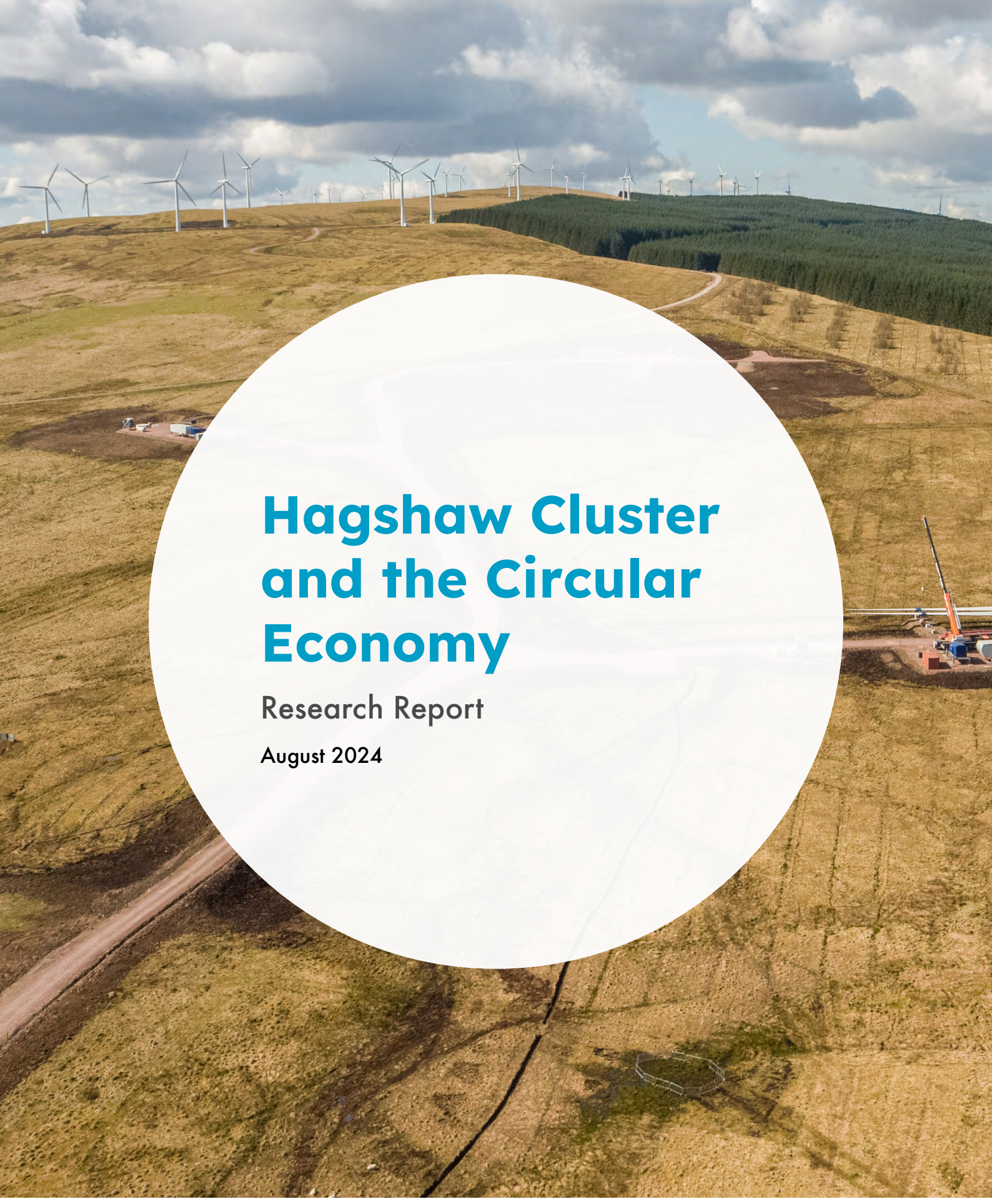


Hagshaw Cluster and the Circular Economy

Research Report

August 2024

ZERO WASTE SCOTLAND

SOUTH LANARKSHIRE COUNCIL

community enterprise

Contents

Foreword by Zero Waste Scotland

The Hagshaw Energy Cluster is an established strategic location for large scale renewable energy projects, located on the border of East Ayrshire and South Lanarkshire.

The Development Framework for Hagshaw Energy Cluster was published in 2022 and adopted by South Lanarkshire and East Ayrshire Councils in 2023. The Framework's overarching purpose is to identify opportunities to enhance and invest in the local environment, communities and place. The Development Framework has been agreed between the local authorities, renewable energy developers and operators, statutory agencies, and communities and created a shared vision for the cluster. It sets out an ambitious ten-year vision for how a more strategic and collaborative approach to renewable energy development can help achieve Net Zero in a just and fair way.

Circular economy has been identified as a key opportunity within the Framework, under the theme of 'inclusive, sustainable growth'. It is estimated[1] that by building capabilities in wind turbine component reuse, refurbishment and remanufacturing, the UK economy could benefit to the tune of around £1.6 billion in total Gross Value Added for the period between 2025 and 2035 (this doesn't include the substantial opportunity that is created by turbine decommissioning, which would push this figure even higher). This presents a significant economic incentive to embed circular economy principles at an early stage. The Hagshaw site is skirted by a significant industrial site (Conexus), presenting a live opportunity to develop manufacturing / remanufacturing and circular economy activity.

Circular Economy Delivery Group

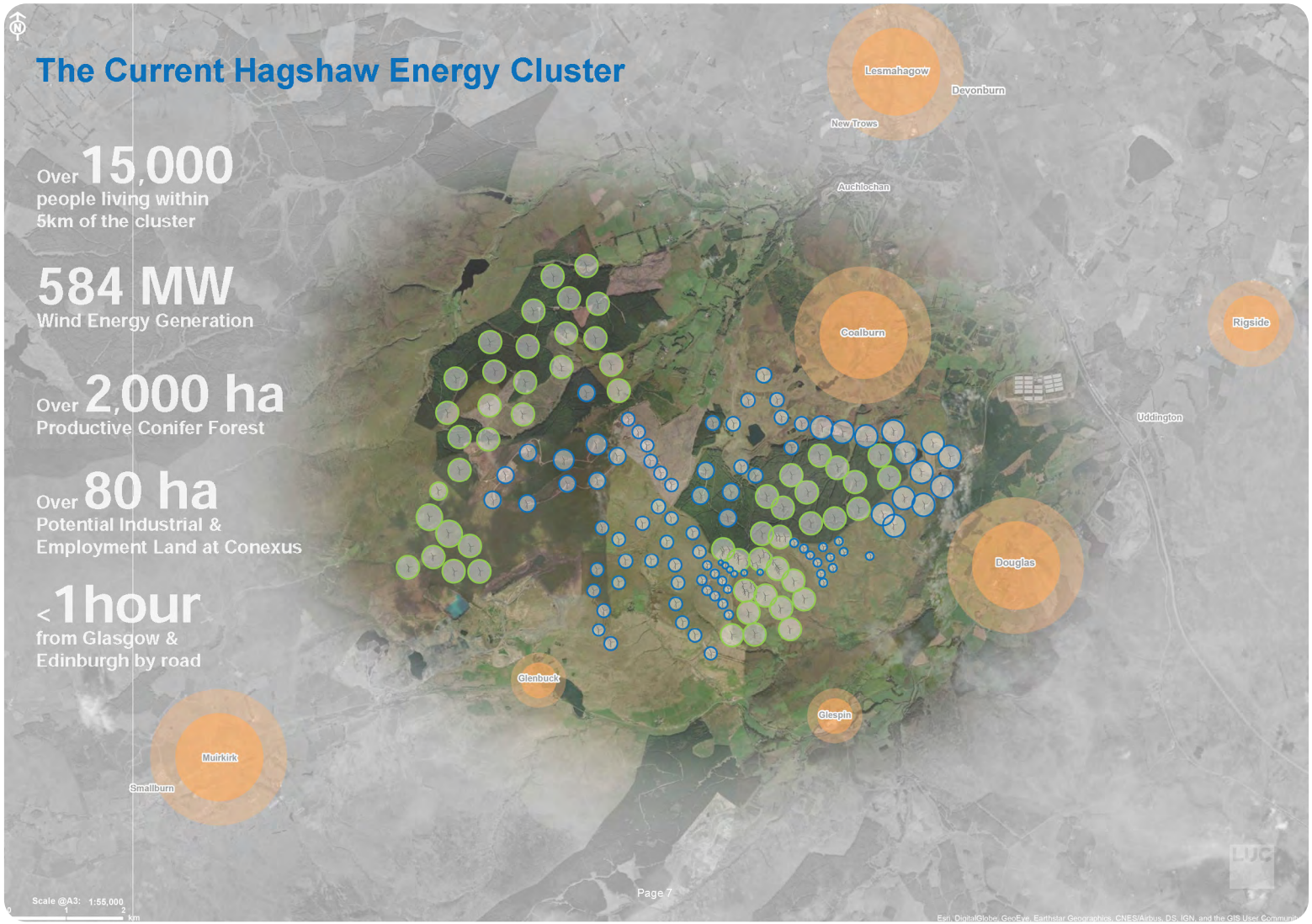
Zero Waste Scotland was invited by the Hagshaw Energy Cluster steering group to take a lead on exploring circular economy opportunities. Zero Waste Scotland established a Circular Economy Delivery Group in April 2023. Initial activity involved engaging with key stakeholders to understand the knowledge base around circularity and identify specific opportunities that could be progressed locally.

An early opportunity was identified to explore how circular economy opportunities could be embedded locally and for the benefit of the communities surrounding Hagshaw. Zero Waste Scotland and South Lanarkshire Council commissioned Community Enterprise to undertake a project to identify added value through circularity for Hagshaw Energy Cluster Community Action Plans. The role of applying circular economy principles in enhancing community benefit funds / activities was also explored.

This report presents the findings of this work and presents a series of recommendations for consideration. A next step will involve the Circular Economy Delivery Group reviewing and prioritising these recommendations and considering how they can be embedded locally.

1 BVG Associates Limited (2023). Circularity market analysis: Assessing the potential market size and economic benefits in the UK of moving toward a circular model for operational wind turbine components. [online] SSE Renewables. Available at: https://www.sserenewables.com/media/234nrsfp/bvga-31410-circularity-market-analysis-r2-1.pdf [Accessed 27 Aug. 2024].

Hagshaw Energy Cluster Map[2]



2 Land Use Consultants (LUC) (2023). The Current Hagshaw Energy Cluster. [Page 7 of PDF] A Development Framework for the Hagshaw Energy Cluster: Planning for Net Zero. Available at: https://www.thehagshawenergycluster.co.uk/pdfs/A%20Development%20Framework%20for%20the%20Hagshaw%20Energy%20Cluster_FINAL%20July%202023_low-res.pdf [Accessed 29 Aug. 2024].

1 Introduction

1.1 Background and Original Drivers

The purpose of this piece of work is to identify where wind farm community benefit funding, distributed amongst multiple funding bodies from across the cluster of wind farms, can be enhanced through the identification and application of circular economy activities. Crucially, the proposition is that this benefit can be embedded and secured in the Community Action Plans of the various communities in the area. Some, though not all, of the priorities in these Action Plans will be funded via these windfarms. Developers must get planning permission to build a windfarm in a particular area but there is currently no requirement for investing to generate local impact.

Fundamentally, this is not just about how community benefit money is invested. Rather, it is about how a whole system can be influenced based on circular economy principles.

The focus of this report is the Hagshaw Energy Cluster (HEC) on the borders of South Lanarkshire and East Ayrshire.

The future extension and repowering of windfarms in the Hagshaw cluster will create an increase in capital works within the developments, which in turn, creates an increase in opportunities to embed circular economy thinking in relation to use of materials, local labour, local supply chains and as time goes by, decommissioning.

To ensure this is more strategic than ad-hoc, the Development Framework[3] as adopted by South Lanarkshire and East Ayrshire Councils highlights realising the opportunities of a circular economy activity as a key objective. A range of agencies have signed up to the framework, from large organisations such as Scottish Power to small scale companies. Connexus[4] offers opportunities from a strategic enterprise perspective.

An overview of the local and national policy context in which the Hagshaw cluster operates can be found in appendix 2. This overview points to some of the operational levers and barriers that may impact the development of circular economy activities in the area.

There is a need for greater awareness in the communities about the circular economy, what it means and how it can be implemented at a local level. If local communities have a greater understanding of the concept and appreciation of the difference it can make, embedding it across the sector and within Community Action Plans will be easier. Some thought will be given in this report to the concept of local awareness. On the site of the HEC there is a feeling that communities gained from the coal industry but now need to understand how to gain from renewables beyond community benefit funding. From our findings here, a strong circular economy could encourage the use of local retail and accommodation, enhance local jobs, attract investment and maximise the use and re-use of local materials flowing through these sites.

Re-use of materials and using local supply chains in procurement can be as powerful as a grant fund for the community to tap into. Rather than releasing funds only through community benefit grants, developers may have a role in supplying free materials and engineer time to develop the capacity of the group.

There may be a need for tree nurseries on the sites and to get communities engaging in growing and planting. Creating effective

3 Hagshaw Energy Cluster (2022). A Development Framework for the Hagshaw Energy Cluster. [online] Hagshaw Energy Cluster. Available at: https://www.thehagshawenergycluster.co.uk/ [Accessed 28 Aug. 2024].
4 Conexus Scotland (2024). Home. [online] Conexus Scotland. Available at: https://conexus-scotland.com/ [Accessed 28 Aug. 2024].

growing areas where there was once coal mining is an important rehabilitation sign. Embedding circularity in community benefit funding activities could provide similar community resilience as that provided by deep coalmining in the area.

There are numerous projects in the Community Action Plans but these need to be resourced. This report will consider whether embedding circular economy thinking into Community Action Plans will be effective in building the resilience of the community.

1.2 The Hagshaw Energy Cluster and Development Framework

The Hagshaw Energy Cluster is an established strategic location for large scale renewable energy projects, with a committed capacity of almost 585 MW. It is situated on the cluster of wind farms near Hagshaw Hill on the border of South Lanarkshire and East Ayrshire and located between the communities of the Douglas Valley, namely; Coalburn, Douglas, Lesmahagow, Glespin, Rigside and Muirkirk. The Development Framework spans the footprint of the seven operational wind farms with a further four consented. A Development Framework has been established as a strategic context to ensure the whole is more than the sum of the parts.

East Ayrshire Council (EAC) and South Lanarkshire Council (SLC) will use the Development Framework as a basis for working with developers, landowners, communities and other stakeholders to promote and adopt a coordinated approach to future renewable energy development across the cluster.

The Hagshaw Energy Cluster Circular Economy Working Group, Landowner Forum and community-led Douglas Valley Advisory Group have been set up to focus on the delivery of Development Framework opportunities. The cluster is predicted to result in capital investment of up to £525 million, with an operational spend of approximately £18 million annually.

Furthermore, it is estimated that the size of the benefits to the UK economy from building supply chain capabilities in wind turbine reuse, refurbishment, and remanufacturing to be in the billions of pounds in Gross Value Added for the period between 2025 and 2035[5]. This estimation doesn't include the substantial opportunity that is created by turbine decommissioning, which would push this figure even higher. Both opportunities present a significant economic incentive for embedding circular economy principles at an early stage.

The development framework is a planning tool. It sets out a 10-year vision and anticipates a range of Environmental, Development, Social and Economic impacts. The Development Framework also has a role in guiding how the community benefits could be used.

The Development Framework has organised its vision around six themes, which we reviewed to identify possible opportunities for surrounding communities.

1. **Realising the Renewable Energy Opportunity:** Maximising green energy generation, whilst minimising impacts.
   - Includes opportunities for community ownership of energy.
2. **Resilient and Connected Communities:** Enhancing and creating sustainable communities for the future.
   - Includes increased connectivity between communities via roads, paths and community transport.
   - Includes helping the community with low-carbon living.
   - Includes supporting Community Right to Buy proposals.
3. **Coordinated Enhancement of Nature**: Making space for nature, delivering increased resilience.
   - Includes environmental conservation

5 Mills, S. (2023). Maximising circularity in the wind industry. [online] BVG Associates. Available at: https://bvgassociates.com/maximising-circularity-in-the-wind-industry/ [Accessed 28 Aug. 2024].

such as peatland restoration.

- Includes improved access to greenspaces and nature, nature education and citizen science.

4. **A Strong Identity, of Heritage, People and Place:** Respect and interpret the natural and cultural heritage of the area.
   - Includes heritage trails and sites.
5. **Inclusive, Sustainable Growth:** Promoting and supporting a local economy, which delivers locally.
   - Includes investment in local businesses and procurement from them, alongside opportunities for them to be involved in the construction, servicing and decommissioning of wind turbines.
   - Includes developing local skills and linking with job opportunities, especially those in the renewable energy sector.
   - Includes tourism promotion.
6. **Outdoor Recreation to Support Health and Wellbeing:** Creating opportunities for healthy, happy and active communities.
   - Includes more greenspaces, connected with each other.
   - Includes opportunities for more recreation areas.

1.3 What is a Circular Economy

The circular economy is a system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting. The circular economy tackles climate change and other challenges such as biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources.

A circular economy is based on three principles, driven by design[6]:

1. Eliminate waste and pollution.
2. Circulate products and materials (at their highest value).
3. Regenerate nature.

The circular economy has been identified as a key opportunity within the Development Framework, under the theme of 'inclusive, sustainable growth'. Zero Waste Scotland was invited to lead a circular economy working group to explore and support delivery of circular economy opportunities.

6 Ellen Macarthur Foundation (2024). The Circular Economy in Detail. [online] Ellen Macarthur Foundation. Available at: https://www.ellenmacarthurfoundation.org/the-circular-economy-in-detail-deep-dive [Accessed 28 Aug. 2024].

2 Community Action Plan Analysis

2.1 CAP Audit and Potential Fit with Circular Economy

2.1.1 Introduction and Implementation

As well as a circular economy being promoted in relation to specific themes and projects, it could be considered as a cross-cutting theme across all themes and projects, viewing it in the community action plans (CAP) as a vital consideration for all activity. When exploring or pursuing circular economy activities, it is important to ensure compliance with waste regulations.

It is vital to note that the CAPs and the circular economy elements that can be expanded and evolved may require additional resources. There is a range of micro, small and larger investments available that can fund the cost identified during the research such as information management and communication, transport of materials and staff time to co-ordinate and ensure circular economy thinking is embedded in project development. Some of this will be local, whereas some will require an area-wide funding strategy. This could potentially be accommodated via the South Lanarkshire Council Renewable Energy Fund[7]. The criteria for this fund have been updated from February 2024 to include revenue as well as capital projects. This indicates that financial resources can be used to employ staff, such as development officers, or deliver project-level activities including the development of communication strategies.

7 South Lanarkshire Council (n.d.). Renewable Energy Fund Grants. [online] South Lanarkshire Council. Available at: https://www.southlanarkshire.gov.uk/info/200168/getting_involved_in_your_community/744/renewable_energy_fund [Accessed 28 Aug. 2024].

2.1.2 Analysis of the Community Action Plans

Coal burn

Theme 1 - Local Jobs and Enterprise

Priorities	Actions	Fit with Circular Economy
Attracting business to the area.	Explore the potential for Coalburn to become a centre for renewable technology and innovative industry to create jobs and apprenticeships.	Developing green enterprise opportunities and creating local training and jobs are key elements of circularity. Plans to develop green enterprise opportunities at the nearby Conexus development. Specific suggestions for this site include the establishment of a wind turbine recycling centre and the production and manufacture of green hydrogen. Potential to train local people to be ready for the decommissioning process that may have an outlet at Connexus. At the moment, a lack of local capacity means that in most areas decommissioned materials go off site.
	Appoint an Enterprise Champion to work with partners to promote the area regionally and nationally as a good place to do business.	Circular economy ways of working could be embedded in this job role as a backdrop to the purpose of the work.
Supporting training and employment.	Maximise training and employability opportunities from all community projects, especially opportunities for young people to gain skills, work experience and jobs.	Developing green enterprise opportunities and creating local training and jobs are key elements of circularity. Developers and contractors noted that lack of skills and capacity locally was limiting their ability to out-source and employ locally. Keeping activity in the area would boost the circular economy in the context of Community Wealth Building.
	Work with existing employability services such as Connect2 Renewables to help people move into sustainable jobs.	Ensure local employers are aware of the benefits of this initiative i.e., up to £6,000 financial support to employ a local person.

Priorities	Actions	Fit with Circular Economy
Supporting training and employment.	Explore the feasibility of creating a local enterprise hub as a co-working space for remote workers and a start-up base for microenterprises.	Coalburn Miners Welfare distribute vouchers to be used at local shops or on energy bills. This could be extended to be used on local start-ups to encourage people to support new business to promote the circular economy.
	In partnership with neighbouring villages, explore the options to improve transportation including the options of community owned transport / local taxi service.	Explore the possibility of using community benefit funds to employ a driver for any community owned transport/ local taxi service.
	Develop active travel routes between Coalburn and other villages to support people to access opportunities more widely.	Reuse of materials from local windfarm developments – coarse, aggregate, sustainable urban drainage system materials, fencing, etc. Where reuse is not possible, seek a local supply chain.

Theme 2 – Connection and Cohesion

Priorities	Actions	Fit with Circular Economy
Create focal points in the village and better social spaces.	Focus development plans on key areas in the village: (the leisure centre and football pitch / the Bowling Club and Miners' Welfare and a new site to the south) to create more obvious focal points throughout the village and stopping points (benches) along the way.	Research the potential to reuse the material from decommissioned turbine blades to create benches for the community. This could demonstrate practical circular activity to a wider audience.
	Develop safe, clean, accessible outdoor places for people to meet up and for gatherings.	Re-use of materials from windfarm developments but also from other sites and businesses across the community.
	Explore the potential for a permanent café (open weekends and after school).	Idea to develop a community garden to grow ingredients needed for community meals. Other groups in neighboring towns discussing this so could link to share learning, tools, produce, etc. Shared services across the regions could include HR contracts and common suppliers reducing out-sourcing beyond the Hagshaw area.

Priorities	Actions	Fit with Circular Economy
Improve local volunteering and intergenerational activity.	Develop local volunteering for all age groups and all abilities to contribute to village life.	Upskilling through volunteering can improve employment prospectives and in turn strengthen the local economy. Raise awareness, and potentially champions, about the circular economy during training.
	Create a forum for community groups and local activists to work better together.	Potential for circularity to be on the agenda.
	Develop a community newsletter to communicate what is happening locally and things of interest, including volunteering opportunities.	A big issue raised by all CAP groups is the community resistance to change based on a lack of understanding of circularity. This concept, with simple local case studies, could be communicated in the newsletter.
	Develop more activities, which are intergenerational and appeal to working families.	Investigate circular activities that could form suite of potential – make do and mend, etc.,
Use heritage to create a sense of Place.	Develop heritage assets in and around the village to tell the story of Coalburn.	Seek a local value chain and reuse materials where possible.
	Bring local people and groups together to develop interpretation displays and exhibitions and tell their own stories.	Linking back to the deep coalmining story and creating a link to wind generation could reference circular economy. Re-use of materials, sharing of services and sourcing as locally as possible were all part of the culture of the coal mining communities when the pits were active.

Theme 3 – Village Improvements

Priorities	Actions	Fit with Circular Economy
Neighbourhood improvements.	Map derelict and unkempt plots in and around the village. Work with owners to make improvements, which could be made voluntarily, through volunteer effort, or through Community Empowerment legislation.	Good asset maintenance is important in reducing waste.
	Develop a neighbourhood improvement plan (including lights on the village green, repairs to the Coal Burn, soft and hard landscaping, more litter and dog waste bins, better signage and trail information).	Circular economy principles can be embedded in the development of these plans, including careful consideration of the material required and how it is sourced.
	Create a programme of regular community litter picks.	Incorporating waste knowledge transfer and waste segregation, where possible.
	Establish 'Coalburn in Bloom' or alternative initiative to encourage people to look after their gardens and outdoor spaces.	Potential to establish a network of shared tools and materials (a tool library) – keeping costs down could widen participation. Such a sharing project may work better across all four CAP areas and beyond.
Network of paths and trails.	Continue to audit existing routes and identify new routes as needed.	As below
	Mobilise volunteer work groups to improve existing paths and promote the path network through signage, events and other local information channels.	Reuse of materials (potentially from windfarms). Where this is not possible, source materials from a local supply chain.
	Link up with the South Lanarkshire Outdoor Access Forum to develop a wider core path plan to link places within our community to places beyond.	Ensure circular economy is noted within all tender documents as an expected principle.
Roads and traffic.	Work with South Lanarkshire Council to introduce traffic calming measures and improve road conditions, especially around the school.	Reuse of materials (potentially from windfarms). Where this is not possible, source materials from a local supply chain.

Theme 4 – Local Amenities and Facilities

Priorities	Actions	Fit with Circular Economy
Improve existing facilities and amenities.	Develop a volunteer group to work with South Lanarkshire Leisure to deliver an improvement plan for the Leisure Centre including cost plans for works and funding sources.	Incorporate circular economy principles into procurement and development phases.
	Support the Jim Hamilton Heritage Centre to look at the options for expansion.	In communities that were built around coalmining there is a history of self-help, sharing materials and re-use driven by economic necessity. This history can be reflected in modern circular economy thinking.
	Form a group of community facility operators, map challenges and devise solutions (which could be collective) and links to specialist external support where needed.	Incorporate circular economy principles, where appropriate.
	Work with property developers and Council Planners to ensure housing developments include housing for first time buyers and retirees looking to downsize.	If building developments are to go ahead, contract local businesses and encourage them to seek a local supply chain where possible and use labour trained via other project priorities in this plan.
Develop new facilities.	Deliver plans to develop a skatepark and multiuse games area for children and young people.	Reuse of materials from local windfarm developments – coarse, aggregate, fencing, etc. Additionally, seek a local supply chain.
	Explore the feasibility of creating a community orchard, allotments and garden, which would appeal to all ages and stages - including a tree house for children.	Potential for produce to be sold or donated to the community, which would reduce local reliance on imported food from out with the area.
	Investigate the option to replace the grass football pitch with a synthetic alternative.	Prioritise the use of circular materials and ensure that health and safety measures are in place.
	Explore the option to develop an All-Terrain Vehicle site by the bings to formalise, contain and potentially commercialise the off-roading that happens illegally.	This development has the potential to create employment opportunities locally. The vehicles could potentially be used to access and maintain the Hagshaw sites.

Theme 5 – Putting Coalburn on the Map

Priorities	Actions	Fit with Circular Economy
Developing leisure and tourism.	Explore the development of a multipurpose Ranger Centre to offer education, training and employment in land management and adventure tourism.	Tourism initiatives should create sustainable jobs and strengthen the local economy – both key principles of circularity. Linking with sustainable tourism policies.
	Contribute to area plans to link the main walkway between Ayrshire and Lanark, to include Coalburn and create points of interest along the way (benches, viewing spots, interpretation, fishing ponds, adventure equipment).	Seek a local supply chain and contract local tradesman to carry out any landscaping work. Re-use of materials for equipment.
	Explore the feasibility of creating a walking & cycling hub in the village offering a café, bike wash, e-bike hire and public toilets, which will be linked to young people and enterprise.	Explore the possibility of partnering with local businesses already doing this. If this is not possible, consider establishing a social enterprise with a view to creating training and employment opportunities.
	Work with neighbouring villages to develop the 'bogie line' to Lesmahagow in the north and south across the heathland to Douglas to appeal to walkers, cyclists, and runners.	Reuse of materials from local windfarm developments – coarse, aggregate, SUDS, fencing, etc. Where this is not possible, seek a local supply chain and share tools and materials amongst neighbouring villages.
Promoting our heritage.	Develop natural and industrial heritage interpretation in and around Coalburn including well marked heritage trails, interpretative boards, and signed landmarks.	Seek a local value chain and reuse materials where possible e.g., for signage.
	Explore the possibility of creating a memorial sculpture and a more visible 'wee museum' for visitors within the village.	A memorial sculpture could be created using recycled materials that would emphasize the development of net zero initiatives in the area and fit with circularity principles. Using materials from open cast sites could create a link to the deep and opencast mining heritage.
	Support volunteers to develop digital resources and online promotion.	Including material exchange platforms

Douglas and Glespin

Theme 1 – Transport, Traffic and Connectivity

Priorities	Actions	Fit with Circular Economy
Public Transport.	Explore ways to work with existing bus service providers, such as Stagecoach X74, and continue to lobby through Community Planning Partnership to change public transport routes, connecting Douglas and Glespin to Coalburn and Lesmahagow.	Will help to address the skills gap identified by developers and can pool staff from across the Cluster by improving connectivity and helping potential staff get to future jobs.
	Explore opportunities to develop a community mini-bus or On Demand / Responsive Demand Transport to Coalburn and/or Lesmahagow to connect with existing bus services. A community minibus could also be made available for hire to groups in the area and could support those less mobile to access services and amenities.	Could explore funding opportunities to employ local drivers for this initiative. Connections for transfer to local colleges also a potential, to up-skill across the community in terms of circular thinking and renewable energy.
Expand Path and Active Travel Network.	Expand on active travel developments to connect Douglas and Glespin to the National Cycle route 74. Continue to improve the network of walking and cycling routes to surrounding villages including Coalburn and Abington.	Reuse of materials from local windfarm developments – coarse, aggregate, SUDS, fencing, etc. Additionally, seek a local supply chain.
	Maintain the path around the back of Glespin and regenerate the walk around the RAMAGE distribution yard.	Reuse of materials from local windfarm developments – coarse, aggregate, SUDS, fencing, etc. Additionally, seek a local supply chain.

Theme 2 – Local Economy and Jobs

Priorities	Actions	Fit with Circular Economy
Tourism.	Work with partners, such as Heritage Museum and Douglas Alive to develop a heritage trail and information displays / hub, showcasing local points of interest that help tell the story of Douglas.	Seek a local value chain and reuse materials where possible. Commit overtly to community led tourism and sustainable tourism principles so that visitors make minimal impact and understand that circular economy principles are part of their experience.
	With the help of outside investment, create local initiatives in adventure tourism such as mountain biking, kayaking, or hiking and other local attractions such as crazy golf, petting zoos, or adventure play parks.	Work with local businesses. Where a local business does not already exist, develop a social enterprise that will source locally, employ local people and work for the benefit of the community.
	Develop accommodation (e.g. renovation of Douglas Arms Hotel, glamping, chalets) and infrastructure (e.g. car park, public toilets, charging points) necessary for visitors	Re-use materials or source locally during all construction, to apply circular principles.
Renewables and Enterprise Hub.	Work with windfarms to identify employment, training and procurement opportunities for local people and businesses. Increase uptake in employment services such as Connect2renewables.	Use of the HEC Circular Economy Working Group to facilitate these discussions. Discuss the potential for windfarms to develop skill specific courses in conjunction with local colleges and schools. Prepare specifically for roles needed now but also roles in future decommissioning.
	Build on existing plans and develop partnerships, such as Connexus West, to create training and jobs that will connect Douglas and Glespin to green enterprise opportunities.	Developing green enterprise opportunities and creating local training and jobs are key elements of circularity. Green enterprise opportunities could include the establishment of a wind turbine recycling centre and the production and manufacture of green hydrogen.
	Explore delivery and logistics business opportunities that could stem from the proximity to the M74.	Circular business models could be considered with the development of new businesses in the area.

Priorities	Actions	Fit with Circular Economy
Training and Employability.	Explore opportunities for apprenticeships in local trades, heritage craft and tourism (e.g. green badge tour guide).	Upskilling local people in relevant trades keeps business in the local area and means less need to outsource to larger, national companies.
	Use community benefit funding to employ / train local people to help maintain the upkeep of Douglas and Glespin, e.g., horticulture, landscaping and basic trade.	The upskilling and employment of local people is key to circularity as it contributes to strengthening local economies.

Theme 3 – Amenities, Facilities and Services

Priorities	Actions	Fit with Circular Economy
Village Improvements.	Get the Douglas Arms Hotel looking better and, longer term, back into use. Current plans for visitor accommodation and bistro will be fully costed and if unviable, other proposals will be explored.	Utilise local supply chains and local businesses/ tradesmen where possible. Rigside and Lesmahagow also have plans to renovate old local buildings – potential here to share learning, tools, materials, etc.
	Develop an improvement plan to carry out necessary repairs and renovations to local amenities including the Bike Track, the playpark in Glespin, the cemetery, as well as general village improvements.	Reuse tools and materials from windfarms/ other projects where possible. Source materials locally and employ/ upskill local people as part of the process.
	Secure funding to build a new changing facility and parking at Crabtree Park.	Utilize local supply chains and local businesses/ tradesmen where possible. Potential to make the facility a good example of net zero technology - encourage widespread use/ installation locally.
	Create a local pressure group to report faults and work with SLC to improve road and pavement surfacing and develop a strategy to tackle littering and fly tipping.	Investigate with South Lanarkshire Council the use of recycled materials for road and pavement repairs, where possible.

Priorities	Actions	Fit with Circular Economy
Village Improvements.	Create a communal heart in Glespin, such as a wildlife / community garden, where people can meet. Improve the village hall and secure funds to install community green energy generators (solar panels) to provide income for the village.	Re-use materials and aggregates from HEC in the construction of this site and use display boards to show how circular economy has been used in the development.
	Work with SLC Transport to explore the need for more EV charging points in Douglas and Glespin.	Explore the potential use of wind farm materials in the development of this infrastructure.
Housing.	Work with Clyde Valley Housing Association and SLC to increase occupancy rates in vacant houses and improve the standard of the housing stock.	Using housing stock that is already available helps to reduce waste. Explore retrofit opportunities
	Explore approaches (including community owned schemes) to build new affordable housing especially two-bedroom homes, which would appeal to downsizers, the younger generation and first-time buyers.	If building developments are to go ahead, contract local businesses and encourage them to seek a local supply chain where possible. Explore possibility of using local or re-used materials in construction.
	Support the development of the community-led initiative to build eco-friendly sustainable housing in Glespin.	If building developments are to go ahead, contract local businesses and encourage them to seek a local supply chain where possible. Explore the possibility of using locally sourced and re-used materials in construction.

Priorities	Actions	Fit with Circular Economy
Natural Environment.	Support the Douglasdale REAL Group to develop the Douglas West Community Woodland into a natural resource and community asset that will provide volunteering activities, skill development opportunities, improve local paths and biodiversity, create sustainable jobs, and provide accommodation (e.g., eco pods, camping huts and chalets).	Douglasdale REAL Group already reuses materials from windfarm developers. Concrete pipes have been recycled and used to put in drainage culverts (under paths) to stop flooding. This goes toward making the community woodland more accessible. Aggregate has also been reused as a base layer of path foundations. It has been pointed out that there is a lot of forestry locally but no sawmills, this could be developed as a social enterprise, and wood used for local projects.

Theme 4 – Community Cohesion

Priorities	Actions	Fit with Circular Economy
Collaboration and Communication.	Improve collaboration between local groups to ensure everyone is pulling in the same direction. Develop a forum or find ways for groups to meet regularly to share updates and support one another.	Consider the possibility of developing a Circular Economy working group to drive projects forward, collaborating with the HEC Circular Economy delivery group.
	Improve and coordinate communication between groups and local businesses and community members with regular updates (including use of funding) and opportunities for community input and feedback, e.g., a community newsletter / use of douglaslanarkshire.scot and insideOut app.	Establish a website as a communication tool for circular economy activity.
	Using the Community Benefit Fund, employ a dedicated local development worker to bring groups together, drive activity and support the implementation of this action plan.	Keep circular economy on the agenda

Priorities	Actions	Fit with Circular Economy
Community Engagement.	With support from VasLan and Youth, Family and Community Learning, improve volunteering locally to increase numbers and enrich the volunteering experience.	Local volunteering helps the community to gain relevant skills, which could be useful in obtaining local employment. Include circular economy ideas in volunteer training.
	Continue to gather feedback from local people and groups to identify needs and additional community activities and events of interest. This could be carried out through existing groups, at existing events such as Gala Day or the Christmas Fayre or online through social media channels.	Raise awareness of circular economy within the communities to enable more activity to be proposed and implemented.
	Work with Universal Connections and other partners to work with young people to understand what social, educational or employment opportunities or initiatives would be popular. Develop some pilot activity.	As above
	Develop additional community amenities, such as a Men's Shed, community garden or allotments that can be used by everyone but particularly by older people.	Re-use of local materials in any renovation and contribute materials to the men's shed for them to use in projects. Ensure communication channels are working and open to enable transfer.
	Explore ways to maximise the use of Glespin Hall for the benefit of the community, such as using the Community Benefit Fund to pay people to deliver activities (e.g., after school childcare or tea groups).	Making use of existing assets helps to reduce waste.

Lesmahagow

The action points for the Lesmahagow Community Action Plan were arranged using the Place Standard themes - due to this there is some overlap.

Theme 1 – Work and Local Economy

Actions	Fit with Circular Economy
Investigate the ownership of vacant units, with a view to establishing opportunities and incentives for local entrepreneurs and craftspeople to occupy them, build on their business, and offer some local employment.	Using existing community assets to their full potential can contribute to minimising waste and consumption. Further, creating local jobs and encouraging local business is key to circularity. Potential to liaise with other local villages who are developing their community assets and share knowledge, tools and materials.
Work with public transport providers to explore the possibility of testing new routes and schedules to suit working people.	As well as being cost effective, an extended bus service would help to reduce consumption and waste – by reducing demand for and reliance on private cars.

Theme 2 – Public Transport

Actions	Fit with Circular Economy
Establish the costs and other implications of reinstating the "wee community bus" as a locally provided service.	A community minibus would help to reduce consumption and waste – by reducing demand for and reliance on private cars. It would also help to move workers around to jobs and training, enabling local people to be employed.
Consider working with other neighbouring settlements on the development of a broader rural community transport initiative. This may produce a project that has lower costs per participant and delivers benefits to a greater number of people, thus being more attractive to funders.	Getting the most value from local resources is integral to creating a circular economy.

Theme 3 – Traffic and Parking

Actions	Fit with Circular Economy
Investigate the possibility of a new car park on the old putting green at Bereholm, and on the site of the old Lesmahagow High School.	Reuse material (e.g., aggregates for the car park) and utilize local supply chains and local businesses/ tradesmen where possible.

Theme 4 – Moving Around

Actions	Fit with Circular Economy
Investigate the options for reinstatement of the 'wee community bus' or other methods of safer community transport.	A community minibus would help to reduce consumption and waste – by reducing demand for and reliance on private cars.

Theme 5 – Streets and Spaces

Actions	Fit with Circular Economy
Identify funding for an initiative that enables occupiers of retail units to improve shop fronts.	An attractive shop front encourages business and in turn strengthens the local economy. Use of local materials and re-used materials in any renovation plan. Build circular economy principles into a renovation invitation to tender.
Introduce new street furniture – benches, picnic tables, etc – in parks and on street e.g., in the space across from Abbeygreen café.	Reuse tools and materials from windfarms/ other projects where possible. Source materials locally and employ/upskill local people as part of the process.
Improve park facilities, including play and green gym equipment, natural history interpretation boards and a grandstand or other covered area in Glebe Park. This may be achieved through community action, and/or through working with South Lanarkshire Council.	Re-use of local materials and potential for some communities to grow items for sale to adjacent parks. Turbine blade to park infrastructure. Growing could occur around hardstanding and soil areas on the wind farms.
Clarify the ownership of and plans for disused buildings. Consider what, if any, community benefit these could offer if deployed differently.	Using existing community assets to their full potential can contribute to minimising waste and consumption. Maximise embodied carbon thinking and re-use materials embedded in any plans.

Theme 6 – Natural Space

Actions	Fit with Circular Economy
Signage to existing paths, and publication of information on local walks and trails.	Reuse tools and materials from windfarms/ other projects where possible. Source materials locally and employ/upskill local people as part of the process.

Theme 7 – Play and Recreation

Actions	Fit with Circular Economy
Consider fencing off play areas in parks to limit litter and dog fouling.	Potential to reuse fencing from windfarm developments.

Theme 8 – Facilities and Amenities

Actions	Fit with Circular Economy
Investigate ownership of vacant units and the options and implications of community and small business use.	Using existing community assets to their full potential can contribute to minimizing waste and consumption. Supporting small, local businesses to thrive is also key to the circular economy.

Theme 9 – Housing

Actions	Fit with Circular Economy
Establish a Community Council policy on support for housing development.	Overtly mention circular economy in such a policy.

Theme 10 – Social Contact

Actions	Fit with Circular Economy
Introduce new street furniture – benches, picnic tables, etc. – in parks and on street, e.g., in the space across from Abbeygreen café.	Reuse tools and materials from windfarms/ other projects where possible. Source materials locally and employ/upskill local people as part of the process.

Theme 11 – Identity and Belonging

Actions	Fit with Circular Economy
Consider the establishment of a sculpture, floral display or other icon at the entrances to the village to better create and maintain identity.	Consider using materials from mining heritage including coal or stone from open casts to recognise local nature of heritage.
Consider how local history and heritage could be used to generate benefit for the community.	Use history and heritage to the advantage of the local community. Potential to establish heritage driven social enterprise that could employ local people and bring tourists and therefore business to the local area.

Theme 12 – Feeling Safe

Actions	Fit with Circular Economy
Improve lighting in relevant locations.	Potential for energy from HEC developments Lighting infrastructure could provide other benefits such as charging locations overall reducing demand.

Theme 13 – Care and Maintenance

Actions	Fit with Circular Economy
Initiate a partnership between community, local business and South Lanarkshire Council to rejuvenate the town centre.	Embed circular economy and the need for re-use of materials and local supply chains and labour as a scored item in the tender documents.
Establish local leadership for action on litter, including litter-picks and education for behaviour change.	Education extending to circular practices to reduce consumption and wasteful practices
Investigate the possibility of reinstatement of the recycling facilities through either South Lanarkshire Council or through a community or local business initiative.	Better management of materials is key to circularity[8] – making facilities accessible to local people increases their likelihood to participate.

8 Scottish Government (2023). National Planning Framework 4. [online] Scottish Government. Available at: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf [Accessed 28 Aug. 2024].

Theme 14 – Influence and Sense of Control

Actions	Fit with Circular Economy
Ensure the wide promotion of opportunities for local involvement in actions within this plan.	Including circular opportunities.
Ensure that, when things change, people know about it and know that it happened because of community action.	One issue raised during the research was lack of awareness of circular economy. This can be built into capacity building and empowering local people with the knowledge they need.

Rigside

The information in this section comes from the Rigside and Douglas Water Community Action Plan Research Report – the finalised CAP is still in development.

Theme 1 – A Connected and Interactive Community

Priorities	Actions	Fit with Circular Economy
Building community capacity	Build capacity for community organisations to work with other organisations (community groups, third sector organisations, businesses, social housing providers, health and local authority).	Up-skilling towards achieving the incorporation of circular activities.
	Develop the Rigside and Douglas Water Tenants and Residents Association as a community anchor organisation e.g., a Development Trust, to lead and coordinate activity with staff support if required.	Note circular economy as a principle to which the group commits in delivery the work
	Employment of a part time Development Officer to bring groups together, drive activity and support the implementation of this action plan.	Part of the job description would be to promote an understanding of circular economy principles.

Priorities	Actions	Fit with Circular Economy
Flexible and accessible community meeting spaces.	Undertake feasibility research and compile business plans to support the community asset transfer or purchase of an appropriate building or land area (to build on at a later date).	Keeping assets in the hands of the community should help to strengthen the local economy. Further, using existing assets to their full potential can contribute to minimising waste and consumption.
	Make full use of Asset Transfer opportunities to give more community control over community buildings and area assets, based on identified need e.g., Community Centre.	Keeping assets in the hands of the community should help to strengthen the local economy. Further, using existing assets to their full potential can contribute to minimizing waste and consumption.
Build on community resilience activities.	Review current resilience activity and develop a Resilience Plan to be widely communicated.	Utilise a website to promote an understanding of circular economy as well as a practical element such as a directory of materials and skills / businesses available.
	Introduce a community newsletter (paper and virtual) to improve and coordinate communication between groups, local businesses and community members with regular updates and opportunities for community input and feedback.	Use the newsletter to communicate the concept of circular economy and raise awareness and buy-in in the local community.
	Develop and offer new healthy food initiatives including a community growing zone, gardening projects, community cookery, community café, community planting and art.	Growing food locally helps to reduce waste. Other groups in neighboring towns are also discussing these ideas so could link to share learning, tools, produce, etc.

Theme 2 – A Sustainable and Enterprising Economy

Priorities	Actions	Fit with Circular Economy
Support for people trying to get into work.	Further encourage local and nearby businesses to offer apprenticeships, internships and work placements to young people.	The upskilling and employment of local people is key to circularity as it contributes to strengthening local economies. Develop skills required in the future e.g., in relation to decommissioning or to any roles growing at Connexus

Priorities	Actions	Fit with Circular Economy
Support for people trying to get into work.	Identify and deliver new employment initiatives.	Potential for this to be connected to the development of green enterprise in the area. Suggested opportunities have been linked to the Connexus development and include the development of a wind turbine recycling center and the production of green hydrogen.
	Establish "ready for work" projects and community learning mentor initiatives.	The upskilling and employment of local people is key to circularity as it contributes to strengthening local economies.
Increase opportunities to attract tourism and business to the local area.	Enhance local attractions and natural assets to bring people to the area and encourage them to stay.	A thriving local economy is key to circularity. Embed circularity to sustainable tourism thinking.
	Develop a community café/pub/restaurants for local people and visitors.	This would create more local jobs. Use locally grown food from across the Hagshaw area and contribute composted material back to those gardens.
	Make the Rigside and Douglas Water an attractive place for inward investment.	Include circular economy businesses in this vision.
Improve support and assistance for local businesses.	Set up an enterprise forum to promote local businesses, access grants and alternative funding opportunities.	Helps to keep materials and services local. View circular economy as a core way of working for the forum.
	Develop a community hub as a venue suitable for home working, enterprise, training, etc.	Helps to keep people in the local area and therefore the local economy is more likely to thrive.
	Lobby for better broadband to encourage new businesses and home working.	Helps to keep people in the local area and therefore the local economy is more likely to thrive. Communication channels diversity for increased sharing of circular practices.
	Explore incentives and flexibility to encourage social enterprises that support local need e.g., childcare, community transport and facilities for families.	By establishing social enterprises that address local need, community resilience is strengthened.

Theme 3 – Healthy, Vibrant and Positive Community

Priorities	Actions	Fit with Circular Economy
Increase the number of engaging events and activities for all ages.	Research, identify and provide affordable events for young people and families with small children.	Use locally grown food and local caterers.
	Increased attractions for people visiting the area.	This would bring business to the area and strengthen the local economy.

Theme 4 – Getting About

Priorities	Actions	Fit with Circular Economy
Public transport and travel.	Lobby for improvements to existing bus service to cover gaps in evenings and weekends.	This will support the supply of staff to developers and contractors / academic places. Create communication around this on demand reduction.
Travel Assistance Projects.	Develop a Community Car Scheme run by volunteers to provide a safe, secure, and affordable door-to-door service for people who are unable to use public transport.	This will support the supply of staff to developers and contractors.
	Develop a community car club: a local, member-based initiative that provides access to self-service, pay as you drive, low-carbon vehicles.	As well as being cost effective, a shared car scheme would help to reduce consumption and waste – by reducing demand for new cars.
Roads and Infrastructure.	Promote sustainability and a variety of approaches to transport e.g. electric car charging points. This will boost tourism and the affordability of the area.	This will need critical raw materials that can be captured through Circular Economy activity such as urban mining.

Theme 5 – A Place Attractive to All

Priorities	Actions	Fit with Circular Economy
Rigside and Douglas Water Improvement Plan	Building on the CAP research, conduct further community consultation to generate ideas to enhance the villages and make them an attractive place for all.	Utilise existing and secondary material, where feasible.

Priorities	Actions	Fit with Circular Economy
Rigside and Douglas Water Improvement Plan	Improve gateways to the villages including improved signage and public information boards, flowers, planters and seating.	Reuse of materials (potentially from windfarms). Where this is not possible, source materials from a local supply chain.
Neighbourhood Management.	Continue to work with South Lanarkshire Council to ensure a rapid response to fly tipping.	Imaginative use of tipped materials positively rather than simply landfill them.
	Use community benefit funding to employ / train local people to help maintain the upkeep of Rigside and Douglas Water e.g., horticulture, landscaping and basic trades.	The upskilling and employment of local people is key to circularity as it contributes to strengthening local economies.
	Re-energise play parks and play areas to facilitate their use by all ages and abilities.	Re-use of materials in the construction and upgrade of parks.
Open spaces	Hold regular community litter pick events.	Initiate consumption reduction discussions and waste segregation strategies.
	Introduce a nice, neat, neighbourhood competition.	Incorporate circular economy criteria.
	Work with garden projects to identify people needing help to clear up their garden/home.	Potential to establish a network of shared tools and materials – keeping costs down could widen participation.
	Create a communal heart in Rigside and Douglas Water, such as a community gardens promoting biodiversity.	Utilise secondary material where possible

2.2 Cross area activities

The other aspect is not just to see where CAPs can be amended to increase circular economy activity in each area, but to create cross community initiatives that can happen across all communities. These initiatives work better at scale, as material transfer at a small-scale level was identified as a barrier to circular practices.

These will require discussion and co-ordination and some resource but could include;

- a tool library
- area wide training programmes
- community transport scheme

Implementation of such cross-area initiatives could potentially be supported by Connect2Renewables, Community Action Lanarkshire, Climate Action Hub or Douglasdale REAL Group.

Business opportunities might include constructing, servicing and refurbishing wind turbines whereas de-commissioning will take longer to set up, such as the Renewable Parts model.

There are likely to be many opportunities for local charities, social enterprises and businesses to help implement the Development Framework.

2.3 Engagement with Communities on CAP Changes

The aspiration of this piece of work is to build on the findings and recommendations and identify where changes could potentially be made to the various local Community Action Plans (as one avenue) to build circular economy projects and principles into these plans. This will depend on the awareness of circular economy in each local group and then an acceptance of changes to the CAPs. From engagement with the CAPs it is recognised that there is a general acceptance of the importance of circular economy principles, but some caution about the process of building principles retrospectively into plans.

The groups have also been approached to consider evolving their Community Action Plans into Local Place Plans (LLPs). This is likely to happen over time in some of the areas, so this may be the time to consider the concept of circular economy and how it fits with LLPs.

3 Summary of Stakeholder Interviews

Community organisations, developers, contractors and other stakeholders were approached to input into the research. The views of those organisations are reflected in the consolidated summary below.

Opportunities for the Circular Economy

Ongoing remedial works at sites such as Broken Cross, adjacent to HEC is resulting in **materials** that could be landfilled but are potentially available for secondary use and to local communities. This includes spoil, rock and stone from platforms (turbine foundations / crane pads, etc.). This could potentially be used in pathways and other construction projects. In the first instance it is possible the developer will seek to use this material themselves, but the remainder can be made available. At the B7078 for example, there is a bridge, which has been used to provide access to the site. There is stone from this, which needs to be removed. The developer has started liaising with local farmers, residents, etc. to gauge interest in take-up of this material. Interviewees noted that ethically, due to disruption caused by windfarms, there is a preference that locals get first rights on materials for re-use.

Materials can be used for construction but also on-going maintenance. Douglasdale REAL group has 50 acres of woodland and have been using materials from developers for several years now - e.g., piping and aggregate from old developments. There are plans to put in picnic benches, viewing points, mountain bike trails, forest school and an outdoor playground, all of which can use materials derived from the wind farm developments. Allotments on the Brocketsbrae side of Lesmahagow has 32 plots with the same number of raised beds and 2 Poly tunnels. The Trust has plans for the development of the space and to introduce learning and teaching green space skills. This is another need for materials, and the opportunity to reduce costs through circular economy activity.

Regarding how recipients can find out, one developer noted that they **communicate** with locals through their newsletter, website and speaking to them in person. They hold progress meetings to update locals e.g., recently in Rigside. This also helps to create initial contact.

Further opportunities for materials release can happen at the **decommissioning** stage.

Use of local workers is encouraged. Developers generally have a pre-qualification process to get contractors qualified, which requires ISO certification. Guidance in the invitation to tender indicates that the contractor should have a recycling scheme, and developers also emphasize recruitment of local workforce. Contractors are told that they will be graded higher at the tendering phase if they can evidence local supply chains, recycling, etc. Caterers, security and maintenance staff are all recruited locally where possible. Connect2 Renewables have an employability program, which aims to get local people into work/

further education. Funding derives from particular wind farm development, and they also provide bursaries for travel for example.

Wind farm operators / developers and landowners are liaising at Hagshaw Energy Cluster meetings, which is aiding **collaboration**. This is creating a focus for better circular economy practices. It is not just individual companies that make a difference, but rather the creation of a committed **local and regional network** working to the same end. The local Climate Action Hub operated by the Rural Development Trust is an important resource and stimulator of change. One officer there is looking into recycling practices in the area.

Many of the **Community Action Plan** projects are capital and will require materials to reduce costs and create a better local circular economy. It was noted that a future opportunity was to **link with other regions** to share materials and labour needs.

The development of **Connexus** as a linking industrial driver and hub may be key to the development of the circular economy and city deal funding is offering a real possibility of this.

Barriers to the development of a Circular Economy

It was noted that some stakeholders were restricted to using traditional **procurement processes**, including use of Public Contracts Scotland. This requires capacity from tendering organisations / individuals and limits the likelihood of local firms tendering for work. It was noted that during procurement, quality questions are asked of bidding contractors e.g., how contractors are going to minimise waste, what sustainability objectives can be met. However, **scoring** is more driven by Net Zero objectives rather than Circular Economy. It was noted that cost and service delivery scored more highly than social value or environmental impact.

Knowledge about available materials is an issue. South Lanarkshire Council already work closely with the Rural Development Trust and can feed information to the Trust about what materials will be available but further work could be done in this area. Developers noted that it would be useful to have an audit of what the community needs. The CPAs can contribute to this knowledge on material needs in the community. Additional **logistics** details are required, outlining how this process might work in practice. Details concerning the pickup or delivery of materials, transport options and minimum/ maximum quantities would be useful information to share with the community. There may need to be additional funding to help groups manage the re-use of materials.

An **online tool/website** to manage material demand and distribution was noted as a potentially useful feature. Stakeholders also suggested an itinerary of materials coming off sites, including detailed timing and locations.

Turbine suppliers have contracts for maintenance. These are large, specialised companies that are focused on the energy sector. It is a challenge to bring small local companies in due to **lack of skills and capacity**. There was concern that Connexus may have an issue with low-capacity labour force. Connect2Renewables and other partners are focussing on skills development.

Rurality and a small population can limit demand for materials and supply of labour. Scale of supply is also an issue in a smaller community. One developer noted that economic viability may be limited if there are constrained economies of scale. Developers produce 30-40 tons of timber per year. Locally, the most people want is

around 10 tons – distributing this amount is not commercially viable.

There is a **health and safety** aspect and security aspect of sharing materials and spoil. For example, at Dalquandy, Baywa were looking to reuse a container for changing rooms to be used by wild swimmers. But this comes with other associated rules and requirements. **Waste regulations** can be a barrier, giving concern about liability.

Lack of awareness of what circular economy means locally was identified as a key barrier. Local groups will not seek to maximise this if they are unclear what it means.

In relation to community benefit funds, communities should be encouraged to think about circularity when designing/ implementing projects and applying for funding. It could be a standard **funding bid question**.

Specific Project Ideas and Opportunities

There is a plan to develop another windfarm towards Muirkirk plus 100 acres of solar and battery storage. Circular economy thinking can be built into that now using ideas noted above.

Repower Phase 2 of Hagshaw extension windfarm, the original was Scotland's first commercial windfarm, is now due to be repowered with new turbines. There will be metal waste that will likely be recycled, and stakeholders are looking at the business case for a blade recycling centre potentially at Connexus.

The Douglas Valley contains Conexus - a strategically located logistics, energy and industrial hub, split into four individual areas - North, West, East and South. Altogether, the site comprises in excess of 200 acres for sale / to let, with planning permission in principle for a range of uses including business, general industry, storage/ distribution and energy.

Access roads at windfarm sites could be reinstated as active travel routes to retain some of the paths, and this may require planning permission, but perhaps only for half the width so could recycle half the path for use elsewhere.

Projects in the CAPs include establishing a tree nursery and community growing. This is likely to require a need to take on green waste / soils from the surrounding wind farms, which could be used for compost / bedding material. In the next five or so years, Forest and Land Scotland's procurement in the area will be for forestry services, planting and maintenance of trees and fences. There are circular opportunities here.

The area has a lot of forestry but no sawmills. Use of local timber is already being considered by Douglasdale REAL Group.

4 Key learning from case studies

Case study 1: The renewable energy sector in South Africa

Introduction

South Africa has a progressive renewable energy programme with 34 wind farms and 51 solar farms in operation by the end of 2023. These renewable energy companies obtained their **licenses and contracts** by agreeing to strict rules about how they will contribute to the economic development of the country. This is social and environmental change driven by the government. These rules include **targets and quotas** for local ownership, employment, procurement and the distribution of other community benefits. This reveals what is possible for wind farms such as the Hagshaw Cluster to achieve if the regulatory regime was different.

Overview of energy production in South Africa.

Eskom is a state-owned energy company that maintains a 95% monopoly on energy production in South Africa. Eskom sells about half of its electricity directly to industry such as mines and large factories. It sells the other half to consumers via the councils and to a variety of other service users. The councils put a markup on the electricity and resell it to households and businesses within their local authority. Eskom has severe capacity constraints due to ageing equipment, insufficient power stations, corruption and widespread non-payment of customers, including councils.

Energy production capacity in South Africa by the end of 2022 consisted of coal (73%), diesel and gas (6.2%), wind (6.3%), pumped storage (5%), solar panels (4.2%), nuclear (3.4%) and hydro (1.1%).[9] Renewables have been slowly growing as a proportion of this electricity mix and form part of the government's programme to purchase energy from Independent Power Producers (IPPs).

The South African government views itself as a 'developmental state' where it is actively involved in directing the market. As part of this **top-down approach**, the government sets strict quotas for the ownership, structure and behaviour of companies through its Broad-Based Black Economic Empowerment Codes for Good Practice (B-BBEE).[10] These laws and policies are hardwired into the economy and significantly influence access to contracts and funding across all sectors, which incentivises businesses and charities to comply.

All bidders must offer to supply electricity at an attractive price and commit to a set of development measures. Price and impact are both weighted. Bidders strive to achieve and exceed the development targets to increase the probability that they will be awarded a contract to supply electricity - this is often the most important criterion. A similar process happens with the application for mining licenses where businesses compete through their Social Labour Plans.

The DMRE's economic-development criteria from 2020 for renewable energy companies includes job creation, local supply chains, ownership of assets, local control, skills development, supplier development and

9 Pierce, W. and Le Roux, M. (2023). Statistics of utility-scale power generation in South Africa. [online] CSIR. Available at: https://www.csir.co.za/sites/default/files/Documents/Statistics%20of%20power%20in%20SA%202022-CSIR-%5BFINAL%5D.pdf [Accessed 28 Aug. 2024].

10 Davies, R. (2013). Broad-Based Black Economic Empowerment Act (53/2003): Issue of Codes of Good Practice . [online] B-BBEE Commission. Available at: https://www.bbbeecommission.co.za/wp-content/uploads/2017/12/Phase-1-36928_11-10_TradeIndCV01_3a.pdf [Accessed 28 Aug. 2024].

socio-economic development.[11]

Most big businesses have created sophisticated enterprise/supplier development, procurement and corporate social investment departments. Charities, social enterprises and businesses are all actively involved in this ecosystem.

The positive impact of Renewable Independent Power Producers Procurement Programme (REIPPPP)

The Independent Power Producers Procurement Programme (IPPPP) reported its overall impact from inception in 2011 to the end of March 2023.[12] Here are some of the highlights with GBP estimates at the conversion rate as of 2 February 2024:

- 37.3% in shareholding in the IPPs by Black South Africans.
- 9.3% shareholding by local communities in the IPPs.
- 69,554 employment opportunities (primarily during construction).
- R2.3 billion of socio-economic development contributions (~£96.3 million). This is 1.3% of revenue generated overall so far by the IPPs. These funds were primarily spent on education, social welfare and health care.
- R0.7 billion (~£29.3 million) on developing Black-owned enterprises outside of the supply chain.
- R64.8 billion in local content spend (~£2,7 billion) on South African products, which is 49% of total project value.
- R30.3 billion (£1.27 billion) of procurement spent on B-BBEE accredited suppliers with annual turnovers less than R35 million (~£1.5 billion).
- R82.1 billion (83% of total procurement) spent on B-BBEE accredited suppliers (~£3.4 billion). An estimated R66.1 billion was for construction and R16 billion for operations.

11 Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP) (2020). Economic Development (ED) Qualification and Evaluation Criteria. [online] Ipp-projects.co.za. Available at: https://www.ipp-projects.co.za/PressCentre/GetPressRelease?fileid=06c9f603-57ff-ea11-9521-2c59e59ac9cd&fileName=Bidders%27%20Conference%20ED%20Qualification%20Evaluation%20Criteria%20Overview.pdf [Accessed 28 Aug. 2024].

12 Independant Power Producers Procurement Programme (IPPPP) (2023). DMRE: Independent Power Producers Programme, an overview as of 31 March 2023. [online] IPP Projects. Available at: https://www.ipp-projects.co.za/Publications/GetPublicationFile?fileid=060966a9-3610-ee11-95ad-00505685662d&fileName=20230531_IPP%20Office%20Q4%20Overview%202022-23_Final.pdf [Accessed 28 Aug. 2024].

Case study 2: Vattenfall's Pen Y Cymoedd wind farm in South Wales

Pen y Cymoedd is one of the larger onshore wind farms in England and Wales which opened in 2017. This £400 million investment has 76 turbines has an installed capacity of 228 MW. It is owned by Vattenfall – a Swedish energy company. This project is renowned for its local supply chain hence its selection for this case study.

Supply chain development

Vattenfall started engaging with local suppliers approximately two years before planning permission was officially granted and has acknowledged that this helped them to develop their local supply chain. One of the key feedbacks from local SMEs that helped to shape the programme was their low awareness of the available opportunities and their need for earlier information on the procurement and contracting approaches. These businesses said that it would enable them to better prepare for opportunities within their capacities. Vattenfall consequently chose to provide such information much earlier on in the process as it recognised the barriers that these potential suppliers would face.

Vattenfall worked closely with the local authorities from the start who "gave us great support and brought forward lots of learnings from public procurement." Vattenfall recognised that they had insight and knowledge into the local supply chain to help match opportunities to local companies. For example, it worked with these local authorities to hold a series of supply chain events that included 'Meet the Contractor' sessions. These types of events enabled local suppliers to meet the main contractors and learn how they might become involved in the value chain of the wind farm. Vattenfall said that it designed these events with clear outcomes in mind and ensured that they were held in areas where suppliers were already working with related industries. Over 600 organisations expressed interest in becoming suppliers. The councils sourced match funding to provide skills development opportunities for local businesses to better equip them for this role. Vattenfall also took steps to improve local skills which included a three-year apprenticeship programme for local people to become turbine technicians

Vattenfall also emphasised the importance of local procurement in all tender documents. It explicitly required all contractors to maximise the use of local suppliers and develop a local supply chain plan. It made its expectations clear and specified the reporting requirements. One-to-one sessions were also available to local companies interested in working on the project with the main contractors to give them direct access to the opportunities.

Tender processes were adapted accordingly to provide more local opportunities. Joint ventures were encouraged where businesses lacked individual capacity. Vattenfall required all main contractors to report on their local supply chains.

This supplier development process resulted in approximately 260 opportunities being identified for local businesses. Ultimately, 52% of the £400 million investment to construct the wind farm went to local suppliers in Wales.

RenewableUK published a report called 'Welsh Supply Chain Opportunities in Onshore Wind: A Good Practice Guide' in 2015. In addition to discussing Pen y Cymoedd wind farm, this report contains a detailed analysis of all the technical requirements for building and operating a wind farm. This analysis shows how many opportunities there are for local procurement, as is illustrated by Figure 1 (page 38).

Vattenfall said that it "provided a really detailed breakdown of the opportunities within each package of work so that there was more transparency to local companies of the opportunities they could compete for." The developer also engaged with the

Part B: Technical and Other Requirements

This section follows on from the discussion in Part A and provides more practical advice on the sorts of operations involved and the likely requirements that subcontractors and suppliers will need to demonstrate in order to bid for work. We follow the division of works in the graphic in Figure 2.

(1) Detailed critical works

The following tables break down typical activities and materials/plant requirements for each category of works. Examples of specific technical requirements that developers and primary contractors may need to see evidence of are included, and an extensive list of generic requirements is included at the end.

Table 1: Detailed works

Construction Stage and Description	Activities	Materials, plant and third-party services	Specific technical requirements
Feasibility: Wind resource assessment			
A potential site is assessed for its suitability to host a wind farm by gathering meteorological data, often for two years.	• Delivery of mast • Ground works • Onsite assembly of mast • Erection of mast • Servicing	• Haulage vehicle • Excavator • Hydraulic winch/crane • Cable/lifting rope • Mast • Meteorological equipment	

Figure 1: Screenshot from 'Welsh Supply Chain Opportunities in Onshore Wind: A Good Practice Guide' (Renewable UK Cymru, 2015)

relevant business support organisations in its network to raise awareness of this opportunity and help identify companies who could work on the project, but who may not have been aware of the opportunities.

Community benefits

Vattenfall established a fund that is run by Pen y Cymoedd Wind Farm Community Fund – a CIC limited by guarantee. This has an annual budget of over £2 million per year, adjusted to keep pace with index funds.

As of summer 2023, the wind farm provided over £11 million of funding to 657 local projects which was leveraged to more than £20m of investment into the local community.

This funding had seven portfolios: 1) environment and sustainability; 2) education and skills; 3) tourism; 4) sport, health and wellbeing; 5) arts, community and culture; 6) jobs and the economy.

There are two main funds that local organisations can apply to – the Micro Fund and the Vision Fund.

The Micro Fund provides grants up to £6,500 to support community life and enterprise development. There have been 14 rounds of funding as of March 2023 when this data was published. A total of 1,085 applications were received and 526 grant awards worth £1,648,366 were given out.

The Vision Fund provides grants of over £6,500. A total of 98 grants (£6,046,306), 9 grant/loan mixed finance (£548,489) and 8 Loans (£273,061) were given out of this same period.

Local businesses can also apply to the fund for grants and loans. During the consultation on the fund's setup, local residents wanted to see the funding used to create local jobs, and therefore this flexibility was built into the fund.

The community fund also provided £572,863 of funding for Covid-related projects.

In a similar spirit to its supplier development, this wind farm project took proactive steps to enable local organisations to apply for community benefits. The community fund held 42 advice sessions and workshops, sometimes alongside other funders, to explain how organisations might apply.

Reflection and conclusion

This case study explains Vattenfall's approach to supplier development and community benefits. These changes seem to be driven primarily by the developer's strategy rather than by the prescriptions of national and local policies, though these also played a role.

The aforementioned report by RenewableUK said the following: "It is often a condition of planning consents for onshore wind farms that developers will take the steps to maximise local economic benefits. The nature of these conditions varies. Often, they state that developers and their contractors should work with local suppliers wherever possible. More recent planning consents have been more prescriptive on this issue and dictated that a specific proportion of supply chain spend should be invested with firms within a particular radius of the site."

This case study shows how much privately-owned wind farms can do to achieve a positive social, economic and environmental impact. The big question is whether such outcomes will primarily emerge from themselves or need to be imposed externally.

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5 Learning and Findings

5.1 Unfamiliarity and Concerns About Change

1. Circular Economy is a relatively new concept to many people who struggled to immediately appreciate the ideas that were being considered and how to engage positively. There was a lack of clarity about where this fits into Net Zero more broadly. Ideas emerged during the conversations but this lack of clarity, although not universal, was evident at all levels. "In Your Hands: Going Circular For Net Zero (2023)" recognised the need for long term culture change and could be a useful mechanism for knowledge transfer. Scotland's state of circularity is only 1.3% leaving a gap of 98.7%, the global average is 8.6% [13].
2. Retro-fitting Community Action Plans may have met some reluctance from communities who feel they have worked hard to pull their plans together and are not keen to re-open them. This is partly due to wanting to feel that plans are "done" rather than live dynamic documents that could change. The further away from the plan having been completed, the happier communities were to consider changes.
3. In addition, there was a concern that the CAP process was grass roots – listening to the community and feeding in ideas. Circular Economy ideas were felt to be "top down" and imposed from outside.
4. However, this resistance was practical rather than ethical and groups were in principle highly supportive of the concept of a circular economy particularly in relation to local supply chains and local jobs.
5. There was some confusion about how circular economy concepts relate to biodiversity as well as reducing carbon.

5.2 Opportunities for Change

6. There are likely to be business opportunities in the short and medium term to help with constructing, servicing, refurbishing and decommissioning wind turbines.
7. Circular economy practices are already being used locally e.g., the use of broken pipes in drainage culverts and contractors who were interviewed indicated that local groups get first rights on materials. This indicates that the area is not at a standing start and has examples to build from and use as exemplars.
8. Contractors indicated a desire to recruit and spend locally so there is a positive direction of travel.
9. Evidence indicates a need for national and institutional change. Imminent Community Wealth Building legislation may be a route to this – with the legal requirement to purchase locally by default.
10. Most interviewees feel that community benefit could be done more smartly and rooted in circular economy principles as a cross cutting theme to all investments.
11. Although long term, the issue of blade recycling has no current solution and there is an opportunity to create something innovative at Connexus.
12. The Hagshaw Energy Cluster is an area

13 Circle Economy Foundation (2024). CGR Scotland. [online] https://www.circularity-gap.world/scotland. Available at: https://www.circularity-gap.world/scotland [Accessed 29 Aug. 2024].

of broadly de-population, high levels of deprivation, a lower-level of job opportunities, with associated poorer health and wellbeing. There are real opportunities for circular economy to initiate projects with that investment that change these communities.

13. There are opportunities for local development trusts to raise their own finance and invest in the wind farms in their areas.
14. There is a significant policy fit, not just with Just Transition to Net Zero policy but with Community Empowerment, Community Wealth Building, National Strategy for Economic Transformation and the Wellbeing Economy.
15. The active forums under the Development Framework (groups including the Circular Economy Working Group, Douglas Valley Advisory Group, the Developer Group and the Landowner Forum) are an encouraging structure to keep the debate regarding Circular Economy alive.
16. With extensions and repowering, the potential benefits of wind farm development are expected to last into the future.

5.3 Barriers to Implementing Circular Economy

17. As well the unfamiliarity above, barriers to developing a circular economy include a lowcapacity workforce and a need to upskill local people before out-sourcing can happen at scale. Rurality exacerbates this.
18. There is a lack of understanding in communities about what materials could become available through developer initiated circular activities.
19. Sometimes Community Action Plan areas are too small and local for initiatives to be useful. There would be more scope if the "circular economy" had layers or was regional (small places linked to other small places). Economies of scale may need to sit alongside very local purchasing and environmental care.
20. Once materials are available some communities indicated a lack of knowledge of how to utilise them. As well as releasing materials, developers contributing engineers time, transport etc. could release significant benefit.
21. Resistance to changing recently completed CAPs was a key barrier with communities concerned about lack of capacity and reputational damage locally.
22. Not only locally, but there is also a national gap in infrastructure, businesses and skills to co-ordinate material re-use and to decommission structures [14]. As it is more economically viable to extend the life of windfarms rather than to decommission, it's likely that the emphasis of circular economy in Hagshaw will be on local supply chains and material re-use rather than decommissioning [15].
23. Short and rushed timeframes can be a barrier due to the time required to prepare and develop local suppliers to participate in the construction and operation of a wind farm. In Pen Y Cymoedd wind farm in South Wales, the developer started to work with the community on circular economy thinking two years in advance and local suppliers were able to meet contractors in advance to discuss opportunities. The local authority funded training and support to communities to build capacity

14 Circle Economy Foundation (2024). CGR Scotland. [online] https://www.circularity-gap.world/scotland. Available at: https://www.circularity-gap.world/scotland [Accessed 29 Aug. 2024].
15 Zero Waste Scotland (2023b). The future of onshore wind decommissioning in Scotland. [online] Zero Waste Scotland. Available at: https://www.zerowastescotland.org.uk/resources/future-onshore-wind-decommissioning-scotland [Accessed 29 Aug. 2024].

on the ground.

24. Procurement rules and guidance, e.g., having to go through Public Contracts Scotland is a barrier for small local community groups.
25. There can be health and safety concerns with the re-use of materials. For example, at Dalquandy, Baywa were looking to reuse a container for changing rooms to be used by wild swimmers. The installation and use of a changing facility could, however, carry associated rules and regulations that could add risk for landowners.
26. The move to Local Place Plans is a factor in relation to a possible evolution away from Community Action Plans.

5.4 Opportunities for the Circular Economy

27. Embedding circular economy principles into CAPs are viewed as a good approach to achieving the aim of better practices. As well as circular economy being promoted in relation to specific themes and projects, it could be considered as a cross-cutting theme across all themes and projects, viewing it in the CAPs as a vital consideration for all activity.
28. Section 3 indicates a significant range of opportunities to achieve circular economy benefits within Community Action Planning as well as shared services across communities.
29. The process would benefit from cross CAP initiatives that can happen across all communities from a tool library to area wide training programmes.
30. Pathways and repairs, as well as grounds maintenance is a good opportunity for local labour supply.
31. Supporting asset locked social enterprise and local business rather than large companies keeps the wealth related to social impact.
32. Small capital investments are often made by windfarm developers.
33. Despite the urgency and "climate emergency" language, it may be the circular economy is embedded better if done organically and in a long-term way, changing behaviour over time. This need for long term thinking alongside the urgent crisis could disarm the process.
34. Circular economy planning works better at a common sense and problem-solving level. For example, re-use of materials in path making is easier to implement than what to do with turbine blades in the future.
35. The international case studies indicated that Governments could legislate for behaviour change more aggressively and can put social impact at the heart of major investments. The South African government sets strict quotas for the ownership, structure and behaviour of companies, which has created societal change, but its top-down approach has had challenges too.
36. Opportunity to work with Connect2Renewables for skills development.

6 Recommendations and Replicability

6.1 Use of Action Plans and Place Plans as a Tool

1. The Hagshaw Cluster should be developed as a national exemplar of good practice in circular economy thinking and how Community Action Plans and Local Place Plans can embed this into local ways of working. (NB: The concept of embedding circular economy thinking into Community Action Plans should be extended nationally as good practice and extended into Local Place Plans).
2. It is likely that some resource (such as a Hagshaw Circular Economy Officer) will be needed to enable this to happen effectively.
3. In addition, if plans are to be evolved, there will be a need for local resource and funds for graphic design and re-printing.
4. Although re-writing already published plans across the board could be onerous, local communities could produce a circular economy addendum with the support of Zero Waste Scotland and other agencies.
5. Cross community plans should be considered for example, a tool library across a whole group of areas such as Hagshaw rather than one per community. Extending out to other areas, such as Muirkirk, could be useful.

6.2 Procurement guidance

6. Lobby for purchasing and procurement guidance to embed circular economy principles would help. Circular economy thinking could be embedded in procurement reform and other guidance and legislation. One example could be including circular economy questions in tender pre-qualification questionnaires.
7. Creating guidance that enables public bodies and contractors to avoid Public Contracts Scotland/national procurement guidance and use more appropriate local tendering systems would aid local access to opportunities.
8. Additional points in procurement should be allowed for social enterprises, which embed social value in their legal structure and are more likely to deliver circular economy benefits.

6.3 Skills and local labour

9. Developers should link contractors and communities well in advance to pre-plan activity in relation to material re-use and local supply chains. Additional capacity such as skills development and training to local communities can increase the effectiveness of that pre-start activity.

6.4 Investing in Change

10. Modest financial contributions levied on developers, or top slicing community benefit funds across Scotland, could create a National Circular Economy Fund that small businesses and social enterprises can tap into to fund good practice (similar to the way landfill tax works with consequent funding streams).

6.5 Learning Nationally

11. Integrate circular economy thinking into

Local Place Plan guidance.

12. Guidance should be developed to ensure that any renewables development (on- and off- shore) has targets related to circular economy, for redistribution of waste and materials, local ownership, employment, procurement and the distribution of other community benefits. Traditionally, the social impact had been small grants. In the future deeper community control should reap additional benefits from a move from developer-funder-community relationship to a developer/community relationship.
13. Circular economy processes could be embedded as a condition of planning.

6.6 Awareness Raising

14. A clearly articulated public awareness campaign is needed to roll out the concept across the country.

6.7 Materials Reuse

15. Release of materials for reuse should come with developer's staff time, transport and other elements as part of a community/developer partnership related to their ESG targets.
16. Contractors and developers should create a directory of the nature and scale of likely materials in any area so that communities can plan how to use those materials.
17. Contractors and developers could communicate the nature and scale of material available through a bespoke website for resource exchange.
18. Requirement for storage areas for various materials so they are available when needed and don't need to have a use immediately.
19. The development of a public facing wind farm development timeline to provide greater certainty to supply chains / communities looking to benefit from circular activity.
20. Examples of materials required and available are set out below. These are common examples that emerged from stakeholder interviews, but systems can be put in place to identify more diverse materials as demand and supply become clear over time.

Priorities	Actions
Aggregate type 1	Pathways, cycle paths and bottoming for construction such as playparks.
Scalpings	Use in pathways.
Fencing and timber e.g. from kissing gates	Can be used by Men's Shed type project for construction of various items. Use for benches and planters.
Trees	Chipped for pathways and gardens.
Topsoil	Used for community growing.
Cement	Used in drainage culverts.

21. Circular economy principles can better be implemented through collaboration with existing Douglas Valley wide partners. This includes Connect2Renewables / Community Action Lanarkshire / Climate Action Hub / Douglasdale REAL Group.

Group	Nature of Contribution
Connect2Renewables	Working with local contractors and offering contracts to them where possible. Providing training schemes and jobs to local people to help them get back into employment, learning placements or apprenticeships. Establishing a local Community Advisory Panel for each of our projects, which identifies local good causes and charities we can support with our Community Fund. This initiative can help implement some of the labour and local supply chain aspirations in the Community Action Plans.
Douglasdale REAL Group	Working to enable the progression of recreation, environmental, access and leisure facilities in the Douglas Valley. As a practical infrastructure deliverer, this group can directly utilise materials.
Community Action Lanarkshire	This organisation procures work locally and can work to simplify procurement of goods and services within the cluster and in relation to action plans.
Climate Action Hub	Support and information for behaviour change and to support the implementation of ideas emerging in the action plans in relation to circular economy.
Local groups	Circular economy can be implemented at a local level via local organisations driven strategically by Community Action Plans and Local Place Plans.

A spider's web of connections locally, across the Douglas Valley, regionally to South Lanarkshire Council and nationally to Zero Waste Scotland and others is a key approach to implementing circular economy at a very local level.

Appendices

Appendix 1: The Local Community

The communities that this cluster covers are, Coalburn, Douglas and Glespin, Lesmahagow Brocketsbrae and Hawksland and Rigside and Douglas Water. The following gives a snapshot of some of the issue in these communities.

Coalburn

- There has been a very significant population increase of 24% in the last 20 years.
- Coalburn has a smaller working age population (57.5%) than the regional or national averages (62.9% and 63.9% respectively).
- Job density in Coalburn is significantly lower than the regional or national averages.
- There are more people in Coalburn with no qualification (42.3%) than the regional or Scottish averages (29% and 26.8%).
- According to Scottish Government EPC data from 2016-2020, housing in Coalburn has an energy efficiency gap of 24.06 SAP points compared to the national average of 16.78 SAP points.
- 17.4% of working age people are living with a limiting long-term illness and a total of 30.8% of people are living with a limiting long-term illness. Both statistics are higher than the regional and national averages.
- Transport is a key challenge.
- The majority of the Coalburn residents live in the most deprived 20%-30% communities in Scotland.

Douglas

- 21.7% of those living in the Douglas area are aged over 65, this is slightly higher than the national average, which is 19.3%. 60.6% are of working age, this is slightly lower than the national average, which is 63.9%.
- Between 2005 and 2010 the population of Douglas dropped by over 5% and between 2010 and 2020 the population dropped a further 10%; 15% below 2001 levels.
- Job density in the Douglas Community Council area is much higher than the local authority average (82.9% compared to 60.9% in South Lanarkshire). Job density is also higher in Douglas than the national average, which is 74.9%.
- 41.8% of people in the area had no qualifications. This is higher than South Lanarkshire (29%) and Scotland (26.8%). Also, 13.1% of people in the Douglas area hold a degree level qualification, which is lower than South Lanarkshire (22%) and Scotland (26.1%).
- As at the 2011 Census, 23.4% of people in the Douglas Community Council area live with a limiting long-term illness. This is higher than the national figure of 19.6%.
- Transport is also limited.

- The current average energy rating of dwellings in Douglas is lower than the South Lanarkshire and Scotland averages, but the potential energy efficiency is relatively high (so there is a higher energy efficiency gap in the Douglas area than South Lanarkshire and Scotland).
- 738 people live within data zones that are ranked in the most deprived 20%.

Lesmahagow

- Lesmahagow has slightly higher number of young people under the age of 16 than the national average (17.7% v 16.8%).
- Lesmahagow has higher levels of unemployment than the national average. 6.1% of working age people living in Lesmahagow claim unemployment benefit compare with the Scottish average of 4.1%. Levels of unemployment in young people aged 16-24 is also higher in Lesmahagow than the national average (7.7% v 5.1%).
- Mental health issues are more prevalent in Lesmahagow. 4.3% of people living in Lesmahagow claim PIP for mental health conditions (Scottish average 3.2%).
- Pupil attainment across years S4 to S6 is lower in Lesmahagow than the Scottish average. Higher numbers of school leavers go into employment or training within a year of leaving school and lower numbers go straight on to further or higher education than the Scottish average.
- People living in Lesmahagow have poorer access to health 'assets' such as GP surgeries, pharmacies and dentists (with the exception of A&E hospitals) and easier access to health 'hazards' such as off-licences and pubs/bars/nightclubs.
- Lesmahagow is an area with mixed levels of deprivation. Income, employment and education are particular challenges. The Bankhead Recreational site falls into a datazone that is in the 10% most deprived areas in Scotland, 21% of people in Lesmahagow live in this specific area of deprivation.

Rigside

- The population of the CAP area was above 2001 levels from 2001 until 2012. The population peaked in 2005 when it was around 11% more than it was in 2001. Since 2012 the population has been sharply decreasing and by 2020, fell to 20% below 2001 levels.
- As at the 2011 Census, 17.5% (58) of people in the CAP area were working in managerial or professional/associate occupations. This is 20% lower than both the South Lanarkshire and national averages.
- Job density in the CAP area is 44.6%. This is around 30% lower than the national job density figure.
- As at the 2011 Census, 43.7% (340) of people in the CAP area had no qualifications. This is significantly higher than South Lanarkshire (29%) and Scotland (26.8%). Also, 8.9% (70) of people in the CAP area hold a degree level qualification, which is lower than South Lanarkshire (22%) and Scotland (26.1%).
- As at the 2011 Census, 26.9% (254) of all people in the CAP area live with a limiting

long-term illness. This is higher than the national figure of 19.6%.

- Transport and connectivity are particularly bad even compared to other adjacent villages.
- As of June 2023, 6.7% (30) of working-age people in the CAP area claim unemployment benefits, which is higher than the Scotland average of 3.2%.
- 40.8% (184) of people living in the CAP area claim Universal Credit, which is much above the averages of 13.9% in South Lanarkshire and 13.4% in Scotland.
- Within the CAP area, all 808 people live within datazones that are ranked in the most deprived 10%.

In summary, this is an area of broadly de-population, with poor educational achievement, lower-level jobs and poorer health and wellbeing.

Appendix 2: Policy Context and Literature Review

Introduction

A circular economy refers to a cluster of value chains that produce little or no waste as any products or by-products of the value chain are recycled into inputs for either the same or other value chains. This decreases levels of waste and the release of carbon into the atmosphere.

Key touching points

Scotland's 2018-2032 Climate Change Plan describes the government's plan for achieving Net Zero and reducing greenhouse gasses 90% by 2040 and 100% by 2045. This is ahead of the UK's goal to achieve Net Zero by 2050.

The Scottish Government's Onshore Wind Policy Statement (2022) aims to achieve onshore windfarms with 20GW capacity by 2030.

The Sustainable Development Goals (SDGs) of the United Nations are also a significant policy driver. Wind farms contribute to multiple SDGs through their positive social, economic, environmental and health impacts. The Conferences of the Parties (COPs) is the name given to the United Nations Climate Change Conferences, which form part of the United Nations Framework Convention on Climate Change. The UK has been party to the agreements emerging from these conferences.

Navigating waste regulations towards more circular outcomes[16]

"A circular economy is part of the solution to our global climate emergency, ensuring that nothing goes to waste, and everything has value.

It is an all-encompassing approach to life and business, which in simple terms, can be explained as 'make, use, remake' rather than 'make, use, dispose' (linear economy)."

Zero Waste Scotland's Circularity Gap Report [17] identified that Scotland is some way from embedding circular practices as a matter of course. The report noted that Scotland's state of circularity is only 1.3%, leaving a gap of 98.7%, the global average is 8.6%. Scotland's Raw Material Consumption (RMC) (2107 data) is 100 Mt of materials, or 18.4 tonnes per person. This is 38% higher than the global average, which is 13.3 tonnes per person and more than twice as high as the level many experts suggest is sustainable (8 tonnes per person per year). This adds an

16 Acknowledging support of Zero Waste Scotland with this information.
17 Zero Waste Scotland (2023a). Circularity Gap Report. [online] Zero Waste Scotland. Available at: https://www.zerowastescotland.org.uk/resources/circularity-gap-report [Accessed 29 Aug. 2024].

urgency to reports such as this.

The energy sector has an important role to play in the transition to circular economy practices by managing resources better through reuse and remanufacture, keeping materials and assets in perpetual use and realising value by building supply chain capacity.

This will need to happen with Waste Regulations.

The Scottish Environment Protection Agency (SEPA), exist to make sure that the environment and human health are protected, to ensure that Scotland's natural resources and services are used as sustainably as possible and contribute to sustainable economic growth.

To make complying with regulation as clear as possible, SEPA and others provide information about how waste management is regulated setting out the duty of care of different stakeholders.

In Your Hands: Going Circular For Net Zero (2023) [18]

This report targets business leaders with an objective to support those companies to embed circular economy principles in their business. The report indicates that the concept is potentially sector changing but is in its infancy. It requires new systems thinking and creating a proper business case, so it has a financial as well as an environmental benefit.

It requires a change in organisational culture. This same culture change will be a challenge in the communities involved here.

Methodology for the implementation of a circular economy at the local and regional scale (2022) [19]

Circularity is acknowledged in the Green Deal at EU level. This document sets out a practical methodology for making circular economy real. The CCRI Methodology distinguishes between three phases (inner circle): MAP – the territory and understand its potential; DESIGN – the circular systemic solution; and IMPLEMENT – the circular systemic solution.

Building a Circular Ecosystem for Scottish Businesses

This Zero Waste Scotland document is a crucial backdrop to the Circular Economy. The report found:

1. Investment in people is important for successful implementation of circular strategies.
2. Demonstrating environmental and social credentials of circularity was both a challenge and an opportunity in competitive markets.
3. Funding helped businesses turn innovative ideas and strategies into tangible and successful pilots, implementing circularity in real-world operations.
4. Working together to be critical to driving the circular transformation Scotland needs.
5. Flexibility and adaptability helped businesses to adapt to economic polycrises, acting as a catalyst for businesses to adapt supply chains and consider innovative new practices, opening the door for circular enterprises to capitalise.

Decommissioning

This section references "The future of onshore wind decommissioning in Scotland", which was published in 2021.

An estimated 4,894 to 5,613 wind turbines are

18 The Prince's Responsible Business Network (2023). In Your Hands: Going Circular for Net Zero. [online] The Prince's Responsible Business Network. Available at: https://www.bitc.org.uk/wp-content/uploads/2023/09/bitc-report-environment-circular-economy-in-your-hands-v2-august23.pdf [Accessed 29 Aug. 2024].

19 European Commission, Directorate-General for Research and Innovation, Menger, P., Etminan, G., Rueda, F. et al. (2022) Circular cities & regions initiative : methodology for the implementation of a circular economy at the local and regional scale. Publications Office of the European Union. https://data.europa.eu/doi/10.2777/068045 [Accessed 29 Aug. 2024].

likely to need decommissioning between 2021 to 2050, although their life can be extended by replacing or refurbishing parts.

The maximum energy production capacity of an onshore wind turbine will typically range between 0.5MW to 5MW depending on its size and location.

Scotland has limited experience with decommissioning windfarms as most were built over the past two decades and have a 25-year lifespan. This capability is in its infancy and will emerge over time.

This section references "The future of onshore wind decommissioning in Scotland", which was published in 2021.

A wind turbine is primarily constructed out of resin, fibreglass, cast iron, iron, steel, silica and copper. By 2050, the conservative forecast is that the following volumes of materials will need to be recycled:

- Steel – 956,728 tons – the best option is to recycle by melting in a furnace.
- Iron – 120,137 tons – the best option is to recycle by melting in a furnace.
- Resin – 79,363 tons – the best option is to recycle through a chemical process such as Pyrolysis to separate fibres and resins and produce fillers.
- Fiberglass – 52,909 tons – Same as for resins.
- Copper – 20,175 tons – the best option is to recycle by melting in a furnace.

It is significantly more profitable to refurbish and extend the life of wind turbines than to recycle their components, and recycling is more profitable than sending the waste to landfills. Furthermore, using refurbished or recycled materials and parts will reduce the carbon footprint of wind turbines by approximately 35% so this is desirable.

The biggest challenge in decommissioning wind turbines is dismantling them, then transporting them and then storing them until they can be recycled or disposed of.

There is currently a lack of infrastructure, businesses and skills in Scotland to refurbish wind farms or to recycle all their components. This means that they will need to be transported to another country or disposed of in landfills. Neither option is desirable. There is therefore a need to invest heavily in recycling R&D and local processing infrastructure. This will help to reduce costs and make recycling more viable compared with landfills. Advocacy is also needed to encourage the government to develop a supportive policy environment at the national and UK levels.

Business Opportunities

This section was informed by "Appendix B Zero Waste Scotland's Hagshaw Reuse Theme Cards" from Hagshaw Energy Cluster Circular Economy Delivery Group workshop (held 29th June 2023, Glespin).

Once a wind turbine gets to the end of its (extended) life, the best option is to reuse or recycle the steel, iron, resin, fiberglass and copper. Recycling is likely to require expensive and specialized infrastructure with economies of scale, which means that only a handful of processors are likely to exist in Scotland. There are likely to be opportunities for businesses in Hagshaw to help with dismantling, storing and transporting these materials to the appropriate processor. It will be at least a decade before such activity becomes widespread.

There are likely to be business opportunities in the short and medium term to help with constructing, servicing and refurbishing wind turbines.

There are numerous opportunities for local businesses to supply wind farm companies with other goods and services, which are not directly related to recycling or refurbishing wind turbines. These include transport, storage, road maintenance, accommodation, safety equipment, machinery rental etc.

There are likely to be many opportunities for local charities, social enterprises and businesses to help implement the Development Framework.

The Hagshaw cluster might agree on quotas for local procurement and employment. This will then necessitate a more structured

approach to enterprise development and people development.

There are opportunities for local development trusts to raise their own finance and invest in the wind farms in their areas. This is likely to produce a significant benefit for communities. For example, a 2021 study commissioned by Point and Sandwick Development Trust found that community-owned wind farms produce approximately 34 times the community benefit payments of equivalent wind farms owned by private companies.

Communities Benefitting from Circular Economy Thinking

There appear to be many examples of how community benefits have been spent to achieve a social, environmental and economic impact.

There are several examples of communities in Scotland that developed their own wind farms and achieved increased community benefit. Communities that own wind farms are more likely to be able to insist on being involved in all aspects of their construction and maintenance compared with those that are owned by private energy companies.

There are numerous examples of the technologies involved in recycling wind turbine components and the outputs therefrom. While many of these technologies might be feasible, or demonstrated on a small scale, they may not yet be viable and practical on the scale required.

There seems to be a scarcity of informative online examples of how communities have provided goods and services to help construct, maintain and decommission wind farms. Some interviews will be required to elicit this information.

National Strategy

Scottish Government National Performance Framework

Scotland's National Performance Framework provides a vision for Scotland with broad measures of national wellbeing covering a range of economic, health, social and environmental indicators and targets. The Framework is intended to inform discussion, collaboration and planning of policy and services across Scotland, encompassing the public sector, businesses, civil society and communities. There are 11 national outcomes of which the most relevant are:

- Economy: We have a globally competitive, entrepreneurial, inclusive and sustainable economy.
- Environment: We value, enjoy, protect and enhance our environment.
- Communities: We live in communities that are inclusive, empowered, resilient and safe. Investment is to be focused on deprived communities and disadvantaged rural areas.

The vision in the CAPs for learning, health, enterprise and community will feed into these outcomes.

Place Principle, 2019

Adopted by the Scottish Government in 2019 and intended to provide a collective focus to support inclusive economic growth and create places, which are both successful and sustainable. It recognises that:

- Place is where people, location and resources combine to create a sense of identity and purpose and is at the heart of addressing the needs and realising the full potential of communities.
- A more joined-up, collaborative, and participative approach to services, land and buildings enables better outcomes for everyone and increased opportunities for people and communities.

Regenerating this place is important and the cluster, with circular economy built in, will be a significant catalyst for the regeneration of the whole community originally blighted by the demise of deep coalmining.

Community Empowerment (Scotland) Act 2015 / Land Reform Act (2016)

Helps to empower community bodies through the ownership or control of land and buildings and by strengthening their voices in decision making around public services.

There is a policy move to shift control of assets from the public and private sector to the people. Here there is a new drive to owning or part owning the turbines or infrastructure.

Scotland's Social Enterprise Strategy 2016-2026

The vision is that "Over the next decade social enterprise will be at the forefront of a new wave of ethical and socially responsible business in Scotland. It will become a far reaching and valued alternative and a key part of the Scottish way of doing business." A third action plan is under development.

The desire is to, where possible, develop enterprises that have an asset lock and reinvest profit into the community, which is a principle of the circular economy.

A Wellbeing Economy

Wellbeing Economy Governments (WEGo) and First Minister speech at Panmure House 2019. This sets out that an economy should be driven by the wellbeing of people and communities rather than only GDP. This has developed with the establishment of the Wellbeing Economy Alliance[20].

The Development Framework will achieve financial outcomes but also both societal and wellbeing ones through community, learning and wellbeing activity.

Community Wealth Building

CWB is a model whereby locally based anchor institutions (such as local authorities, NHS, etc.) focus spend locally to encourage the development of local economies and to limit procurement spend leaking out of the area.

The Scottish Government has bought into this concept, and it is rolling out across local authorities. There are 5 key principles:

1. Plural ownership of the economy.
2. Making financial power work for local places.
3. Fair employment and just labour markets.
4. Progressive procurement of goods and services.
5. Socially productive use of land and property.

This is becoming a central policy reference point and using these five principles to build the local economy will be a major focus. The local economy can be boosted through harnessing the buying power of developers and creating local community supply chains.

Scotland's National Strategy for Economic Transformation

This maps out how Scotland will recover from covid in a way that is more than just getting into growth again.

"The ambition of this strategy is not just to grow our economy but in doing so, to transform our country's economic model so that we build an economy that celebrates success in terms of economic growth, environmental sustainability, quality of life and equality of opportunity and reward."

Key objectives are to:

1. Establish Scotland as a **world-class entrepreneurial nation** founded on a culture that encourages, promotes and celebrates entrepreneurial activity in every sector of our economy.
2. Strengthen Scotland's position in new markets and industries, generating new, well-paid jobs from **a just transition to net zero**.
3. Make Scotland's businesses, industries, regions, communities and public services more **productive and innovative**.
4. Ensure that **people have the skills** they need at every stage of life to have rewarding careers and meet the demands of an ever-changing economy and society and that employers invest in the skilled employees they need to grow

20 Wellbeing Economy Alliance Scotland (n.d.). Home. [online] WEAll Scotland. Available at: https://www.weallscotland.org/ [Accessed 29 Aug. 2024].

their businesses.

5. Reorient our economy towards **wellbeing and fair work**, to deliver higher rates of employment and wage growth, to significantly reduce structural poverty, particularly child poverty, and improve health, cultural and social outcomes for disadvantaged families and communities.

This policy sets out a commitment to a new economy that the renovation of such an important local site can contribute to.

Local Policy Context

South Lanarkshire Council's Plan 'Connect 2022-2027'

The Council Plan Connect 2022 – 2027. This five-year plan set out the vision and actions to 'improve the lives and prospects of everyone in South Lanarkshire.' The plan 'sets out how we will deliver on that vision by focusing on what matters to the people of South Lanarkshire and the priorities they have identified.' The priorities are: **1. People** – we need to put people first and reduce inequality; **2. Progress** – we need to recover, progress and improve; **3. Planet** – we need to work towards a sustainable future in sustainable places. The Plan lays out a raft of actions it intends to take on issues relating to Health and Wellbeing, the Economy, Children and Young People, Education and Learning, Communities and the Environment and Housing and Land. Examples of commitments include:

- Increasing digital access in rural areas.
- Improving active travel, road and transport infrastructure.
- Ensuring high quality streets, parks and other public areas.
- Support people to live active and independent lives.
- Support children and young people to develop skills.
- Work to bring vacant and derelict sites back into productive use.
- Support the sustainability and prosperity of rural communities and economy while protecting their distinctive character.
- Minimise unemployment and underemployment with a focus on disadvantaged communities.
- Improve employment and entrepreneurial activity in key business sectors in key locations.
- Promote South Lanarkshire as a leisure and tourism destination and fully realise the potential of heritage and cultural attractions and the natural environment to bring economic benefits.

South Lanarkshire Community Engagement and Participation Strategy 2020-2025[21]

As part of the Community Action Plan (CAP) process, local policies and strategies have been reviewed and the following have been identified as having a direct bearing on proposed developments . It will be important for the CAP to align proposed developments, where possible, with wider strategies and work already underway locally.

South Lanarkshire Council Community Planning[22]

As a requirement of the Community Empowerment Act, SLC produce a LOIP strategy setting out how community planning partners will work with local communities to improve outcomes for individuals, families and communities where inequality persists. The Plan sits under an overarching vision: "To improve the quality of life for all in South Lanarkshire by ensuring equal access to opportunities and to services that meet people's needs". It sets

21 South Lanarkshire Partnership (n.d.). South Lanarkshire Community Engagement and Participation Strategy 2020-2025. [online] South Lanarkshire Community Planning Partnership. Available at: https://www.southlanarkshire.gov.uk/cp/downloads/file/356/south_lanarkshire_community_engagement_and_participation_strategy_2020-2025 [Accessed 29 Aug. 2024].

22 South Lanarkshire Council (n.d.). Community Planning. [online] www.southlanarkshire.gov.uk. Available at: https://www.southlanarkshire.gov.uk/info/200172/plans_and_policies/1640/community_planning [Accessed 6 Sep. 2024].

out 5 priorities:

1. Improving health and tackling inequalities.
2. Reducing crime and improving community safety.
3. Promoting sustainable and inclusive communities and opportunities for all through life.
4. Ensuring sustainable economic recovery and development.
5. Tackling poverty.

In addition, SLC has set out a Community Plan 2022-2032 and pulled together the top priorities from different communities, which together are stated as:

- Taking action to create more activities for people of all ages.
- Taking action to make better use of community centres and other buildings.
- Taking action so that it is easier to get around and visit other areas.
- Taking action to make places look better.
- Taking action to make communities safer.

In response, the Plan has made commitments under 'children and young people thrive' / 'putting learning at the centre' / 'thriving businesses and fair jobs' / 'caring, connected communities' / 'good quality, suitable housing for everyone' / 'people live the healthiest lives possible'.

South Lanarkshire Council: Local Development Plan 2[23]

The South Lanarkshire Local Development Plan (LDP) sets out how the Council sees the area developing over the next 10-20 years in relation to land use. Key to the area's success is ensuring all development contributes to and enhances South Lanarkshire's vibrancy. It sets out planning priorities and proposals for the region and any future planning applications for the area are assessed against the LDP. The LDP is intended to complement the aims and objectives of the LOIP (see above) and ensure an improved quality of life that lives, works and does business in South Lanarkshire. Its overall vision is "to promote the continued growth and regeneration of South Lanarkshire by seeking sustainable economic and social development within a low carbon economy while protecting and enhancing the environment." Key aims of the plan are to:

- Support the local economy by providing the right conditions for inclusive growth.
- Work with communities and partners to promote high quality, thriving and sustainable communities.
- Improve the road network, influence the improvements in public transport and encourage active travel.
- Improve the availability, quality and access of housing.

The LDP covers a period of 5 years and is underpinned by a set of policies, which are used to guide planning decisions. Currently, these relate to climate change, green belt and rural areas, placemaking, visitor economy and tourism and community infrastructure.

23 South Lanarkshire Council (n.d.). Development plans. [online] www.southlanarkshire.gov.uk. Available at: https://www.southlanarkshire.gov.uk/developmentplan2 [Accessed 29 Aug. 2024].

ZERO WASTE SCOTLAND

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