



# **Cultivating Clean Growth in Cornwall's Textile Industry**

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## Executive Summary

- The Duchy of Cornwall is a region situated in the southwest of the UK, with an economy predominantly reliant on agriculture and tourism<sup>1</sup>.
- Employment in Cornwall has historically featured jobs in the hospitality, health and social care industries, making it the third worst performing sector in the UK<sup>2</sup>.
- This is set to change with a number of strategic initiatives in the so-called 'smart specialisation' areas which include space and aerospace, e-health, the marine sector and renewables, digital economy and agritech<sup>3</sup>.
- These initiatives are supported by ongoing university-industry collaboration and aimed at advancing the UK Government's commitment to net-zero targets.
- An area of sustainable growth, aligned with the concept of the circular economy (CE) is Cornwall's textile industry.
- This report highlights how the clean growth of the textile industry in Cornwall can be achieved through CE principles such as resource efficiency through recycling, repairing and refurbishing/repurposing garments.
- This can also support the creation of 'green jobs' in direct support of strategic objectives such as the Cornwall and the Isles of Scilly's Strategic Economic Plan, Vision 2030<sup>4</sup> and the Cornwall 2020-2050<sup>5</sup> plan.
- This report also provides an overview of legal provisions pertaining to the reuse of fabrics through a case study of two Cornish community interest companies (CICs): Cultivate Cornwall and Upcycle Kernow.

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<sup>1</sup> Economics Observatory: <https://www.economicsobservatory.com/how-does-the-cornish-economy-compare-with-the-rest-of-the-uk>

<sup>2</sup> *ibid.*

<sup>3</sup> Meeting Smart Specialisation business needs through Higher Level Skills (SS-HLS): <https://www.exeter.ac.uk/cornwall/business/iibcornwall/higherlevelskills/sshis/>

<sup>4</sup> Cornwall and Isles of Scilly: Vision 2020: <https://cioslep.com/wp-content/uploads/2021/05/Vision-30.pdf>

<sup>5</sup> Cornwall 2020-2050 Plan: <https://letstalk.cornwall.gov.uk/cornwall-plan>

## Introduction

Host to the G7 summit in 2021, the Duchy of Cornwall is a geographical region in the southwest of the UK. Cornwall's peripheral location, dispersed demographic and absence of industry have historically presented a number of socio-economic challenges. Tourism is Cornwall's biggest industry which, despite a projected growth of 3.8% by 2025 is seasonal and offers jobs, is approximately 30% lower than the national average<sup>67</sup>. Cornwall's agrifood industry has been severely hampered by the reduced labour pool of migrant workers post-Brexit<sup>8</sup>. The region has a high number of small and medium-sized enterprises, which have maintained employment rates higher than the UK average and yet Cornwall is one of the least productive regions in the UK<sup>9</sup>.

Nevertheless, Cornwall offers a seedbed of opportunity. There has been an almost 50% increase in graduate qualifications, from 62,000 in 2004 to over 105,000 in 2014<sup>10</sup>. Cornwall has a devolution deal and the Levelling Up white paper envisages the region becoming a UK leader in the green and blue economy<sup>11</sup>. This strategic direction is reflected in the Cornwall and Isles of Scilly's Strategic Partnership aspiration of harnessing innovation and creativity, which has a positive impact on wage growth, community development but without environmental impact trade-offs.

This is a key priority not only given the government's commitment to COP26's net-zero targets, but also to prevent ecological damage to the region and its multiple sites of outstanding natural beauty. In the next section, we outline how the principles of the circular economy can help clean growth in one specific industry, textiles. Following this, the report will present a case-study of two SMEs, Cultivate Cornwall and Upcycle Kernow.

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<sup>6</sup> Cornwall: supplying skills for the local visitor economy: <https://www.local.gov.uk/case-studies/cornwall-supplying-skills-local-visitor-economy>

<sup>7</sup> Cornwall and Isles of Scilly Vision 2030: <https://cioslep.com/wp-content/uploads/2021/05/Vision-30.pdf>

<sup>8</sup> Manolchev, C. (2022). 'Dances with Daffodils': Life as a Flower-picker in Southwest England. *Work, Employment and Society*, 36(2), 372-380.

<sup>9</sup> Economics Observatory: <https://www.economicsobservatory.com/how-does-the-cornish-economy-compare-with-the-rest-of-the-uk>

<sup>10</sup> Cornwall and Isles of Scilly Vision 2030: <https://cioslep.com/wp-content/uploads/2021/05/Vision-30.pdf>

<sup>11</sup> Levelling Up in the United Kingdom White Paper: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1052708/Levelling\\_up\\_the\\_UK\\_white\\_paper.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1052708/Levelling_up_the_UK_white_paper.pdf)



*Pictured above: Harry Deacon, Director of Business Development with Rt Hon George Eustice, MP, then Secretary of State for Food, Environment and Rural Affairs, holding a prototype of a dog vest design, created from a reflective equipment for roadside maintenance workers.*

The two will be used as examples of successful community interest companies, which incorporate a commitment to clean growth and business model innovation through refurbishing and repurposing textile waste and transforming end-of-life into end-of-first-use products<sup>12</sup>. Next, we will outline the legal framework which governs the reuse of textile waste, highlighting the barriers to clean growth in current legislation. We will conclude with a proposal for a regional hub, as a centre for clean growth in the textile industry.

## **Foundational Principles of the Circular Economy**

The key principle of the circular economy, that replacing linear production with closed-loop material flows can improve the efficiency of resources and minimise waste, is not new<sup>13</sup>. Yet, targets adopted at COP26 have added a growing urgency to transform ‘take-make-dispose’ processes with new business models which can not only keep resources in circulation but promote social value and decent work - both at national and regional level<sup>14</sup>. Applying Circular Economy principles in practice can nevertheless be a daunting prospect. The body of research

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<sup>12</sup> Kara, S., Hauschild, M., Sutherland, J., & McAloone, T. (2022). Closed-loop systems to circular economy: A pathway to environmental sustainability?. *CIRP Annals*.

<sup>13</sup> *ibid*.

<sup>14</sup> Circle Economy, Baseline Analysis of Circular Jobs in Cornwall and the Isles of Scilly, [https://assets.website-files.com/5d26d80e8836af2d12ed1269/5ef080cd61fa764f802998b7\\_20200618%20-%20Tevi%20-%20Circular%20Jobs%20-%20297x210mm%20\(1\).pdf](https://assets.website-files.com/5d26d80e8836af2d12ed1269/5ef080cd61fa764f802998b7_20200618%20-%20Tevi%20-%20Circular%20Jobs%20-%20297x210mm%20(1).pdf)

on the topic has grown in complexity. The Ellen MacArthur Foundation, one of the pioneering think tanks working in this field has contributed to not only popularising the circular economy framework and its goals but gained allies among the biggest multinationals across the globe - Coca Cola, Unilever, H&M, Philips, Nestle, Microsoft, and many others<sup>15</sup>.

This does not mean that circular economy principles require a large-scale business or a global span of activity in order to be made operational. The circular economy can be successfully applied at a macro scale (cities and regions), meso (eco-parks) but its reduce, reuse, recycle approach can work equally well at the micro scale - that of an individual business<sup>16</sup>. It is at this individual level, that a transition to close-loop production, which can use waste as a resource, can be made possible on account of crossovers and continuities with existing business concepts. An example of this is the triple-bottom line, which advocates sustainable business development through the inclusion of economic, social and environmental impact<sup>17</sup>. This is particularly relevant for the case study of Cultivate Cornwall and Upcycle Kernow who are both community interest companies (CIC) which, although operating for profit, are also seeking to deliver community benefits. The two CICs are also able to demonstrate another conceptual crossover of the circular economy, that of industrial symbiosis, which seeks to enable collaboration between two types of companies - one offering a by-product/waste and another, using this as a resource for its operation<sup>18</sup>.

In practice, industrial symbiosis could take the shape of several, so-called 're'-strategies: repurpose, reuse, repair, remanufacture, refurbish and so on<sup>19</sup>. Those are aimed at transforming a product from being in an end-of-life state, to a state of end-of-first use in readiness for reuse. Not all products can be reused in their existing state and, in the case of the textile industry where Cultivate Cornwall and Upcycle Kernow operate, the two strategies have been used to refurbish and repurpose waste with varying degrees of wear and tear.

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<sup>15</sup> The Ellen MacArthur Foundation, Who's In The Network:

<https://ellenmacarthurfoundation.org/network/who-is-in-the-network>

<sup>16</sup> Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, conservation and recycling*, 127, 221-232.

<sup>17</sup> Barbier, E. B. (1987). The concept of sustainable economic development. *Environmental conservation*, 14(2), 101-110.

<sup>18</sup> Kara, S., Hauschild, M., Sutherland, J., & McAloone, T. (2022). Closed-loop systems to circular economy: A pathway to environmental sustainability?. *CIRP Annals*.

<sup>19</sup> *ibid.*

The below case study offers examples of the scope of products created in this way.

### **Case Study: Cultivate Cornwall and Upcycle Kernow**

Cultivate Cornwall<sup>20</sup> (CC) and Upcycle Kernow<sup>21</sup> (U/K<sup>22</sup>) share the joint aim of empowering local communities through education, inclusive and sustainable initiatives, and practical skills building. Before focusing on the elimination of textile waste, CC ran numerous successful initiatives, which ranged from food distribution during the coronavirus pandemic, to the provision of a musical instrument library for local schools. This goal of supporting local communities creates a natural alliance with U/K, who offer a recycling point for textiles, shoes and plastic products, as well as running workshops, repair cafes and programmes aimed at vulnerable community members. An example of the latter is U/K's #tooligans programme which teaches teenagers and young adults how to use hand and power tools in order to promote independence in circumstances of supported housing and so on.

As a brief outline of CC and U/K's business model, the companies accept a variety of textiles as materials for their own production process with the main sources of input being:

- Fashion and textile industry waste
- Hidden commercial textile waste
- Post-consumer textile waste.

*Fashion and textile industry waste* is sourced from textile companies in the Southwest, and includes offcuts, product samples, discontinued and surplus products, as well as returns. The latter could be faulty or returned within the 14-day cooling-off period and CC and U/K have found that companies would typically wish to protect their brand reputation and will hesitate to resale. This allows the reuse of a wide range of product-use, which includes neoprene offcuts from wetsuit manufacture. sheepskin, wool products and cotton samples. A big input stream comes from discontinued school uniforms and may cover polyester sportswear to jerseys and fleeces, as well as other traditional uniform textiles. *Hidden commercial textile waste* is produced by businesses who may not formally occupy the textile industry but may still work with

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<sup>20</sup> Cultivate Kernow web-page: <https://www.cultivatecornwall.com/about.html>

<sup>21</sup> Upcycle Kernow web-page: <https://www.upcyclekernow.org/about-us>

<sup>22</sup> The U/K acronym is stylised to distinguish it from UK as the United Kingdom.

textiles. This may include personal protective equipment from construction companies, deckchair fabrics, military surplus, and marketing surplus such as banners made from PVC or recycled polyester to branded cotton T-Shirts and any other textile product used in marketing. *Post-consumer textile waste* can be any waste donated by the general public - from towels to bedding, clothing to shoes. In turn, some of the textile items are in perfect condition and this is the case for most of the surplus school uniforms, as well as new fabric from manufacturing offcuts. In turn, protective equipment may be contaminated by tar as is often the case with road maintenance company donations.



*Pictured above: a handbag prototype, created from textile offcuts.*

Such a variety in end-of-use products causes significant week-to-week variation, from less than 500 kg per week to 3 tonnes in a week. Key suppliers tend to wait until they have a stockpile, so as to make the processing of waste easier. As a result, the two CICs tend to measure that received textiles on a quarterly basis and they are on track to process a total of 32 tonnes between February 2022 and February 2023, which presents a monthly average of just over 2.5 tonnes. This represents growth at roughly 100% from the previous year and CC and U/K have plans to sustain that level of growth by reaching 65+ tonnes in total next year, although with further investment and supportive legislation this would be a conservative estimate.

After textiles are received, they are sorted and graded into the following groups:

- New - to be used as is: rather than refurbishing or repurposing, these textiles/products are sold in their current form

- New - slight changes needed: there may be intellectual property (IP) limitations here, for example where a new garment is branded and needs to have logos removed. The refurbishing depends on the design and might include cutting-off the logo and adding a replacement patch, or it could involve removing 'iron-on' logos without damaging the fabric, basically rendering the item as new again but now unbranded.
- Good quality usable or new with stringent IP: these items allow the greatest innovative flexibility, with CC and U/K using quality fabric to produce their own range of products, using patterns that allow waste of all sizes to be used. This is also a process limited by current legislation<sup>23</sup> which stipulates the need for labelling showing the mix of fabrics used in a product.
- Good quality - limited amount: this item may be of good quality, but its size is too small to make it viable for use. In these cases, waste is transferred across to CC and U/K's community department, the materials are then used to train staff by using waste material and to facilitate community workshops. The latter are aimed at upskilling members of the public in order to either promote independence or support their pursuing work in the textile industry. Some of them can be employed by CC and U/K.
- Poor quality but clean: these textiles can only be sold as rags, for instance, to garages who would then typically return them after use and the products would be graded down to 'contaminated' (see below). It is notable that current legislation<sup>24</sup> also requires the labelling of such rags.
- Contaminated: where material is contaminated, it is assessed in house. If there are salvageable parts, they may be cut-off and moved up the grading system. Stained parts are sent to third parties, for shredding and use into car insulation.

This grading system is constantly being expanded with more layers added as the companies find more innovative solutions that can add to lifecycles and keep materials at the top of the reduce, reuse, recycle hierarchy.

### **Key Legislation Governing the Reuse of Textile Products**

CC and U/K's ability to turn end-of-cycle waste into end-of-use products is contingent on compliance with legislation in two key areas- safety and labelling. Key regulations and standards in these areas are included below:

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<sup>23</sup> s5(2) Textile Products Regulation 1986

<sup>24</sup> Ibid.



## Safety

- General Product Safety Regulations (GPSR) 2005
  - Where there are no regulations or standards governing a specific area of product safety, general regulations as per s. 5 are applied.
  - Producers are required to supply only safe products, in doing so testing products and investigating any safety complaints (s. 7(4)(b)).
- The Nightwear (Safety) Regulations 1985
  - Assesses the safety of both children's nightwear (at a higher standard, see BS EN 14878) and that of adults.
  - Incorporates BS 5651 (Assessing the effect of cleansing and wetting on flammability) and BS 5722 (Flammability performance of fabrics and fabric assemblies).
- The REACH Enforcement Regulations 2008
  - Based on EU Regulation No 1907/2006, regarding the Registration, Evaluation, Authorisation and Restriction of Chemicals.
  - Regulates the manufacturing and distribution of textile products as a result of any chemical treatment it might undergo during the manufacturing process.
  - Detailed requirements are contained within Sch. 1A.

Requirements for how these products are to be safety-tested by the enforcement authority are contained within the standards, which a business repurposing textiles and fabrics into nightwear products would need to take into consideration, and meet any additional costs.

## Labelling

- Textile Products (Indications of Fibre Content) Regulations 1986
  - Per Reg. 5(2) any textile product made available for sale on the British market must be labelled in a manner which declares its fibre content. If the product is made up of two or more fabrics, and these make up >30% of the product weight, then they must be labelled separately, as per reg. 5(4).
  - Relatedly, *Textile Products (Labelling and Fibre Composition) Regulations 2012* are tied to existing European Union legislation, particularly EU Regulation No 1007/2011. The United Kingdom has not passed any amending/new legislation

since Brexit, yet under such regulations products must be adequately labelled to be sold on the market.

These items have dual implications for CC and U/K. First, it intensifies the labour process by requiring all refurbished products to have labels indicating material content. Second, it requires the CICs to develop the infrastructure through which they not only categorise donated textile waste by its condition but also by its material types. This may not always be possible in cases where received fabrics are missing their original labels.

### **Next Steps: Enabling a Regional Sustainable Textile Processing Hub**

The Cornwall and Isles of Scilly's LEP's Vision 2030<sup>25</sup> outlines six development areas through which local business can help local communities thrive, by enabling access to decent work and good quality of life. A sub-theme in this framework is the development of research and innovation hubs to improve productivity, increase wage levels and support sustainable economic growth.

The business model of CC and U/K outlined above provides the blueprint for such an innovation hub to underpin Cornwall's textile industry transition towards sustainable and circular production. The case study offers a brief overview of how these CICs operate in a network of industrial symbiosis, collecting end-of-life products in different states of usability (through size, quality, and contamination). Those products then undergo a variety of innovative internal refurbishment processes in order to be resold or recycled in ways to maintain them in use for as long as possible.

The case study also highlighted two legislative challenges in the way of increasing the throughput of waste processing which CC and U/K achieve, from the currently projected 32 tonnes per year, to 64 tonnes per year. Those were safety and labelling. Safety legislation and regulations govern fabrics coming in touch with skin, worn at night and so on. Safety legislation does not provide a unified means of testing textile products, and thus places both the burden of safety proof and cost of such testing at the company processing end-of-use materials. Labelling legislation and regulations govern the disclosure of products' material content, presenting a

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<sup>25</sup> Cornwall and Isles of Scilly Vision 2030: <https://cioslep.com/wp-content/uploads/2021/05/Vision-30.pdf>

challenge for businesses collecting large amounts of waste materials and products from other businesses and members of the public.

It is envisaged that changes in those legislative areas can have a direct benefit for businesses seeking to support sustainable regional growth through circular innovation.



*Pictured above: a dress made entirely from reclaimed textile and plastic waste products.*