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Circular Economy *Implementation*

Case studies *in Wales*

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Circular Economy Implementation: Case studies in Wales

Written by Dr Gary Walpole, Ben Dewale, Dr Sarah Evans,
Nerys Fuller-Love, Sarah Hopkins, Dr Zheng Liu, Dr
Pouya Moghadam, Dr Lyndon Murphy, Prof Nicholas Rich,
Clare Sain-Ley-Berry

Cardiff Metropolitan University
Western Avenue
Cardiff, CF5 2YB
029 2041 6070

www.cardiffmet.ac.uk

Aberystwyth University
Reception, Penglais,
Aberystwyth, SY23 3FL
01970 622900

<https://www.aber.ac.uk/en/>

Bangor University
Bangor, Gwynedd, LL57 2DG
01248 351 151

<https://www.bangor.ac.uk/>

Swansea University
Bay Campus
Fabian Way
Swansea, SA1 8EN
01792 205678

<https://www.swansea.ac.uk/>

Cwmpas
Spark, Maindy Road
Cardiff, CF24 4HQ
0300 111 5050

<https://cwmpas.coop/>

Cynnal Cymru
107 Cowbridge Road East
Cardiff, Cf11 9AG
029 2294 0810

<https://cynnalcymru.com/>

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Mae'r ddogfen hon hefyd ar gael yn Gymraeg.

This document is also available in Welsh.

Foreword

The recent IPPC report asserted: “*To avoid mounting loss of life, biodiversity and infrastructure, ambitious, accelerated action is required to adapt to climate change, at the same time as making rapid, deep cuts in greenhouse gas emissions*” (IPCC, February 2022). The Welsh Government declared a Climate Emergency in 2019 and their Net Zero Strategic Plan (2022) outlines the need to transition to a Circular Economy (CE) in Wales.

This report aimed to support practitioners within public, private and third sector organisations by enhancing their knowledge of the implementation of CE principles. The ESF funded [Circular Economy Innovation Communities](#) (CEIC) programme, delivered by Cardiff Met and Swansea University, encountered a few organisations implementing CE principles and many more looking for 'how to' examples of the application of CE principles. The CEIC programme was [designed](#) to support public service and third sector organisations co-produce new regional circular economy service solutions, through [regional CE innovation communities of practice](#).

We obtained the support of the [Wales Innovation Network](#) to provide 'how to' cases to inspire practitioners to implement CE principles and help Welsh Government encourage public, private and third sector organisations to reduce their carbon footprint and transition to a CE as outlined in their '[Beyond Recycling](#)' strategy.

*Dr Gary Walpole
Director, CE Innovation Communities
Co-Director, The Centre for Regional Innovation and Research.*

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Introduction

This report outlines twenty-one Circular Economy (CE) cases studies, that include video clips, from across Wales. The case studies provide 'how to' examples for practitioners to better understand CE principles and their implementation. The case studies should also encourage public service organisations and businesses to begin implementation of CE principles. This report disseminates some of the magnificent work ongoing in Wales and supports organisations to reduce their carbon footprint whilst moving to a CE business model.

Circular Economy can be defined as:

“A circular economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources, and. designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles:

- 1. Design out waste and pollution*
- 2. Keep products and materials in use*
- 3. Regenerate natural system”*

([Ellen MacArthur Foundation, 2022](#)).

This report was written collaboratively by Cardiff Metropolitan University, Aberystwyth University, Bangor University, Swansea University, Cwmpas and Cynnal Cymru funded by the Welsh Innovation Network. During the summer 2022, Cardiff Metropolitan University and partners ([Appendix 1](#)), conducted interviews with the twenty-one organisations and developed the case studies. We created short videos, links within the case studies, for sixteen of the twenty-one case studies. We obtained participants thoughts on the support they have found useful in implementing CE principles and what interventions have proved helpful. The interview consisted of eleven structured interview questions ([Appendix 2](#)), which informed the format of the case studies ([Appendix 3](#)).

The organisations were selected with consideration to:

- Geographic location (all Wales coverage sought)
- Representation of a mix of producers (food to steel) and service providers (health to hospitality).
- Representation of innovative and diverse approaches to CE implementation across the public, private and third sectors.
- Not already publicised or within the public domain.

This report was compiled partly to inform the Circular Economy Pedagogy Report which contained a Circular Economy capability development matrix and a list of Circular Economy interventions designed for practitioners. These resources are available [here](#).

Case Study 1

Aber Food Surplus Aberystwyth



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1. At a glance

1.1 *The initiative*



AberFood Surplus is a not-for-profit social enterprise based in Aberystwyth. Its origins are found in the Aberystwyth University Sustainability Society, organised and led by students. Three members of the Sustainability Society became the founding members of Aber Food Surplus. It was established in 2015-16, with the collection of food waste from the Morrisons supermarket in Aberystwyth. Food that is destined to be thrown away is donated, providing it is fit for human consumption, to the community. Aber Food Surplus is run largely by volunteers. It is a provider of volunteering opportunities for people in Aberystwyth and its surrounding area. Aber Food Surplus supports the development of a sustainable society with its vision being 'for Aberystwyth to be a pioneering example of food sustainability. A place where food is grown, distributed, and consumed in a fair and environmentally sustainable way. Where people of all ages and backgrounds come together to enjoy tasty and nutritious food. Where food waste is a thing of the past.

1.2 *Timeframe*

Aber Food Surplus was established during the Aberystwyth University academic year 2015-16. In 2018, the volunteers applied for and received funding to support a pilot of their project. The following year saw funding received to help employ people to work on the project.

1.3 *Focus areas*

The work of Aber Food Surplus places an emphasis on establishing collaborative relationships between both organisations and individuals. For example, a key collaborative relationship is with local supermarkets and individual employees responsible for monitoring food sell-by-dates. Food waste to be thrown away by supermarkets is made available to the wider community. Aber Food Surplus also try to create change in people's awareness of the role they play in their environment and the consequences of their actions on the planet. They also undertake work to change members of the community's thinking about surplus food distribution. Aber Food Surplus works with local charities such as homeless shelter providers.

1.4 *Organisational structure/core team*

The team at Aber Food Surplus are heavily invested in a flat structure where "all volunteers have a voice." The egalitarian nature of Aber Food Surplus extends across the whole organisation including its directors, full-time and part-time employees, and volunteers. Aber Food Surplus is looking to develop the team further, especially to enable the organisation to become more entrepreneurial in its approach.

1.5 Finance

Initially, the Aber Food Surplus project was funded via 'pay as you feel' events. The 'pay as you feel' practice of fund raising continues today with people being able to pay if they wish for food donations. To help develop the project further the team decided to apply for grant funding, the purpose of which was to grow the project in Aberystwyth. The first tranche of funding came from the LEADER program via Cynnal Y Cardi Local Action Group (managed by Ceredigion County Borough Council, sourced from the Welsh Government Rural Communities – Rural Development Programme 2014-2020). Subsequent funding came from the National Lottery Community Fund. This funding enabled the creation of a community fridge space and an environmental hub in Aberystwyth. Several other organisations have provided funding to Aber Food Surplus including Tai Ceredigion, Aberystwyth Town Council, the Ship and Castle pub in Aberystwyth, and Hubbub Foundation. Work undertaken for Aberystwyth University also generates income for the project. Aber Food Surplus are not funded directly by government or supermarkets.

1.6 Outcomes to date

Aber Food Surplus can calculate the number of kilograms of food saved from going to waste. Consequently, this leads to a reduction in food waste and an increase in food remaining in safe use by people. Typically, Aber Food Surplus save over 300kg of food from being wasted every week in the Aberystwyth area. The work of Aber Food Surplus includes spreading the message of reducing surplus food and therefore food waste. An outcome of spreading this message is an increasing number of businesses in Aberystwyth are adopting the practice of 'too good to go.' As a result, this practice leads to a reduction in the normalisation of food surplus. Aber Food Surplus help create a win-win position with supermarkets, with Aber Food Surplus receiving food donations from supermarkets which in turn limits the amount of food supermarkets send to waste facilities. This relationship illustrates the benefit to both Aber Food Surplus and supermarkets of circular economy practices.

The outcomes of Aber Food Surplus activities also include encouraging community connections to the food system and inviting people to question their role in the food system. This is in part undertaken by the sharing of a vision of a circular food system. Aber Food Surplus is a real-life example of a circular food system in practice in Aberystwyth. In other words, Aber Food Surplus is "making change (in the food system) accessible and visible."

2. The Journey

2.1 Origins

Aber Food Surplus was created because of the vision of three Aberystwyth University students. This emerged from the discussions and ideas exchanged by three University Sustainable Society student members. It was driven by an ongoing need for individuals and communities to be more mindful that their actions impact on issues of environmental sustainability.

2.2 Process adopted

Aber Food Surplus identified a problem of food waste being generated by local supermarkets. Consequently, it formed agreements with local supermarkets to gain access to food potentially going to waste and distribute it to people who wish to consume it. Aber Food Surplus aim to ensure that the food is consumed and not thrown away. However, they recognise that not all food waste is suitable for human consumption.

The food waste hierarchy which provides a framework for the work of Aber Food Surplus is as follows:

- i. Reduce food waste at source
- ii. Feed people
- iii. Feed animals
- iv. Food composted

Aber Food Surplus has established relationships with various charities in Aberystwyth. Their work with these charities helps encourage members of the community to be actively involved in the food system. Such work aims to have more people aware of, and empowered to be involved in, the food system. This is arguably a form of raising the community's critical consciousness. Such work aims to help people become more aware of how food is distributed and sold. It also aims to limit the barriers for people growing their own food

Aber Food Surplus operate a seed saving system with a seed library, an Aber Food Coop, and a composter system. Aber Food Surplus are piloting a food hub which creates space for food producers to gain access to market. Several local food producers do not have access to a market for their produce. The food hub will support a diversity of food production. Food collected from supermarkets and then distributed to the public saves it from being needlessly wasted. The food is either distributed, dehydrated, or pickled. It is recognised that the dehydration of food has consequences in terms of energy consumption. Aber Food Surplus also organise and deliver food skills workshops. These workshops contain elements of circular economy practices. For instance, food production which exceeds market demand or exceeds a family's consumption needs may go waste. The food skill workshops explore dehydration and pickling techniques, both of which will stop food going to waste and will enable food consumption at a later date.

There is a common misconception that Aber Food Surplus are a foodbank which gives food to people typically on low incomes. The food distributed by Aber Food Surplus is not distributed on needs basis, it is distributed to anyone who wants it. Therefore, the distribution of food is seen as a community resource. It is emphasised that Aber Food Surplus is an environmentally focused project and not a foodbank.

2.3 Milestones/measuring process

The measuring process is partly undertaken to work with funder requirements. For example, there are quantitative measures such as the numbers of people engaging with Aber Food Surplus initiatives, the number of stakeholder organisations engaged with and some of the outcomes of such engagements. Other quantitative measures include the number of kilos of food preserved, and the number of kilos of food distributed that would have gone to waste. However, much of the work undertaken by Aber Food Surplus is of a qualitative nature and is difficult to quantify. For instance, Aber Food Surplus is working to better understand how volunteering improves individual's well-being. An additional milestone Aber Food Surplus is working towards is to improve its financial resilience.

They encourage community gardening and growing of a range of food produce. One of the aims of Aber Food Surplus is to create a more circular food system that is community led. Fundamentally, Aber Food Surplus can be described as an environmental organisation which seeks to improve the environment for current and future generations. They are environmentally motivated in their operations. Giving local food producers access to local markets has both a positive impact on the environment as well as on the local economy. This initiative can be said to exhibit traits of a foundational economy.

3. Reflections

3.1 *What works*

There are several aspects of the work undertaken by Aber Food Surplus which contributes to its success, for example, the visibility of Aber Food Surplus in its community space. The team prides itself on encouraging open dialogue with all its stakeholders. This is particularly the case with its volunteers, who are a valuable source of both knowledge and skills. The volunteers help reinforce the core values of Aber Food Surplus and challenge the organisation to go further with its work. The organisation is fully invested in social justice, environmentally focused as well as being a fun place to be.

3.2 *What support was useful*

The support provided by the funders has been valuable. The funding application process enabled discussion to explore the desired outcomes of the work of Aber Food Surplus. Working with stakeholders has also enabled the cross-pollination of ideas. Aber Food Surplus supports other organisations by offering mentoring opportunities to those wishing to set up community fridges.

Developmental matrix

The work of volunteers at Aber Food Surplus is described as having an environmentally focused “state of mind.” The learning that takes place at Aber Food Surplus is part informal and part more formally created. The more formal elements include the volunteer induction programme which includes group induction sessions and a sharing of the Aber Food Surplus organisational ethos. There is also a volunteer agreement which highlights the foundational basis of Aber Food Surplus in being environmentally friendly. There is also a ‘how to’ guide at the Food Hub. Finally, the creation of a network of similar organisations to share learning would be welcomed by the team.



Watch the video [here](#).

Case Study 2

Bluestone National Park Resort Narberth



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1. At a Glance

1.1 The initiative



Bluestone National Park Resort is a holiday park in Pembrokeshire, South West Wales. It is family owned, with staff having a 30% shareholding and the Local Authority having a 0.5% shareholding. It employs over 770 people. The resort consists of 344 timber lodges, as well as cottages and studio apartments set in 500 acres (2.0 km²). Each year the resort hosts more than 150,000 guests. Bluestone has had a commitment to sustainability since opening in 2008. It has been awarded 'Green Key' accreditation and 'Bee Friendly' status. It is also a

member of BiTC, WRAP Food Road Map, Guardians of Grub, Surfers Against Sewage 250 Club, and the Pembrokeshire Nature Partnership. The term 'Free Range' at Bluestone suggests significant space to roam and enjoy at the guest's leisure. To bring the ethos into the business, in 2019 the company introduced a range of Free Range Future initiatives and ongoing strategies to maximise the positive impacts on the business, while benefiting the community and environment.

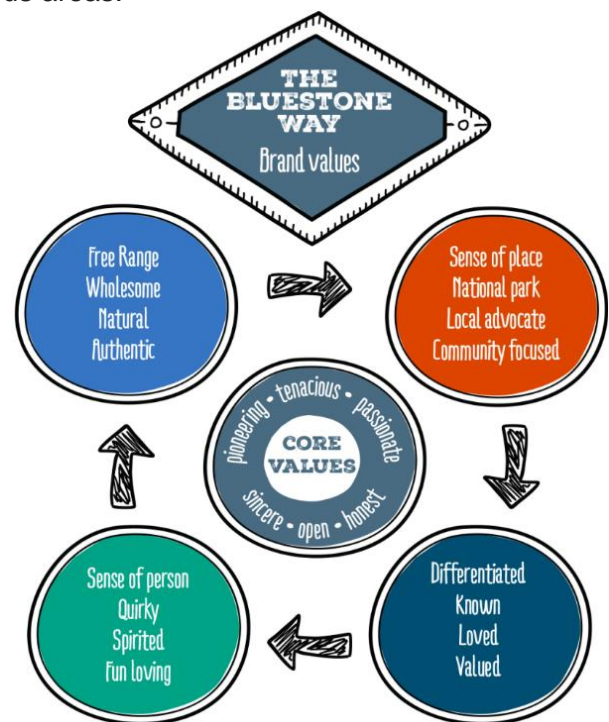
1.2 Time frame

The Free Range Future initiative started in 2019 with the promise, as a business, to work towards a sustainable and green future. A series of projects to foster a circular economy have been launched since then in terms of waste management, renewable energy, and community engagement amongst others.

1.3 Focus areas

The vision of Free Range Future within Bluestone is to be the most responsible short break resort in the UK. To achieve this, there are five focus areas.

- Biodiversity: To maximise biodiversity across Bluestone's site of 500 acres. To develop year on year enhancement of Bluestone's natural assets in support of the Nature Recovery Action Plans for Pembrokeshire and Wales;
- Energy: To eliminate energy wastage. To increase the use of renewable, efficient sources of energy, and to reduce energy use per guest night through the energy management plan;
- Waste: To maximise reduction, reuse and recycling of waste, with a focus on the circular economy. To ensure the most responsible outcome for waste at Bluestone, at every opportunity;
- Community: To engage with communities and schools through a sustainability lens. To share with, enable, and support the community, utilising Bluestone's position to enhance sustainable development in the region;
- Net Zero: To achieve Scope 1&2 by 2030 and Scope 3 by 2040.



1.4 Organisational structure/core team and participants

In recognition of their commitment to corporate responsibility, a new department was established in January 2019 to consolidate all issues around sustainable development and form a basis on which to build a Free Range Future. The remit of the department is firstly to take Bluestone into a position of sector leadership, then to be continually progressive and to share best practices wherever possible.

The department operates a learning and sharing ethos, supporting greater understanding and the enhancement of sustainable development, engaging both sector and cross-sector partners, and the wider community at large. Meanwhile, Bluestone also works with a range of existing and new partners to advance the Free Range Future projects.

1.5 Finance

Bluestone spends several million pounds per annum in the local supply chain and the local workforce receives over £11m per annum. With an orientation towards sustainability, the business will also profit from reusing items, waste reduction, circular solutions, customer engagement and long-term supplier relationship.

1.6 Outcomes to date

Bluestone generates a large proportion of its energy from local sustainably grown biomass. It has been on a Green Tariff for electric since 2019. It was the first regional hospitality business in the UK to switch to Bio LPG gas; the first UK resort to ban the sale of water in plastic bottles, and the first resort in the world to recycle disposable nappies. Bluestone has eliminated a significant amount waste through reduce, reuse, refabricate, upcycle and recycle programmes. Meanwhile, it has reconfigured its supply chain by working with local partners to reduce the CO²e.

2. The journey

2.1 Origins

Sustainability has always been Bluestone's core value. In 2019, with the commitment to a Free Range Future, a new department was created to foster a circular economy. The company reviewed historic good practices concerning approaches, to transform knowledge into better practice in the future. Five focus areas were identified as biodiversity, energy, waste, community, and net zero, alongside a number of innovative projects aiming for sustainable solutions.

2.2 The process adopted

Outlined below are some of the processes that Bluestone is exploring or has adopted.

- Develop as much as possible onsite. For example, planting woodlands, hot composting short rotation coppice (as soil improvers) for food production agri-partners;
- Potential partnerships with local farmers. For example, woodland planting/management/ Carbon Credit;
- Offset locally and with as much additional benefit as possible such as biodiversity and water quality;
- Investigating local opportunities in areas such as woodland development, peat restoration, sea grass or kelp forests;
- Talking to potential partners including Wildlife Trusts, Dŵr Cymru, WWF, National Parks, Clo Carbon, local landowners;

- Recycling nappies and reducing over 400,000 pieces of single use items;
- Working with community partners such as Homelessness Teams, Frame, Value Independence, Xcel, Norman Industries to reuse, upcycle and recycle used sofas.
- Working with Norman Industries and Pembrokeshire College to turn 1000 bed runners to blankets for homeless and disaster charities;
- Working with a neighbouring farm to transform hundreds of tonnes of Bluestone's cut grass into manure reserve to create natural fertiliser for crops;
- Engaging with Portfield Special School to help understand and support local biodiversity through the National Nest Box week;
- Selecting a new laundry supplier, Pengarreg Laundry, together eliminating 200,000 single use plastic laundry bags per year;
- Working with Simon Safety & Community Partners, VC Gallery & Milford Youth Matters to reuse coats for local gardening projects;
- In 2021, Bluestone stopped providing water in plastic bottles provided to guests, reducing 42,000 bottles per annum;
- Encouraging staff and guests to use reusable coffee cups, reducing 16,000 single-used cups per annum.



2.3 Milestones/measuring progress

Bluestone follows a phased approach to building the net zero pathways. Specifically, these are the milestones and measures which indicate progress towards reducing their carbon footprint:

- Switching to Rego (Green Tariff) electricity supply (2019). This will reduce CO²e by approx. 2,000 tonnes per year;
- Investing in a renewable energy centre on site. This means that about 40% of electricity will be generated onsite;
- Decarbonising the vehicle fleet. A commitment to shifting all viable vehicles to electric by the end of 2023. This will reduce CO²e by approx. 75 tonnes per year;
- Switching to Biopropane for cooking in 2022. This will reduce CO²e by approx. 150 tonnes per year;
- Auditing the entire supply chain to ensure local sourcing, ethics and quality. The Scope 3 analysis is not yet complete, but this will contribute a large amount of CO²e reduction;
- Menu development with more local sourcing and low carbon meals. The Scope 3 analysis is not yet complete, but this too will lead to a large reduction in CO²e.

3. Reflections

3.1 'What works'

According to Bluestone, small practical projects with good intentions really work. The concept of thinking and acting locally helps the company to establish new partnerships with local suppliers, farmers, schools and community. Bluestone believes that a circular economy can be embedded in strategic thinking, as it tries to design new solutions to be circular wherever possible.

3.2 *What support was useful*

The people along with the organisational culture have been a great support for a circular economy implementation in Bluestone. The company makes sure that staff are aware of the importance of sustainability. Bluestone has a 'Team Planet' group consisting of members from all departments, who meet monthly to share good practices and bring knowledge back to their departments. Engaging with guests is also useful, according to Bluestone. The company encourages guests to become eco-consumers, seeing the value of a circular economy. In 2020, it surveyed guests and from 3,400 respondents noted the following data:

- 98% reported how important sustainability was to them;
- 94% say climate change is something everyone needs to play a part in addressing;
- 89% would pay more for a sustainable (quality) product;
- 97% would segregate waste further.

Moving towards the future, Bluestone seeks a bigger platform to exchange knowledge and practical tools, linking the North and the South of Wales together to tackle environmental challenges.



Watch the video [here](#).

Case Study 3

Celsa Steel UK Cardiff



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1. At a Glance

1.1 The initiative

Acquired in 2003, Celsa Steel UK is the largest recycler of steel in the UK and one of the largest manufacturers of steel products for the construction industry in Europe. From



Leading the *circular* transformation

facilities in Cardiff, Celsa UK produces and delivers 1.2 million tonnes of finished products each year, mainly to the UK and Irish markets. The company directly employs more than 500 people and several hundred sub-contractors in South Wales. It aims to be the domestic market leader, growing in a sustainable and profitable way. In 2009, it became the first steel manufacturer certified to a recognised responsible sourcing standard, Eco-Reinforcement (BES 6001 Sector Standard), for its reinforcing products. In 2010, the entire product range was certified with BES 6001 standard. Celsa UK has been through a significant transformation process towards a circular economy.

1.2 Time frame

Celsa Group was established in 1967 and had the vision for steel production to not only be efficient and effective, but also environmentally sound. The current chairman of Celsa, the son of the founder, understands the legacy and has embraced the principles of circularity. As a result, Celsa UK sees circularity as a way of firstly reducing its impact, and then eliminating the negative impact on the environment completely and to start building a positive role in the development of a new economy.

1.3 Focus areas

The focus areas include recycling, producing new products, and eventually providing a circular economy service to wider industries.

1.4 Organisational structure/core team and participants

The circular economy transformation in Celsa UK has not happened to just an individual department, but across the entire organisation. It is a system approach, requiring fundamental changes of mindset. For instance, questions such as “how can the organisation function?”, “how does the supply chain function within an economy?” are always considered across departments. According to Celsa UK, the links between departments, organisation, and supply chain makes circularity happen.

1.5 Finance

As a family-owned business, the circular economy activities in Celsa UK are mainly self-funded.

1.6 Outcomes to date

Rather than focusing on specific projects, Celsa UK has a circular economy transition programme for the entire organisation, with a much higher understanding of the opportunities that circularity can bring to sales as a business. Moreover, it means the value it generates will return to the local economy where Celsa UK is based. A whole new executive committee has been created within the organization, which includes an emphasis on sustainability. This is done in terms of understanding their current impact and quantifying that impact in greenhouse gas emission protocols. There is a team looking at the wider aspects of the circular economy, including extraction of critical resources from by-products. Future plans will consider the development of new business models around circular solutions and services. Therefore, instead of continually working with a range of suppliers, Celsa UK is starting to look more actively at strategic partnerships, which can collectively deliver on the circular agenda. The fact that Celsa UK is now exhibiting in industry events and promoting the concept of steel produced in a circular solution system, has attracted potential new customers and collaborators. These are some of the key achievements so far in the last two years.

2. The journey

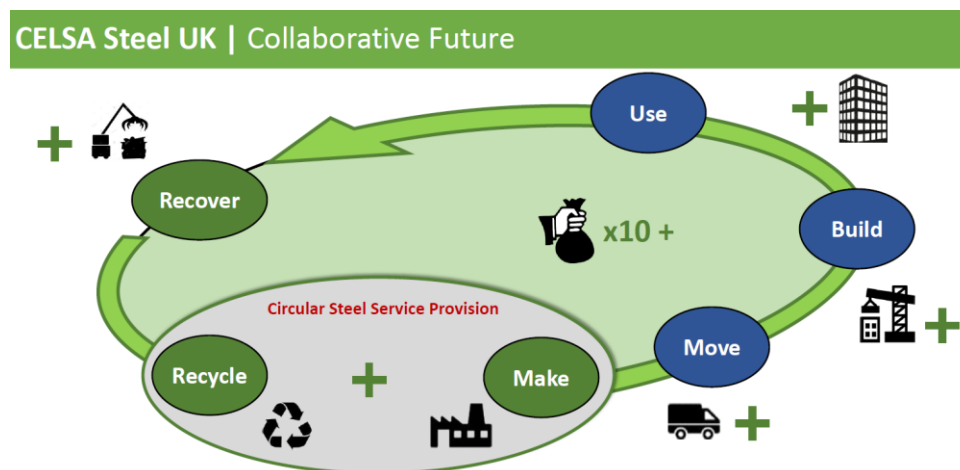
2.1 Origins

Since its beginnings, Celsa UK has produced steel in a way that is more sustainable than many others. Over the last couple of years, the company has embraced the principles of a circular economy, realising that the full value of circularity has yet to be proven and demonstrated within Celsa UK. The organisation is currently going through this transition and is starting to educate the organization, customers and suppliers on what circularity can mean.

2.2 The process adopted

Initially, Celsa UK reviewed its internal processes by examining the material resource flow through the organization. They looked into the purchasing of raw materials and the systems of recycling and processing that material, and then also with the sales teams who sell the product back into the economy.

Once the different departments were connected internally, it became easier to explore circularity externally. Wanting to bring a service solution back to industries, Celsa UK looked at their collaboration with the construction sector, aiming to connect both ends of the supply chain.



According to Celsa UK, the circular economy process does not have to be complex. For example, Celsa UK undertook a pilot project with Bam Construction to re-develop the Plaza cinema in Port Talbot. Using circular thinking, they asked a series of questions:

- Does it need knocking down?
- Can the structure be used again?
- If it does need to be taken down, can it be disassembled as opposed to demolished so the components can be used again?
- If the components cannot be used again, can they be remanufactured and used elsewhere?
- And if all of that fails, can they be recycled?

These questions were considered in the demolition of the Plaza cinema and ultimately Celsa UK chose to get material to recycle and reprocess. The plan was to obtain material from the source, quantify it at source, trace the flow through the journey to the processing plant and then the journey from the plant to the fabricators, and back to the same construction site. As a result, this could create a closed loop. This demonstrates that a circular economy can be a simple solution, and designers should have the ability to create a new future, with only minor changes.

2.3 Milestones/measuring progress

First and foremost is the ability to undertake large scale recycling. Celsa UK recycles about 1.2 million tonnes of scrap 'end of life' material from other industries. If this was multiplied across the whole of the Celsa group, 8 million tonnes of materials could be recycled every year.

The second element which is starting to become more prevalent is Celsa UK's capability to process material. It can melt material, cast it into steel billets, which can then be rolled and produced into new products.

Celsa UK also has the capacity to fabricate products into a format which can be delivered back into the economy again. With this new business model, the company can now offer services to a wider industry. Rather than continuing to be primarily a steel producer, Celsa UK are now looking at how to be facilitators and collaborators for the idea of closed loop circular steel supply. Ideally at some stage, the company would not purchase materials, but offer steel back into the economy as a service for certain applications.

Furthermore, Celsa UK produces by-products in the form of slag, dust or scale. The company is currently exploring collaboration opportunities with automotive, electronics and construction industries to utilise these by-products as critical resources. With an understanding of the wider circular economy, Celsa UK believe that they can rethink their business model and resource efficiency.

3. Reflections

3.1 *'What works'*

The Circular Economy Innovation Communities organised by Cardiff Metropolitan University are one of the best forms of engagement. According to Celsa UK, to achieve true circularity, there is a need to explore the wider economy, which includes existing manufacturing and service industries. It is only when there is a wider choice for consumers or users of resources, that they make those informed decisions and push the agenda forward. Also key is aligning the principles of circular economy to education.

3.2 *What support was useful*

The biggest barrier was the fear of change. However, once the barriers were understood and articulated, the principles of circular economy enabled solutions to be developed.



Watch the video [here](#).

Case Study 4

Circular Economy Mid Wales Newtown



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1. At a Glance

1.1 *The initiative*



Circular Economy Mid Wales is a not-for-profit organisation. There are a number of different parts to the business including bases at the household waste recycling centres in Newtown and Welshpool and a high street shop in Newtown. The company also has a lease from Neath Port Talbot College for an area of land adjacent to the further education college campus

in Newtown. This land is being developed as a centre for a variety of mostly social enterprises. Circular Economy Mid Wales are acting as a facilitator for other organisations, such as Cultivate, Bike to the Future and Men's Shed, all of which are working within the circular economy.

The organisation appointed a new CEO in April 2022, Suzanne Wardell, who has a background in textile design. For her, the circular economy is about recycle, reuse and repair and she feels that the principles of the circular economy were something she learnt as a child growing up in rural Mid Wales where farming communities relied on reusing, repurposing and mending.

1.2 *Time frame*

Circular Economy Mid Wales was launched in 2019. Key stakeholders within the town were central to the development of the Circular Economy Mid Wales enterprise idea and these included Newtown and Llanllwchaearn Town Council and Open Newtown, which is a Development Trust based in the area.

1.3 *Focus areas*

Circular Economy Mid Wales encourages people to donate their waste materials. They have bases at two local household waste recycling centres, and they try to reuse and recycle as much of the donated waste as possible. They are, however, realistic that they are not able to accept everything. The CEO is pragmatic that their shops are full of waste that other people didn't want. However, from an enterprising perspective they can sell it on and generate an income. Circular Economy Mid Wales are a key stakeholder within Newtown and they work in partnership with a variety of different organisations including a local private sector recycling company and Powys County Council.

1.4 *Organisational structure/core team and participants*

Circular Economy Mid Wales currently employs six staff but is considering plans to expand soon. The CEO has been working with the Jobcentre and Jobcentre Plus in Newtown to develop a plan for volunteer opportunities, recognising that volunteering can often be a way of getting those in long term unemployment back into work.

In terms of recruitment and selection, knowledge of the circular economy has featured within the interview process. This has been the case for a variety of job roles from an Operator at one of the centres to Shop staff. All staff are committed to the organisation's aims. They have a small number of volunteers, and they maximise their social impact by providing volunteering opportunities to several different groups, including people with additional learning needs. Volunteering placements are available at all their sites and facilities.

1.5 Finance

Circular Economy Mid Wales, Newtown & Llanllwchaiarn Town Council, together with funding from the Welsh Government's Circular Economy Fund provided £675,000 investment to be able to purchase a prominent town centre property, to serve as a community Reuse & Repair Hub, to showcase reused and repaired goods in prominent public spaces and to invest in the infrastructure behind a reuse and repair economy. The organisation has also received grant funding, including from the National Lottery. Circular Economy Mid Wales also generated income from its trading activities, such as sales from its shop and from running classes and events.

1.6 Outcomes to date

Grant funding from the Welsh Government allowed the organisation to develop quickly, being able to purchase a large high street premises which has provided a strong foundation for the company. This foundation should also allow the business to continue to evolve and grow into the future. Circular Economy Mid Wales also believes that there has not been a need to convince the public that the business is a good idea. The CEO considers that it has not been like launching and establishing a commercial business, where marketing campaigns to sell ideas, goods and services may have been necessary.

2. The journey

2.1 Origins

The idea to establish Circular Economy Mid Wales came from the vibrant social enterprise and sustainability ecosystem that already existed within Newtown along with strong support for the idea from the local Town Council. Together these key stakeholders successfully applied for Welsh Government funding, which has allowed the organisation to become established.

2.2 The process adopted

Circular Economy Mid Wales understands a systems approach, instead of starting with a linear economy approach of buying products new and then discarding. At Circular Economy Mid Wales, the CEO feels that they are trying to join the two ends of that line to make practices as circular as possible. They consider that every input into the system results in a waste output and those outputs usually end up in a landfill or an incineration plant. To keep generating waste is not good for Newtown, Wales or the planet.

They work at the local waste recycling centres, encouraging the public to donate their recycling so that it can be repaired, repurposed and sold to generate income for the business. Circular Economy Mid Wales own a large property on the high street in Newtown; the ground floor of which has been renovated. There are two other floors which will be renovated in the future.

Since having a high street presence more local people are starting to know about the organisation and what it is trying to achieve. The public have now started donating straight into the shop, as well as at the recycling centres.

The company is soon planning to organise another series of repair cafes. These have been popular when Circular Economy Mid Wales have run them previously, however they do require a lot of planning to ensure that there are enough volunteers in place.

2.3 Milestones/measuring progress

The company calculates that they are currently saving over 9 tonnes per month from going into landfill and they are hoping that this will soon increase to 10 tonnes per month.

The CEO has noticed that there seems to be a sense of wellbeing for people who support the project, as by donating items, rather than sending them to landfill, makes them feel positive. Also, post-Covid, there seems to be more of an awareness about resources and sustainability meaning that people want to donate but also that people are willing and even want to look at buying second hand goods. With the cost-of-living crisis too, many people need to buy value for money items and appliances and Circular Economy Mid Wales can serve this need.



Now that they are established on the high street, staff in the shop are building strong customer relationships which they feel are important as the business continues to grow and develop in terms of services and events. Shop staff also notice that many tourists are coming into the shop, and they are really impressed with what the enterprise is doing.

The CEO evaluates that there could be opportunities to grow the business further in the future, potentially to other recycling centres and high streets in Mid Wales. The organisation also has a base on the Neath Port Talbot college Campus in Newtown and feel that they could be working with business students to give them practical opportunities and also given them the chance to understand the circular economy and social enterprise.

3. Reflections

3.1 'What works'

From a commercial perspective, the company has learnt a lot since it was established in 2019, particularly in terms of funding sources and developing income generating activities. Circular Economy Mid Wales consider that they have really benefited from the support of other organisations, particularly those located in Newtown. A support ecosystem, with an emphasis on circular economy has developed with organisations such as the Town Council, Open Newtown and Cultivate. These organisations have been able to support each other in many ways, not just financially, but also with financial management and their experience within sustainability and the circular economy. There have also been many of the same people involved which has meant that people have been able to develop skills and capacity by gaining experience in different roles and in different organisations. It is felt that this has been a real benefit to the town.

The company has a Facebook page and an Instagram account, but they recognise that they need to use them more effectively. They feel that to develop a successful social media presence, they need to post regular updates and information and acknowledge that currently they do not have an effective website which is something they are planning to address soon. Circular Economy Mid Wales feel that an upgraded website will provide them with an opportunity to showcase what they do and let the public know about events and opportunities. It is also a way of reaching people who don't yet know about the business and what it does. They recognise that a website can take a lot of time to maintain and update but feel it's worth that investment of time.

3.2 What support was useful

The support ecosystem, detailed above, has also led to further conversations which have resulted in more opportunities, with the possibility of greater expansion in the future. It is considered that there is significant opportunity to replicate and grow the CE model that Circular Economy Mid-Wales have developed. The support from the Welsh Government in terms of a grant to buy the high street building has been very beneficial for the company along with the policy stance adopted in terms of the circular economy. Circular Economy Mid Wales acknowledges that without the Welsh Government grant they would not have been able to buy their facility. The support from Powys County Council has also been invaluable.

Finally, the organisation would not have succeeded without the support of the general public through donating their unwanted items, buying products in the shop and attending events and classes.



Watch the video [here](#).

Case Study 5

Craft Aberystwyth



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1. At a glance

1.1 *The initiative*



Craft is an independent, not-for-profit enterprise. Its main aim is to reuse household goods and stop them being thrown away. A strapline used by Craft, which sums up its work is 'good for the planet, good for you.' From its inception, Craft was arguably born as a circular economy enterprise. As Craft evolved it became an enterprise which focused heavily on reducing landfill waste. The most significant element of Craft's contribution to the reduction of landfill waste is to reduce the amount of furniture going to landfill sites. The furniture is donated to Craft and is then offered to the public as an opportunity to reuse it. Geographically, Craft works within a 25–30-mile radius of Aberystwyth. The geographic extremities of Craft's range include Newquay, Lampeter, and Tywyn.

1.2 *Timeframe*

Craft was initially created as a bike and computer repair initiative. The genesis of the idea emerged because of four people chatting in a local Aberystwyth pub in 1998. The early vision for Craft was to help people who had problems with their bikes or computers to have an Aberystwyth based location for repairs.

1.3 *Focus areas*

The areas focused on by Craft include furniture, electrical items and kitchenware repair and onward sale (sometimes given away to those in need) along with household goods and bedding.

1.4 *Organisational structure/core team*

The organisational structure of Craft consists of six full-time employees of which two are directors, two hold supervisor roles and two have operational duties. There are also five part-time employees and one longstanding volunteer. The team at Craft are described as likeminded people who care. Caring about each other and Craft's stakeholders is something that is very much apparent at Craft. The training and induction of new members of the team to ensure they understand the organisation's values is undertaken through hands-on training and by "learning on the job." Circular economy practices are evident throughout Craft, meaning that new members of the team quickly become familiar with the circular economy nature of Craft's work.

1.5 *Finance*

Craft have helped fill a circular economy void created by the gradual withdrawal of large household item collections, such as furniture and large electrical goods, by the local authority. Craft offer to collect these items and reuse them. This is subject to the items being fit for purpose or being able to be repaired ready for use. The local authority recognises the work Craft does in the circular economy, in particular reducing landfill waste and provides an annual subsidy to Craft. Craft generate income through the sale of furniture, electrical items, kitchenware, bedding, and various household goods.

1.6 Outcomes to date

The outcomes of Craft's operations are primarily the reduction in the number of furniture and homeware products going to landfill waste sites. Furniture and homeware which is donated returns to use and does not end up in landfill. The team at Craft also recognise the societal outcomes of their work. For instance, Craft provide affordable furniture and other household goods to people who may not be able to afford similar goods at standard retail outlets. Consequently, this builds self-esteem and "helps people feel better about themselves." It also helps with the community focus of Craft's work. They work closely with Ceredigion County Borough Council, in particular the Social Services department. Finally, Craft help young people into work and help school children become more aware of sustainability issues.

2. The Journey

2.1 Origins

In the late 1990s Aberystwyth had a lack of bike and computer repair facilities. This was particularly true for those on low incomes. The founders of Craft identified there was a need to develop repair skills and capacity in Aberystwyth. Craft was created from the vision of the four people who met in an Aberystwyth pub.

2.2 The process adopted

Operationally, Craft receives donations, it does not buy stock. The donations are either brought directly to Craft's premises, which is part of Aberystwyth train station, or they are collected from the donor's home or commercial premises. On arrival at Craft, the furniture is cleaned and may need to be repaired. The cleaning and repair work is undertaken in Craft's workshop located next to the loading bay. The furniture is then placed in Craft's retail space for sale or, depending on stakeholder need, it may be given away. The flow of furniture through craft is as follows: collection > delivery bay > repair workshop > retail space > loading bay > delivery.

In addition to reusing furniture and preventing it going to landfill, Craft also provides opportunities for household items such as kitchenware, bedding and clothing to be reused. Craft also receives donations of electrical goods. These are also cleaned and, if needed, repaired, ready for reuse. It should be noted that Craft only reuses soft furnishings which have a fire protection label, typically mattresses, and electrical goods which are PAT tested.

The team at Craft play a key role in the Aberystwyth and surrounding area circular economy. For instance, at the start of the Aberystwyth University academic year, students are frequent kitchenware customers, and at the end of the academic year students often donate their used kitchenware back to Craft. Similarly, local housing landlords offering student accommodation will buy furniture from Craft at the start of the University term and may donate it back to Craft at the end of the summer term. Tourists to Aberystwyth, especially caravaners, will often donate homeware items at the end of the summer season only to be purchased and reused by other tourists at the start of the following year's summer season. Finally, during the Christmas period Craft sells many reused Christmas decorations and then witness them donated back to Craft post-Christmas. This is summarised by an interviewee who said, "the place goes crazy (at Christmas), then we have it back in January." Typically, the month of January sees higher than normal volumes of exercise equipment being donated.

2.3 Milestones/measuring process

The measuring process considers both tangible, objective measures and intangible, subjective measures. Tangible measures include generating sufficient revenue to ensure Craft continues to operate successfully, paying necessary energy bills, rent and wages. Other objective measures are the aggregate total weight of furniture saved from going to landfill. This measure is particularly important as it relates to the main aim of Craft, namely, to limit the amount of furniture and other household items going to landfill.

There are also intangible measures to consider, such as the impact of the work of Craft on boosting people's self-esteem and mental health. Craft also provides volunteering opportunities and part-time employment opportunities, both of which help enhance an individual's employment prospects. Finally, Craft offers work placement schemes with local schools.

3. Reflections

3.1 What works

The factors, which enable the successful work at Craft are many and varied. The working environment is described as a "a family atmosphere." There is an environment where circular economy practices are widely implemented. The shared expectation of saving goods from going to landfill along with repairing and reusing household goods is the driving force behind all that Craft achieve. The location of Craft is also a key enabler. Craft is located in Aberystwyth train station, in buildings formerly used as part of the station. As a result, rail passengers often shop at Craft. It is also a thoroughfare for shoppers visiting a local supermarket. Finally, it is close to a large car park and has easy access to its loading bay. There is ease of access for both inbound and outbound deliveries, along with customer visits to the shop. Alongside these enablers is also the loyalty of the team members at Craft. Staff members are regularly consulted about decision making which may affect Craft's operations. This consultative approach contributes to a feeling that "we're all in this together." As stated by an interviewee, "I wouldn't ask someone to do something I wouldn't be prepared to do myself."

To generate a steady flow of donations, Craft advertise in the local newspaper and have a web presence. However, by far the best way to encourage donation is word-of-mouth. Stakeholders such as local government and non-government agencies consider Craft as a reliable partner, who complement their work. For instance, Craft provides furniture for those in need, requiring immediate support.

3.2 What support was useful

Craft has a good working relationship with local support agencies, which support people in need. Ceredigion County Borough Council and Craft work closely together for mutual support in the reduction in the amount of household items going to landfill sites.

Finally, the building housing Craft needs to be maintained, consequently funding is required to enable Craft to offer their services. There is a desire to continue working with stakeholders to pass Craft and its circular economy practices onto the next generation.

Developmental Matrix

The circular economy development matrix was discussed during the interview. The team at Craft stated that the process of engaging new and existing members of staff in circular economy practices is achieved via social learning at work.

Case Study 6

Cwm Aman Maker Space Glanaman



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“It's not a hack space. It isn't just code and programming or electronics. It isn't an art studio or woodwork room... it's the people.”

1. At a Glance

1.1 The initiative

In 2016, Cwmaman Town Council started the journey to create a MakerSpace in the Aman Valley, a former coal mining area in South Wales.

A MakerSpace is defined as a collaborative workspace for making, learning, exploring and sharing, open to both adults and children. The aim is to boost confidence and skills in all areas but particularly critical 21st Century STEM skills (Science, Technology, Engineering and Maths) by providing hands-on learning, help with critical thinking skills and opportunities to innovate, experiment and grow. Equipment can range from ultra-high-tech to no-tech. As the global MakerSpace movement explains: “It’s more of the maker mindset of creating something out of nothing and exploring your own interests that’s at the core of a MakerSpace.”



1.2 Time frame

The MakerSpace has expanded from a single room in a community centre in 2016 to a multi-room, multi-project site by 2022, giving community members access to the sort of facilities and kit more usually associated with cities and university towns.

1.3 Focus areas

Although, the journey that the Council team started on wasn't intentionally focused on creating a circular economy, the links to circular economy principles became clear, for example, from using only waste products in production to offsetting energy use through installing solar panels on almost every Council-owned building.

The purpose behind the MakerSpace project is to retain ideas, knowledge and skills, as well as resources, within the local community. A focus on relationships as well as processes, and basing on circularity and reciprocity, have been fundamental to the project's success.

Education is another key focus area for the MakerSpace, to help people in the community understand that they have skills that are relevant to the circular economy, rather than present it as a new concept that people have to fit into.

From designing and producing face shields during the pandemic to enabling school children to design and create model cars using 3D printers, the MakerSpace has benefitted in excess of 6,700 people both directly and indirectly and, using a high percentage of waste materials in production has saved an estimated 3,500kg from landfill.

1.4 Organisational structure

Driven by the Council's Community Development Officer, and a passionate group of local volunteers, the Aman Valley MakerSpace has had the full support of Town Councillors and the local authority's economic regeneration team.

1.5 Finance

The MakerSpace has received approximately £36,000 in funding as follows:

- £20,000 from the Rural Community Development Fund (RCDF) was used to fund capital equipment including laser cutter, ceramics kiln and 3D printers.
- Approximately £16,000 from other small grants and the Council's own resources

The Council is currently applying for funding for a CNC plasma cutter, which will be, to the team's knowledge, the only one of its kind available at community level in Wales.

2. The Journey

2.1 Origins

The MakerSpace was created after an initial LEADER-funded feasibility study in 2016 looked at how Cwm Aman's community buildings could be better used to meet local needs. Consultation had identified a need of places for people to enjoy arts and crafts activities but the Town Council had also noted the lack of access that people in this part of rural Wales had to facilities that let them develop and nurture ideas beyond this, particularly in areas linked to STEM. This lack of access was restricting



creativity and aspirations, not only in terms of employment and career paths, but the skills that people universally could develop, both for their own well-being, and as a resource to help wider community development. The MakerSpace aimed to address this by helping to provide the same access to cutting-edge knowledge, equipment and facilities in Cwmaman as could be experienced in cities and university towns. These aspirations also aligned with incoming changes in the education system at the time, such as the Digital Competency Framework, Wales' over-arching sustainability legislation and the Well-Being of Future Generations (Wales) Act 2015.

The feasibility study was used to apply for funding from the Rural Community Development Fund (RCDF), of which approximately £20,000 was dedicated to developing the initial MakerSpace. Led by the enthusiasm and passion of a small group of volunteers, known as the Lead Makers, the grant was used mainly to fund capital equipment including laser cutter, ceramics kiln and 3D printers.

2.2 The process adopted

The Council insisted that instead of paying freelancers and contractors to help develop the space, it would all be led and developed with local volunteers and stakeholders, whether this was asking local landowners to donate their wind felled trees to be processed into nest-boxes with the community sawmill or inviting a car manufacturer to sponsor school children to design and manufacture model cars to race on the county velodrome. This would create ownership of the space but also help with exposure to types of equipment, such as 3D printers and Computer Aided Design software not readily available at rural community level. This community involvement and the subsequent word of mouth helped build local ownership of the MakerSpace, as well as an audience for what it offered.

Having started as a single room in a community centre in 2016, described as “the most chaotic design technology department you've ever seen,” the MakerSpace has expanded significantly. There is an arts and crafts room with the only community kiln in Wales, a ‘dirty’ room for woodworking and similar activities and a ‘clean’ room for vacuum forming, 3D printing and computer work such as coding. A separate room houses a laser-cutter. Next door is a 28-bed bunkhouse, to be used for future residences, as well as shipping containers containing a bandsaw mill and equipment for metal fabrication and welding, and a community polytunnel.

2.3 Milestones/measuring progress

There are numerous examples of the ways that the MakerSpace has helped unlock and nurture innovation using circular economy principles of designing out waste and using systems that help build economic, social and natural capital. These include:

- benefitting in excess of 6,700 people both directly and indirectly and, using a high percentage of waste materials in production has saved an estimated 3,500kg from landfill.
- producing approximately 60,000 3D printed face shields during the pandemic, which were designed, produced, decontaminated, and distributed by volunteers to care homes and GP surgeries across Wales and beyond. The network of skills, facilities, and goodwill that the MakerSpace had developed led to an extremely efficient design and manufacturing process with design iterations being tested in days, rather than weeks, minimising resource use and building skills, knowledge and confidence within local members. It also gave community members who had become excluded from economic and community life, due to age, disability or other reasons, an opportunity to share their skills and expertise by being part of the design process. One member explained that, paradoxically, they felt more connected to their community during the lockdown, due to this project, than they had done for years, due to the isolation caused by their disability.
- an incubation tent and a mask modification to an existing snorkel mask that can be purchased through Amazon, a design which is now Open Source and being printed all over the world.
- a plastics project that targets small scale plastic waste that is still entering the environment to transform it into useable items. The result is a beautiful product made from rubbish that's been cleaned up in the community.

The Amman Valley MakerSpace continues to expand. The Council is currently applying for funding for a CNC plasma cutter, which will be, to the team's knowledge, the only one of its kind available at community level in Wales. Future projects also include a community orchard that focuses not just on growing but having the equipment to process fruit and nuts into products that will keep money and skills circulating locally. This will also harness opportunities for inter-generational skill-sharing and relationship-building.

3. Reflections

3.1 'What works'

The project has benefitted from two key components. First, a decision at the outset that the project would be demand-led, responsive to community needs and developed and owned by the local members who used it. They would prefer to spend three weeks setting up something that would usually take a day, if it means that others learn to understand it and feel confident to take on its future management. This builds skills and ownership and is ultimately more sustainable.

Second is an experienced project manager committed to the local community and bringing in a wealth of experience and knowledge from other industries and sectors. This has allowed a wide range of audiences to be engaged, simply by having someone at the centre that understands the needs or 'speaks the language' of different sectors and can help different audiences see how the project benefits fit into their own duties, learning requirements or goals.

There have also, of course, been some barriers to the project's success, with one of the biggest being the name 'MakerSpace' and schools, funders and community members not knowing what that meant. However, despite it not being a familiar term to the area, the name was deliberately chosen and used as part of an upskilling process to help people relate what they were doing to the wider MakerSpace movement.

They have also found that business input into community activities and academic outreach, are much more limited than in countries like New Zealand, America and Canada where they are called upon more commonly. They think that if businesses were facilitated to support their communities with the skills that they have as a business, such as engineering firms providing engineering support or having a financial director support a charity with its finances, then projects such as the MakerSpace could achieve more.

3.2 What support was useful?

The project has benefitted from a very supportive Town Council along with advice and guidance from the local authority's economic regeneration team. Whilst the MakerSpace's infrastructure and equipment has been largely financed through a series of grants, essential community outreach and engagement has been resourced by the Town Council itself. Volunteers, community groups, teachers and local businesses have also supported the venture with surplus materials and through donating time, energy, leadership along with other project support.

Although the journey that the team started on wasn't intentionally focused on creating a circular economy, the links to circular economy principles in their most holistic sense are clear, from using only waste products in production to offsetting energy use through installing solar panels on almost every Council-owned building. As the whole purpose behind the MakerSpace project has been to retain ideas, knowledge, and skills, as well as resources, within the local community, it seems that relationships, as well as processes, based on circularity and reciprocity have been fundamental to the project's success.

They are confident that the skills required for a circular economy already exist. They think that "the majority of people will find that they have skills already that are applicable within specific circular economy type projects." The project's approach has therefore been to "educate people in that fact", which then instils confidence and capitalises on what is already there, rather than present the circular economy as a new concept that people must fit into. This approach has helped the team raise awareness and understanding so that people from all walks of life can relate some of the academic research around circular economy to what they are doing in the MakerSpace.



Watch the video [here](#).

Case Study 7

ELITE Paper Solutions Ltd Merthyr Tydfil



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1. At a glance

1.1 The initiative



Elite Paper Solutions Ltd (EPS) is an award-winning social enterprise that provides confidential paper shredding services, archive storage, and document scanning. The 1,200 customers range from small businesses such as accountants and solicitors, to large public sector organisations including schools, colleges, NHS trusts and local authorities. Once received,

documents and cardboard are shredded and bailed by EPS for onward recycling at a facility in Oswestry, North Wales with Recycling UK.

1.2 Time frame

EPS was established in 2015 as a subsidiary of ELITE Supported Employment Agency Ltd (ELITE SEA). Since 1994, ELITE SEA has been supporting disabled people and people experiencing disadvantage, to access and maintain paid employment opportunities.

Since its inception, EPS has grown through the purchase of additional machinery in 2017-2019 and 2022 and expanding its product and client base. In 2019, it won Community Business of the Year at the National SME Awards.

1.3 Focus areas

EPS's overall focus is to continue to grow and develop the business so it can provide more opportunities for disabled people and people experiencing disadvantage to gain knowledge and skills, and progress within their communities.

Its current services and products implementing circular economy principles are:

- Confidential shredding
- Non-confidential recycling
- Domestic shredding
- Document scanning
- Document archiving
- Animal bedding
- Production of instruments from recycled plastics



EPS continues to broaden the range of products it takes for recycling and the development of sustainable products which reduce waste and divert it from landfill, making it easier for organisations across Wales to recycle. The key materials recycled by EPS are paper and cardboard, but they also repurpose and recycle plastic and metal such as the components found in document folders.

In 2021, using shredded cardboard, EPS launched ELITE Animal Bedding, an environmentally friendly bed, using mixed corrugated cardboard cut finely into small strips, which helps to increase absorbency whilst maintaining a warm insulated barrier.

1.4 Organisational structure

EPS is a subsidiary of ELITE SEA and a sister company to Elite Training Solutions Ltd and Elite Clothing Solutions Ltd, in Ebbw Vale.

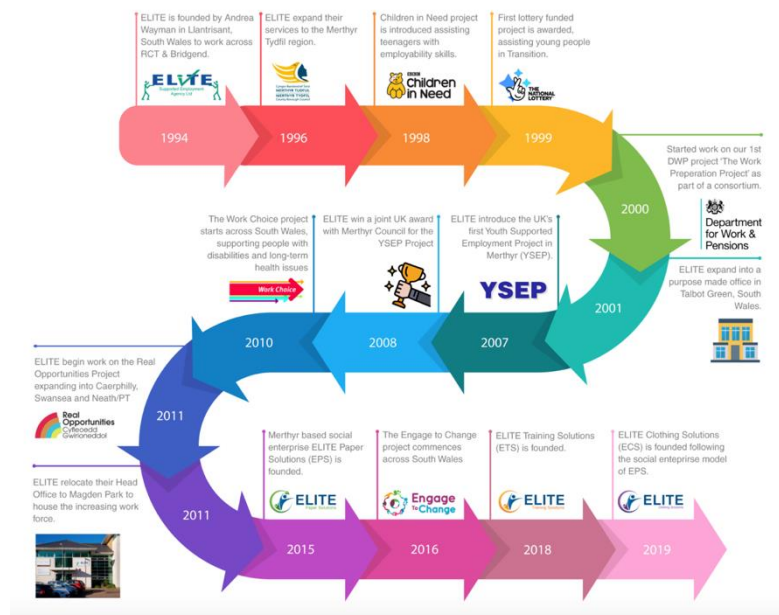
Ian Thomas, Group Enterprise Manager, is supported by an Enterprise Coordinator and Sales/Marketing Coordinator. The other six staff in the core team include an Employment Advisor, Finance and Admin assistants, Recycling Team Mentors, and a scanning operative.

The Operations team make up the remaining 60 staff, 37 of which are paid employees with the remaining people on work experience, volunteers, or volunteer mentors. As EPS has grown, the infrastructure around the core business has needed resourcing to include employing drivers, drivers' mates, and other key roles.

History of ELITE SEA and group companies

1.5 Finance

EPS has received financial support from a range of sources, including the South-East Wales Community Economic Development Programme (SEWCED) via Wales European Funding Office (WEFO), WCVA's Social Business Growth Fund, Social Investment Cymru and WRAP Cymru. In June 2014, £63,000 of funding from SEWCED enabled EPS to purchase an initial two shredding machines and a bailor.



1.6 Outcomes to date

Key outcomes for EPS to date include:

- 936 tonnes of paper and cardboard recycling generated per year
- Over 1,200 customers with a growing number of local authority contracts following registration on the National Procurement Service (NPS)
- Working with over 500 disabled people and people experiencing disadvantage
- Launching Elite Animal Bedding - an environmentally friendly bed, using mixed corrugated cardboard cut finely into small strips

2. The Journey

2.1 Origins

ELITE SEA was established in 1994 to enable adults with learning disabilities to access and maintain paid employment opportunities across Rhondda Cynon Taf and Bridgend, expanding into Merthyr Tydfil in 1996. According to the company, 'ELITE SEA's main aim is to help disabled people and disadvantaged people to find jobs via specialist one to one support'

EPS was established in 2015 in recognition of the need to provide good quality employment opportunities for ELITE SEA's clients and a gap in the market for document recycling in Wales. The location of the base in Merthyr Tydfil was a compromise between good logistics and also transport links for the staff, as it was important that staff could travel to work by public transport.

2.2 The process adopted

EPS's processes across their service areas aim to make it as easy as possible for their clients to recycle. As a team, they are always analysing how they could make their services easier for customers, such as offering schools free collections of paper, cardboard, along with recycling plastic and metal components of folders within EPS and at a recycling centre in Merthyr Tydfil.

2.2.1 Confidential and Non-confidential recycling for organisations

The client facing process for confidential shredding can be summarised as Arrange > Fill > Collect. EPS provides a complete audit trail from collection to destruction and issues a Certificate of Destruction within 48 hours from collection. Once shredded, the paper and cardboard waste is put into bails and sent to a recycling facility in Oswestry, North Wales where the majority is recycled into Steinbeis office paper. Steinbeis paper can be recycled up to 9 times.

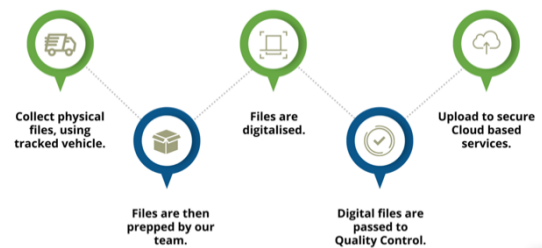
2.2.2 Domestic shredding

Domestic customers must purchase waste sacks which are delivered for free to the property. Once full, domestic customers arrange for EPS to collect the sacks to be processed in the same way as paper from other customers.

2.2.3 Document scanning

The document scanning service enables customers to convert physical files to digital and for the physical files (and their storage) to be destroyed and recycled in the same way as confidential waste.

The process for document scanning



2.3 Milestones/measuring progress

Over 7 years, EPS's business model has been developed and refined through research and analysis of the competitor market. For example, EPS recognised that it needed certifications and standards to ensure compliance and credibility. Currently, it holds certifications such as Green Dragon Environmental Standard (Level 2), ISO 9001: 2015 - Quality Management, BS EN 15713: 2009 - Secure Destruction of Confidential Material, Registered Natural Resources Wales (NRW) Waste Carrier and Cyber Essentials Plus

Today, EPS has a growing number of local authority contracts following registration on the National Procurement Service (NPS). To fulfil growing demand and counter the challenge of lacking storage space, in May 2022, EPS purchased five units on their site in Merthyr Tydfil taking the total area of operations to 21,625 square feet. A lack of storage space is an on-going challenge highlighted by EPS, due to the need to make significant investments in machinery to counter growing business or face hitting a ceiling of operations.

As well as playing a key role in the circular economy in Wales, EPS continues to challenge the perception of employing disabled people and people experiencing disadvantage. Over the past eight years, it has worked with over 500 people and currently employs over 60 staff including those doing qualifications through Agored Cymru and young people who have come through the work placement programme at homelessness charity Llamau.

In 2021, following the launch of ELITE Animal Bedding further funding from WRAP has enabled them to purchase a bespoke animal bedding machine and they have recently established links with a haulage company to fulfil orders in England and Wales.

The next development will be to install solar panels across five units on their Merthyr Tydfil site. EPS plans to sell energy back to tenants and store it to sustain machines within the business. EPS is also phasing in EV charging and electric vehicles into their fleet with the aim of using renewable energy throughout the entire cycle of production.

3. Reflections

3.1 'What works'

According to EPS, having a decision 'sounding board' and 'learning by doing' have both been key to their development as a sustainable business. Such a sounding board has been Recycle UK in North Wales, who were key to EPS trialling the recycling of plastic bottles in their bailors. Whilst this was found not to be possible, it led to a recycling company in Ferndale, RCT taking the plastic waste and therefore created a new relationship for EPS.

For the staff team, education and understanding of the circular system is also important. This includes EPS's current processes and ambitions and the values and systems behind them in terms of water, energy and the environment. Every volunteer and paid employee who joins EPS completes environmental training as part of their induction, including the waste hierarchy. This not only focuses on the business processes but also what employees can do at home.

3.2 What support was useful?

3.2.1 Access to information

EPS highlighted that access to information about what other organisations are doing within the circular economy in Wales has been key and could be further improved on. For example, WRAP's Circular Materials Mapping Tool was thought to be helpful but could be expanded further to include organisations working across the circular value chain. For example, to identify which organisations might be generating waste but not be aware of EPS and which ones might make use of EPS's waste. According to EPS, there is a need to build further knowledge and awareness of what is out there and how to join up waste into someone else's resource.

3.2.2 Finance

The key enabler for EPS has been finance from a variety of sources outlined elsewhere.

3.3.3 Education and best practice sharing

Whilst EPS has not undertaken any formal courses linked to the circular economy, it recognises that a tool like the matrix model would help them to identify gaps and inspire them to try new options to achieve a higher level of knowledge across the organisation. Critical to this tool should be its accessibility, for example, linking to further information about the different courses offered.



Watch the video [here](#).

Case Study 8

Green Salon Collective Holywood



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1. At a Glance

1.1 *The initiative*



The vision of the Green Salon Collective is to raise the standard of the hair and beauty industry by enabling salons to become more ethical and sustainable environments for not only the salon, but also for the stylists and salon customers. The elements of circular economy have been considered since the Green Salon Collective was founded in 2020. Its unique recycling program, together with education and accreditation programmes, enable salons and other businesses in the hair and beauty industry to gain new like-minded clients by becoming ethical, sustainable businesses that turn the waste in bins into meaningful benefits. By doing so, the organisation helps salons in the UK and Ireland become zero waste companies.

1.2 *Time frame*

The Green Salon Collective was established in 2020 by three individuals who were former hairdressers and also sustainability experts. During the first lockdown in 2020, the Green Salon Collective had 50 salon members. By the end of the first year, the number reached 500. Now, it has around 1,000 salons throughout the UK and Ireland.

1.3 *Focus areas*

At the outset, the organisation's focus was largely centred around recycling for salons. Gradually, the Green Salon Collective's emphasis moved more towards education, offsetting and research, aiming to help salons with everything from recycling to becoming more sustainable.

1.4 *Organisational structure/core team and participants*

As an SME, the Green Salon Collective has 10 people on the core team, in charge of business operations, research, marketing and other core functions. The organisation then works with member salons in the UK and Ireland along with third party logistics partners and recyclers and composters, ensuring the movement of salon materials follows the right process. The research department investigates current recycling services seeking out new improved solutions for every waste stream the organisation encounters.

1.5 *Finance*

Most of the research projects that the Green Salon Collective undertakes have been collaborations between other interested parties. For example, there is a research project with a third-party company undertaking lifestyle analysis for cellulose based disposable salon towels versus cotton towels, which helps salons to make sustainable choices. The Green Salon Collectives has worked with the University of Southampton on several projects on a reciprocal pro bono basis for new knowledge creation. It also works with designers, architects, and manufacturers at low cost.

1.6 Outcomes to date

Since the Green Salon Collective was launched in 2020, there has been a mindset shift with increasingly more hair salons understanding the climate crisis and rethinking their business processes. Working with its member salons, the Green Salon Collective actively promoted its recycling programme initially. It researched effective solutions to recycle salon waste, separating metal, paper, plastics and other types of waste, to reduce the risk of cross-contamination. The impact of this circular economy practice has been significant. With just 500 salons joining up in 2020, the Green Salon Collective managed to recycle 10 tons of metal alone. The total amount of waste recycled in the first year alone was 25 tons and in the first half of 2022, it has diverted 40 tons of waste from landfill.

2. The journey

2.1 Origins

The founders of the Green Salon Collective noticed the way the industry was wasteful, so they evaluated the possibility of recycling materials including hair foil, colour tube, salon towels, and hair. According to the Green Salon Collective, between the linear economy and circular economy, there is the recycling economy, which is a critical part but still incredibly resource intensive. Thus, the organisation keeps on rethinking a whole solution, finding values in waste materials and turning them into a resource. In that way, the industry can help improve the world socially and environmentally, as well as generate profits.

2.2 The process adopted



The Green Salon Collective has built working relationships with several specialists in the UK and the collaboration with salons through membership has been successful. To join the Green Salon Collective, salons need to buy a starter kit from £99. From then on, salons purchase return boxes via a pay-as-you-go system, and fill the boxes with bags of hair, foil, colour tubes and other recyclable items. For the system to become cost-neutral, member salons charge their clients a £1 to £2 (or Euro) 'Green Fee' on every visit.

The organisation then works with third party companies to collect the waste from member salons. Some of the waste streams are handled in their facilities, some are sent to the Green Salon Collective HQ, and some are sent to other partners for recycling or composting. For instance, hair can be used to clean up oil spills, while clean energy can be generated from discarded PPE, and salon towels can be composted.

2.3 Milestones/measuring progress

The Green Salon Collective has the ambition to turn every item of salon waste around to be used again to benefit industry, community, and the environment. Realising the cross-contamination problems with the mixed recycling, it provides a circular economy solution for hair salons. Its returns boxes overall hold approximately 350 clients worth of waste, cost £175 and are the biggest recycling boxes available on the market. So far, the organisation has saved 72 tons of salon waste from landfill, along with 642 kgs of waste from industry events. They aim to have saved 200 tons by the end of 2022.

The three most common ways for the Green Salon Collective to handle waste is through recycling, recovery and composting. In addition to work with recyclers, logistics companies, and composting companies, they also collaborate with universities and local charities. They have partnered with The Liminality to develop unique accreditation programs for salons and other businesses in the hair and beauty industry. Moreover, they have partnered with Eco Offset to allow salons or freelancing business to offset the carbon emission and reduce the environmental impact of their business.

According to the Green Salon Collective, an interesting part of developing circular economy for the industry is reverse logistics. It is important to make sure that the outcome of the process is as efficient as possible. For example, the Green Salon Collective used to recycle salon chemical waste separately and sent it to a specialist who would put it into a centrifuge and extract waste through the water. However, the Green Salon Collective realised that a considerable amount of energy was required to run the machinery as well as to transport these chemicals separately. Therefore, the organisation re-evaluated the projects, and made the decision to combine chemicals with other waste to create energy. Innovation and a passion for the environment have driven the Green Salon Collective to look for the best circular economy solutions.

3. Reflections

3.1 'What works'

According to the Green Salon Collective, education is important for the transition to a circular economy in the hair and beauty industry. The organisation has a database of educational articles shared with partners and member salons. Practical solutions are useful for quick wins. Nevertheless, the organisation believes that in the long term, more investment is needed to address major changes like procurement, switching to more ethical products suppliers. To achieve this, knowledge sharing is useful especially for SMEs to know the process to follow.

The Green Salon Collective also suggest educational programmes and interventions that are specifically designed for industry professionals, so that they can develop a significantly improved circular economy framework for the hair and beauty industry. The organisation wants to see the SMEs really understand and get excited about change. Accordingly, it is important that the interventions are packaged in a way that minimize their overheads and save money over the long term.

3.2 What support was useful

Prior to the pandemic, there was a lot of coverage on the climate crisis. There was therefore a general degree of readiness in the UK, and a lot of businesses were already taking the first steps. As a result, partners and salon members adopted new ideas collaboratively, instead of the more usual approach of competing. In addition, information sharing was also helpful. As the recycling process is progressing smoothly, the Green Salon Collective can now focus on education and research into better sustainable solutions.

Case Study 9

Green Wave Hair Salon Ton Da CIC Haverfordwest



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1. At a Glance

1.1 *The initiative*

Green Wave is an independent, sustainability driven hair workshop based in Haverfordwest, Pembrokeshire. Apart from providing conventional hair salon services such as haircuts, it also manufactures sustainable oil spill recovery mats made of hair clippings from salons, individuals and animals. The mats, which can be used to absorb oil spills in the ocean or on the ground, are made in a variety of different sizes for the various needs. By producing these mats, Green Wave is diverting hair from landfill as well as preventing blocked drains, whilst also preventing oil from polluting oceans and water ways.



The founder of Green Wave formulated the idea while she was working in Canada, seeing how hair salons could recycle waste, transforming it into oil spill mats. When she returned to the UK and realised that no one was doing a similar thing, she started the business in March 2022.

1.2 *Time frame*

During the lockdown in 2020, the founder of Green Wave started to make hair mats with a machine from the USA. In November 2020, she managed to get industrial space to locate the machine. In March 2021, Green Wave was opened in Haverfordwest, operating both the salon and hair mat business. In July 2022, a community interest company Ton Da C.I.C. was registered as a separate entity for the hair mats business, while the hair salon is still called Green Wave.

1.3 *Focus areas*

Green Wave runs 4 days a week for the hair salon business, and 3 days a week manufacturing hair mats. There are two sides of the mat business, sourcing and selling.

The sourcing side has developed well, as Green Wave is regularly approached by hair salons and individuals who want to donate hair. The suppliers also include hair extension companies and Dyson. With regard to the selling side, the main customers are oil refineries. The current focus of Green Wave is on marketing the mats and getting oil companies to realise the benefits of the recycled hair mats over plastic products.

1.4 *Organisational structure/core team and participants*

Currently, the founder is implementing the circular economy project by herself. She is in the process of developing a funding application with the hope of employing more people for production, distribution and marketing.

1.5 *Finance*

The circular economy project of hair mat production is self-funded. The founder of Green Wave works 4 days a week as a hair stylist to support the project. There is a partner in the US who supplied the machine on a use or return basis. Green Wave is currently applying for grants to grow the business. The founder is also keen to work with large oil companies as potential customers to fund the project.

1.6 Outcomes to date

For the first 6 months, the founder of Green Wave learnt the skills necessary to produce the hair mats with the equipment. The business started in March 2021, with the aim of selling the product to industries within one year. The concept has been supported by hair salons, customers, and extension companies, who regularly donate hair as the main source materials. The mats demonstrated better effectiveness and sustainability compared with the more traditional plastic oil-spill clean-up kits. Green Wave has approached some customers, with its current focus being to get more recognition in the oil industry.

2. The journey

2.1 Origins



The founder of Green Wave has worked as a hair stylist for 11 years. She understands, from experience, the problems of waste generated in the hair salon business sector. Customers have asked questions about what happens to the cut hair, which has driven the process of researching how to think beyond simple disposal of the hair. While working in Canada, she saw the potential solutions and value of hair recycling and decided to create that in the UK.

According to Green Wave, the idea of using hair to absorb oil and protect the environment has important value. Whilst the hair mat is an eco-friendly and effective alternative to other methods, circular economy can be achieved through completely recycling a waste product and making a business out of it.

2.2 The process adopted

Green Wave gets hair from hair salons, individuals and organisation donations. The material supply is currently sufficient and products are stockpiled for selling. The founder of Green Waves spends 3 days a week, 5-6 hours a day manufacturing the mat with a machine on site. It takes 1.5 hours to produce one item. She approaches oil refineries through email, website and social media.

The principal barrier to realising the idea fully into practice is having the correct contacts in the in the oil industry, who are concerned about eco-purchasing. Another challenge is that human resource shortage, as the founder is working on her own. With more funding opportunities, more people can be hired to improve efficiency.

2.3 Milestones/measuring progress

The circular economy scheme of hair mat production started in early 2020. On average 3 hair mats can be made every day, with one person working for 5-6 hours. The selling price is approximately £40 for a 2 feet x 2 feet x 1inch mat weighing around 800 grams, which can absorb over 4 times its weight in oil.

By working with the charity, The Matter of Trust, Green Wave has been involved in some pilot studies, the results of which reveal that the renewable waste fibre resource is sufficiently effective to compete with petroleum-based products. The research partners and customers are highly satisfied with the hair mats, the low tech and accessible science behind them.

Green Wave believes that the project helps hairdressers finally realise a meaningful solution to deal with hair waste. This motivates many hair salons and extension companies in the UK to donate hair, which previously would be thrown away.

Since 2020, products have been sold to customers in England and Germany, though the sales are relatively low. The next stage is to further promote the products to oil refineries who deal with a large amount of oil spills. In the long term, Green Wave would also like to explore wider markets such as those working in garages, motor workshops, boatyards, as well as machine operations which can also make use of the hair mat as a sustainable solution.

In July 2022, the founder of Green Wave registered a community interest company Ton Da C.I.C. as a separate entity for the hair mats business.

3. Reflections

3.1 'What works'

Regular production would be the most practical help to advance the circular economy implementation and to clarify the business direction. It would be ideal for Green Wave to employ more people who not only are capable of marketing products, but also share the passion. Green Wave is also interested in university programmes for learning purposes. Education is vital to raising awareness along with changing the mindset of companies towards adopting sustainable and eco-friendly products such as the hair mat, instead of plastic or polypropylene mats. If that happens, the whole industry can achieve a full circular economy.

3.2 What support was useful

Green Wave got help to set up the circular economy scheme from the charity, The Matter of Trust. Pembrokeshire and Carmarthenshire customers of the hair salon were also supportive. They were very positive about the innovative and responsive idea, wanting to donate hair. There was a general awareness of recycling in hair salon business sectors, which helped advance the project.



Watch the video [here](#).

Case Study 10

Jaspels Craft Cider Aberffraw



Cardiff
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1. At a Glance

1.1 The initiative



Jaspels Craft Cider is a craft cidery located in Aberffraw, Anglesey. Founded in 2016, this small company has a positive vision to change the perception of cider, from a weekend drinking essential to one with a fine stature comparable to wine or champagne. The company established its process of cider production from entirely using waste or unwanted apples and pears, originally making it a brewery without its own orchard. More recently, Jaspels has sourced a percentage of apples from struggling, local orchards to help support them, but has no plans to make this a permanent avenue for sourcing fruit.

1.2 Time frame

The origins of Jaspels can be traced back to when one of the owners, ciderist Ade Percival, was in his 20s, conducting small scale fermentation of fine wines and ciders from scavenged, unwanted fruits found locally to his home. Upon meeting his wife and second owner, “ciderboss” Jannie Percival, this hobby was rekindled in 2015, forming Jaspels Craft Cider as a company a year later.

1.3 Focus Area

The circular economy focus of the business is to rely on donated apples and pears from the local community. This was discovered through observation of the amount of fruit waste generated from orchards and community grown fruit trees on Anglesey. Either from overproduction or irregularities stopping the fruit from being ‘shop worthy’, lots of fresh, perfectly edible fruit was being needlessly discarded. This is where Jaspels stepped in to convert waste fruit to fine cider.

1.4 Organisational structure

Jaspels is a very small scale, family run brewery. The two main employees are joint owners but there is frequent seasonal employment of 2-3 additional staff, who help out with pressing the fruit between October and December.

1.5 Finance

Jaspels is a self-funded business that has had no external help in financing its operations. Compared to comparable businesses, Jaspels has had little financial input, with all business opportunities being financed through reinvestment into the company, allowing for organic growth.

1.6 Outcomes to date

Since producing their first batch of craft cider in 2016, Jaspels reach has outgrown the Isle of Anglesey, selling to over 45 outlets within Wales, as well as having their own on-site shop at the cidery in Aberffraw. Community donations of apples and pears have been overwhelming, more than providing supply with demand for sustainably produced fine craft cider rising to match, as public awareness of Jaspels steadily grows.

2. The Journey

2.1 Origins

Jaspels rise as a sustainable craft cidery began decades before the company opened. One of the owners had experimented with fermentation of wines and ciders in his early twenties. This process was on a very small scale and was limited to the family garage, but was successful none the less, resulting in the fermentation of some notable fine country wines. What made this side hobby possible was the owner's intuition in how he sourced his fruit. Following observation, he decided to scavenge the local community for discarded fruit in places such as hedgerows and use this waste to produce a product. This was the first stage of the Jaspels circular economy story. Upon meeting his wife and second owner, this once lost hobby was reborn again, opening as Jaspels craft cidery in the summer of 2016.

2.2 The process adopted

When the company first started, the cidery operated by exclusively using donated apples and pears from the local community. This process was entirely framed using the owner's previous experience of fermenting using only waste fruit. Observing the scale of waste fruit on Anglesey prompted the couple to open Jaspels craft cidery and make cider fermenting their full time profession, instead of a limited hobby on the side of a day job.

The scale of donations grew exponentially after opening, allowing the cidery to establish its own shop, as well as supply 45 other outlets with their products. With this increased scale also came an increase in waste from the fermentation process in the form of apple pomace. To reuse this waste whilst also meeting increased demands, Jaspels donated pomace to local pig farms so that it could be reused as a feedstock and put back into the system. Any excess pomace is composted nearby.



Unlike other cideries, Jaspels relies on a traditional, manual fruit press to process the apples and pears, rather than modern machinery. Although being more labour intensive, this decision mitigated the steep upfront costs of sourcing modern fermentation equipment, which in turn keeps operating costs lower as less energy is consumed within the value chain process. In the theme of keeping costs low, Jaspels repurposed many old wooden supports when renovating the rustic style barn they now operate in, using them as decorative panelling within the shop, rather than treating them as a waste product.

2.3 Milestones/measuring progress

Jaspels main aim is to keep on expanding the company and spreading the positive message that many things that are initially considered waste, can be turned into a high-quality final product to other communities.

Jaspels main goal for the future is to continue to increase cider production, so that they can limit the amount of wasted local apples even further. Jaspels have also been working with Pennotec and Bangor University, with the aim of producing a food product from the waste apple pomace in the next few years.

3. Reflections

3.1 *What works?*

As part of the process, Jaspels gifts a craft cider for every donation over 10kg. Customers, who may have previously donated a bag full of apples, returned a year later with boxes overflowing, all helped by the motivation of receiving a quality product and having tangible evidence that their donations were going to good use. Working with and giving back to the local community was paramount to the success of Jaspels as a company.

3.2 *What support was useful?*

Community support is the number one thing that was helped Jaspels be as successful as it is today. Relying on local donation, it was key for Jaspels to get the community involved and motivated in the process, otherwise this circular economy dream would not be possible. The initial response was very enthusiastic during the pilot donation scheme in 2015, because of strong community ties found across the Isle of Anglesey. The people of Anglesey and North Wales are very motivated to help when it comes to sustainable projects, as they want to protect the natural environment in which they live. Having this common vision when it comes to supporting sustainable initiatives in the area was very important to Jaspels becoming a success.



Watch the video [here](#).

Case Study 11

Kindle Cardiff



Cardiff
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1. At a Glance

1.1 *The initiative*

Kindle is a sustainability-focused independent restaurant in Cardiff. The vision is to create a restaurant that gives back more than it takes from the environment. By implementing Circular Economy principles, it ensures a reduction in negative environmental impact and continually improves environmental performance as an integral part of the business. An example of this is by serving fresh and seasonal food, eating locally, using the whole food, and reducing the use of disposable napkin, all of which are practised by Kindle, they promote healthy and responsible consumption.



1.2 *Time frame*

Kindle was opened in September 2021, after a two-year process of fundraising, planning and renovation. Having a strong passion for the environment, sustainability and social responsibility, along with many years of working in the food industry, the co-owners has incorporated Circular Economy elements into every aspect of the business strategy and operation methods.

1.3 *Focus areas*

The circular economy practice of Kindle is an evolving journey. It started with the focus on construction, renovating a former park warden's cottage into the restaurant. The project followed a regenerative design framework to minimise the negative impact on the environment. With the restaurant open, the priority was then product design, sourcing and waste management. Now, another area of focus is the social aspect in terms of recruitment and increasing awareness.

1.4 *Organisational structure/core team and participants*

Kindle has a team of 15 people, who have a responsibility in their specific areas to ensure the sustainability aims are met. A sustainability champion within the team is appointed to implement and improve the circular economy processes. Externally, Kindle works with a design company, Object Space Play, who have the expertise in sustainable construction. It also works closely with the Sustainable Restaurant Association, and a consultancy company to write sustainable policies.

1.5 *Finance*

The Covid-19 pandemic has been a huge disruption for the past two years in terms of investment in hospitality. Therefore, circular economy projects are mainly self-funded. As part of the accelerated growth program, Kindle has now received some funding from the Welsh Government. The restaurant group is also a member of the AGP programme in Wales which allows the restaurant to access consultants, specialists, and services in the hospitality field through a 'benefit in kind' system. This has allowed Kindle to access sector specific training and development programmes.

1.6 Outcomes to date

So far Kindle has developed close relationships with local farmers, gamekeepers and gardeners, to use ethical produce with a significant emphasis on provenance and sustainability. The focus of the small plates dining experience is flavour and balance, cooked over fire to an impeccable standard whilst undertaking 'good things' for the community and environment.

The restaurant was designed, built and is underpinned by a regenerative design framework. In essence, it has been built for disassembly, from every brick, reused material, fixture and fitting. Designing a restaurant this way greatly reduces its environmental impact from the outset and provides a real platform for innovation and creativity.

As a restaurant, Kindle is a pioneer in the sector in implementing circular economy principles at a systematic level. Currently, it is awaiting its SKA environmental assessment which will measure its impact and identify areas of improvement.

2. The journey

2.1 Origins

The co-owners of Kindle also own the business of Dusty's pizzerias in South Wales, and Nook Bistro in Cardiff. With the complete renovation of a run-down former park warden's cottage in Sophia Gardens, Cardiff, they saw the opportunity to push the boundary of true sustainability in a restaurant setting. The co-owners take a holistic view of circular economy from the beginning, considering construction, product design, energy, transportation, sourcing, waste, recruitment and training. They ensure that the materials do not end up as waste or going to landfill.

2.2 The process adopted

Kindle draws on the expertise of people around. There has been in-depth research and learning, with an open attitude towards the pros and cons of circular economy. The implementation of circular economy follows a holistic process covering every aspect of the restaurant.

In terms of the construction, Kindle has used a regenerative design framework, a product of OSP which maps everything. Alongside a financial assessment, the co-owners prioritise environmental investment versus return, to find the effectiveness of potential equipment such as solar panels on the roof.

Based on this learning experience, Kindle now has developed expertise to monitor the day-to-day operational activities relating to waste, suppliers, and packaging. An internal sustainability champion has been appointed to continuously practise and advance the circular economy approach. Currently, Kindle is in the process of being accredited by the Sustainable Restaurant Association.

2.3 Milestones/measuring progress

Some of the measurable processes and criteria applied in Kindle are:

Sourcing:

- Seeking to source seasonal, local, sustainable, and ethical products for customers.
- Selecting fish suppliers based on their commitment to sustainability.
- Scrutinising the origin of meats, knowing that respectfully reared animals are the source of quality.
- Developing direct relationships with overseas tea and coffee farmers.
- Choosing local dairy product suppliers from Wales.
- Sourcing produce as locally as possible to minimise travel distance, with a preference to source exclusively within Wales.
- Using environmentally friendly cleaning materials where possible.

Energy/Water:

- Reducing the amount of energy used as much as possible.
- Using technologies such as automatic sensors to control lights and other electrical items.
- Providing blankets and hot water bottles to customers instead of using outdoor heaters.
- Considering energy consumption and efficiency of new equipment before purchasing.

Waste:

- Minimising the use of materials and packaging across the operations
- Monitoring and reducing the amount of food waste and seeking new possibilities to improve such as using small plate portion sizes, serving more vegetables, and using every ingredient in cooking.

Culture/Recruitment:

- Recruiting people based on their values
- Increasing employee awareness of circular economy through training and regular meetings.
- Working with suppliers, contractors and sub-contractors to improve their environmental performance

3. Reflections

3.1 'What works'

Kindle is keen on research, learning and conversations with people, though sometimes there can be different responses. It has not drawn on any formal programme or intervention, as the circular economy process is developed through experiential learning, alongside collaboration with external experts. According to the co-owners, a good education course should focus on the application of principles at a practical level. For example, it should help business understand the actual pitfalls and positives during the circular economy transition. Potentially, it should contain different models of analysis, such as how to reduce waste, how to measure the impact, and how to analyse the supply chain.

3.2 What support was useful

According to Kindle, the key to realising circular economy was people with sustainability awareness and knowledge of specific areas. A passion and care for the environment have always been a driving force for Kindle to collaborate with its suppliers, partners, and customers.



Watch the video [here](#).

Case Study 12

Poblado Coffi Nantlle



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1. At a Glance

1.1 *The initiative*

Poblado Coffi is a small artisan coffee roaster located in the town of Nantlle, North Wales. The company's primary vision is to brew coffee in the most ethical way possible, going well above and beyond the line that determines "Fairtrade." Since its founding in 2013, the company has added sustainability, and therefore circular economy principals, into its outworking, promoting sustainability not just in the coffee farms, but within Wales too, working with the local community to achieve their goals.



1.2 *Time frame*

In 2003, the founder, Steffan, lived in the town of El Poblado outside Medellin, Colombia, where he learnt extensively about the cultivation and production of coffee beans. After various trips to similar locations across the world, he opened Poblado Coffi in 2013. At first, the coffee business was run from a hut at the bottom of his garden, referred to as 'Cwt Coffi', but moved to the current premises in Nantlle a few years later.

1.3 *Focus Area*

When looking at the circular economy, the focus area for Poblado Coffi is in eliminating all forms of waste and pollution from their roasting process. The beans are sourced from ethical and sustainable coffee farms around the world, with the sacks being repurposed by the local community into items such as bags and plant pots. The coffee is sold in entirely compostable packaging and the waste chaff from the roasting process is recycled both on site and at a local, commercial, composter.

1.4 *Organisational structure*

Poblado Coffi is a small organisation, with the two main business proprietors being Steffan and Sion. An additional 2-3 extra staff are employed as well, to help with the sorting, packing and delivery of coffee orders.

1.5 *Finance*

Poblado Coffi is an entirely self-funded organisation that has not received any additional funding to help grow the business in a circular economy direction.

1.6 *Outcomes to date*

Poblado Coffi has grown from being contained within a small hut at the end of a garden, to being housed in a restored workers' barrack, selling coffee all over the UK, but mostly within North Wales. Their latest plan is to open their own coffee shop within the town of Caernarfon, introducing a global variety of coffee to the wide range of people visiting the area.

2 The Journey

2.1 Origins



The sustainable coffee story began in 2003, when the founder was living in the town of El Poblado in Medellin, Colombia. It was here that he learned extensively about cultivating coffee in a sustainable manner. Around 2013, he relocated back to North Wales and started Pablodo Coffi from a hut at the end of his garden, known as 'Cwt Coffi.' When Sion joined the company in 2016, the prospects for Poblado outgrew the Cwt. The company relocated to its current location within an old

quarrymen's barracks in Nantlle, opening a small café on site as well as expanding their roasting operation.

2.2 The process adopted

From his travels, the founder learned a great deal and formed global contacts from which to source coffee beans. The climate in the UK does not support the cultivation of coffee, so the circular economy outreach far extends beyond the borders of Wales. Poblado source coffee directly from the growers, paying a premium rate well above the bare minimum standards required for Fairtrade. This allows the coffee growers to spend extra money and time looking after the land around their coffee farms, improving the local environment as well as the quality of the coffee beans.

Once the coffee sacks arrive in North Wales, the mission of waste elimination begins. Upcycling the sacks became a community-led task, with many local people requesting sacks to repurpose them into items such as bags, plant pots, or even Christmas stockings. Poblado Coffi works with members of the local community to produce these items on an ongoing basis, which are then placed for sale on their website.

During the roasting process, a substance known as chaff is produced which comes from the skin of the coffee grinding up against the roaster. This chaff is collected in large, reusable bags, and taken to a commercial composting centre to be turned into fertile compost. Any extra chaff that the local facility cannot take is composted directly on-site in Nantlle.

One of the biggest waste reduction achievements at Poblado Coffi is found within the packaging of the coffee beans that are sent out to customers. Each bag is made from an entirely compostable material, and Poblado Coffi also made the decision to move away from sticky labels as the glue can be toxic, so a piece of card is stapled to the packaging. The inner lining of the bag, usually made from plastic or glue, is a natural layer of polylactic acid, a form of resin produced from renewable sources which is 100% compostable.

2.3 Milestones/measuring progress

Poblado Coffi wants to expand coffee production at its premises so it can benefit more coffee farms across the world through buying their produce. Finding a renewable source of energy has also been considered to help the company become more self-sufficient.

The next tangible goal however involves the company purchasing their own electric vehicle. Currently, Poblado hires an electric van from a local community enterprise once a week to carry out deliveries but owning their own van would help to expand on the delivery system, as well as be more flexible about when the company can deliver to customers.

3 Reflections

3.1 What works?

Local infrastructure was an initial barrier for Poblado Coffi, as there were not many commercial composting companies within North Wales to take their compost, which made it more challenging to source. The hired electric vehicle would also not be a possibility if it wasn't for a local community social enterprise taking this initiative prior to Poblado investigating this avenue.

All staff at Poblado Coffi share the values of the company and help build upon the vision of sustainability that was embedded in the founding of the company. This has assisted in a smooth transition within the company when introducing new, circular economy principals.

3.2 What support was useful?

An external consultant was a huge benefit to Poblado in helping them gauge a potential direction in which to start introducing circular economy measures. Although the owner and other staff at Poblado are well versed with sustainable practice, they did not have the resources to carry out this type of evaluation on their own.

As a small company of 4-5 staff in total, it has been useful for the staff at Poblado to have open communication about the direction of the company when it comes to sustainability. All staff are welcome to promote ideas, and this has created a very positive atmosphere within the company, where every employee feels valued and has passion for chasing circular business practices.



Watch the video [here](#).

Case Study 13

Prom Ally CIC Llandudno



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1. At a Glance

1.1 The initiative

Prom Ally was set up in 2015, when the founder, Ally Elouise, was still at university. The principle behind the business idea is to tackle poverty and social inclusion for disadvantaged young people who cannot afford to buy formal wear to attend their school prom. Prom Ally lends them a dress or a suit free of charge. Originally it was anticipated that this would just be a local service for the area around Llandudno in Conwy, North Wales, however it quickly became clear that there was a huge demand for this service. The founder explains that she hadn't appreciated quite how many people were struggling to afford to attend their prom. She has recently established a new business called Eco-wardrobe and it is anticipated that this will provide trading income to sustain Prom Ally.

1.2 Time frame

Prom Ally was established in 2015 and it was registered as a Community Interest Company (CIC) in 2020.

1.3 Focus areas

The focus of the social enterprise is sustainable fashion, in particular the reuse of prom and formal wear. Currently Prom Ally has thousands of dresses and hundreds of suits which they loan out for school and college proms. The business now operates across the UK, but a significant amount of the demand remains in their local area of Llandudno.

The ethos of Prom Ally is to reuse pre-loved clothing, alongside a social purpose, supporting young people that would otherwise not have afforded to attend their prom. Since starting the social enterprise Prom Ally has not bought any new clothing, everything has been donated. As well as Prom Ally, there is also another clothes business called Eco-wardrobe. Eco-wardrobe has a shop on the high street in Llandudno and it sells, and hires preloved formal wear, second-hand shoes and bags. Both organisations brand themselves as being part of the circular economy and focus on reusing, recycling, keeping clothing out of landfill and seeing how long formal clothing and accessories can keep within the usage system.



1.4 Organisational structure/core team and participants

Prom Ally is registered as a Community Interest Company (CIC), which is a legal structure often utilised by social enterprises. The Founder is the only employee of the business, but she has two young volunteers that work in the shop at weekends. She explains that the volunteers want to come and work for the company because they are interested in the circular economy and sustainable fashion. Prom Ally has a Board of four female Directors, all of whom are under the age of thirty. They are all passionate about Prom Ally and are particularly focussed on the social impact of the business, although two of the Directors also have an interest in sustainability.

1.5 Finance

Prom Ally doesn't make any money because it gives the dresses and suits away for young people to wear for free. Initially the founder had another job to sustain the business. Recently, however, she has successfully applied for grants to be able to be employed in the business. One of the grants she received was from Social Investment Cymru, administered by the WCVA.

Finance and funding are a constant concern for the organisation. The aspiration is that the Eco-wardrobe business will be successful in generating trading income, meaning that Prom Ally does not have to keep applying for grant funding. The founder emphasises that it is usually straightforward to apply for grants when an enterprise first starts. However, the company has now been established for nearly 2 years, meaning that they will not be eligible to apply for start-up grants. Applying for grants takes a significant amount of time and the process can be confusing and difficult.

1.6 Outcomes to date

The main purpose of starting the enterprise was to support disadvantaged young people and to date Prom Ally has lent formal wear to hundreds of young people across the UK, allowing them to attend their school or college prom.

In terms of their environmental impact, a report is currently being written for Prom Ally, to enable them to be able to talk about their social impact, sustainability and their role in the circular economy. Once they have the information, they will really be able to promote the outcomes that they have achieved. The Eco-Wardrobe homepage already has several facts and statistics about sustainability, but these are taken from other sources, such as Oxfam. They consider that promoting the circular economy principles of both Prom Ally and Eco-wardrobe are going to be key to the success of the business.

The growing profile of the business means that Prom Ally receives many donations of clothing. After buying the first 10 dresses in 2015 to allow the business to get started, they have not bought anything since. They have opened a PO Box and they receive approximately 10 boxes of donations per week.

2. The journey

2.1 Origins

At university, the founder was studying law, rather than sustainable fashion. She had always been interested in buying from charity shops and this really helped her to develop the business idea for Prom Ally. Back in 2015, when she was just getting started, she says that she wouldn't have used the term circular economy, she just knew that she liked to shop second-hand and reuse clothing. It wasn't until she started Prom Ally that she started to think about sustainable fashion and today she considers that the whole idea of reuse and sustainable clothing is now 'fashionable'. More people are getting involved in circular fashion and therefore the public in general are hearing more and learning more about it.

2.2 The process adopted

When the business first started anyone could rent the dresses, but Prom Ally now use a referral process. Customers must be referred by either social services or their school. The customer then chooses the dress or suit that they want to hire, and it is posted out to them free of charge. After the prom/event they return the package via Royal Mail. The whole service is provided free of charge.

The founder has now developed the Eco-wardrobe concept. One of the main reasons for doing this was because Prom Ally now has approximately 4,000 dresses and traditionally the Prom season only lasts from May to July. For the rest of the year all the dresses are in storage. To make money, rather than constantly rely on grant funding, she decided to try and utilise the dresses all year round. Eco-wardrobe is a sustainable hire business. It mainly trades online, and it hires out clothing for wedding guests, bridesmaids and to people attending the races. The money made from this business goes into supporting Prom Ally and allowing it to supply their service free of charge. Again, the stock at Eco-wardrobe is all donated, nothing is new, so it gets reused over and over again and most importantly it is being kept out of landfill.

Eco-wardrobe also has a retail premises in Llandudno, and they feel that this high street presence has contributed to raising the local profile of both businesses.



2.3 Milestones/measuring progress

Prom Ally tries to work with other businesses that share the same ethos. By thinking of all the different elements and potential impacts of the business they have developed their services with the circular economy at the core.

Through the Eco-wardrobe business, Prom Ally are working with a dry-cleaning company. The dresses and suits have to be cleaned between hires and they are aware that laundrettes and many traditional dry-cleaning processes can have a significant impact on the environment. They have found a distribution warehouse in Glasgow, called ACS Clothing, that specialises in enabling brands and retailers to join the circular economy. Several clothing rental companies use their warehouse and ACS will send the dresses out and will then clean them when they are returned. The dresses are cleaned using an eco-friendly washing system instead of using the traditional Perc dry cleaning chemical.

Prom Ally has also thought about the delivery companies that it uses for the dresses. Ideally, they consider that they would use a carbon neutral delivery company, however, they also need a delivery option that is financially viable. They currently use Royal Mail because, as well as their environmental considerations they also need to think of their end users, their vulnerability and access to drop off points. Post Offices tend to be accessible to everyone.

Prom Ally has evaluated their waste processing too, because often people will send them several dresses and not all of them can be used. If they need to dispose of clothing, they pass them on to reSource which is another circular economy business based in North Wales. reSource uses the dress fabric for their re-maker workshops.

3. Reflections

3.1 'What works'

The main thing that has really allowed Prom Ally to maintain the business is the significant amount of donations that they receive, meaning that they haven't had to buy any clothing since purchasing the initial start-up stock. Other charity shops in Llandudno also tend to bring any evening dress donations to Prom Ally.

Prom Ally feels that it is important to work with companies that share their ethos, and this has been successful in terms of both social and environmental impact. The founder has not undertaken any formal training on the circular economy, but she knows people locally that have an interest in it. She has also developed her knowledge of the circular economy by attending events, online research and by watching documentaries.

They also highlight changing attitudes towards fashion and the role influencers in the media, such as Stacey Dooley and Amal Clooney, play. Influencers now talk about sustainable fashion and have an interest in the circular economy, and they feel that this does affect how people think about fast fashion.

3.2 What support was useful

The support provided by Social Business Wales was very important, particularly in terms of deciding the most appropriate legal structure and assisting with grant applications and sources of funding. In early August 2022, the founder attended Ideas Fest and was invited to pitch Eco-wardrobe to a panel of judges at the event. The judges really liked the idea and she won. The prize was a £5,000 marketing campaign for Eco-wardrobe. They are hoping that this marketing campaign will be successful for both Eco-wardrobe and Prom Ally and will really have a positive effect on their funding situation.



Watch the video [here](#).

Case Study 14

reSource CIC Denbigh



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1. At a Glance

1.1 The initiative

reSource CIC is a Community Interest Company founded by Janine Cusworth in 2020. It is a solution focussed organisation which works in collaboration with other organisations to find creative ways of reusing waste materials, such as through upcycling, repurposing or simply recycling items that may otherwise go to landfill.

reSource provides opportunities for people within the local communities surrounding Denbigh and Ruthin in North-East Wales, to learn, create and benefit the community using circular economy as a basis.

1.2 Time frame

reSource registered as a social enterprise in 2020 with the founder being supported by a Board of four Directors. Since the business started it has grown and diversified into several different areas, all of which are focussed on circular economy principles.

1.3 Focus areas

reSource has a number of different parts to the business including the reUse store, the reMakery, reForm Plastics and most recently Bws Benthg.



The main subsections of the business are described below:

- reSource CIC collects clean, dry, safe and nontoxic items from individuals, businesses and trade. These are then sorted and made available in their **reUse Store**. reSource's aim is to support a local Circular Economy, where items are used until their complete end of life, keeping items out of landfill and in use for longer. They are also a registered Natural Resources Wales Waste Carrier licence holder.
- **reForm Plastics** is an innovative plastics workshop space, which is used to sort household plastics with a focus on items which are difficult to recycle such as plant pots and seasonal items, for example broken plastic sledges. These plastics are shredded and reformed to turn into useful items, such as plant pots. The workshop is also used by the local community to explore the properties of plastics.
- **reMakery**, is a dedicated community creative workshop space that provides low cost, accessible workshops to all. It is based on reusing items and the workshops include upcycling and painting furniture, mosaics, sewing, textiles and felting.

- reSource have recently opened a furniture store on the high street in Ruthin, which has generated a high level of interest within the community. The shop is located in the former Barclays bank building and the organisation feel that having a high street presence will lead to future opportunities. Everything in the **reUse shop** is reused or donated although it stocks a few new craft items to compliment the reusables and to help with creative activities. All new items are selected for their environmental credentials and to support the development needs of children and young people. Having the shop premises also means that reSource are able to offer a variety of volunteering opportunities to local groups.
- reSource have also been working on a **Bws Benthylg** project for approximately two years. The project, which launched in August 2022, works in four different towns in North Wales. There is a timetable explaining where the bus will be and it spends half a day in each of the towns, one town per day. The project has a membership fee and members can hire a variety of products, such as tools and decorative items. There is also a range of affordability, so that the project is accessible to everyone. This is the first project of this type in Wales, and it has been supported by the National Lottery. reSource are looking to write the project up as a blueprint for other similar projects, wishing to share resources in rural communities. They also consider that this project is an opportunity for people to develop new skills in the area. As an example there is no one that fixes sewing machines locally so they have organised a workshop and are hoping to do another, so people are learning skills that can also be shared with other circular economy projects such as repair cafés.

1.4 Organisational structure/core team and participants

reSource is led by the founder, who is supported by a Board of four other Directors. The Board have a variety of different skills, and all share the CIC's ethics and principles about reuse, recycling and repurposing materials. The organisation has 15 employees, including 2 apprentices and 3 contract support workers. The founder considers that reSource has been able to naturally attract staff that share the organisation's values.

reSource works with a variety of different organisations including the probation service, Scope and other organisations/groups with an interest in the circular economy and sustainability. Participants are wide-ranging too, from adults with learning difficulties, young people, retired people and carers. The organisation is able to provide opportunities that bring the community together.

1.5 Finance

reSource received grant funding to get the business up and running. They found that after having a smaller grant and demonstrating their financial competence, they were able to access funding from larger grant schemes. The organisation also has a number of contracts that it delivers, for example they have a sizable contract with Scope, supporting people across North Wales with employability skills. Having such contracts in place has allowed them to grow and develop and they are working towards being financially self-sustaining. reSource also highlighted the time and effort that the grant application process takes.

1.6 Outcomes to date

reSource have received funding from a range of different organisations, such as WWF, the National Lottery, the WCVA and other philanthropic sources. They have accessed smaller local funding sources, usually to purchase specific pieces of equipment. The organisation believes it has evolved by taking advantage of opportunities such as obtaining their first site when a local Trust contacted them to explain that they had spare workshop space. reSource took on the workshop space and pay a peppercorn rent. The workshop provides sufficient space for the projects to keep evolving. Gardening projects have also been successful, particularly considering the coronavirus pandemic. Gardening projects also try to reuse and repurpose as many waste materials as possible too with the organisation having recently received £30,000 to develop another couple of acres of land as a community orchard. They are also making significant efforts to reach those people who do not usually engage in these types of activities. They recognise that many talks and meetings aren't accessible for a lot of different people, so they try to 'keep it real' and get as many people involved as possible. reSource is a key stakeholder in the local circular economy ecosystem that is developing in the region.

2. The journey

2.1 Origins



The founder of reSource moved back to North Wales three years ago, with a background in social work. She had an idea about the need for flexible and adaptable opportunities for people and about how to utilise local materials and resources, influenced by a Scrap Store where she previously lived. After meeting a local Friends of the Earth group, she felt that there was a real interest in the community about reuse and repurposing. reSource

brought together a combination of her initial ideas with the organisation being based on using the resources that are available, including physical materials but also people skills. They consider that they are using what is available locally to build confidence and share skills. reSource also feels that its work is building back communities, with the circular economy being fundamental to that and having a real impact on local places.

2.2 The process adopted

reSource considers that for a social business it is often difficult to separate the environmental and circular economy elements of the business from the social justice factors; they go hand-in-hand and make the business model unique. The circular economy is the vehicle that it is using to engage people and have a positive impact on the community. reSource thinks that everything they do is consistent with circular economy principles of reusing and repurposing.

They suggest that reSource is introducing the concepts of the circular economy almost by 'stealth', by doing practical activities, with tangible outcomes and engaging with local communities. For reSource the emphasis is on changing people's understanding about what waste is, using practical approaches such as their garden to talk about food production and food waste and showing people the value of plastic as a reusable substance via their plastic reuse workshops. The company feels that it is moving beyond recycling because it is demonstrating circular economy processes of collecting, sorting, shredding plastics and then reforming them into other items which they can sell to generate income. Their organisational

purpose is also about upskilling, offering several different qualifications, along with raising people's aspirations through their social mission.

reSource is developing branding relating to the recycled plastic plant pots that it makes. They believe that relating their marketing to the circular economy principles to be a unique selling point of their products.

2.3 Milestones/measuring progress

Having worked in the local community, they know that many people do not have enough resources, but by using the circular economy as an approach, it becomes clear that there are many resources, within communities, that can be reused and repurposed to support others. The principles of the circular system help people to make sure that things are shared as well as reused, rather than wasting them. An example is a visit to a company to pick up some wood. reSource was asked if they picked up electrical items and as the conversation went on, it was realised that the company were regularly dumping laptops and computer equipment that could easily be recycled and reused. reSource explained that such equipment can get reused and recycled and is often redistributed to families who cannot afford to buy such equipment. The company was surprised with what they had been doing and how they could use this equipment to help people. The circular economy approach gives people a real chance to rethink what they are doing with waste.

reSource creates work and volunteering opportunities for adults with disabilities and inspires local people and organisations to work with them and buy products. They have done several talks for local schools and groups about their work and the role that the circular economy can play within local communities.

They continue to innovate and respond to local needs, having, for instance, just established a packaging exchange for people moving house, whereby they can use boxes and packaging that others have used previously. It is also working with the County Council to look at how they can scale up their plastic recycling and shredding. One issue that they have also noticed is that unwanted spectacles are a problem locally and they are looking to work with a company to recycle them into shelving for opticians' shops, an innovative and circular solution.

reSource knows that its social enterprise is making an impact but acknowledges that it needs to improve how it is communicating that impact, particularly in terms of the circular economy, as well as the social impact. It also realises that it needs to start collecting data to show how much waste is being diverted from landfill.

3. Reflections

3.1 'What works'

reSource considers that it has really benefited from having conversations with other community groups and social enterprises that are working towards the same circular economy aims. They highlight that, trying to do things differently, can feel very isolating at times and these conversations reaffirm the value of what they are doing. They mentioned that it is really important to know that challenges are shared and the importance of sharing ideas with local groups, discussing what is possible and how people can work together. They do recognise that people do not fully understand the term 'circular economy,' so they don't always know what the organisation aims to achieve.

3.2 What support was useful

reSource received support from the Social Business Wales New Start Programme, to get the business set up. This included support relating to legal structures, governance and applying for further funding. The organisation has also received grant support from a variety of funders including Social Investment Cymru. Some of the upsides of the pandemic have been the emphasis on the Climate Crisis and supporting local businesses, which have all helped the organisation to grow and develop.

Finally, working with and learning from others has been supportive in terms of starting the social enterprise, but also to allow the business to keep innovating and finding circular economy solutions.



Watch the video [here](#).

Case Study 15

Splosh Newtown



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1. At a Glance

1.1 The initiative

Splosh's mission is to find innovative ways to protect the planet. The company considers that most branded cleaning products manufacturers are not moving fast enough and almost all their home and personal care products are still packaged in single use plastic bottles.

As a result, Splosh have designed refillable cleaning essentials solutions, based on concentrated products formulations. The founder of the company, Angus Graham, worked with chemists to develop their unique products. The Company is based in Newtown in Powys.

1.2 Timeframe

In 2022, Splosh is celebrating its tenth anniversary. Since the company was established in 2012, it has continued to innovate and develop products and processes based on the principles of the circular economy.

1.3 Focus areas

The original premise of Splosh was to be a completely zero waste company, with a focus on cutting out plastic waste, particularly single use plastics. Splosh provide a wide range of products in three main areas; laundry, cleaning, and health and beauty. Products are also available as bio and non-bio.

Splosh sells "bottles for life" which can be refilled as necessary. The bottles have a fill line so that customers know exactly how to dilute their concentrated products. Most customers purchase a starter pack from the Splosh website and then progress to purchase the concentrated refill pouches. Having concentrated refills means that unnecessary water is not being transported.

Splosh were the world's first refillable washing up liquid, shampoo, and conditioner manufacturers. One example of their concentrated products is their refillable handwash, one refill pouch will fill a standard bottle six times. Splosh are also conscious of the price of the products, as many eco products are sold at a premium price point, whereas Splosh products are priced at a comparable level to mainstream competitors.



1.4 Organisational structure/core team and participants

Splosh employs 11 members of staff and the majority of these are based at the company's manufacturing and distribution site in Newtown.

1.5 Finance

The company describes itself as a 'bootstrap business', with much of the work undertaken by the founder and supported by a close-knit team. Income is generated via internet and retail sales.

Splosh have received some grant funding to purchase specific pieces of equipment, such as a pouch filling machine, refills despatch machine and an industrial blender funded by grants from the Welsh Government.

1.6 Outcomes to date

Currently Splosh trades in the UK and most of their sales are via their website. However, they are developing their retail sales and since January 2022 their products have launched in over 90 stores across the UK. Currently their retailers include farm shops, health food shops and smaller supermarket chains. Currently, the new retail range is limited but it is anticipated that this will keep developing as the project evolves. They have also recently launched a range of supersized products.

2. The journey

2.1 Origins

The founder of Splosh had the idea for the company whilst in a car park in Hay-on-Wye. He was putting plastic bottles in a recycling bin when he spotted a young mum and her children leaving the store with a trolley full of plastic bottles. These were the very same bottles that he was throwing out. It struck him that the supermarket business model was bizarre - why encourage customers to throw away perfectly usable packaging?



2.2 The process adopted

Splosh have utilised the principles of the circular economy to design their processes and products. Raw materials arrive at one end of the Splosh factory and Royal Mail collect finished goods from the other. The fact that there is no middleman, minimal waste and no excess transport makes the production and distribution processes extremely efficient. Splosh source their raw materials, where possible, from the UK or mainland Europe. Their products are also vegan-friendly, septic tank safe, and they don't test their products or ingredients on animals.

Customers can save up their refillable pouches and return them to Splosh. If customers save 20 or more pouches, they can print a return label from the Splosh website and send them to the company for free. With every pouch returned Splosh donate 10 pence to the Whale And Dolphin Conservation Society. In retail shops there are return post boxes for empty pouches.

Splosh don't believe in plastic waste and acknowledge that with innovative approaches plastic waste can be turned into a valuable resource given that plastic is a very efficient packaging material and in many ways is superior to cardboard. By applying circular economy principles, Splosh take back used refill pouches and either re-use them, sell them as "Crinklies" or reprocess them into new, higher value products. The company are also investigating if the pouches can be strengthened so that more of them can be reused.

Splosh have used the reprocessed plastic pouches to develop a prototype ice-scraper, however, they have been undertaking research in this area and are about to launch a new reprocessed plastic product, which they will be launching in the near future.

2.3 Milestones/measuring progress

Splosh consider that they have made the lifecycle of plastics as “circular” as possible. Their bottles are designed for re-use again and again. They also estimate that their pouches cut plastic waste by 95% and CO₂ emissions by around 85%, as pouches contain concentrates, stacking easily for distribution and being compressed in size when returned.

The company estimates that it has saved over 2 million bottles from bins. Customers can see their individual “bottle score” on their accounts. Once customers have saved 100 bottles, they become part of a hundred club where they can access rewards and offers.

The company acknowledges three milestones in the last year, which are,

- launching shampoo and conditioner, following customer demand
- launching a supersize product range for business clients
- developing a retail presence for the business.

3. Reflections

3.1 ‘What works’

As a small company, the clear vision and values of the founder have been instrumental in growing the business and are still driving the innovation forward. The founder believes that, “Splosh has always been circular, it’s in our DNA.”

The products that Splosh have are designed to have a strong colourful brand image and the marketing messages and concept are also very clear. Splosh promotes that the company and their products are a great example of the circular economy in action, and this is promoted on the company’s website. A growing environmental awareness, particularly in relation to single use plastics, amongst consumers has also benefitted sales.

3.2 What support was useful

Research input from chemists to develop the unique, concentrated products was essential support as the idea for Splosh began to evolve. Grant funding support from Welsh Government has also been key to allowing the company to keep innovating and developing their product range. Splosh also consider that the support from local customers and businesses has allowed sales, particularly retail sales to grow as consumers look to support local manufacturers.



Watch the video [here](#).

Case Study 16

Swansea Bay University Health Board - Bed poverty Project Swansea



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1. At a Glance

1.1 *The initiative*

Community Supported Agriculture (CSA) is a social enterprise that supports development of land for agricultural purposes to produce locally grown organic food. The CSA is a model of agriculture where the responsibilities and rewards of farming are shared between farmers and consumers. There are different types of CSA, but one of the most common is where community members agree to purchase 'shares' ahead of the harvest, so that the farmer has the money to invest in the forthcoming growing season with a customer base, who will later receive regular vegetable boxes, already guaranteed.



1.2 *Time frame*

The CSA project within Swansea Bay UHB started in January 2021.

1.3 *Focus areas*

For CSA, the focus was on the regeneration of natural systems, social value benefits, and reduction of waste.

1.4 *Organisational structure/core team and participants*

The project involved the Strategic Planner for Swansea Bay University Health Board, and a person outside the organisation, who handles the farming of the allocated land. However, with funding they would like to employ two additional members of staff.

1.5 *Finance*

The CSA didn't cost the UHB anything. It used land that the UHB already owned. There was an agreement to supply the land at a notional cost of £1 per year in exchange for the UHB doing social prescribing, therapy, and gardening in the project. Alongside this, the community will get access to vegetables. Working with Swansea University's Natural Resources Wales project funding of up to £250,000 for 2 years was gained. Alongside this, NHS Forest donated trees and Swansea City Council offered fencing. The CSA will generate revenue from monthly subscriptions based on their fresh vegetable boxes.

1.6 *Outcomes to date*

Progress to date is that Swansea Bay UHB has allocated 7.6 acre of land to provide food to patients, have social events and hold therapy sessions.

2. The Journey

2.1 Origins

CSA is a cooperation and partnership for the creation of agricultural land for the purpose of producing locally grown organic food. There have been different types of CSA implemented, specifically in Japan. For this project, a feasibility study was conducted first, to see if there was demand. The report showed that there was a need for a CSA project. After that land was sourced to set the project up. The project is also supported by the Well-being of Future Generations Act and the adoption of a One Health approach, which coincides with the Health Board's environmental initiative.

However, the principal CSA barrier was securing land from the health board, as this project was new to them, and they were reluctant to act on it initially.

2.2 The process adopted

For the CSA project one notable process that relates to Circular Economy is that they take coffee waste from the Morriston Hospital cafeteria and Costa Coffee to this allocated land to be used as compost. In addition, cardboard waste is used to make boxes for vegetable and compost boxes.

2.3 Milestones/measuring progress

The Swansea Bay UHB CSA aims to improve the health of people and improve the environment in the area by increasing access to good food, green space and contact with nature, education and training, along with enhancing biodiversity. When fully established, the CSA hopes to produce enough food for approximately 100-150 households per week through a vegetable box scheme, provide some food for the hospital catering department at special events, and donate any surplus food to local food banks to ensure nothing is wasted. The CSA will also support the Healthy Schools Initiative which will allow children from the local area to learn more about the environment and participate in a growing project.

3. Reflections

3.1 'What works'

The CEIC course was beneficial as it was in-person teaching and takes people out of the office environment, delivering in an environment that is completely safe. In addition, it gives the team the time to think and collaborate with like-minded people and share ideas and pushes through policies, given that people don't often understand the bigger picture, due to the high pressures on the NHS. It supports innovation by looking at things with a fresh pair of eyes and a different perspective.

3.2 What support was useful

The CEIC course, as it provides a lot of tools.

Case Study 17

Swansea Bay University Health Board - Community Supported Agriculture (CSA) Swansea



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1. At a Glance

1.1 The initiative



The Covid Bed Project saw the onward donation of unused hospital beds, instead of sending them to the landfills for scrap. These beds had been bought by the Welsh Government as additional hospital bedding during the Covid pandemic crisis phase. Beds were donated to help combat bed poverty in Wales.

1.2 Time frame

The Covid Bed Project started in December 2021.

1.3 Focus areas

The focus of the project was designing out waste and keeping material in use, including, alongside this, social benefits.

1.4 Organisational structure/core team and participants

The project involved a total of seven people from the Health Board and Bayfield hospital. Their distribution channel allowed for the transport of the beds free of charge.

1.5 Finance

The beds were bought by the Welsh Government as additional hospital bedding during the crisis phase of the Covid Pandemic. Instead of sending them to landfill for scrap, the beds were donated. The only cost was staff time.

1.6 Outcomes to date

Knowing that a directive to dispose of the extra beds was expected in July 2022 and having been inspired by an item on the BBC December of 2021, those behind the project organised different parts of the UHB to donate 600 beds to help combat bed poverty in Wales. In addition, other Health Boards are undertaking the same process.

2. The Journey

2.1 Origins

Those behind the project were wondering what to do with the additional beds procured during the pandemic. In December 2021, they saw a segment on the BBC about children not having beds to sleep on, which led to bed poverty. This inspired them to donate the 600 unused NHS beds for this cause.

However, the Bed Project barrier was the newness of the project and therefore the reticence of the Health Board to support an untried project, especially as they were not aware of bed poverty

2.2 The process adopted

The team organised different departments and distribution channels to deliver the beds as donations for combating bed poverty in Wales at no cost. This process also got approved by the Welsh Government to be implemented in every Health Board.

2.3 Milestones/measuring progress

600 beds donated to combat bed poverty in Wales. This process was approved by the Welsh Government, and it has been suggested it could be implemented in every Health Board. To date £3,000 has been saved and materials were reused.

3. Reflections

3.2 'What works'

The CEIC course was beneficial as it was in-person teaching and takes people out of the office environment, delivering in an environment that is completely safe. In addition, it gives the team the time to think and collaborate with like-minded people and share ideas and pushes through policies, given that people don't often understand the bigger picture, due to the high pressures on the NHS. It supports innovation by looking at things with a fresh pair of eyes and a different perspective.

3.2 What support was useful

The CEIC course, as it provides a lot of tools.

Case Study 18

TCG Solutions Cardiff



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1. At a Glance

1.1 *The initiative*



Thermal Compaction Group (TCG) was founded in 2014 and specialises in sustainable waste, carbon reducing, environmental impact systems providing cost effective solutions to common waste management problems. Following a unique principle of circular economy, TCG focuses on problematic single use plastics. The company recovers and recycles polystyrene in packaging and polypropylene widely used in the healthcare sector. It has a system to reengineer light polymers into solid materials that can be returned to the supply chain for new product manufacture. TCG has developed a range of products that contribute to the circular economy by reducing waste volume through recovery and reuse.

1.2 *Time frame*

The journey of TCG's circular economy started with its founder, who believed in turning waste into a resource. Engineers and managers of TCG have around twenty years of sustainability and recycling practice experience. They realise the importance of doing things proactively and creating a culture using green technologies and sustainable solutions for a circular economy.

1.3 *Focus areas*

The initial focus was on very light and problematic polypropylene and polystyrene. For many years, the company has been recovering these materials, diverting them from landfill and making sure they can be reused in the UK. Drawing upon successful experiences, TCG hopes to replicate this good practice in other parts of the world. Therefore, TCG has developed solutions that can be broadly adopted, apart from selling its machines.

1.4 *Organisational structure/core team and participants*

As an SME, TCG has 6.5 FTE staff directly involved in the circular economy projects. Nevertheless, it makes sure that everyone in the company shares the same value on circular economy. The company always investigates opportunities to make things as circular as possible.

1.5 *Finance*

In TCG, circular economy related R&D and implementation are self-financed. However, in early 2022, as the business recovers from the coronavirus pandemic, TCG has been interacting closely with manufacturing partners, potentially providing wider funding opportunities to support circular economy projects.

1.6 Outcomes to date

TCG has developed a range of products and solutions that are focused on processing single use plastics, thus reducing the amount ending up in landfill, incineration, or even watercourses and oceans. The company's main machines include CURTAINMELT, STERIMELT, STYROMELT, and MASSMELT. TCG had made great progress before the pandemic in 2020. However, the pandemic did have a beneficial impact because the company could concentrate on machine upgrades and improvements. It also studied a wider range of plastics and found opportunities for the health sector to embrace new technologies. This has brought a new momentum since early 2022, with hospitals seeking carbon net zero, and TCG's systems can complement these expectations of sustainability and circular economy.

2. The journey

2.1 Origins

Engineers and managers in TCG realised the problems of polystyrene eighteen years ago, and they started the journey to deal with polypropylene about eight years ago. Utilising the concept of circular economy, they have been creating sustainable solutions to bring used materials back into the supply chain. This results in TCG's innovative and disruptive technologies which recover 'single use, disposable' products from expensive waste disposal routes such as landfill or incineration. Thus, the harm of core polymer to the environment can be significantly reduced.

2.2 The process adopted

TCG has developed tangible solutions to recover and recycle plastics. As an example, it has designed and developed machines that melt and compress used polypropylene, such as face masks, gowns, and curtains, at 350°C to produce one metre rectangular blocks. The blocks of polypropylene can then be re-engineered into items like chairs, garbage bins and bottle caps. While hospitals are the biggest users of polypropylene, the TCG machines are compatible for use in the shipping, construction, and military industries.

Circular economy in TCG is within their organisational ethos. It is reflected in an emphasis based on daily activities, which cultivate a shared vision and culture. For instance, internally, people regularly ask questions such as where items come from, what has been done to them, are they brand new and is there recycled material in there? Externally, TCG engages actively with sustainability managers and circular economy champions, especially from the NHS and healthcare sectors to share knowledge and resources. As the business grows, TCG is considering formally documenting the best practice of circular economy as procedures.

2.3 Milestones/measuring progress



Four main machines have been developed and put into commercial use to date, demonstrating the achievement of circular economy implementation. These are CURTAINMELT, STERIMELT, STYROMELT, and MASSMELT.

CURTAINMELT: This is TCG's latest innovation for the recycling of single use plastic healthcare ward curtains with the following features.

- Recovers single use disposable polypropylene (e.g. ward, bed and cubicle curtains; sterilisation wraps; drapes; patient transfer sheets)
- Volumetric reduction up to 85%
- 100 tonnes per annum on average
- Carbon emissions saving of 50% on average
- Provides a true circular economy for waste
- One “push button” operation
- Minimal labour impact

STERIMELT: This is an innovation which can reform the future of single use hospital plastics.

- Recycles and recovers single use disposable polypropylene (sterilisation tray wraps; drapes; patient transfer sheets)
- Volumetric reduction up to 85%
- 50 tonnes per annum on average
- Carbon emissions saving on average 50%
- Provides a true circular economy for waste
- One “push button” operation
- Minimal labour impact



STYROMELT: This is a sustainable expanded polystyrene (EPS) recovery innovation.

- Recycles and recovers single use disposable polystyrene
- Reduces the volume of polystyrene (EPS) by up to 90%, reducing vehicle movements which in turn improves sustainability and reduces carbon footprint
- The solid polystyrene blocks can be re-introduced into the UK or Global plastic supply chain
- A clean process, no white 'Snowstorm' bead mess

MASSMELT: This is a horizontal, auger fed, thermal screw compaction system

- Reduces mixed compactable waste volume by around 70%
- Reduces moisture content up to 25%
- Output logs are ideal for EfW feed stock
- Uses plastics within the waste to form a thermally binding skin
- The output 'logs' can be cut to any length
- The process is managed using 'state of the art' Pro Logic Controllers, where speed and heat are all fully adjustable
- When required, a pre shredder can be installed as an optional extra. Ideally, waste particle size would range from between 20mm to 400mm and should have a minimum 20% plastic content.
- Enhances reductions in transportation by maximising payloads and reducing vehicle movements which in turn improves sustainability and reduces carbon footprint.

3. Reflections

3.1 'What works'

According to TCG, education is the key to realising a whole circular economy. It is important for people to understand the difference between the linear and circular economy. If possible, schools should consider embedding the concept of circular economy in the curriculum, so that knowledge can be learned as young as possible.

As for their professionals, they benefit from the reality that people have varied backgrounds and mindsets. Therefore, as far as TCG are concerned, universities can foster a platform for common knowledge creation and dissemination. There are numerous approaches to transforming the circular economy, and a foundation or a coherent agenda can be helpful.

3.2 What support was useful

With machines and solutions developed, TCG has achieved a healthy route map to the circular economy. According to TCG, circular economy is about knowledge and awareness. By engaging with partners and customers, the awareness of sustainability, alongside knowledge and tools can be passed on, so that actions can be taken as early as possible to tackle environmental challenges. So far, TCG has worked with several organisations including IHSS (Decontamination & Sterile Service Solutions), Globus Group Healthcare, Northumbria Healthcare NHS Foundation Trust, University Hospitals of Derby, Burton NHS Foundation Trust, Royal Cornwall Hospitals NHS Trust, and Aneurin Bevan University Health Board. These organisations have successfully adopted TCG's innovative technology for an on-site solution, specifically to repurpose plastic waste. The support to share knowledge and information was beneficial.



Watch the video [here](#).

Case Study 19

Vale Swansea



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1. At a Glance

1.1 *The initiative*

The Sustainability Team from Vale Europe Ltd have created three processes that recycle and reuse materials. This includes recovering waste and by-products by extracting previously unobtainable materials. The first initiative focuses on recapturing by-products, such as nickel, from slag and feeding it back into the manufacturing process instead of sending it to landfill.



The second initiative focuses on regenerating natural systems, such as coolant water. Water used in manufacturing processes needs to be purified before reaching the waterbed. They have this by not only taking out hazardous material but also capturing useful material from it as well.

Finally, the third initiative, a collaboration with their supply chain partner which specialises in mineral wool insulations, focuses on recycling and refurbishing insulators. Vale return their old insulators to their supplier as a waste management option instead of sending them to landfill. This waste management option is higher up the hierarchy than disposing of old insulators and also reduces financial costs of purchasing new insulators.

1.2 *Time frame*

Two of the by-product recapturing initiatives, recovering nickel and regenerating coolant water, were started thirty plus years ago, thus current employees who are involved in these initiatives did not have the exact information regarding the time of implementation. The collaboration with their supply chain partner which specialises in mineral wool insulations started in 2012.

1.3 *Focus areas*

Through these initiatives, all three principles of the Circular Economy - eliminating waste and pollution, circulating materials (at their highest value) and regenerating nature- are implemented, albeit not concurrently. In the regenerating coolant water initiative, two principles of Circular Economy are applied. Hazardous materials are filtered out before releasing the water back into the riverbed which eliminates pollution and regenerates nature. As for the collaboration with the mineral wool manufacturing partner, Vale Europe Ltd send mineral insulants to their partner for repurposing and recycling so that the end-product is a biodegradable insulant, which is better for the environment. Thus, one element of the circular economy is implemented: designing out waste and reusing of materials. As for the process of recapturing nickel, the slag is re-smelted to extract nickel which reduces waste and pollution.

1.4 *Organisational structure/core team and participants*

The by-product projects, extracting nickel and regenerating coolant water, were established before the participants started working with the organisation. Therefore, they did not know who was involved from the organisation. As for the refurbishing insulators initiative, the Sustainability Team at Vale were responsible for the pickup and transport to their supply chain partner. Also, the waste management control department at Vale Europe Ltd were responsible for the packaging and collection of the materials and insulators.

1.5 *Finance*

The recovering nickel and regenerating coolant water initiatives are internally financed as the processes of recycling, reusing and transport of the materials are undertaken by Vale Europe Ltd. For both initiatives the core resource being significantly expanded is the time of staff. As for the refurbishing insulators initiative, transport costs are the only expense. Transportation is, however, undertaken by Vale's partner organisation which specialises in manufacturing mineral wool insulators.

1.6 Outcomes to date

Waste reduction and material re-extraction were the main outcomes of the by-product cases, with the exception of the one case that uses water as its input. In this case they also purify the water before it returns to the main body of water. In terms of the collaboration with their supply chain partner, the main outcomes were the reuse of materials. Although Vale still purchase new insulation from their supplier, they avoid sending old insulators to landfill.

2. The Journey

For the slag by-product case study, when raw material comes out of the ground and gets processed through the smelters, the extra slag is packed in special containers and shipped to Canada for re-smelting using a specialised smelter to extract extra nickel. This process produces limited to zero waste.

For the water by-product study, the water that is used to cool the smelters goes through a water treatment machine which takes out hazardous material before releasing it into the body of water (the riverbed). In addition, within the process they also recapture any remaining material in the water such as nickel, before releasing the water into the river.

As for the refurbishing insulators initiative, instead of using the waste management department at Vale, they worked with their partner who was seeking an old mineral insulator. As the insulators used in the plant turn into mineral insulators, these two organisations reached an agreement. The outcome of which is that biodegradable insulators are given back to Vale in return for the mineral insulators they provide to their partner. The first step was to conduct a trial run and examine material contamination for safety purposes. The process now provides that the Vale waste management department collects the mineral insulators, packages them and sends them to their partner using their transport.

For all three initiatives government regulations, business standards and economic benefits were the main enablers. The company's culture also encourages consciousness of sustainability issues and environmental impact.

3. Reflections

3.1 'What works'

The experience and expertise of the sustainability professionals at Vale are key to the success of the project and its ongoing monitoring. The team at Vale are members of AEMA, a professional standards organisation that provides sustainability courses and training. Their waste management services have a clear line of communication to the sustainability team, who provide them with ideas for adopting green processes. Vale recently established a Green Champion programme which acts as an onsite think tank for the creation of green and sustainable processes. These ideas then go through proof of concept via the sustainability team. Vale also has a sustainability induction that creates awareness of environmental concerns.

3.2 What support was useful

The “Think Tank” that was created under the Green Champion programme was helpful, as it supports the internal understanding and know-how of Vale processes. The ‘Think Tank’ appears to perform the function of a ‘community of practice’ and enables Vale employees to suggest and discuss new ideas to support Circular Economy related processes within Vale.

Case Study 20

Wilderness Brewery Newtown



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1. At a Glance

1.1 The initiative



Wilderness Brewery is a fine ale brewery located in Newtown, Powys, producing a wide range of seasonal and aged beers. Starting in 2017, the owner, James' main aim for the company was to brew modern mixed fermentation beers in a sustainable manner. Transparency has also been a big focus for Wilderness, as the owner believes people should know exactly what goes into what they consume. Unlike other, larger, breweries the completed brewing sheets for Wilderness Brewery are published online for people to use, share and remix into their own variants.

1.2 Time frame

After graduating university with a PhD in biochemistry and being employed as a trainee brewer in 2010, the owner, James, spent many years perfecting his craft within the company, even relocating with them to east London. James and his wife then made the decision to relocate to Newtown in 2015, founding Wilderness brewery 2 years later in late 2017.

1.3 Focus Area

The main circular economy focuses in Wilderness Brewery are all about reducing waste and lowering carbon emissions. The owner has achieved this in several ways, from opting to power the brewery using a renewable energy supplier, to sourcing the barrels from larger brewing companies who viewed them as waste after usage. All the grain and hops are sourced as locally as possible to reduce the carbon footprint of the beer, with any waste products, such as sugar extract from the grain, being supplied to local farmers as animal feedstock and therefore put back into the system.

1.4 Organisational structure

Wilderness Brewery is a small organisation, operating with the owner being the only Brewer on site. One additional staff member oversees the media and marketing side of the company, but this role only started in early 2022.

1.5 Finance

On the whole, Wilderness Brewery is an entirely self-funded project. The owner did however manage to secure some partial funding from the Welsh Government to acquire a canning machine to help improve the overall sustainability of the company, following the results of an LCA report.

1.6 Outcomes to date

The owner has significantly expanded his range of fine craft beers since opening Wilderness Brewery, which has included adding canned beers alongside the original glass bottle packaging following the advice of an LCA report looking into the sustainability of the brewery production process. Wilderness also calculates the carbon emissions from deliveries, aiming to offset this amount by supporting local, verified carbon reduction projects.

2. The Journey

2.1 Origins



The owner has been a brewer for the entirety of his professional career. After graduating University with a PhD in Biochemistry, he applied for the role of a trainee brewer at a large organisation in the South-West, beginning this journey in 2010. The company relocated to London in early 2015, a move which Wilderness' owner followed to continue learning his craft, especially as the company wanted to branch out and start

producing more experimental beers, rather than having a fixed, standardised production. The owner and his wife then took the decision to move to Newtown in late 2015, inspiring him to start up his own brewery, continuing his passion, and leading to the opening of Wilderness Brewery in 2017. The move to Newtown was essential for the owner to start his own company, as the higher financial overheads associated with London would not have supported a fine ale producer on the scale of Wilderness Brewery.

2.2 The process adopted

The initial circular economy approach at Wilderness Brewery was sourcing barrels from other, larger breweries that were considered waste. When aging a product such as wine or whisky, the barrels used have a finite number of reuses before a build-up of flavourings within the barrel begins to impact the taste of the batch within. These flavours are referred to as tannings, which Wilderness use in their favour to create unique flavours within their beer range. Each barrel has a different flavour, so it is a trial-and-error process, but some of their tested favourites include old barrels of Bordeaux Red and Bourbon Whisky.

Wilderness Brewery was involved in a wider study from Bangor University that aimed to test the sustainability of different brewing operations. Following the results of an LCA conducted during this project, Wilderness changed from being an entirely bottled fine beer company, to also producing canned beers alongside the glass. This was because the quantity of packaging involved with cans compared to glass is considerably less, which outweighed the fact that glass as a material is easier to recycle than tin. Where it can, Wilderness Brewery also tries to source packaging that is not only recyclable after use but is produced using a percentage of recycled material. This comes at a slightly more premium cost, but this is covered by the fact that Wilderness' fine beers are considered a premium product, so this increased expense is coverable and beneficial, helping establish a stronger brand image.

To reduce their overall carbon footprint, Wilderness sources all their grain and hops as locally as possible. Waste from the brewing process, such as sugar extracts from the grain, is made circular by being sold to local pig farmers as a feedstock for their animals. Wilderness also calculates their carbon emissions from deliveries, offsetting them by donating to verified carbon reduction projects. A small percentage of each brewed beer is donated to the Helsinki Foundation.

2.3 Milestones/measuring progress

Currently, the owner has no plans to expand the brewing process beyond the 800-litre batch size they currently operate at. However, he would like to relocate Wilderness Brewery to a larger premises that offers a greater potential for increasing its commitment to the circular economy, specifically targeting a wastewater collection system to help reuse the water required for brewing.

In the short term, Wilderness' next ambition is to install solar panels on site to directly produce their own electricity, making the brewery almost entirely self-sufficient.

3. Reflections

3.1 What works?

Working within the local area to improve circular economy awareness is key to helping develop sustainable opportunities further. In the case of Wilderness, the local pig farmer was not looking towards breweries as a potential source of feedstock but was happy to take the chance to work with another local company to reduce wastage when the offer was presented. This isn't always possible as opportunities like this are often coincidental, but improved awareness and willingness for different businesses to collaborate with each other can help increase circular economy practices such as this in the future.

3.2 What support was useful?

In the case of Wilderness, having an external consultant assist with evaluating the company's sustainable outlook was crucial to helping them move forward. Although the owner is highly knowledgeable on the topics of sustainability and circular economy, as a sole brewer he did not have the resources to carry out an in-house LCA assessment for his products. Having that external avenue made it possible and has since resulted in Wilderness Brewery acting upon the results to become more sustainable overall.



Watch the video [here](#).

Case Study 21

Y Dref Werdd Blaenau Ffestiniog



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1. At a glance

1.1 The initiative

Y Dref Werdd is an environmental community enterprise which was established in 2006 as part of the Communities First project in Blaenau Ffestiniog. Initially, the aim of the project was to protect and improve the local environment in the Bro Ffestiniog area. This has evolved to include looking after the people and improving their health. One of the key activities for the circular economy is the food waste that is collected from the large supermarkets in Bangor and re-distributed to the food banks in Blaenau. The activities that are undertaken by Y Dref Werdd are mainly for the Bro Ffestiniog area but have been expanded recently to include the Penrhyndeudraeth, Croesor, Minffordd and Llyn areas.

Y Dref Werdd is a good example of the circular economy. Y Dref Werdd offers nature activities programmes for adults and children which help to preserve the local environment and encourage participants to spend time in nature. They also provide advice on debt management and can provide small grants to help with heating bills. The wood from the environmental project goes to the wood bank to help people heat their houses. It is an integral part of the community and responds to their needs with basic help such as a food bank and help with heating.

1.2 Timeframe

Y Dref Werdd was established in 2006 following the Communities First programme. In 2013, it was established as a company limited by guarantee. Since 2015 Y Dref Werdd has been helping people with food and heating as well as offering debt management advice. Y Dref Werdd is also part of Cwmni Bro Ffestiniog which acts as an umbrella organisation for a number of social enterprises in Blaenau Ffestiniog. The idea behind the umbrella organisation is to facilitate easier cooperation among the social enterprises. Partners in Cwmni Bro Ffestiniog include Antur Stiniog which owns the café in the town centre and has a downhill biking centre in Llechwedd and Seren which runs a hotel and workshops where disabled young people recycle furniture and sell them in their shop.

1.3 Focus areas

Y Dref Werdd was initially established as a community environmental project. However, as there are some serious problems within the community including fuel poverty, food poverty and unemployment, the aim of the social enterprise has evolved. Y Dref Werdd can provide temporary heating vouchers to people in need until they receive their benefits.

One of the main activities is a drop-in centre in the town centre in Blaenau Ffestiniog where people can receive independent energy advice as well as debt management advice. Y Dref Werdd started the drop-in centre because many of the statutory services had been removed

from the area and people did not have anywhere to go for support with matters concerning benefits claims and debt management advice. The drop-in centre has a food bank which is run in conjunction with a local charity as well as a wood bank which offers wood to people who would otherwise struggle to pay for heating.

1.4 Organisational structure/core team

Y Dref Werdd employs 10 people. The manager works full-time. Two members of staff work in the drop-in centre to provide advice and support to individuals. There is also a specialist who can give advice about energy in the community. Two members of staff focus on developing various environmental projects. The Skyline project has one manager who works on projects to do with traditional skills, growing food and setting up a wood bank. Y Dref Werdd also employs two coordinators for the Hwb project who organise activities for adults and children. Another coordinator organises the two repair cafes and looks after the community cars. Y Dref Werdd has a board of nine directors, all with different areas of expertise.

1.5 Finance

Funding for the different projects comes from a variety of sources including the Lottery Communities Fund, European funding through WEFO, Gwynedd Council and contract work. The main funding comes from the Lottery Communities Fund, Pawb a'i Le. However, the main project, Hwb, is in its final year of funding which is causing some uncertainty. The Skyline project is run in conjunction with communities in South Wales and is funded by WEFO. Other funding for the repair cafes and the community cars comes from a variety of sources including Gwynedd County Council and the Community Transport Agency. Some of the environmental work is funded by accepting contract work, for example, to dispose of environmental waste on Gwynedd County Council owned land.

1.6 Outcomes to date

Y Dref Werdd has premises in the town centre in Blaenau Ffestiniog where people can drop in and get advice. They also run sessions in the area to provide heating advice to elderly members of the community and to hand out thermometers to ensure they do not get too cold. As the houses in the area are generally old and draughty, one of the projects focused on recruiting volunteers to make draught excluders for doors. The fillers for the draught excluders, duvets and duvet covers, come from Seren, another social enterprise in Blaenau Ffestiniog. Y Dref Werdd also provide links to Welsh Government Warm Homes Nest Scheme which offers free, impartial advice and, if eligible, a package of free home energy efficiency improvements such as a new boiler, central heating, insulation, or solar panels. One of the key activities is the food bank. One of the aims of Y Dref Werdd is to reduce food waste and Y Dref Werdd works very closely with the Blaenau Food Bank and arranged a food box in the local Co-op supermarket. All the left-over bread and cakes are stored in freezers in the Co-op at 10pm each night and then staff from Y Dref Werdd pick up the food box every Friday and take it to the food bank. There are also drop off points in the Y Dref Werdd premises as well as the local school.

2. The Journey

Although YDref Werdd started with environmental projects they have now responded to the needs of the community to improve their wellbeing by offering green spaces to disadvantaged children and adults to spend time in nature. The Cynefin y Gymuned project facilitates different outdoor activities which are led by an expert and aim to enable children to learn about the environment, history and culture. It is targeted at children between the ages of 8 and 11 who do not have these experiences in their family life and runs for a whole year. The project raised money to provide small grants to all of the families to provide the children with the clothes and

equipment needed so that the parents were not burdened with the costs. In the Bro Ffestiniog area, fifteen children took part. Two new groups are about to start, one in Bro Ffestiniog with fourteen children and one in Penrhyndeudraeth with ten children. The children are working towards receiving the John Muir prize at the end of the project. This enables them to earn a qualification for their career before attending secondary school.

There are also sessions for adults which are called 'coming back to the trees'. Y Dref Werdd has developed outdoor spaces in Llechwedd (an old slate quarry) and in Penrhyndeudraeth where adults can have a cup of tea in the woods, do Pilates or join walking tours. The aim of the outdoor spaces is to create an opportunity for people to get away from their problems and spend time in nature. This also means that they are not as dependent on the support of the drop-in centre. Once people feel happier and see improvements, they can reduce their dependence on the drop-in centre. Some participants who have been through the process, have become volunteers for the environmental projects themselves.

2.1 Origins

Historically, Y Dref Werdd has been based in Blaenau Ffestiniog. However, during the COVID-19 pandemic a project funded by the WCDA enabled them to expand and to reach a wider area. A co-ordinator was employed for the community project in the Penrhyndeudraeth area who also organises a repair café in Penrhyndeudraeth and looks after the community car to rent out to the community in Llanfrothen. Although originally Y Dref Werdd was established with an environmental focus, they have now taken a holistic approach to the needs of the community.

2.2 The process adopted

The original activities include improving the environment such as clearing rivers and training people in conservation skills. Recycling food waste is one of their main activities today as well as energy advice and tackling fuel poverty. Another core activity is to improve the wellbeing of the people in the community through initiatives like growing herbs and vegetables in the community garden.

As the focus of Y Dref Werdd is on developing and supporting the community, the circular economy is integral to them as a social enterprise. They would like to be more involved with other organisations involved in the circular economy. Currently, this role is carried out by Cwmni Bro Ffestiniog which provides a platform for discussion with other partners while Y Dref Werdd's focus is on work in the community.

2.3 Milestones/measuring process

Y Dref Werdd has been successful in raising funding to carry out the environmental projects as well as providing services for the community that have been lost as a result of government cutbacks. By giving to the community and investing in people's wellbeing, Y Dref Werdd also invests in its own future. Many people who have previously received help from Y Dref Werdd now volunteer for it themselves.

3. Reflections

One of the challenges Y Dref Werdd faces is to ensure there is sufficient funding to sustain their activities. There is currently only one year left on the Hwb project, which is funded by the Lottery. Gwynedd County Council has provided some funding for the Hwb project, but this is not expected to cover all the costs of the project. Y Dref Werdd fills an important gap in the provision of basic support for the community. The project has grown in recent years as a result of taking advantage of grants and contracts. In 2018, Y Dref Werdd only employed a manager on a full-time basis. As of 2022, Y Dref Werdd employs ten people on a full-time basis. The

majority of the grants and contracts are short-term however they have been in conversation with the Welsh Government about longer term funding.

3.1 What works

One of the most important achievements for Y Dref Werdd is to build a team of people who share the same approach to regeneration and the circular economy. They have very close relationships with the local community in Blaenau Ffestiniog as they are in daily contact with the people who live there. Therefore, they can respond effectively to what the community needs. The services provided by Y Dref Werdd are ingrained in the community. People know where to go with matters ranging from help with universal credit applications to developing a garden for the community. Things are changing all the time and the focus for the future is to grow more food for the community and develop alternative sources of energy.

3.2 What support was useful

Support from the Cwmni Bro network has been important to the development of Y Dref Werdd, especially help with receiving grants and providing communication films and news through Brocast. Y Dref Werdd has a very good relationship with the Lottery which has provided funding since 2015. The Arbed am Byth scheme provided one thousand pounds for heating vouchers. Currently, applications are in the pipeline for more funding to continue this scheme.

Developmental Matrix

Y Dref Werdd is constantly developing skills in the workplace and raising awareness of the circular economy. The members of staff also communicate the importance of the circular economy through their jobs and when meeting members of the public. . The staff also learn from the other network members. Learning from others, especially those that are ahead in the circular economy, is the main benefit of the network, especially those that are ahead in the circular economy so they can learn from them, in order to train and move forward Y Dref Werdd as a community enterprise.

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Conclusion

This report showcases twenty-one innovative organisations through written case studies and sixteen videos for practitioner and academic audiences. The case studies, from across Wales, demonstrate 'how to' implement CE principles and often foundational economy principles and practices. The case studies should inspire and encourage businesses and public service organisations to begin implementing CE principles to reduce their carbon footprint and move to a CE business model.

The collaborative approach of this project strengthened partnerships between Welsh universities and third sector organisations across Wales, enhancing the collaborative environment for research and innovation. This report supports the Wales Innovation Network's strategic priority of enhancing Welsh research capabilities through collaborative projects that deliver impactful research and innovation.

The project addressed four of the Wellbeing of Future Generations Act Goals. The project contributes to a Prosperous Wales by providing better understanding for Welsh Government and practitioners on the 'CE exemplars' in Wales and their approach to developing innovative products and services that apply CE principles and enhance the foundational economy. The project contributes to a Resilient Wales as the case studies advance the circular economy capabilities of practitioners to reduce the raw materials associated with making products, thereby reducing ecosystem damage and pollution. The project contributes to a Wales of Cohesive Communities through engaging and connecting communities developing circular and resource efficient community initiatives such as repair cafes. The project contributes to a Globally Responsible Wales as exemplars and enhanced circular economy capabilities will encourage taking responsibility for and reducing waste and the exploitation of natural resources to respond to the climate emergency.

Appendix 1– List of Case Study Authors and Organisations

Case Study	Author	Organisation
Case Study 1 - Aber Food Surplus	Dr Lyndon Murphy	Aberystwyth University
Case Study 2 – Bluestone National Park Resort	Dr Zheng Liu	Cardiff Metropolitan University
Case Study 3 – Celsa Steel UK	Dr Zheng Liu	Cardiff Metropolitan University
Case Study 4 – Circular Economy Mid Wales	Dr Sarah Evans	Cwmpas
Case Study 5 – Craft	Dr Lydon Murphy	Aberystwyth University
Case Study 6 – Cwm Aman Maker Space	Clare Sain-ley-Berry	Cynnal Cymru
Case Study 7 – ELITE Paper Solutions Ltd	Sarah Hopkins	Cynnal Cymru
Case Study 8 – Green Salon Collective	Dr Zheng Liu	Cardiff Metropolitan University
Case Study 9 – Green Wave Hair Salon/ Ton Da CIC	Dr Zheng Liu	Cardiff Metropolitan University
Case Study 10 – Jaspels Craft Cider	Ben Dewale and Professor Gareth Griffiths	Bangor University
Case Study 11– Kindle	Dr Zheng Liu	Cardiff Metropolitan University
Case Study 12 – Poblado Coffi	Ben Dewale and Professor Gareth Griffiths	Bangor University
Case Study 13 – Prom Ally CIC	Dr Sarah Evans	Cwmpas
Case Study 14 – reSource CIC	Dr Sarah Evans	Cwmpas
Case Study 15 – Splosh	Dr Sarah Evans	Cwmpas
Case Study 16– Swansea Bay University Health Board	Dr Pouya S. Moghadam and Prof Nick L. Rich	Swansea University
Case Study 17– Swansea Bay University Health Board	Dr Pouya S. Moghadam and Prof Nick L. Rich	Swansea University
Case Study 18 - TCG Solutions	Dr Zheng Liu	Cardiff Metropolitan University
Case Study 19 – Vale Clydach	Dr Pouya S. Moghadam and Prof Nick L. Rich	Swansea University
Case Study 20 – Wilderness Brewery	Ben Dewale and Professor Gareth Griffiths	Bangor University
Case Study 21 - Y Dref Werdd	Nerys Fuller-Love	Aberystwyth University

Appendix 2 – Interview Questions

INTERVIEW QUESTIONS

1. What is your understanding of the term circular economy?
2. What elements of the circular economy have you implemented/began to implement?
 - a. Why did you start your circular economy journey?
 - b. What did you do?
 - c. When did you start and what is your progress to date?
 - d. Who was involved? (roles or departments)
 - e. How was it financed?
 - f. How – what process or activities did you develop to implement circular economy principles?
3. What circular economy interventions or programmes (courses, consultancy, web content, industry information etc) or support have you accessed or drawn on?
4. Can you describe the elements of these that were most effective at developing knowledge and skills?
5. Have you done anything further to this internally to develop the circular economy knowledge and skills of the people in your organisation?
6. (*If not already mentioned*) What tools/methods or processes helped your organisation engage with and develop circular economy knowledge and skills?
7. More broadly, what circular economy interventions or programmes do you think would be most effective for developing practitioners/professionals' circular economy knowledge and skills in your sector?
8. What barriers have you faced putting your project into practice?
9. What were the enablers?
10. Looking at the circular economy 'development matrix' do you think it is useful as a framework to develop circular economy organisational capability?
11. What would you add or subtract from the matrix?

Appendix 3 – Case Study Format

1. At a Glance
 - 1.1. The initiative
 - 1.2. Time frame
 - 1.3. Focus areas
 - 1.4. Organisational structure/core team and participants
 - 1.5. Finance
 - 1.6. Outcomes to date
2. The Journey
 - 2.1. Origins
 - 2.2. The process adopted
 - 2.3. Milestones
3. Reflections
 - 3.1. 'What works'
 - 3.2. What support was useful?

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**Wales Innovation
Network**
Rhwydwaith
Arloesi Cymru

Cardiff Metropolitan University

Western Avenue
Cardiff, CF5 2YB
029 2041 6070

www.cardiffmet.ac.uk

Aberystwyth University

Reception, Penglais,
Aberystwyth, SY23 3FL
01970 622900

<https://www.aber.ac.uk/en/>

Bangor University

Bangor, Gwynedd, LL57 2DG
01248 351 151

<https://www.bangor.ac.uk/>

Swansea University

Bay Campus
Fabian Way
Swansea, SA1 8EN
01792 205678

<https://www.swansea.ac.uk/>

Cwmpas

Spark, Maindy Road
Cardiff, CF24 4HQ
0300 111 5050

<https://cwmpas.coop/>

Cynnal Cymru

107 Cowbridge Road East
Cardiff, Cf11 9AG
029 2294 0810

<https://cynnalcymru.com/>