry activities, a mixed farming program that supports biodiversity and is dealing with climate change through carbon neutrality and zero waste to landfill, and is admired by residents and visitors. A place that attracts tourists, students, entrepreneurs and investors to experience and participate in this uniquely circular valley.

As has been proven in Scandinavia and the Netherlands, this is an attainable vision if adequate support through a structured circular economy program is provided.

# What is circularity?

## What does it mean for the region?

A circular economy is one in which a corporate, city or region keeps resources in use for as long as possible, extracting the maximum value from them whilst in use, then recover and regenerate products and materials at the end of their life. All materials are kept in a 'close loop' right along the value chain all the way to consumption.

It is a more efficient and environmentally sound alternative to the traditional short-sighted linear economic model in which we make, use and dispose of resources. Circularity works at every level of the economy – micro, meso and macro.

### How it would be applied in the Australian context

In 2014 the World Economic Forum (WEF) estimated that the global material cost savings of adopting a more restorative circular economy could be over US\$1 trillion per year by 2025.

In a report commissioned by the CSIRO, KPMG estimates that the transition to a circular economy across food and agriculture, transport and the built environment could give Australia a \$23 billion GDP boost by 2025.

KPMG estimates that the benefits of a circular economy across these three sectors will likely rise to a present value of \$210 billion in GDP with the potential to create an additional 17,000 full-time jobs by 2047-48.

In addition, the transition to a circular economy provides the opportunity to:

- generate a new and sustainable competitor advantage at both country/regional level
- stimulates innovation in production processes
- facilitate increased digitisation
- fosters supply chain collaboration, and
- spawn new circular revenue models.

### What does it mean for the region?

Initially, the region will focus on supporting circular initiatives based on regenerative resource management. This is because of the region's strength and dependence on agriculture and aquaculture activities.

Consequently, a focus of the 'Circular Bega Valley 2030' program and measure of the short, medium and longer term success will be the number of small, medium to large companies engaging with the material resources marketplace within the BVS.

Assisting companies develop innovative solutions is a focus of the 'Circular Bega Valley 2030' program.

In a world of interconnected economies, a systems-led approach applied via circularity will help Bega achieve:

- Value preservation: designing out waste/pollution
- Resource optimisation
- System effectiveness – regeneration of Gross Regional Product (GRP) as well as natural (environment) systems
- Strengthen social fabric and sense of community across the region
- Collaboration across different sectors in the region, aligning multiple initiatives

### A multi-stakeholder regionally networked platform with the technology and methodology to accelerate circularity

To bring circularity alive, Bega requires a regional, community anchored Circularity Hub, spearheaded by systems entrepreneurs, which can combine their experience, skills and contacts to connect the stakeholders collaboratively scaling impact, gather dynamic data and resource matchmaking and enabling local value creation and jobs.

- Providing access to tools, workshops, and educational resources to better understand and implement circular solutions,
- Supporting a holistic view of the Circular Economy with additional focus on the smallest loops: Reduce and Reuse supporting Value Retention Processes
- Implementing the technology for increased impact by enabling networked regional cross-sector secondary-material and product-as-a-service marketplaces
- Providing added value by fostering a multi-stakeholder network
- Aggregating data in an open searchable dynamic database enabling businesses to identify relevant circularity opportunities and partners for innovation, reduce costs, accelerate time to market, increase differentiation in the market, as well as support alternative revenue streams and reduced expenditures via new value chains

## A circular economy is about more than just recycling

- 1 Using resources more efficiently by changing the way we think about products and production processes. Is the product the best way to meet the demand? Could we use fewer or different resources in its production?
- 2 Design differently; for example, by considering reuse, repair and recycling options in advance of production
- 3 Product reuse for same purpose
- 4 Product repair, maintenance and revision
- 5 Processing and reuse of materials
- 6 Recover energy from materials
- 7 Lastly, waste disposal and incineration without energy recovery is avoided where possible

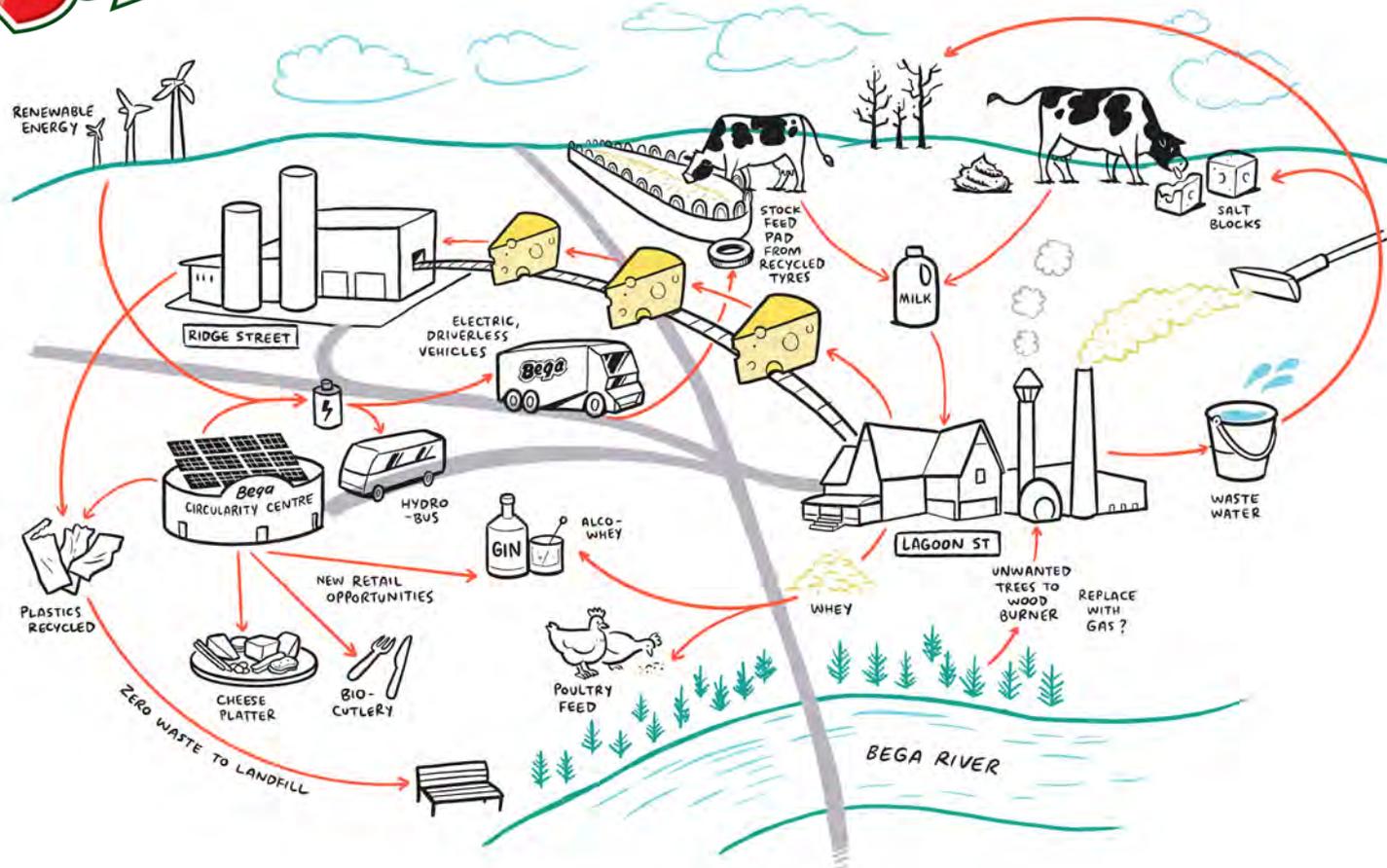
Diagram adapted from PBL Netherlands Environmental Assessment Agency, Refer: <https://themasites.pbl.nl/o/circular-economy/>



*Local Aboriginal Land Councils (Bega, Eden and Merrimans), Black Duck Foods (and Indigenous enterprise) and Aboriginal Elders have had preliminary engagement on the CE project. All showed significant enthusiasm for being involved and exploring further opportunities for Aboriginal communities.*



# Bega Cheese is moving towards becoming a more circular business



Prepared by KPMG Circular Economy team for Bega Cheese

40+

Ideas from the Circular Economy workshops

21

Circular Economy projects pitched

6

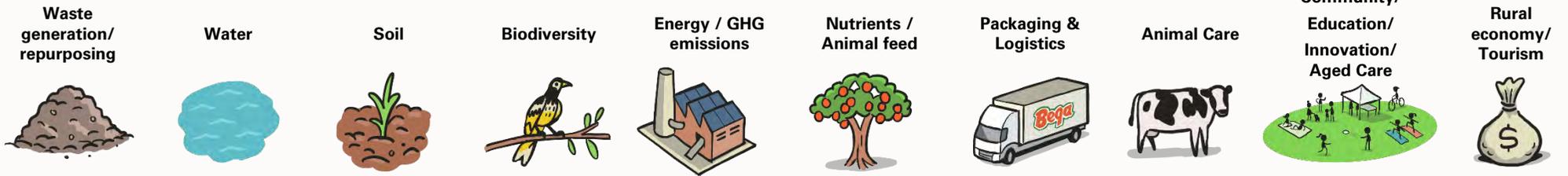
## Selected Circular Economy projects

1. Repurposing cardboard boxes and wooden pallets into seedlings nursery containers for flora revegetation
2. Solar energy as a substitute to butane gas
3. Ultrasonic sealing as a substitute to cheese plastic wraps
4. Membrane technology for chemical recovery in wastewater and environmental impact reduction
5. Waste heat recovery for reuse in the cheese factory
6. Ethanol from whey

# What would success look like?

Exploring the business case for Australia's first circular net-zero footprint region

## HORIZON 1 1 - 2 Years



## HORIZON 2 3 - 5 Years

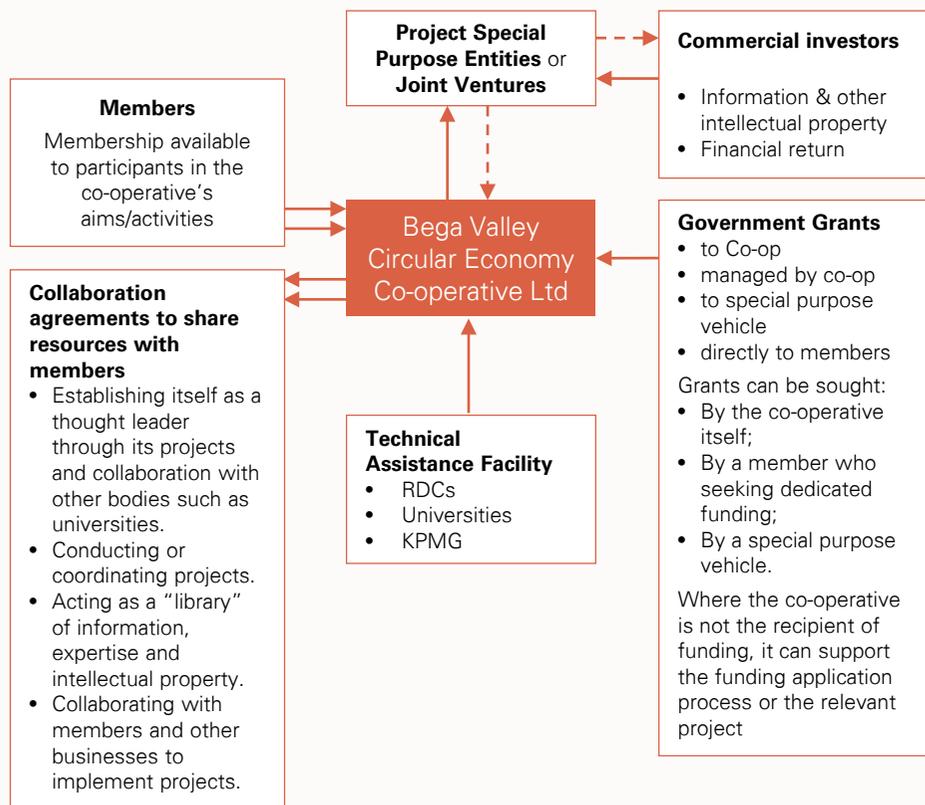
<p>Tonnes of waste to landfill</p> <p>Tonnes of waste diverted from landfill</p> <p>Recycling rate by waste stream</p> <p>Circular inflows and outflows</p>	<p>kL water used</p> <p>% water recovery, treatment and re-use (water circularity)</p> <p>Water quality (e.g. eutrophication)</p>	<p>Soil acidification</p> <p>Land productivity</p> <p>Rejuvenated soil</p> <p>No. farms with regenerative practices</p>	<p>Land productivity and efficiency</p> <p>Land use per industry/nature</p> <p>Local biodiversity</p> <p>Threatened species</p>	<p>% renewables</p> <p>GHG from landfill reduced</p> <p>Biofuel/gas captured</p> <p>Carbon offset</p>	<p>Soil fertility</p> <p>Land productivity and efficiency</p> <p>External nutrient input phase out</p>	<p>Scope 3 (Value chain) emissions decrease</p> <p>Single use packaging phase out</p> <p>% transport fleet using electric vehicles or biofuels</p>	<p>Reducing animal emissions</p> <p>Reduced animal waste</p> <p>Hormone-free/organic fed</p>	<p>Population growth</p> <p>\$ community funding</p> <p>Poverty rate</p> <p>Homelessness rate</p> <p>Local stakeholders engaged, circularity participation %</p> <p>Domestic Violence rates</p>	<p>\$ Invested into economy from solution</p> <p>No. jobs created</p> <p>Unemployment rate</p> <p>No./\$ training programs</p> <p>Skills improvement</p> <p>No. new businesses and industries</p> <p>Private investment</p> <p>Regional growth</p>
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## HORIZON 3 5-10 Years

<p><b>Closed loop</b></p> <p>Close to zero waste to landfill</p> <p>\$ Re-manufactured goods sold</p> <p>\$ trade in recycled/reused materials</p> <p>% Waste-to-Hydrogen energy</p>	<p><b>Water recovery and reuse</b></p> <p>% of water is recovered or reused (Waste-to-Hydrogen)</p> <p>Recovered waterways</p> <p>Water quality</p>	<p><b>Soil and land preservation</b></p> <p>Re-forestation</p> <p>Re-wilded regions</p> <p>Closed soil nutrient cycle</p> <p>Land productivity</p> <p># farms with regenerative practices</p>	<p><b>Biodiversity in business model</b></p> <p>Re-forestation</p> <p>Re-wilded regions</p> <p>Local biodiversity</p> <p>Threatened species</p>	<p><b>100% renewable electricity by 2030</b></p> <p>% Renewable energy</p> <p>Biofuels captured</p> <p>Carbon sequestered</p>	<p><b>Closed soil nutrient cycles</b></p> <p>Limited input of external nutrients</p> <p>Nutrient recycling</p>	<p><b>Circular logistics</b></p> <p>Scope 3 emissions minimised</p> <p>% of transport fleet using electric vehicles or biofuels</p> <p>No. companies with a circular business model</p>	<p><b>Holistic animal care</b></p> <p>No. credentials issued</p> <p>No. patents for animal care initiatives</p>	<p><b>Rural (mental) health Barometer</b></p> <p>Population growth</p> <p>\$ community funding</p> <p>Poverty rate</p> <p>Local stakeholders engaged circularity participation %</p> <p>Mental and general healthcare costs</p>	<p><b>No. 1 Food &amp; Agri Innovation Hub in Australia</b></p> <p>No. jobs created</p> <p>Unemployment rate</p> <p>Training programs</p> <p>Business innovation (start ups and social enterprises)</p> <p>Private investment in regional growth 10</p> <p>% circular revenue/growth</p>
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# Implementing Vehicle: The Bega Valley Co-operative

## Proposed Structure Diagram



## Co-operative Snapshot

Name	Legal Structure	Type	Membership	Subscriptions
Bega Valley Circular Economy Co-operative Limited	Non-Distributive Cooperative	Public Benefit	Targeting 1,000+ across all parts of the community	Annual
<b>Investment Strategy</b>	BVCE Co-op will establish and administer a fund that aims to provide financial and technical assistance to Eligible Beneficiaries that deliver regional circularity outcomes			
<b>End-Beneficiaries</b>	The ultimate beneficiaries, or target group, of all co-investments will be local <b>enterprises and farmers across small, medium and large enterprises which are committed to delivering circular economy projects aligned to the purpose of Bega Valley Circular Economy Co-operative.</b>			
<b>Size</b>	\$100m – with desired government seed grant funding of \$7.5m for the enabling projects			
<b>Geographic Focus</b>	BVSC LGA			
<b>Sectors</b>	The BVCE Co-op Fund aims to undertake transactions to enhance the circularity in three core sectors: <ul style="list-style-type: none"> <li>Agriculture, Forestry, Environmental Services and Food Manufacturing</li> <li>Tourism</li> <li>Health &amp; Wellbeing</li> </ul>			
<b>Goal</b>	As the Fund Manager, Bega Valley Circular Economy Co-operative Ltd would lead and enable projects			
<b>Objectives</b>	Technical Assistance Facility – Established to accelerate the development of investable opportunities and maximise the circular solutions, as well as de-risk the investments made by the Fund. The TA Facility is set up as a separate facility. The TA Facility will accompany the Fund in the following areas: <ul style="list-style-type: none"> <li><b>Pre-investment support:</b> circularity design support, to support projects to become investment ready for the Fund, resulting in a strong and balanced pipeline of investable projects. The intention is that TA provided should lead to a potential investment for the Fund within 12 month's time.</li> <li><b>Post-investment support:</b> To projects in the implementation phase, so that project developers have greater capacity to implement projects, resulting in reduced risk to the Fund and/or increased positive environmental, social and cultural outcomes.</li> <li><b>Enhanced impact monitoring:</b> supporting projects and the Fund Manager in monitoring progress towards targeted impact for circularity and reporting on the Fund's impact KPIs.</li> <li><b>Learning and knowledge sharing:</b> Taking insights from circularity transactions and publishing them in a variety of formats including workshops, publications and tools.</li> </ul>			

*“Within the Bega Valley there is the creativity, know-how and natural advantage to create a sustainable way of life. By taking a circular approach, we can add value to our local economy, keep more people in local jobs, capitalise on our natural assets, optimise resource use, and reduce the amount of waste we generate. The Bega Circular Valley 2030 program, led by Bega Cheese, has the potential to accelerate that transition.”*

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**Alice Howe PhD**

Director Community, Environment & Planning



## A region at a crossroad:

The Bega community is likely going to face future shocks and recognises the importance of building adaptive capabilities.

### Scenario 1 Do nothing

As rainfall, wind speed, temperature and sea level increase, climate variability is set to exacerbate and affect vital industries in Bega Valley.

- The economy will be unsustainably dependent on a handful of industries. Each industry faces specific challenges and vulnerabilities leaving the employment base in a precarious position.
- Lack of diversification will remain a feature of the region's economy, with each industry facing their own vulnerabilities and setbacks. Despite national trends, modest growth is expected, exposing the employment base to future shocks.
- The labour force is expected to decrease to 50%, significantly below the NSW average.
- The community will prepare for annual bushfire seasons, drawing some families and young people away from the region's bushfire risks.
- The community is on a path leading to communitarianism with detrimental consequences for the harmony of the region.

### Scenario 2 Adapt and Innovate for greater Resilience

With the government's amplification support to local industry, circularity can offer an overarching program and method that will accelerate the transition to self-sufficiency and drive regional economic development. The program will support the alignment between multiple state and regional strategies and amplify their impacts:

- The actors of the economy will be provided with a platform that will strengthen industry networks and foster cross-pollination through circularity design turning challenges into locally relevant value propositions.
- The community as a whole has experienced significant loss and will be able to be part of the solution, inclusive of Indigenous Australians who can contribute their insights into traditional circular ways and create new social and employment opportunities.
- New streams of activities and industries will flourish resulting in additional GDP and circular job creation to the region.
- The region will be known for its circular valley and be on the world map of circular economies. This will likely attract a new type of inter-state and international tourism to the region and strengthen local industries.
- The valorisation of the region's natural assets, through close collaboration with Indigenous to incorporate their knowledge and global lessons learnt will help leverage and respect the region's natural systems.



**While a clear asset, Bega Valley's topography is also leaving the region exposed to climate volatility.**

**The community is clearly picking up momentum and willing to act differently in order to ensure its resilience to future events. The region may be a precursor of what is to come. Perhaps all of regional Australia might be at a crossroad in the near future.**

**This is an opportunity for the community to demonstrate the mateship that the Australian community is so proud of.**

# Circularity presents a real economic resilience opportunity.

Est. \$210b boost in GDP & up to 17,000 full-time jobs

According to a recent report KPMG completed for CSIRO, KPMG estimates Australia's transition to a circular economy in food and agriculture, transport and the built environment can boost GDP by \$210 billion and catalyse up to 17,000 full-time jobs by 2047, thereby acting as a significant accelerant of economic growth and job creation at both a national and regional level.

## What is the 'Bega Circular Valley 2030' Program?

The 'Bega Circular Valley 2030' (BCV 2030) program is a transformational high-impact regional development initiative of national significance with the pioneering vision to establish Bega Valley Shire (BVS) as the most circular regional economy by 2030 that will inspire other regions to follow.

We have been working with the local community and Bega Valley Shire (BVS) council to ensure local knowledge informs the program and the many inspiring initiatives industry, council and communities have currently underway are embraced, empowered and nurtured by embedding smart circular economy principles and skills across the various actors, and mobilising new innovative circularity solutions.

Specifically, over the next 3 years, the program will identify, accelerate and implement 9 enabling projects which will support the delivery of 15 flagship and 29 supporting circular projects to stimulate a regional circular marketplace and a vibrant ecosystem of diverse stakeholders, SMEs, technology innovators, researchers, academics, indigenous leaders, social ventures, NGOs and government as well as funders, impact investors and philanthropists.

BCV 2030 is anchored in the community by a newly created 'backbone' organisation in the form of a membership-based Co-operative which will co-convene the program and optimise community participation.

Powered by global circularity expertise, implementation rigour and technology, the program has been designed with leading practice impact evaluation frameworks in mind, to measure the success (at both program and project level) and enabling a targeted focus of key circularity initiatives to improve the impact and share the learnings for the benefit of other regions across Australia.

## The Mission

BCV 2030 program isn't simply about zero waste to landfill and optimising recycling. This program is about linking regenerative economic, environmental development with social equity across the region, underpinned with efficient water and energy utilisation. The delivery will be driven by a community owned cooperative enterprise that will facilitate the delivery of circular projects, invest in critical infrastructure and community initiatives and become a global leader in a range of product areas.

As an outcome, our objective is for the Cooperative to support the Bega valley in becoming the most circular valley in Australia and a lighthouse regional development project.

## The Objectives

- 1 CE capability:** diversify and strengthen the region's capacity for systemic innovation, resource efficiency, diversification of industry, creation of new income streams, revenue models and meaningful jobs through the circular economy
- 2 Resilience:** instil greater economic and environmental resilience, regional regeneration and social cohesion post the devastating bushfires and coordinate public and private investment in critical infrastructure required to support the recovery and resilience of the region
- 3 Regional Vision:** create a clear unifying sense of purpose for the BVS, one that retains and attracts talent to the region, and improves the living standards of local people and the diversity of natural habitat of the region
- 4 Environmental management:** strengthen the biodiversity of this special corner of the world by weaving together the region's greenhouse gas emission reduction targets, environmental ecology improvement targets, water and energy security, economic diversity ambitions, improved participation in education, innovation activity, and sense of community
- 5 Circular-focused practices:** incorporate circular public sector best practice policy frameworks, place-based differentiation and circular provenance mark (Born in Bega) to instil pride in BVS's local produce and services that are exported
- 6 Stakeholder management:** engage consumers and businesses as key enablers of the BCV 2030 program
- 7 Skills:** Lift the skills of the local community and incorporate circular business model training and support
- 8 Collaboration:** share intelligence in order to overcome challenges together and reduce the risk of failure and economic dependency on a few major businesses by inspiring and incentivising collective effort to create the most circular valley in Australia
- 9 Funding:** fund the delivery of critical community infrastructure assets that enable resource efficiency and community resilience and support environmental and economic development

## A delivery team anchored in the community for the community

We acknowledge we cannot work alone. The BCV 2030 initiative is anchored in the local community and supported by the major industry employer Bega Cheese, and the BVSC and the State Government through Regional NSW and Local Land Services. As a collective leadership group, we have brought together global specialists with the experience and capabilities to develop and support the delivery of the BCV 2030 program.

The BCV 2030 initiative is being developed and championed under the visionary leadership of Barry Irvin AM, Executive Chairman of Bega Cheese and local agricultural entrepreneur. It is further supported by:

- BVSC;
- Influential leaders across local industry (Bega Cheese, SCPA, Local Aboriginal Land Councils (Bega, Eden, Merrimans) Bega Beef Co-op, Far South Coast Dairy Development Group, Far South Coast Farmers' Network, Cobargo Community Group);
- The Global Foundation;
- Charles Sturt University and University of Wollongong;
- NGOs and RDCs;
- Private investors and philanthropists.

Our goal is to create a legacy for the Bega Valley, and turn it into the most circular regional valley in Australia.

Collectively, Rabobank and KPMG have collaborated on regional circular economy change programs in Europe for over four years and worked with 400+ organisations and many regions on transitioning towards circularity.

Our globally informed and locally refined program already has industry support (dairy production and processing, aquaculture, horticulture, packaging and tourism), and local government support (Bega Shire Council).

“This region has been heavily impacted recently by drought, fire and COVID-19.

A well-resourced Circular Economy project approach to small scale food production promises food security, community bonding and long term economic security.

SCPA – South East Producers is excited by and committed to this Circular approach.”

**Paul McMurray**  
Director of SCPA

## Informed by successful overseas circular economies

In Europe circular regional development is gaining significant recognition as one of the best models for addressing economic inclusion and participation for local and indigenous communities in harmony with the minimisation of resource depletion and impact on the local environment. Nations such as the Netherlands aspire to be fully circular by 2050, and are investing heavily to achieve this.

Rabobank and KPMG have played key parts of circular regional development programs that have transitioned towns and cities in the northern hemisphere, sparking innovation and shortening supply chain loops to improve local resilience and self-sufficiency, while also creating a beacon to attract new industry, immigration, innovation, investment and eco-tourism.

Informing the Bega Valley Circular Program are two international case studies: Oslo circular region in Norway; and the Food Valley circular region in the Netherlands, and we are committed to nurturing a relationship with these international counterparts who we can learn from to accelerate making Bega Valley the most Circular Valley in Australia.

**Our ambition is for the Bega Circular Valley to become a comparable global lighthouse** example of community-led transition from linear wasteful resource use to a renowned for circular resource efficiency and resilience. The work undertaken to date is already being considered for profiling at the November 2021 UN Global Sustainable Food Summit in New York. This is one of several examples of how the local Bega Circular Valley program can create global interest in the program and projects, and stimulate education and eco-tourism to the region.

A monitoring and evaluation framework will ensure that knowledge, learnings and data gained from this regional circular resilience program will be shared for the benefit of other regions across Australia.

## Our ask...

### Help us accelerate the program's impact and reach

Support by both NSW State and Federal governments for this regional circular economy program will be critical to accelerate delivery of our program and building a repeatable program which is scalable beyond the Bega Shire.

We are seeking government funding support of \$7.5 million funding to amplify the commitment of resources from local industry, local council and NGOs to fund the design and delivery of this Australian pioneering circular economy program.

### Scalable to other regions

With funding support from State and Federal government the regional circular program can be packaged up and scaled across other parts of regional Australia as a regional resilience program. The formal outcome of the pilot project will include a circular economy blueprint ('toolkit') for the Bega Valley region which can be leveraged and applied across other regions across Australia.

Having assembled local influencers with a proven record of delivering outcomes, and assembling global leaders in circular economy who have been advising the European Commission and World Economic Forum this program presents a low risk to government to put serious financial support into the program to transform the prosperity of residents within the Eden Monaro electorate.

# How will partners be involved?



Bega Cheese is investing in the building of the Bega Circular Centre as well as providing co-investment in both the Cooperative establishment and projects, alongside pro bono resources.



BVSC will support projects aligning with its priorities, development of the accelerator program, support the creation of the natural capital investment fund and support pilot programs.



The Bega Beef Coop and the Farmers Network are volunteer based organisations that provide linkage to the non-dairy agricultural farmers within the Bega Valley.



CSU will participate to projects, provide research insights, support the accelerator program, promote the program and collaborate on the waste to energy, alternative animal feed development, soil carbon and use of marine by-products and socio economic modelling



The Far South Coast Dairy Development Group provides direct linkage to the dairy farmers within the region. All support farmers by providing access to information, training and support.



Rabobank, as a global Food and Agriculture bank, contributes to the Bega Circular Valley project with active and probono support. Our dedicated Circularity team has representation from our global and local Commercial, Research, Innovation and Sustainability teams to support the submission. Rabobank will be committed to the Bega Circular Valley Cooperative structure and will support selective project streams by providing access to finance, knowledge and networks.



They are supporting the proposed on farm water storage project and are the driving force behind the proposed upgrade of the Bega Livestock Exchange Centre and any initiatives that involve opportunities for land managers (including carbon farming and biodiversity credit initiatives).



KPMG has provided probono support to the development of the Bega Circular Valley program and projects, and will support as implementation partner, drawing on its global knowledge, insights and expertise in Circularity, Digital and Natural Capital.



NSW will collaborate and provide guidance on the development of the program and projects.

*The Bega Circular Valley project is a true partnership between local, regional and global stakeholders and represents real action and tangible economic and sustainable outcomes in an unique holistic approach. It is an exciting project, builds on the strong fundamentals of the Bega Valley and fits perfectly with Rabobank's mission to 'Growing a Better world together'. We are proud to be part of it.*

**Karin van Selm**  
Group Executive Wholesale Banking, Rabobank Australia and New Zealand

*We believe how you grow matters. The benefits of this circularity initiative is not limited to the Bega Valley Shire. It can create a blueprint for positive impact to inspire other regional communities in Australia and has the hallmarks of a systems game-changer.*

**Ben van Delden**  
Head of AgriFood Tech and Circular Economy Advisory, KPMG Australia

*Bringing together many local opportunities in this partnership will build a sustainable and dynamic future for the Shire and is timely and exciting. Bega Valley Circular builds on and adds value to work Council is doing in waste, procurement, water, and climate resilience; supports learning, research and development; empowers local businesses to think outside the box; it reaches across all sectors of our economy providing opportunity to challenge, rebuild ,and recover - building a new resilient future focussed economy.*

**Leanne Barnes OAM**  
General Manager, BVSC

# Globally informed, locally developed



## Circular Friesland

*Leeuwarden region, the Netherlands*

The Circular Friesland Association was founded by 25 companies and organisations including the Province of Friesland and Municipality of Leeuwarden.

The first step was to analyse the flow of raw materials to identify which streams could be processed circularly and quickly transformed into a circular economy.

Five circular themes were identified: circular agriculture, circular plastic, organic waste streams, construction of the future, and saline agriculture.

Members of Circular Friesland are from the public and private sector, and collaborate with circular experts.

### Key initiatives:

- Collaboration between public and private sector
- Partnerships between different companies within material value chains

### Outcomes and value delivered:

- Circular collaborations between companies in the region
- National Test Centre Circular Plastics

[READ MORE](#)



## Circular Oslo

*Oslo, Norway*

The Circular Oslo initiative, part of Circular Regions, was created as a regional multi-stakeholder approach to accelerate the transition to a circular economy.

The initiative identifies and highlights solutions with the potential to be tested on a smaller scale in Oslo, then replicated internationally – including innovating business models through the adoption of circular design based strategies, building knowledge and experience for reduced material consumption, and enabling a regional access economy.

Circular Regions supports and maps initiatives, and connects cities to the broader region, and covers urban and rural solutions.

The multi-stakeholder collaboration environment includes government, industry, civil society and science bodies.

### Key initiatives:

- Tools and resources for the public sector, business, NGOs and individuals
- Circular workshops and events

### Outcomes and value delivered:

CIRCULAR @ Oslo Innovation Week event, September 2020

[READ MORE](#)



## Foodvalley

*The Netherlands*

Foodvalley's ambition is to achieve food production in balance with the living environment, while significantly reducing the use of raw materials and losses throughout the chain.

The Foodvalley ecosystem aims to accelerate circular innovation and growth by connecting a range of companies to resources, facilities, knowledge suppliers, and potential partners.

### Key innovation activities include:

- Robust cultivation of healthy soils and sustainable livestock farming
- Reduce the use of raw materials, combined with high quality processing of residual flows
- Scaling up alternative cultivation methods, such as vertical agriculture
- Innovative companies and knowledge suppliers working together

### Outcomes and value delivered:

Foodvalley Summit events for market trends, innovations, opportunities and challenges in Circular Agrifood

[READ MORE](#)

# Work is already underway in the region

This Circular Economy proposal has been developed through Collaboration and Engagement. Our successful Discovery Week highlighted the latent desire from many organisations and community members to participate and contribute creating a stronger circular Bega regional economy.

Together a group of local entrepreneurs, civic leaders and global circular economy specialists from Rabobank and KPMG have mobilised under the leadership of Barry Irvin AM, Executive Chairman of Bega Cheese and intergenerational local farming entrepreneur, to develop a long term program to support the transformation and recovery of Bega Valley through the principles of the Circular Economy.

During a Circular Economy Discovery Week we met with community stakeholders from SMEs to large industry and community groups, and identified key insights into sectoral opportunities and challenges. Inputs were captured from stakeholders including farmers small businesses, Education, Indigenous representatives, large companies, the Council and invested individuals.

From the Circular Economy Discovery Week engagement a list of critical projects was distilled that will be co-funded with the industry and investors. These projects are categorised as:

- **Enabling priority projects**, which are program work packages that are fundamental to establishing the Cooperative as a regional facilitator and BCV 2030;
- **Flagship projects**, which are high visibility projects showcasing the Bega Valley's transition towards circularity;
- **Supporting projects**, which will specifically activate circularity and impact local community.



# The Bega Circular Valley program will be a conduit to the region's environmental, economic and social success

**We collectively believe the Bega Valley Circular Economy program can unlock significant value for the community and propel our region forward while progressing ongoing agendas around sustainability and biodiversity, climate resilience, economic growth and social inclusion.**

- We are already on our way to building our Bega Circularity Centre, which will be a highly visible complex for incoming travellers as well as a demonstration of the region's commitment to support the valley to transition to circularity. The building will be designed and constructed using circular economy principles and be an example of circular construction.
- We are on our way to establishing the Cooperative which will facilitate funding to the organisation and to dedicated projects.
- Finally, we have great interest from stakeholders to continue the cross-sectoral engagement and develop high impact projects together.

We have therefore identified a pipeline of initiatives opportunities to confirm the involved stakeholders, project scope and expected regional impact and outcomes. It is expected that these discussions will be facilitated via the newly established Cooperative structure.

Pending further discussions with regional sectors, project summaries will be submitted to the SteerCo for opportunity and impact assessment. The following sectors will be consulted:

- Agriculture;
- Forestry;
- Marine and Aquaculture;
- Indigenous Land Councils;
- Health, Aged Care and Community Services;
- Technology and Education;
- Tourism, Culture and the Arts;
- Supply Chain and Support Services.

“UOW and UOW Bega Campus are strong supporters of the Bega Valley Circular Program concept and proposal, and view these developments as being a catalyst for educational, social and economic growth and development for the region and in turn the nation.”

**Samantha Avitaia,**  
UoW Bega Campus Manager

“The community-centric approach of the Bega Valley Circularity Program strongly aligns with our values of supporting industry and local communities. This is made more pertinent by the scalability of the program to other geographic regions to strengthen economic growth in harmony with consideration for reduced environmental impact.

**Rick Willmott and Hon Niall Blair,**  
Charles Sturt Uni COO and Prof of Sustainable Food Systems

“As the owner of a local software engineering business, I view the Bega Circular Valley proposal as the most significant transformative initiative to have emerged since I first moved to the region in 2008. Encompassing new agricultural practices, extensive innovation, environmental preservation, economic development and a greater embrace of digital technology, the Bega Circular Valley will lead to the creation of vital high skill jobs for our community and deliver a resilient local economy on which many families can build a secure future.”

**Liam O'Duibhir,**  
Technology Entrepreneur

The time is

**NOW**



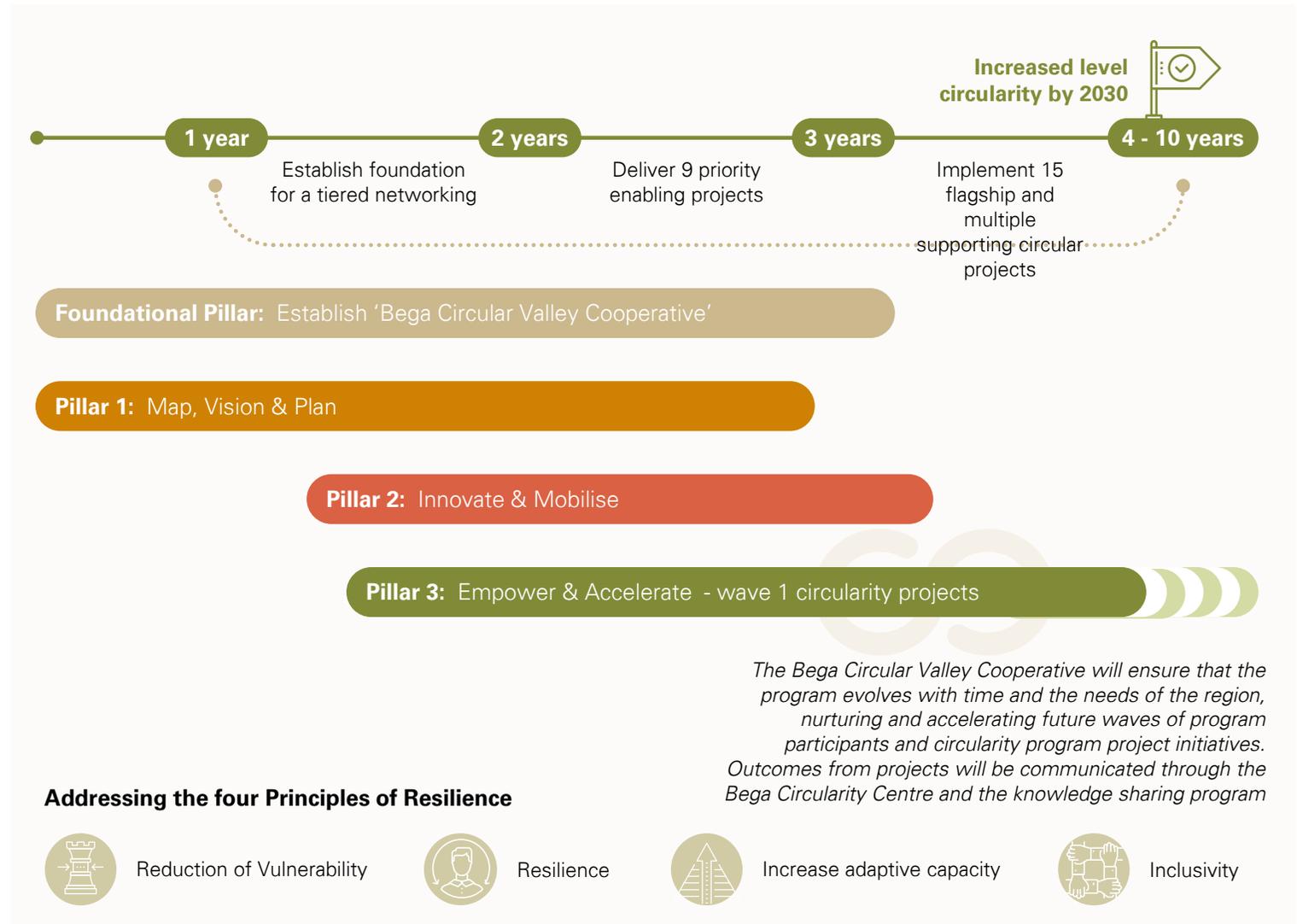
# Bega Circular Valley 2030 Program - on a page

A 10-year high-impact regionally networked program with the expertise, process, rigor, technology and convening and implementation power to accelerate circularity in the Bega Valley Shire by 2030.

Specifically, over the next 3 years, the program will aim to identify, promote, train and accelerate and implement 9 enabling projects which will support the delivery of 15 flagship and 29 supporting circular projects to stimulate a regional circular marketplace.

A newly created 'Circular Bega Valley' backbone organisation in form of a non distributing co-operative will be established to drive and convene the program across seven defined pathways that will ensure engagement with diverse stakeholders to optimise community participation.

Informed and powered by two global circular economy design and strategic delivery partners, KPMG Australia and Rabobank, this program has been designed around the 'Principles of Resilience' with an embedded impact evaluation framework (at both program and project level) to measure outcomes and monitor the success.



# Pathways and identified projects

Pillar	Pathway	Priority Enabling Projects	Flagship projects	Supporting Projects	Project Partners
<b>Foundation</b>	<p>1. GOVERNANCE, STRATEGY AND FINANCE</p> <p>Innovative governance, management and funding models that deliver distributed community ownership and benefits.</p>	<ul style="list-style-type: none"> <li>• <b>Co-operative model design and establishment</b></li> <li>• <b>Co-operative and Blended Finance Fund</b></li> <li>• <b>Regional Circularity and Resilience Strategy</b></li> <li>• <b>Bega Circularity Centre)</b></li> <li>• <b>Bega Biodiversity and Carbon Trading Scheme</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Regulatory Sandbox (pilot Circularity State Environmental Planning Policy and Special Activation Precinct)</b></li> </ul>	<ul style="list-style-type: none"> <li>• BV Community Strategic Plan (funded by BVSC)</li> <li>• BV Climate Resilience Strategy (funded by BVSC)</li> </ul>	<ul style="list-style-type: none"> <li>• Bega Cheese</li> <li>• Rabobank</li> <li>• KPMG</li> <li>• BVSC</li> <li>• Aboriginal Elders</li> <li>• Dept of Regional NSW</li> </ul>
<b>1 Map, Vision and Plan</b>	<p>2. RESEARCH AND DEVELOPMENT</p> <p>Knowledge and resource hub for the Bega Valley to support circular economy-based projects through innovation, partnerships and technical capabilities.</p>	<ul style="list-style-type: none"> <li>• <b>Circular Knowledge and Resource Enabler</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Knowledge and Resource Repository</b></li> </ul>	<ul style="list-style-type: none"> <li>• Circular Accelerator and Open Innovation Platform (Ag tech development program, Industry based post grad placements, Industry beta testing of innovation platform products)</li> </ul>	<ul style="list-style-type: none"> <li>• Bega Cheese</li> <li>• BVSC</li> <li>• UoW</li> <li>• CSU</li> <li>• 2Pi</li> <li>• KPMG</li> <li>• Rabobank</li> </ul>
<b>2 Innovate and Mobilise</b>	<p>3. CAPACITY BUILDING AND EXTENSION</p> <p>Support local businesses and workers to transition to circular thinking and practice</p>	<ul style="list-style-type: none"> <li>• <b>Circular Knowledge and Resource Enabler</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Bega Circularity Centre</b> (innovation stream)</li> <li>• Circular Advantage &amp; Circular Champions Program</li> </ul>	<ul style="list-style-type: none"> <li>• Bega Materials Exchange Platform</li> <li>• Cross-sectoral environmental management system (dairy, beef, aquaculture, silviculture)</li> <li>• Forestry projects</li> </ul>	<ul style="list-style-type: none"> <li>• UoW</li> <li>• LLS</li> <li>• TAFE</li> <li>• High schools</li> <li>• KPMG</li> <li>• Forestry research, development and industry</li> </ul>
<b>3 Empower and Accelerate</b>	<p>4. ECONOMIC TRANSFORMATION &amp; REGENERATION</p> <p>Transformative initiatives that drive economic activity towards our circular economy vision.</p>	<ul style="list-style-type: none"> <li>• <b>Circularity Procurement Aggregator and Accelerator</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Bega Smart Local Food and Logistics Program</b></li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Seaweed production and processing</li> <li>• Bioanimal feed and fertiliser products</li> <li>• Food trails</li> <li>• Stock identification (farm to fork)</li> <li>• Timber industry projects</li> </ul>	<ul style="list-style-type: none"> <li>• NSW Circular</li> <li>• Top 10 businesses</li> <li>• BCV Coop</li> <li>• LALCs</li> <li>• Rabobank</li> <li>• KPMG</li> <li>• Twofold Aboriginal Corporation</li> <li>• Black Duck Foods</li> <li>• Ocean to Earth</li> <li>• SCPA</li> </ul>

# Pathways and identified projects cont.

Pillar	Pathway	Priority Enabling Projects	Flagship projects	Supporting Projects	Project Partners
3 Empower and Accelerate	<p>5. ENABLING INFRASTRUCTURE</p> <p>That supports sustainable, long term economic outcomes across a diverse set of sectors.</p>	<ul style="list-style-type: none"> <li>• <b>Circularity Feasibility Analysis</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>On farm water storage</b></li> <li>• <b>Bega livestock saleyards exchange</b></li> <li>• <b>Bega Organics Processing Facility</b></li> <li>• <b>Bega Net Zero Emissions Water Supply Network</b></li> </ul>	<ul style="list-style-type: none"> <li>• Materials Repurposing Hub (concrete, tyres, wood, plastic, sewage biosolids, dairy manure)</li> <li>• Farm-scale biodigester program</li> <li>• Forest product manufacturing (pellets, packaging, pallets)</li> <li>• Mobile abattoir</li> <li>• Water supply and storage network upgrades</li> <li>• Brogo Dam wall</li> <li>• Connectivity between water supply systems</li> <li>• Recycled water (Merimbula STP upgrade part funded by BVSC)</li> <li>• Renewable energy generation and storage</li> <li>• Electric vehicle charging network</li> <li>• Grid stability infrastructure</li> <li>• Supply chain logistics optimisation</li> </ul>	<ul style="list-style-type: none"> <li>• BCV Coop</li> <li>• Bega Cheese</li> <li>• BVSC</li> <li>• KPMG</li> <li>• Rabobank</li> <li>• CSU</li> </ul>
	<p>6. COMMUNITY AND CULTURE</p> <p>Celebrating, enabling and promoting the unique social and cultural characteristics of Bega Valley Shire</p>	<ul style="list-style-type: none"> <li>• <b>Circular Cultural Enabler</b></li> </ul>	<ul style="list-style-type: none"> <li>• Regional gallery expansion (BVSC - funding secured in part)</li> <li>• Major events (EAT, Four Winds, Bermi Sculpture etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Art and culture trail (linked to food trail)</li> <li>• Bundian Way, Light to Light, Six Mile walks</li> <li>• Farm stays</li> </ul>	<ul style="list-style-type: none"> <li>• BVSC</li> <li>• Event organisers</li> <li>• SEA</li> <li>• Aboriginal Elders</li> <li>• NPWS</li> </ul>
	<p>7. ENGAGEMENT AND ADVOCACY</p> <p>Telling the BVC success story to leverage ongoing momentum and support</p>	<ul style="list-style-type: none"> <li>• <b>Circular Engagement and Advocacy Strategy</b></li> </ul>	<ul style="list-style-type: none"> <li>• Digital presence and collateral</li> <li>• Official launch (farm to fork conference in the BV)</li> </ul>	<ul style="list-style-type: none"> <li>• Government engagement</li> <li>• Media pitches</li> <li>• Cross-sector Bega Valley stakeholder engagement</li> <li>• Case studies</li> <li>• Celebration events</li> </ul>	<ul style="list-style-type: none"> <li>• BCV Coop</li> <li>• Bega Cheese</li> <li>• Rabobank</li> <li>• KPMG</li> <li>• Local industry and community leaders</li> <li>• Timber businesses</li> </ul>

# Project funding requirements

Priority enabling projects	Est. total cost	Industry investment	Government ask
<b>Foundations – Pillar 0</b>			
Circular Cooperative and Finance Fund	\$0.5m	TBC	\$0.5m
Circularity and Resilience strategy	\$0.4m	-	\$0.4m
Circularity Procurement Aggregator and Accelerator	\$0.5m	-	\$0.5m
Bega Circularity Centre	\$6m	\$5m	\$1m
Bega Biodiversity and Carbon Trading Scheme	\$3m		\$3m
Circularity State Environmental Planning Policy and Special Activation Precinct*	TBA	TBA	TBA
<b>Program delivery – Pillar 1</b>		No	
Circular Knowledge and Resource Enabler	\$0.8m	\$0.4m (\$0.3m Innovation Hub, \$60k BVSC, \$40k Bega Cheese)	\$0.4m
<b>Program delivery – Pillar 2</b>			
Circularity Procurement Aggregator and Accelerator	\$0.8m	-	\$0.8m
Circularity Program Feasibility Analysis	\$0.5m	-	\$0.5m
<b>Program delivery – Pillar 3</b>			
Circular Cultural Enabler (smart foods, Indigenous engagement, tourism)	\$0.2m	-	\$0.2m
Circular Engagement and Advocacy Strategy	\$0.2m	-	\$0.2m
<b>Priority Enabling Projects Sub Total</b>	<b>\$12.9m</b>	<b>\$5.4m</b>	<b>\$7.5m</b>
<b>Flagship projects seeking access to existing government funding program</b>			
On-farm water storage network	\$35m	\$15.3m	\$19.7m
Bega Smart Local Food and Logistics Program	\$5m	\$2.5m	\$2.5m
Bega Valley Organics Processing Facility	\$2m	\$1m	\$1m
Bega Livestock Exchange Centre	\$3.6m	TBA	\$3.6m
Bega Net Zero Emissions Water Supply Network	\$6m	\$3m	\$3m
<b>Flagship Projects Sub Total</b>	<b>\$51.6m</b>	<b>\$21.8m</b>	<b>\$29.8m</b>
<b>TOTAL</b>	<b>\$64.5M</b>	<b>\$27.2M</b>	<b>\$37.3M</b>

*In order to launch the BCV 2030 program, a series of enabling and flagship projects have been identified.*

*Indicative budgets for these projects have been established along with associated funding contributions from industry and local government.*

*In addition, considerable in-kind contributions have been secured to support the projects.*

*We are seeking a government contribution for priority enabling projects of \$7.5 million to complement the \$5.4m funding commitments BCV 2030 has secured.*

*We expect that our flagship projects will be accessing funding from existing government programs and attract industry co-investment.*

# Project overview

**Foundational Pillar:** Establish 'Bega Circular Valley Co-operative'

## Bega Circular Valley Cooperative and Finance Fund

### Description

An innovate and formal, governance and management structure developed with a legally constituted cooperative body established to strategically lead the Bega Circular Valley across all sectors and oversee the financial framework for core and pillar projects. Key memberships to be locally and broader.

**Priority** ★★☆☆☆      **Impact** ★★☆☆☆      **Cost** \$0.5m

### Outcomes

A Non distributing cooperative will be established, and a legal framework with clear adopted strategic direction will be developed.

- **Collaboration** - MOU with NSW Circular
- **Financially independent** - Self-funded body
- **Community** - Distributed community ownership and benefits

### Available grants/funding

- Membership
- Farm Innovation Fund
- Bushfire Industry Recovery Fund
- Remanufacture NSW
- BLERF

### Potential partnerships/investors

- Bega Cheese/KPMG/Rabobank
- BVSC
- Members
- NSW Circular
- Regional NSW

### Benefits



Empowering the  
Bega Valley  
community to  
achieve sustainable  
growth

# Project overview

## Regional Circularity and Resilience Strategy

### Description

The Regional Circularity and Resilience Strategy will set a national and international benchmark and model. It will articulate the Bega Circular Valley program including the vision, projects, its pillars, pathways and project, governance and financing mechanisms that will deliver transformation of the Bega Valley economy. The Strategy will clearly link to local, State and Federal actions and targets to improve the use and value of resources and the resilience of local communities. It will include a comprehensive monitoring and evaluation program to inform continuous improvement and support uptake in other jurisdictions.

**Priority** ★★☆☆

**Impact** ★★☆☆

**Cost** \$0.4m

### Outcomes

- **Education** - Global best practice in a regional context. It will lead to a broader more holistic definition and framework of a real life circular economy, achieving a national (and international) model for the future.
- **Resilience** - It contributes to outcomes of the Bega Valley Community Strategic Plan, Climate Resilience Strategy. It improves social resilience and diversifies the economy for Australia's most disaster impacted local government area of 2020.
- **Local economy** - It contributes to outcomes of NSW Economic Vision for Regional NSW; NSW Circular Economy Policy and Far South Coast REDS
- **Waste** - It contributes to outcomes of National Waste Action Plan and South East and Tablelands Regional Plan.

### Available grants/funding

NSW Circular, Modernising Australian Recycling Fund, Place based investments NSW Regional

### Potential partnerships/investors

BCV Coop, BVSC, KPMG, Rabobank, NSW Circular

### Benefits



**Foundational Pillar:** Establish 'Bega Circular Valley Co-operative'



# Project overview

## Bega Circularity Centre

### Description

A multi-purpose community facility will be located on the northern access to Bega. The facility will be the public face of the Bega Circular Economy, showcasing local products, programs, technology use and community history. It will incorporate a visitors centre, a local providore, AgTech and business innovation hub, Indigenous cultural information and the home of the circular economy concept. It could also incorporate R&D and training opportunities

**Priority** ★★☆☆ **Impact** ★★☆☆ **Cost** \$6m

### Outcomes

- **Local economy & Community** - It will enable the local community and visitors to the region to experience firsthand the fruits of a Valley transforming into a circular economy.
- **Education & Tourism** - The Centre will showcase the vision, pathway and technology used in the transformation. Additionally it will showcase AgTech and business innovation and the highlights of the valley in a circular economy context.
- **Regional Australia** - The hub will inspire others to undertake and participate in the journey.

### Available grants/funding

- Bega Cheese \$5m
- Government

### Potential partnerships/investors

- Bega Cheese, Govt (incl BVSC), tourism bodies

### Benefits



**Foundational Pillar:** Establish 'Bega Circular Valley Co-operative'

The convergence of  
collaboration,  
education and  
inspiration

# Project overviews

Foundational Pillar: Establish 'Bega Circular Valley Co-operative'

## Bega Biodiversity and Carbon Trading Scheme

### Description

Around 75% of the Bega Valley Shire has conservation values, with significant potential for carbon and biodiversity credits. In addition, agricultural land has the potential for on-farm carbon sequestration and biodiversity projects. Building economic and market systems that can support this long term stewardship provides a foundation for investment in effective environmental sustainability. This project aims to support effective governance and administration of a Shire-wide biodiversity and carbon trading program

Priority 

Impact 

Cost \$3m

### Outcomes

- **Local economy** - Establishment of alternative income streams for farmers, other landholders and indigenous land management bodies. The opportunity to market local produce under a local biodiversity assurance scheme. Introduction of high skilled employment to the region resourcing the Carbon Desk.
- **Productivity** - Higher land and agricultural productivity through regenerative practices. Increased resilience of soils, biodiversity benefits and forest recovery.
- **Regional economies** - Creates the opportunity for farmers and landholders from other regions to access the benefits of the specialised Carbon Desk which include revenue opportunities, expertise and education services.
- **Education & Awareness** - Fast track the development, education and uptake of carbon and biodiversity projects. Contributing to moving carbon trading from a volatile and immature market to a stable and transparent market.
- **Technology** - Comprehensive data sets and audit mechanisms of local biodiversity and carbon banks that can link to State, Federal and international biodiversity and carbon programs.
- **Carbon neutrality** - Support international, national and industry emissions targets. Governance framework to support assurance, trading, monitoring and reporting for investing partners and agencies,

### Available grants/funding

Corporates (offsetting), Government (e.g. Federal CF announcement),

### Potential partnerships/investors

BCV Co-op, Rabobank, KPMG, Biodiversity Conservation Trust, carbon markets, Land to Market, farmers, LALCs, Forestry lands

### Benefits



# Project overview

## Circularity State Environmental Planning Policy and Special Activation Precinct\*

### Description

This project is externally enabled through a partnership with NSW and seeks to establish a 'regulatory sandbox' to test circularity models such as carbon trading, and pilot circularity projects in the Bega Valley. This work will progress the NSW Government's circular economy policy and lead to the development of a Circularity State Environmental Planning Policy and embedding of circularity principles in the next round of Regional Plans.

**Priority** ★★☆☆ **Impact** ★★★★★ **Cost** -

### Outcomes

This project will streamline the regional planning system in response to circularity and aim to improve environmental, waste, economic, social outcomes.

- **Regional Australia** - It will establish a model for NSW Circular and the NSW Government and enhance collaboration among government and industry stakeholders.
- **Resilient local economy** - Through this work the Bega Valley Shire will be identified as a NSW Special Activation Precinct in its own right.

### Available grants/funding

- Waste Less Recycle More
- Local Economic Recovery Fund
- Technology enabled primary industries

### Potential partnerships/investors

- BVSC, NSW Circular Research Taskforce, CSU/UoW, NSW Regional, NSW Planning, EPA



# Project overview

## Bega Circular Valley Knowledge and Resource Enabler

### Description

Transformation to a circular economy in the Bega Valley requires a deep understanding of material and energy flows across the local economy. This project seeks to map the current industrial ecosystem within the Valley. Once mapped, opportunities to substitute imported products with local products, create partnership to trade these by-products and generate economies of scale to support investment in new, local goods and services will be identified.

Priority ★★☆☆

Impact ★★☆☆

Cost \$0.3m

### Outcomes

This is foundational work that seeks to create a pipeline of innovation beyond the low hanging fruit identified as flagship projects.

- **Resource optimisation** - The capacity to visualise inputs, outputs and throughputs of key material and energy streams, quantification of waste streams that could substitute virgin and imported materials across the local economy and identification of shared procurement opportunities.
- **Capacity building:** - The outputs of this project will be used as inputs to the Bega Circularity Program Feasibility Analysis, and will inform capacity building projects.

### Available grants/funding

None identified

### Potential partnerships/investors

Bega Cheese, Bega Council, NSW Circular, Charles Sturt University, UoW Innovation Hub

### Benefits



Pillar 1: Map, Vision & Plan

Pillar 2: Innovate & Mobilise



# Project overviews

## On-farm smart water storage network

### Description

This project proposes a water management solution that will revolve around the implementation of an initial 47 water storages amounting to a maximum volume of 9,000ML. These water storages will be complemented with a smart water management solution based on AI, which will capture detailed data around water levels, fire risk and biodiversity for the purpose of trading credits, preparedness for future bushfires and the fine-tuning insurance policies. 50% of the funding is committed from industry.

**Priority** ★★☆☆☆      **Impact** ★★☆☆☆      **Cost** \$35m

### Outcomes

- **Resource optimisation** - This project will help improve water reliability for agriculture.
- **Resilience** - Consequently bringing a range of benefits, the main ones being an improved climate and fire resilience as well as decrease of insurance premiums.
- **Biodiversity** - It will support the regeneration of native ecosystems on farms and offer opportunities for low stream flows and riverine ecosystems.
- **Education** - The region will further benefit through associated education programs and eco-tourism opportunities.
- **Local economy** - It is expected that Agriculture and Food Manufacturing will stabilise at 700 FTE positions, milk volume from dairy farms will stabilise at 115 million litres per year, no water shortage for participating farmers, real-time data for the RFS and the provision of opportunities beyond the Agriculture sector.
- **Community** - It will support the production of Indigenous food/medicine.

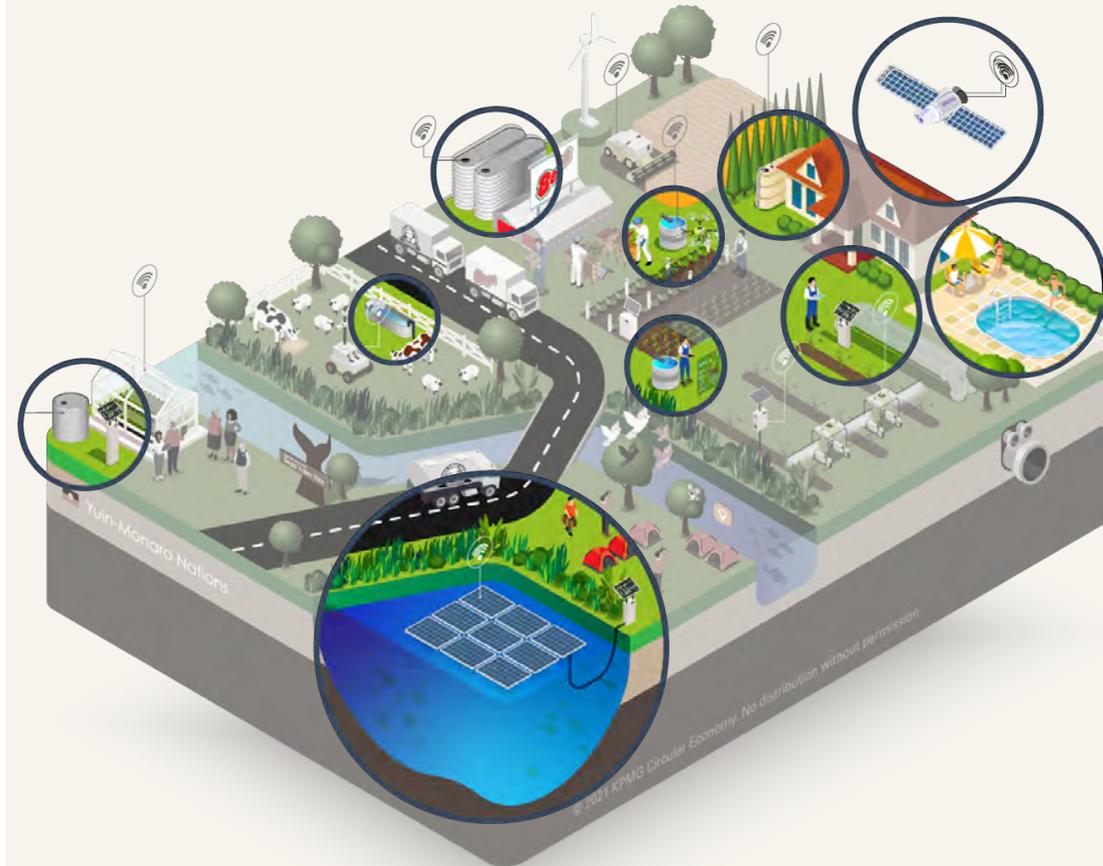
### Available grants/funding

Bushfire Local Economic Recovery Fund  
(application pending)

### Potential partnerships/investors

KPMG Arwin, Rabobank, NSW RFS, Esri, Farmbot, Microsoft, Local Farmers

### Benefits



**This illustration is extracted from an application currently underway for consideration by the BLERF. It highlights key water resource instrumentation proposed.**

# Project overview

Pillar 3: Empower & Accelerate

## Circular Cultural Enabler

### Description

Celebrating, enabling and promoting the unique social and cultural characteristics of Bega Valley Shire is central to the circularity program philosophy. Through this project, opportunities to reflect the arts, culture and history of the Shire within circularity projects will be explored. This will ground the program in the local community, showcase the breadth of local creative talent, and generate employment for local artists. It will enrich tourism offerings across the Shire and contribute to increased understanding among disparate local communities.

Priority ★★☆☆

Impact ★★☆☆

Cost \$0.2m

### Outcomes

- **Local economy** - This project will complement the Bega Circular Valley Knowledge and Resource Enabler by generating a suite of opportunities to incorporate cultural elements in circularity projects. It will directly inform the scoping of flagship projects and feasibility analyses of the next tranche of circularity projects.
- **Community** - It will build on work already completed by BVSC, South East Arts and the Bega, Eden and Merrimans Local Aboriginal Land Councils.
- **Awareness** - It will help shape the vision and values of the Cooperative and Finance Fund and contribute directly to the narrative of the Bega Circular Valley Communication Strategy.

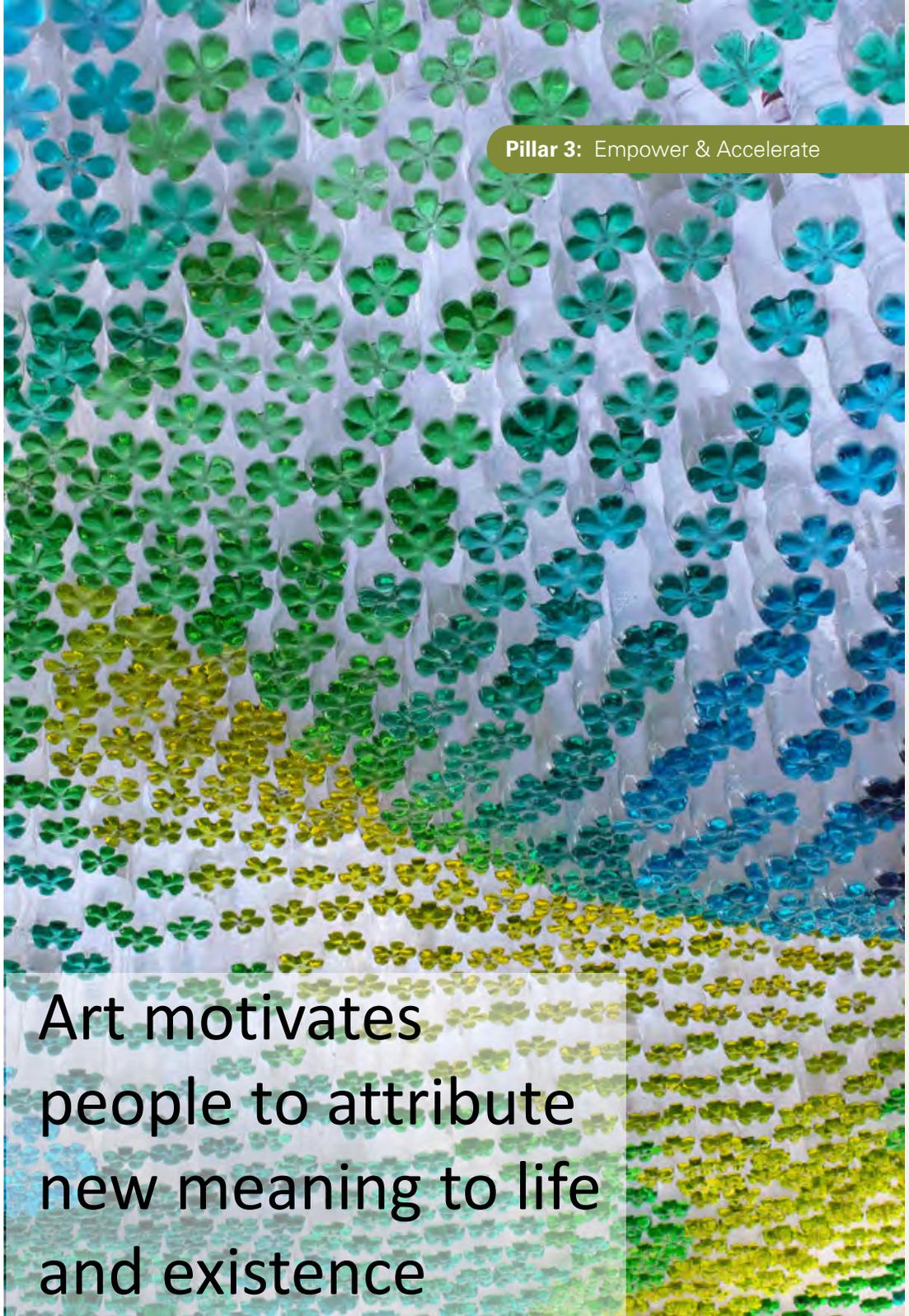
### Available grants/funding

None identified

### Potential partnerships/investors

Bega Council, South East Arts, KPMG, Bega LALC, Eden LALC, Merrimans LALC

### Benefits



Art motivates  
people to attribute  
new meaning to life  
and existence

# Project overview

## Circular Engagement and Advocacy Strategy

### Description

The Bega Circular Valley Communication and Engagement Strategy will guide story telling around the initiative. It will reflect the values and vision of the Cooperative and Finance Fund, celebrate the culture of the Shire identified through the Cultural Enabler, and leverage ongoing momentum and support for the circularity initiative. It will articulate key messages, identify key partners and stakeholders, and develop promotional and advocacy collateral. It will also deliver a range of web, social media, print and radio content.

Priority ★★☆☆

Impact ★★☆☆

Cost \$0.2m

### Outcomes

- **Local economy** - This project aims to develop a compelling narrative for the circularity initiative that celebrates successes of early adopters, generates local support to transform the local economy and assists others outside the Shire to make the transition towards a more sustainable way of living and doing business.
- **Education & Awareness** - It will guide engagement with stakeholders across the Valley to generate buy-in and participation in circularity initiatives, and ground those initiatives within the local community.

### Available grants/funding

None identified

### Potential partnerships/investors

Circularity Coop, Bega Council, KPMG, NSW Circular, local media, cross-sectoral stakeholders

### Benefits



# Project overview

## Bega Circularity Procurement Aggregator and Accelerator

### Description

Investigate opportunities to develop procurement specifications that drive circularity, including local sourcing and employment, whole of life costs and evaluate potential externalities on suppliers along the supply chain. Explore joint procurement opportunities with large procurers in the region, with a focus on local industry procurements.

Priority ★★☆☆

Impact ★★☆☆

Cost \$0.8m

### Outcomes

- **Innovation** – supporting the nurturing of local circular businesses and business models to accelerate the region towards being more circular
- **Globally connected** – leveraging the partners global reach to bring specialist insights to the regional entrepreneurs and support commercialisation through their national and international networks
- **Resource optimisation** - Partnerships with local industry buyers to promote efficiency, circularity and demonstrate leadership. Local supplier networks that are cost competitive and demonstrate social, cultural and environmental value. Improved category management driving decisions around procurement partnerships and managing investment in viable circular initiatives.

### Available grants/funding

- Industry Capability Network (ICN)
- Supply Chain Resilience Initiative

### Potential partnerships/investors

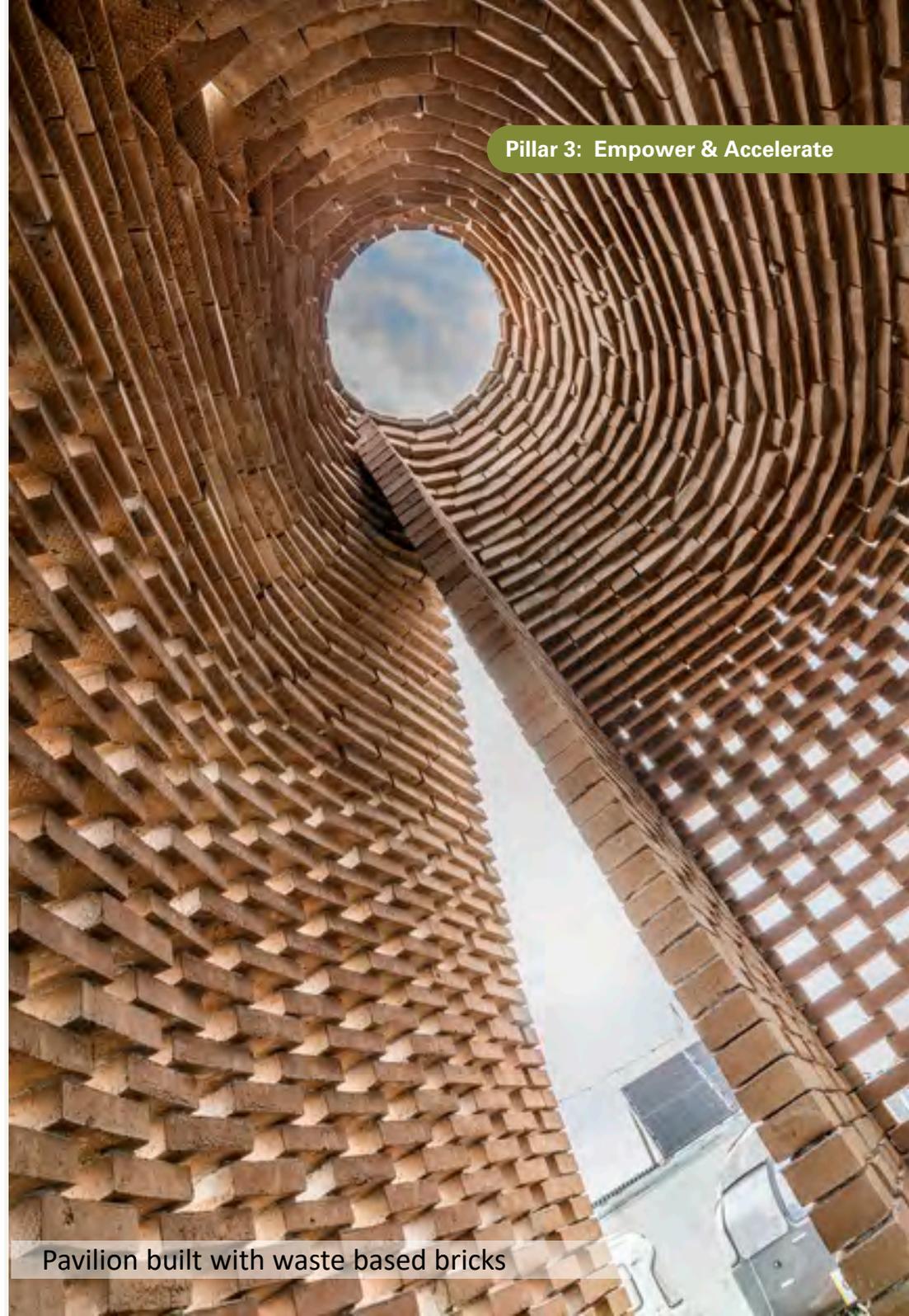
BVSC, Bega Cheese, South East Regional Hospital, Key Haulage and distribution partners, All sectors – Retail, Agriculture & Forestry

### Benefits



Pillar 3: Empower & Accelerate

Pavilion built with waste based bricks



# Project overview

Pillar 3: Empower & Accelerate

## Bega Circularity Program Feasibility Analysis

### Description

Once the opportunities for enhanced circularity are identified through the Bega Circular Valley Knowledge and Resource Enabler and Cultural Enabler, feasibility analyses will be undertaken for 10 specific projects. These projects will seek to cover the breadth of benefit categories, but will be prioritised based on potential benefit and buy-in of project partners. For those projects that are deemed feasible, concept plans will be developed to describe and quantify their implementation.

Priority ★★☆☆

Impact ★★★☆☆

Cost \$0.5m

### Outcomes

- **Derisking investment** - This project will result in a suite of concept plans for the next tranche of circularity projects for the Bega Valley. It will provide further insight to improve the industrial ecology map of the Shire, and will provide input to the commercialisation activity undertaken through the Bega Circularity Centre.

### Available grants/funding

- Partner matching funds
- No Grants identified

### Potential partnerships/investors

Bega Circularity Coop, Bega Cheese, Bega Council, UoW, Rabobank, KPMG

### Benefits



The natural ecosystem as inspiration for the industrial ecology map

# Project overviews

Pillar 3: Empower & Accelerate

## Bega Livestock Exchange Centre

### Description

The Bega saleyards is a key enabling infrastructure for the Bega Valley agricultural and subsidiary sectors. It provides a vital service to beef and dairy producers within and beyond the Bega Valley, being a local selling point that enables the industry to operate locally without having to send stock to larger selling centres outside the region. This project will upgrade the facility to handle larger volumes of stock and facilitate online sales.

Priority 

Impact 

Cost \$3.6m

### Outcomes

- **Local economy** - The proposed upgrade of the facility will enable the saleyards to operate more effectively and, through the application of technology, will improve access to larger markets. With the addition of more local processing and value-adding, this project will contribute to improved margins for local producers.
- **Animal welfare** - The upgrade will also improve animal welfare and WHS outcomes (important for future viability) and will establish the saleyards as a focal point for the local agricultural community.

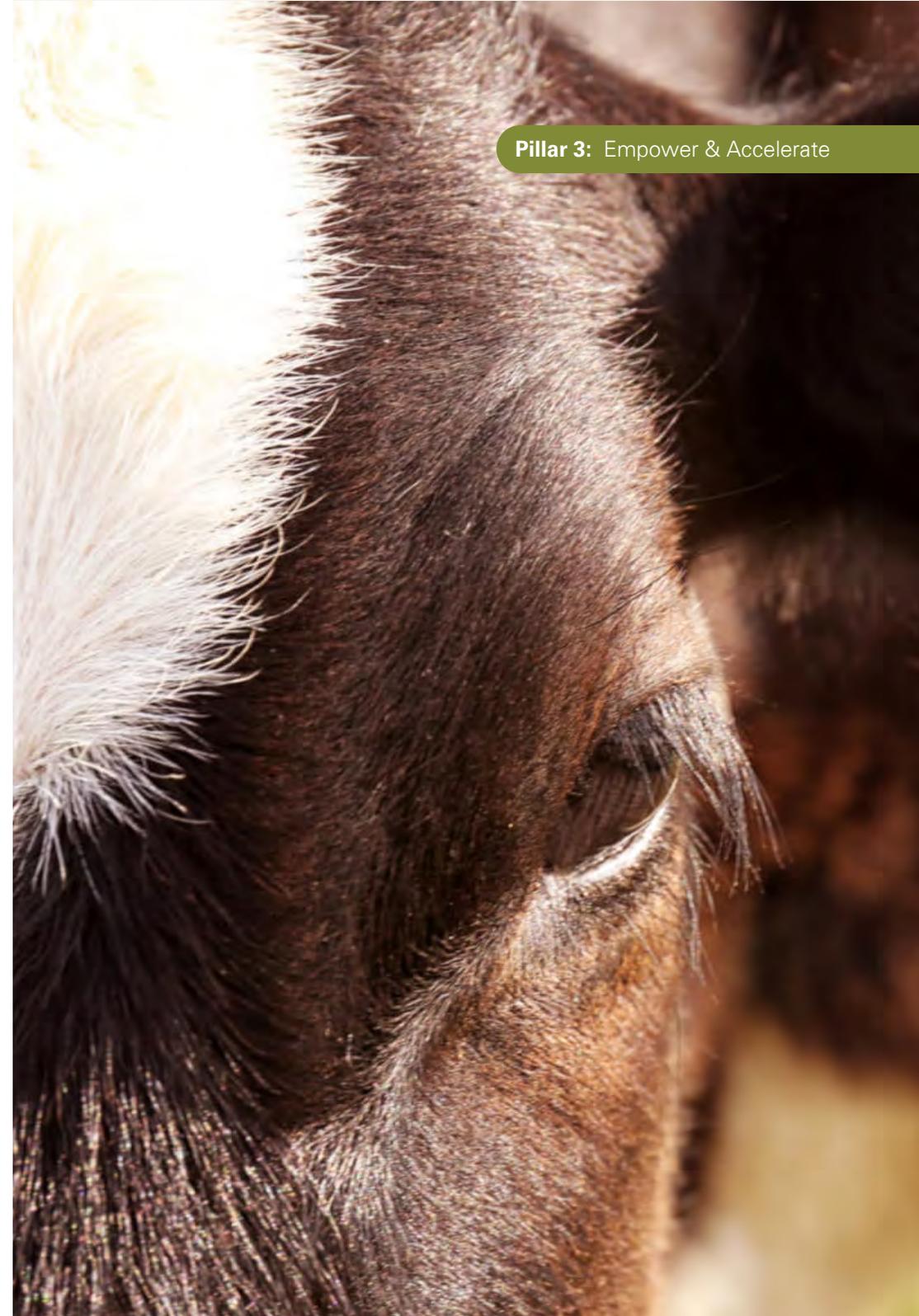
### Available grants/funding

BLERF

### Potential partnerships/investors

Bega Beef Coop, BVSC, LLS, producer groups

### Benefits



# Project overviews

Pillar 3: Empower & Accelerate

## Bega Net Zero Emissions Water Supply Network

### Description

Pumping water is high energy use but can be shifted into different parts of the day to suit low carbon energy generation sources. Installing significant behind-the-meter solar can create a daytime energy supply opportunity which, coupled with process changes, can meet up to 70% of energy needs and export significant power. Energy storage systems, battery or otherwise, can close the gap for energy demand. Changing how and when we pump water needs smart control systems and smart operations to optimise return on investment.

Priority ★★☆☆

Impact ★★☆☆

Cost \$6m

### Outcomes

- **Carbon neutral** - This project will contribute to achieving Bega Valley Shire's net zero emissions by 2050 target, through reduced emissions from water treatment and reticulation.
- **Resource optimisation** - Power generated on site will reduce electricity transmission losses, while on-site storage will contribute to grid stability and load management. Export to the grid will contribute to reducing the carbon intensity of the electricity grid.
- **Local economy** - Investment in capital installation, maintenance and operation will contribute to the local economy.

### Available grants/funding

- BVSC matching funds
- No Grants identified

### Potential partnerships/investors

- BVSC
- Essential Energy
- Water users

### Benefits



# Project overviews

Pillar 3: Empower & Accelerate

## Bega Smart Local Food and Logistics Program

### Description

The complexity of food systems requires a holistic and coordinated approach. To develop more resilient food systems that support a vibrant and sustainable local economy and environment, agricultural producers need to be profitable. This Future Food System program will develop a strategy and activation program based on circularity concepts to achieve local job creation, improved logistics networks, integrated digital Ag technologies, optimal nature positive production, increased resilience and reduced food/resource waste.

Priority  Impact 

### Outcomes

The program will bolster the passion and strength of planned and existing local initiatives ensuring synergies that will amplify collective outcomes:

- **Local Economy** – Improved farm gate returns and increased employment through new approaches to farming, agricultural processing, marketing and distribution. Promoting provenance, future proof farming and uniqueness of the Bega region incorporating a “Hack Farm” and Circularity Education Centre.
- **Logistics** - Smart logistics network supporting regional and national market access, decreased footprint involving the participation of logistics and distribution partners and infrastructure planners.
- **Technology** - Empowered locally driven technology pathway targeting smart yet low cost technology solutions with locally demonstrated value and effectiveness allowing access to low threshold technology to increase productivity for farmers and small businesses.
- **Education & Tourism** - Valuable research opportunities for local Universities i.e. Charles Sturt University and the University of Wollongong. Study tours facilities for primary and secondary schools aligned with the STEM curriculum. Promoting the Bega region as a Eco-Tourism destination.
- **Waste** - Smart food & resource waste/surplus solutions

### Available grants/funding

Kick off with Rabobank powered Circular Food Valley Forum 2021 in the Bega Valley to share the vision and mobilize the stakeholders.

### Potential partnerships/investors

SCPA South East Producers, 2PiSoftware, Bega Cheese, KPMG, Rabobank, local farmers/networks, technology entrepreneurs, Government, Logistics, Universities, local schools

### Benefits



*Bega Future Food Systems Forum*

# Project overviews

## Bega Valley Organics Processing Facility

### Description

Bega Valley Shire currently collects food and organic waste for processing using low-technology windrow composting. The compost product is relatively low quality, with high pH making it unsuitable for use on farm. Through investment in additional shredding, screening and sifting infrastructure, as well as more sophisticated process control, this project will generate a product suitable for reuse on farms, household gardens and public spaces.

Priority 

Impact 

Cost \$2m

### Outcomes

- **Resource optimisation** - The compost product would be applied to agricultural soils within the valley, including those owned or managed by Bega Cheese suppliers.
- **Natural capital** - While achieving continued positive environmental outcomes, the project also helps manage a number of operational challenges faced by Council and increasing soil amelioration costs faced by farmers in the Bega Valley. It also supports development of paddock to plate to paddock circularity.

### Available grants/funding

BVSC matching funds  
Waste Less Recycle More grant program

### Potential partnerships/investors

BVSC, Bega Cheese, Ocean2Earth, farmers

### Benefits



# Case studies

● Critical raw materials

● Biomass

● Bioenergy

● Food waste

## SMaRT Centre

### Description

The SMaRT Centre develops e-waste recycling solutions through the mining of landfills. It provides a pathway for valuable materials (e.g. silica, titanium dioxide, etc) and elements to be collected and separated.

### Activities

The model leverages both waste collectors and scavengers present in India. Alongside the government (for CapEx funding), the SMaRT Centre aims to upskill these workers and give them the technologies to deploy modular and cost-effective microfactories located close to waste stockpiles. These convert discarded glass, textiles and plastics into engineered filaments for 3D printing and other materials. Recently, the UNSW Centre for Sustainable Materials and MidCoast Council both deployed the Microfactory™ technology for various wastes (e.g. silage wraps, hybrid textiles, glass and plastics).

### Outcome

Waste collectors and scavengers are employed and empowered within a sustainable and safe environment. Microfactories enable communities to produce products and materials needed locally. Creates new supply chain and manufacturing capabilities, enhancing both social and economic outcomes.

## Landfill gas bioreactor

### Description

The landfill gas bioreactor turns organic waste into resources (e.g. gas, nutrient extraction) and is recognised as best practice in municipal waste management and globally remains a key feasible clean energy technology for waste management and energy production.

### Activities

A 21 km rail transfer terminal was developed in the Sydney region to move Sydney South's organic waste to a Woodlawn site. This was coupled with the landfill gas bioreactor and a Mechanical and Biological Treatment (MBT). Household waste is collected and placed into rotating drums to kickstart the degradation process and prepared for separation. Inorganic materials are extracted for recycling and recovery while organic waste is transferred to the bioreactor to produce methane gas further converted into energy and waste heat. Remaining waste is refined and composted during a three months aerated fermentation process.

### Outcome

Since 2004, the landfill gas bioreactor converted 4.1 Mt of organic waste generating green electricity for up to 30,000 homes. 1 tonne of waste releases 1.33 MWh of clean energy.

## Tuls Dairies methane digesters

### Description

A coordinated approach to achieve animal wellbeing, environmental and community respect.

### Activities

A nutrient management planning tool details the nutrient inputs and outputs of the farm to ensure proper optimal nutrient input and soil conditions. This in turn also minimises potential for impacts to surface and groundwater.

Further, a wastewater treatment system enables a zero wastewater discharge to any surface water or wetlands.

The storage facilities are designed to withstand all anticipated loads and collect all precipitation to prevent any runoff. Odour is also considerably reduced through biofilters and microbial technology.

# Case studies



## Anaerobic digestion of algae

### Description

ALG-AD is an eco-innovative project developed as a Cooperation program between Swansea University and 10 partners including university, industry and European policymakers, which received €5.5m funding from the European Commission and matched by the Welsh government.

### Activities

The anaerobic digestion technology (AD) is combined with algae to capture excess nutrients out-flows from AD as a food source. This algae is further processed into animal feeds.

### Outcome

Funding has been received for 3.5 years Nutrient waste

## Providentiel Coquillages

### Description

The project started in France, in partnership with Toulouse Business School, with the intention to leverage oyster shells for soft water treatment. Water can be remineralised with oyster shells for human consumption.

### Activities

In partnership with an affiliated laboratory, the founders developed a technique using several layers of crushed oyster and clam shells to filter and remineralise treated water. Additional applications for these shells include organic soil amendment, an input into poultry feed and gardening products.

- Poultry feeds as it contains calcium, which support healthy eggs
- Fertilizers for wine, fruits & veg and soils (too acidic, harvest productivity)
- Water treatment for soft water remineralisation
- Desalination
- Veolia reached out for exactly the same opportunity – collection costs, water treatment
- Work with other regions in France and Spain
- Works with farmers, individuals, CAC40 looking for innovation
- Job creation and local innovations
- Challenge, incubation, start-up finalist, regional innovation, networked, #1 organic region (Normandie, Nord) in France
- 3,000t from local oyster farmers and national coverage
- Support organic agriculture

### Outcome

This technique has the potential to become a substitute for existing soft water treatment techniques.

## Blantyre Farms, pig producer

### Objectives

The Blantyre farm is a highly productive mixed farming and livestock business in Young, NSW. Recently, Edwina Beveridge included innovative circular-based solutions to optimise the farm operations.

### Activities

Instead of feeding their pigs with grains, the piggery used 500 tonnes of food waste per year which is diverted from landfill. In addition, they built on-site biodigester capturing methane gas from pig manure and converting it into electricity. On average a tonne of pig manure produces 15 to 25 cubic metres of biogas.

### Outcome

The piggery considerably reduced their operational costs by leveraging organic food waste, fully eliminating manure disposal costs – which used to be the 4<sup>th</sup> biggest cost – and generated on-site electricity. Beyond ongoing maintenance costs, this successful set up is a viable solution to tackle food security.

[Link](#)

# High levels of engagement and support for the BVC 2030 program been received from

## Organisation

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BVSC  
Bega Cheese  
Rabobank  
KPMG  
Bega Beef Coop  
Far South Coast Dairy  
Development Group  
Charles Sturt University  
Horticulture Innovation Australia  
Fisheries Research and  
Development Corporation  
Meat and Livestock Australia  
Dairy Australia  
NSW Circular  
Forestry Research and  
Development  
University of Wollongong

## Organisation

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Bega Local Aboriginal Land Council  
Eden Local Aboriginal Land Council  
Merrimans Local Aboriginal Land  
Council  
Black Duck Foods  
SCPA  
Sapphire Coast Wilderness  
Oysters  
Broadwater Oysters  
Bermi Fishermen's Coop  
Far South Coast Farmers' Network  
Pentarch Forestry  
Four Winds  
2Pi  
Cobargo Community Group



**Contact details:**

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