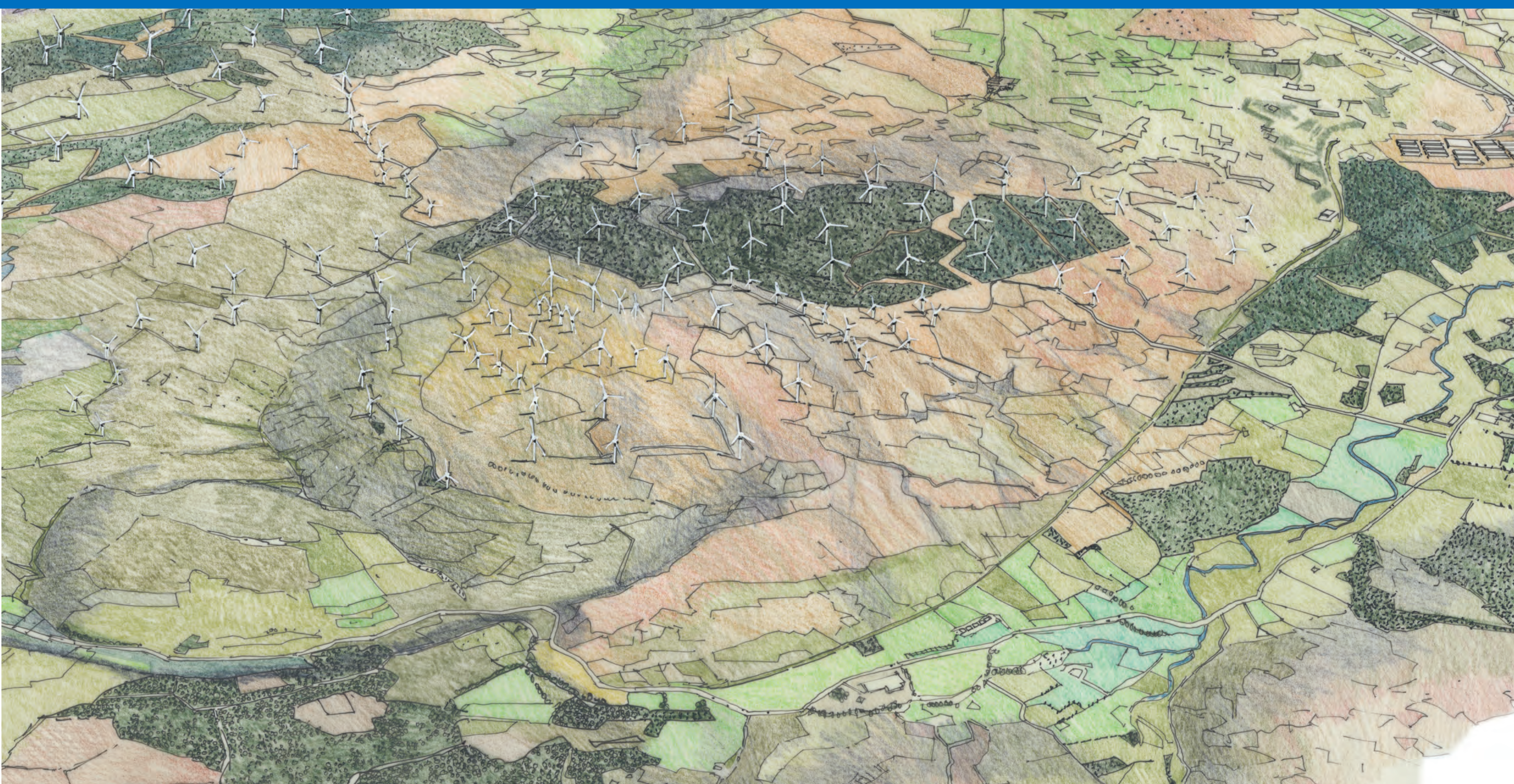


# A Development Framework for the Hagshaw Energy Cluster

## Planning for Net Zero





Project Steering Group

NatureScot

ScottishPower Renewables

Architecture & Design Scotland

Energiekontor UK Ltd.

East Ayrshire Council

Octopus Renewables

South Lanarkshire Council

BayWa.re UK Ltd.

3R Energy Solutions Ltd.

Ventient Energy



Project Team

Land Use Consultants (LUC)

BiGGAR Economics

RPS Group

Richard Carman Architectural Illustrator

STAR Development Group



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Cover Image: The Hagshaw Energy Cluster © Richard Carman

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# Welcome to the Hagshaw Energy Cluster Development Framework

**If Scotland is to achieve Net Zero greenhouse gas emissions by 2045, a more collaborative and inclusive approach is needed.**

The Hagshaw Energy Cluster is an established strategic location for large scale renewable energy projects, with a committed capacity of almost 585 MW. Future plans, policies and decisions by local authorities should reflect the cluster’s suitability for hosting a range of renewable energy developments which can be delivered at pace to achieve Scotland’s Net Zero ambitions.

Coupled with advocating quality through design, the Development Framework identifies opportunities to deliver enhancement to both communities, and the natural and built environment, and support a thriving and prosperous local and regional economy - maximising benefits for people, nature and place.

The first important milestone on the journey to Net Zero will be achieving the Scottish Government’s 75% reduction in greenhouse gas emissions by 2030. The changes we make during this current decade will be critical to ensuring we are on the right path to achieving that goal.

The Development Framework has been developed together between the local authorities, renewable energy developers and operators, statutory agencies and communities to create a shared vision for the cluster.

It sets out an ambitious but deliverable ten year vision for how a more strategic and collaborative approach to renewable energy development can help achieve Net Zero together in a just and fair way.

## Role of the Development Framework

East Ayrshire Council and South Lanarkshire Council 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 Development Framework will inform, shape and support the delivery work, which represents an ambitious vision for the future, but is not a statutory plan.

The maps presented in the Development Framework are schematic and indicative, and are designed to illustrate the possible location for future investment and enhancement. They are not detailed proposals and individual projects will require discussion with landowners, relevant stakeholders and all normal consents and licenses.

Landowner and community forums have been set up to support the delivery of the vision and specific projects, progressed via specific Action Plans being developed in parallel to the framework.

**Potential 1GW+  
of Renewable  
Energy Generation**

**A Regional  
Green Energy  
Employment Hub**

**Local Prosperity  
and Thriving  
Communities**

“We’re delighted to be working with the group to pilot a new approach to onshore wind energy which can help deliver a just transition and more investment in nature.”  
- NatureScot



Image: Looking west to the Hagshaw Hill Energy Cluster from above  
Conexus West site © Airborne Lens



# What is the Project about?

## Working together on a Development Framework for the Hagshaw Energy Cluster

In 2020 NatureScot brought together a group of wind farm developers and operators with East Ayrshire Council and South Lanarkshire Council to discuss how we could work together on the future of renewable energy development in the context of planning for, and delivering Net Zero in Scotland. Focused on the cluster of wind farms near Hagshaw Hill on the border of South Lanarkshire and East Ayrshire, and located between the communities of Coalburn, Douglas and Muirkirk - the Hagshaw Energy Cluster was born.

Other stakeholders were engaged in initial discussions, including the Scottish Government, Historic Environment Scotland (HES), Scottish Environment Protection Agency (SEPA), Scottish Forestry, Forestry and Land Scotland (FLS) and the Royal Society for the Protection of Birds (RSPB), along with a range of consultants involved in renewable energy developments within the existing cluster, to scope out the topics where there may be opportunities to collaborate and coordinate. A project steering group was formed and has worked together to prepare this Development Framework for the cluster.

In 2021, LUC (Land Use Consultants), working with BiGGAR Economics, RPS Group and Star Development Group, was commissioned to develop the project and engage with landowners, communities, local businesses, and other interested parties to shape the Development Framework.

Although a familiar design tool for many other forms of development, this is the first time this approach has been taken in Scotland towards shaping a more strategic approach to renewable energy development and related opportunities. It is hoped that the Development Framework can demonstrate how a more coordinated and structured approach to planning, consenting and delivery of renewable energy development can help deliver a Just Transition to Net Zero.

The key contributors to the development of the Framework include:

<b>NatureScot</b>	<b>3R Energy</b>	<b>Octopus Renewables</b>
<b>Architecture &amp; Design Scotland</b>	<b>ScottishPower Renewables</b>	<b>BayWa.re UK Ltd.</b>
<b>East Ayrshire Council</b>	<b>Energiekontor UK Ltd.</b>	<b>Ventient Energy</b>
<b>South Lanarkshire Council</b>		



Image: Looking west to the Hagshaw Energy Cluster from above Conexus West site © Airborne Lens



“

As Scotland's design champion we believe in the power of design to improve people's lives. Our vision is a Scotland whose places are healthy, sustainable and thriving, and where everyone works together to shape their future.

We are delighted to be part of the collaborative approach taken at the Hagshaw Energy Cluster which aims to see the benefits of the Place Principle become an everyday reality in the way Scotland's places are created, adapted and sustained.

- Architecture & Design Scotland

”





# Why a Development Framework?

## Development Frameworks and Renewable Energy

Planning policy advocates that design tools, such as design frameworks and development briefs, can look to make places better and promote positive change – the same principle can be applied to this Development Framework.

Development frameworks have been used regularly for large scale strategic development addressing a particular land use challenge, development type or opportunity through a co-ordinated approach. Many development frameworks can act as the precursor to more detailed masterplans, providing a spatial vision with flexibility for detail to be brought forward through a potential masterplanning process.

Onshore wind energy is expected to continue to make a substantial contribution towards the target of Net Zero by 2045, with current Scottish Government ambitions targeting 20 GW of installed onshore wind generation by the interim target of 75% reduction in emissions in 2030. The Hagshaw Energy Cluster could deliver a significant proportion of this target through the deployment of consented developments, and the future extension and repowering of existing wind farms.

## How will the Development Framework be used?

The Development Framework has been adopted by both East Ayrshire Council and South Lanarkshire Council as non-statutory planning guidance and will help shape future development within the cluster in a clear and coordinated way. It creates an overarching design vision for the cluster and the surrounding area, and through the key themes and objectives it seeks to deliver a wide range of potential benefits alongside existing committed renewable energy development - as well as any future proposals which may be brought forward in the coming years.

Alongside National Planning Framework 4 (NPF4), the Local Development Plans (LDPs) and relevant Supplementary Guidance (SG), the Councils will refer to this non-statutory planning guidance to inform decision making.

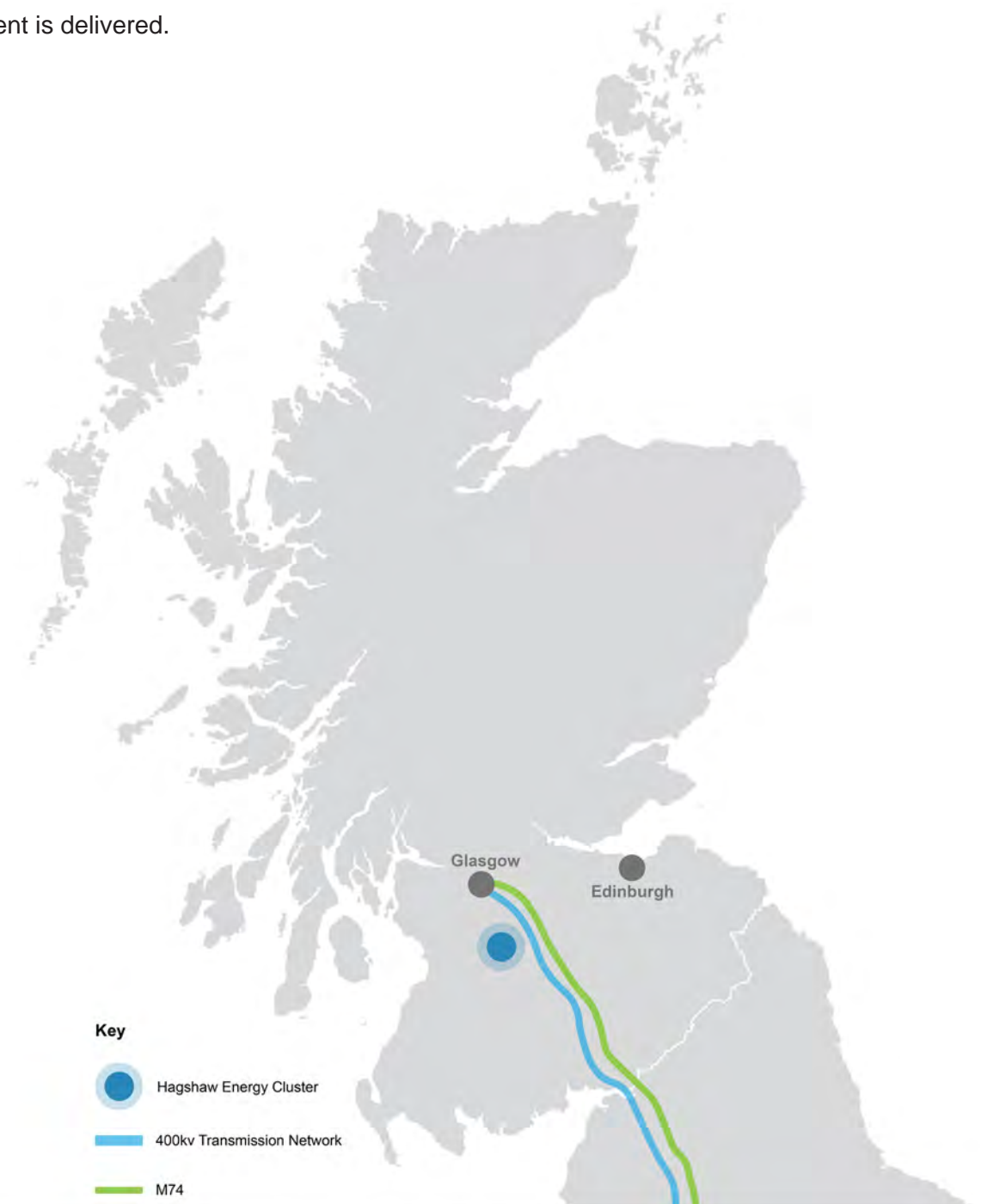
## Monitoring and Reviewing the Framework

The Development Framework is designed to be in place for at least ten years, but will be updated as required, to reflect the changing baseline context, respond to changes in planning policy and the evolution of renewable energy technologies. The future governance of the framework has been agreed by East Ayrshire Council and South Lanarkshire Council who will monitor and review the framework in line with their relevant LDP timescales.

## Why here?

The Hagshaw Energy Cluster is uniquely placed in central-southern Scotland, close to large conurbations, key transport and communication routes, and areas of rich industrial, cultural and natural heritage.

Since the construction of the original Hagshaw Hill Wind Farm in 1995, wind energy in the cluster has evolved, and the next decade will see a new generation of wind farms emerge. Whilst communities in the area have benefitted from the presence of renewable energy developments over many years, future opportunities for further enhancement which benefits people, place and environment will increase as committed and future development is delivered.







# The Current Hagshaw Energy Cluster

Over **15,000**  
people living within  
5km of the cluster

**584 MW**  
Wind Energy Generation

Over **2,000 ha**  
Productive Conifer Forest

Over **80 ha**  
Potential Industrial &  
Employment Land at Conexus

**<1 hour**  
from Glasgow &  
Edinburgh by road





# Policy Context

## International Policy

Policy drivers for the principles underpinning the Development Framework start at an international level, with the United Nations (UN) 17 Sustainable Development Goals (SDGs). They recognise that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth - all while tackling the global climate and biodiversity crises. The SDGs are becoming a pivotal part of policy making for many governments, and a more global outlook on tackling climate change was underlined at the 26th United Nations Climate Change conference (COP26), held in Glasgow in 2021.

## National Policy

In April 2019, the Scottish Government became the first government in the world to declare a climate emergency. In line with this declaration, the SDGs are embedded in National Planning Framework 4 (NPF4) adopted by the Scottish Government in February 2023. NPF4 forms the long-term plan for Scotland, setting out where development and infrastructure is needed to support sustainable and inclusive growth, whilst achieving Net Zero by 2045. With a focus on place, NPF4 aims to deliver sustainable, liveable and productive places, linking closely to the overall vision of the framework.

An update to the Scottish Government Onshore Wind Policy Statement was also published in December 2022 and sets out a vision for achieving an installed capacity of 20 GW of onshore wind in Scotland by 2030. The Scottish Government is also consulting on the Draft Energy Strategy and Just Transition Plan that aims to deliver a flourishing net zero energy system that supplies affordable, resilient and clean energy to Scotland's workers, households, communities and businesses.

The National Performance Framework was introduced in 2007, and was last updated in 2018. It sets out a vision for the national wellbeing of Scotland, an overall purpose and vision, and 'National Outcomes'. The Performance Framework measures Scotland's progress using a range of economic, social and environmental 'National Indicators', and is supported by the Place Principle in ensuring a collective purpose for Scotland.

## Regional Policy

Strategic Development Plan (SDP) Areas are found across several regions of Scotland and focus on the key land use and development issues that may cross planning authority boundaries. Most of the Hagshaw Energy Cluster is located within the southern extents of the Clydeplan area. As per the Planning (Scotland) Act 2019, the current SDP will soon expire and a new non-statutory Regional Spatial Strategy will be prepared for the Clydeplan area as well as a separate one for Ayrshire. It is envisaged that the Hagshaw Energy Cluster, and other similar wind farm clusters, could form a key strategic development area within Regional Spatial Strategies.

Regional Spatial Strategies will support Regional Growth Deals, and the CoRE project in Cumnock in particular, provides opportunities for linkages with the Development Framework. Regional Land Use Partnerships are being piloted by the Scottish Government to help develop Scotland's approach to land use in support of our green recovery and transition to Net Zero.

## Local Policy

The extents of the Hagshaw Energy Cluster are covered by the Local Development Plan (LDP) of East Ayrshire Council and South Lanarkshire Council. Future iterations of the Development Plans will incorporate support for the Development Framework, which will be monitored and reviewed in line with emerging national and local policy.

The Development Framework will form non-statutory planning guidance alongside each LDP. The Development Framework does not replace or supersede other existing adopted policy from East Ayrshire Council or South Lanarkshire Council. It complements the principles of key guidance documents related to renewable energy in the area.

### A Development Framework for the Hagshaw Energy Cluster Planning for Net Zero

“

East Ayrshire Council is excited to be part of this energy. We think, that by taking a joined up approach, we can achieve more. More benefits for our communities, landscape enhancements, and more jobs, all in the face of the climate emergency.

We hope to be able to approve the Development Framework to help guide and influence future development more widely that a joined up, strategic approach is the best way forward.

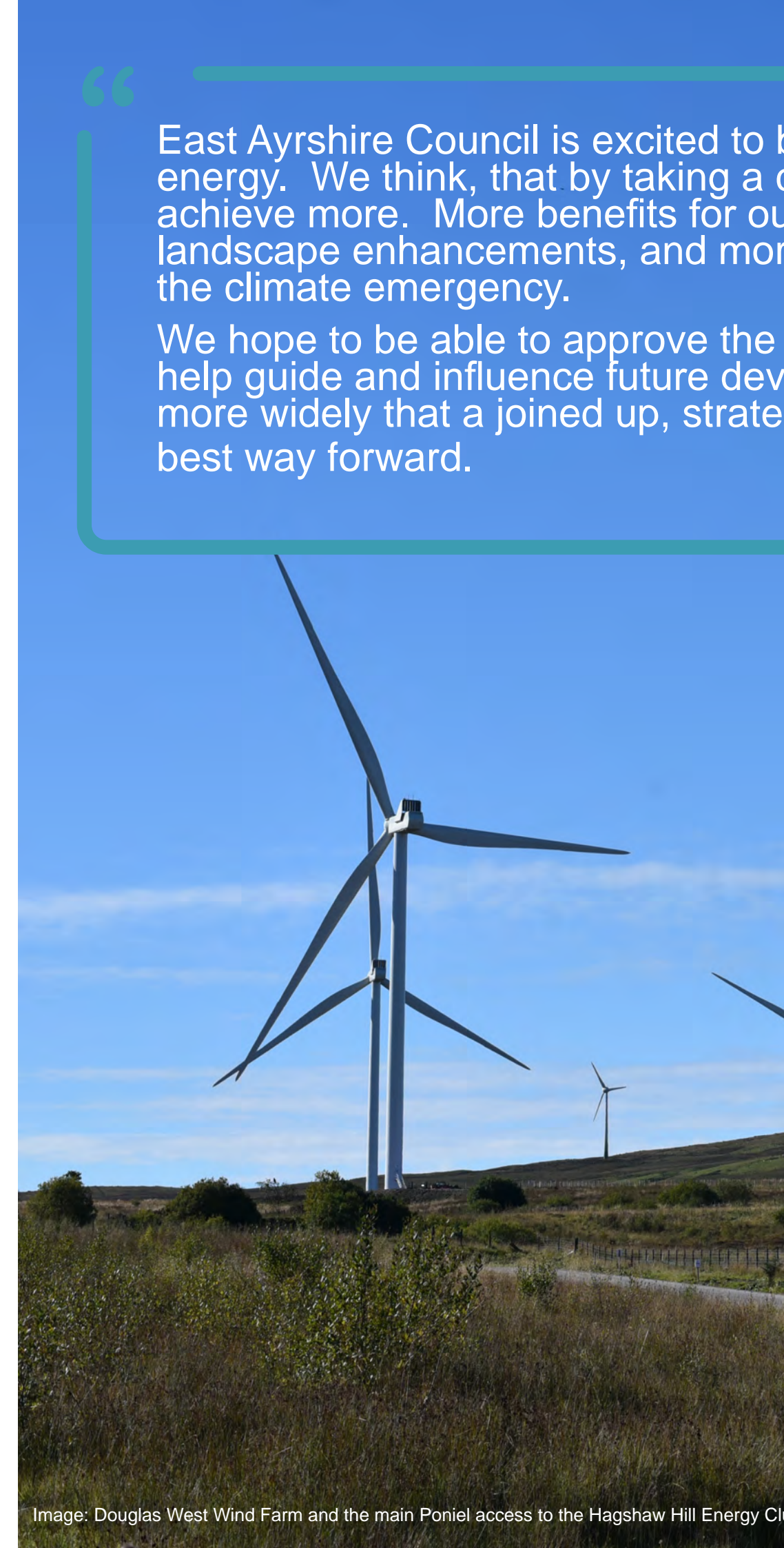


Image: Douglas West Wind Farm and the main Poniel access to the Hagshaw Hill Energy Cluster



be part of this new approach to planning for renewable  
cross boundary and collaborative approach, we can  
ur communities and local economy, more habitat and  
e clean, green energy, helping to play our part in tackling

framework as a new piece of planning guidance that will  
elopment in the Hagshaw cluster and also demonstrate  
gic approach to renewable energy development is the

- East Ayrshire Council

**2045**

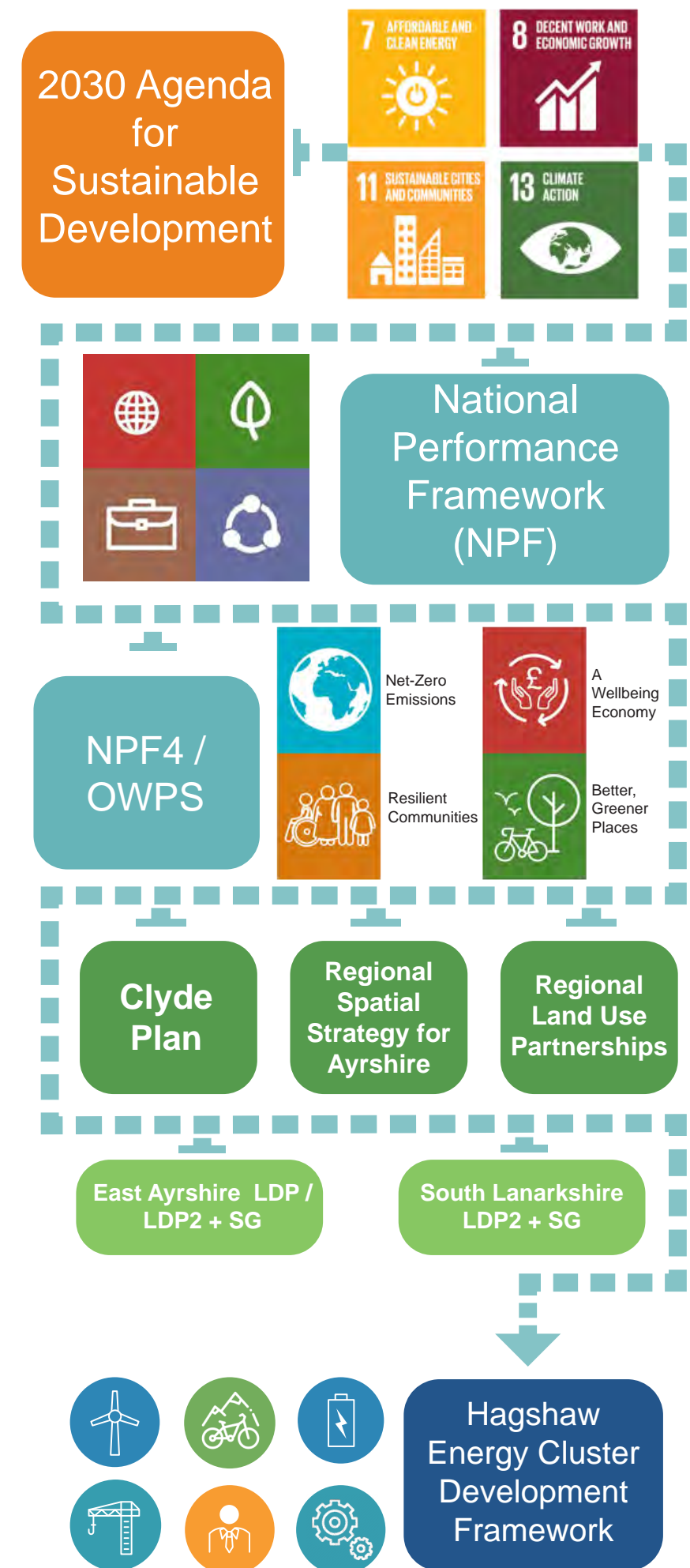
Scottish Government  
target for Net Zero  
greenhouse gas  
emissions

**250,000 ha**

Scottish Government  
target for peatland  
restoration by 2030

**18,000 ha**

Scottish Government  
target for new  
woodland each year  
by 2024-25

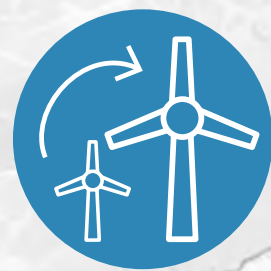






**584 MW**  
Total Committed Wind  
Energy Generation  
Capacity

**1 GW+**  
Potential Renewable  
Energy Capacity



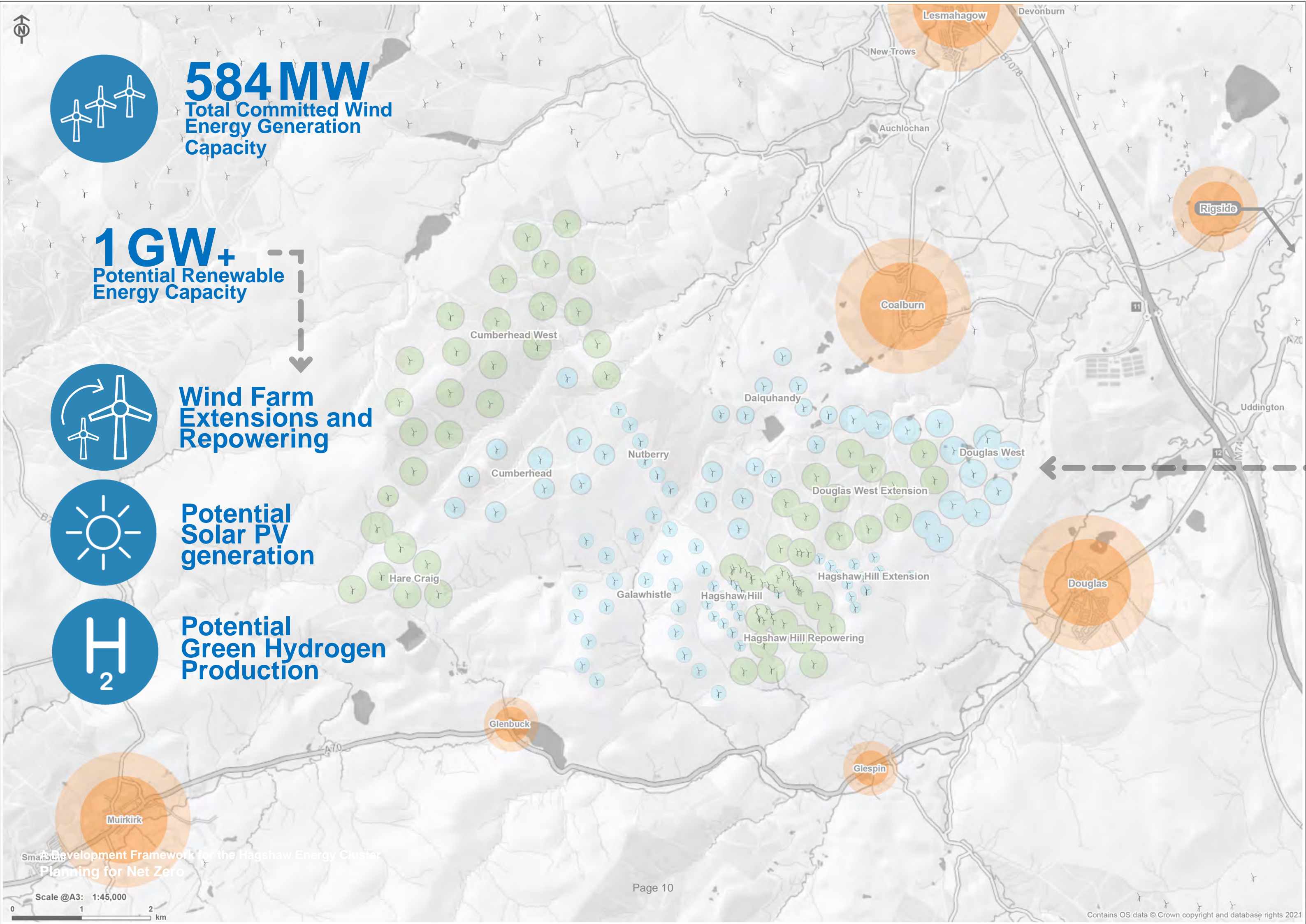
**Wind Farm  
Extensions and  
Repowering**



**Potential  
Solar PV  
generation**

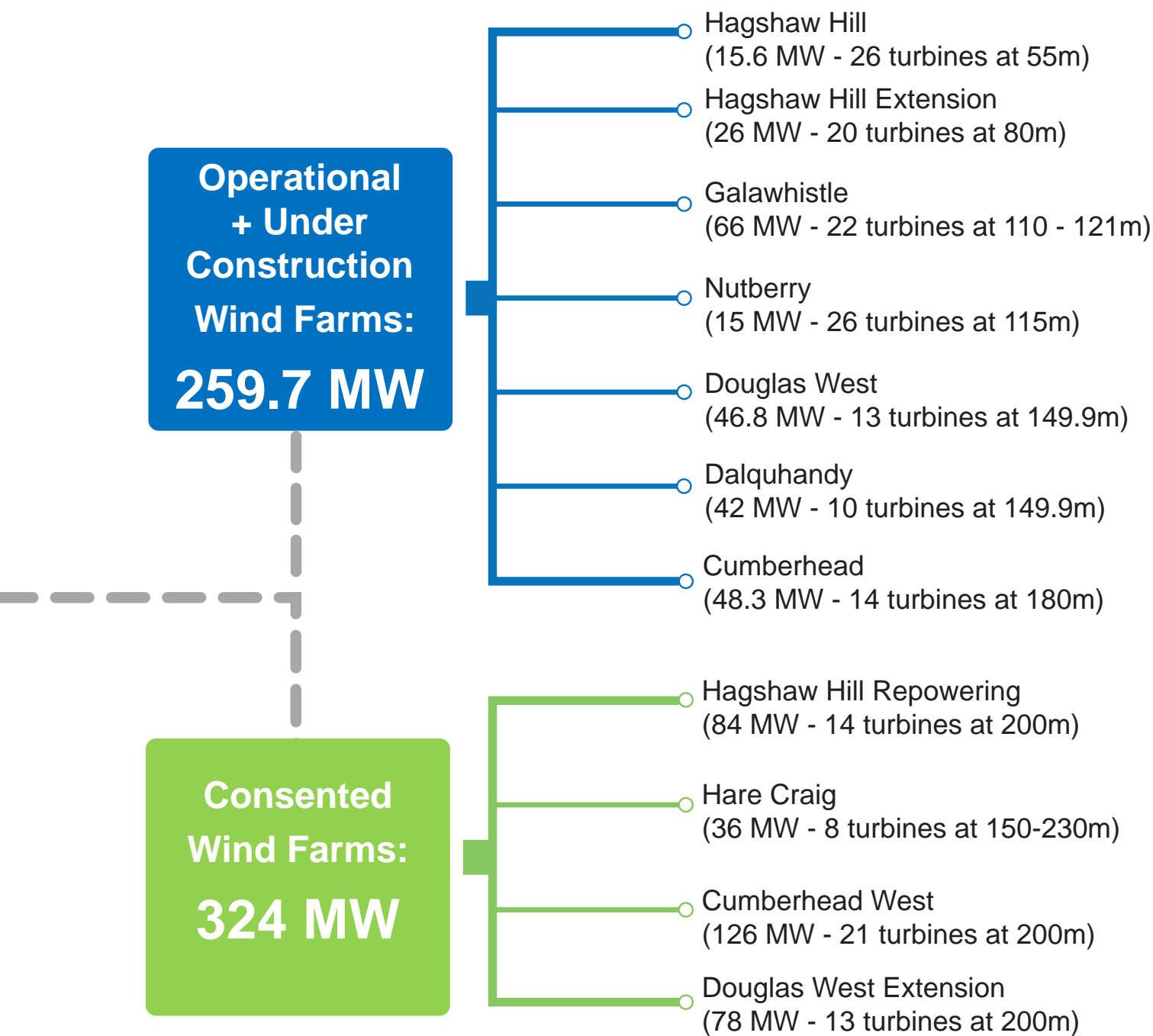


**Potential  
Green Hydrogen  
Production**





# What is the Hagshaw Energy Cluster?



## Existing Renewable Energy Development

Onshore wind energy development within the Hagshaw Energy Cluster has grown organically since Hagshaw Hill Wind Farm was first commissioned in 1995. There are now seven operational and under construction wind farms within the cluster. A further four projects have consent, including Hagshaw Hill Repowering, one of the first wind farm repowering proposals in Scotland.

The cluster includes developments at various stages in their life cycle; from consented, under construction, operational and soon to be repowered, making it the ideal location to pilot a new approach which could leave a long lasting legacy. Over the coming years it is expected that renewable energy generated from onshore wind in the cluster will reach almost 585 MW. However, over the life of the Development Framework it is envisaged that this may increase further as existing schemes are repowered and/or extended, and other renewable energy technologies are co-located.

## Achieving Net Zero

Scotland currently has almost 12 GW of installed renewable electricity generation, with onshore wind contributing to almost 60% of all installed capacity. The Scottish Government has committed to decarbonising all energy production by 2045. A large proportion of this will come from additional onshore wind development, with a commitment for deployment of between 8 GW and 12 GW by 2030.

The extension and repowering of existing onshore wind farms will play a critical role in this substantial increase in onshore wind energy capacity, powering our journey towards achieving Net Zero carbon emissions by 2045.

## Optimisation and Diversification

Beyond onshore wind energy generation, the cluster has the potential to make a greater contribution towards Scotland's renewable energy targets. Greater diversification of renewable energy generated within the cluster could be achieved through the deployment of other complementary renewable and low carbon energy generation and storage technologies, including solar photovoltaics (PV), hydropower and battery storage.

There is clear opportunity to utilise the green energy generated from wind energy development within the cluster to power green hydrogen electrolyzers, which would contribute to a resilient energy system. This emerging green technology could help meet Scottish Government ambitions to generate 5 GW of renewable and low-carbon green hydrogen by 2030.

## What could the future hold for renewable energy in the cluster?

 Extension, Life Extension and Repowering

 Solar PV

 Hydropower

 Green Hydrogen Production

 Battery Energy Storage Systems (BESS)

 Carbon Capture



# The Evolution of an Energy Landscape

## Industrial History and Heritage

The Hagshaw Energy Cluster is located within an area of Scotland with rich industrial heritage, which has played an important role in the provision of energy and resources throughout history.

The artefacts of many of the region’s past industries now form distinctive landmarks and contribute to the identity and character of the area. Up until the late 18th century this area of Ayrshire and Lanarkshire was predominantly agricultural and characterised by pastoral fields associated with burghs and landed estates, typically located within the valley floors and lower slopes of the valley sides.

The Industrial Revolution, coupled with the discovery of a number of coal and iron seams brought about significant change to the area. From the late 18th century onwards, a number of mine workings became fixtures in the landscape and led to an influx of workers. The need to transport raw materials to more industrialised and urban areas led to the building of railways in the local area.

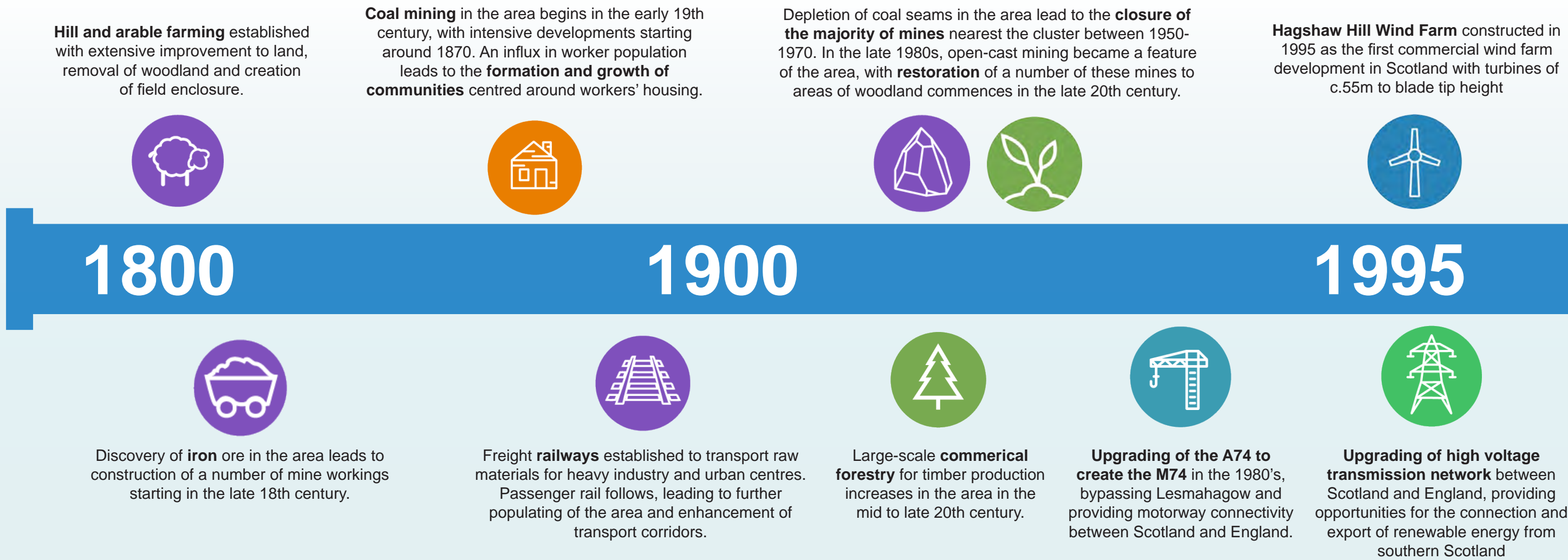
## Changing Priorities

Most deep mines closed between 1950 and 1970 with the final mine in the local area closing in 1972, however open cast mining has been a more recent feature of many landscapes surrounding the cluster.

In the late 20th century, changing priorities for a more sustainable future resulted in a new industry for the region. Sites for commercial wind energy developments began to be identified, proposed and built in upland landscapes, harnessing renewable energy from the wind and creating a new chapter for the industrial heritage and land use of the area.

In 1995 Hagshaw Hill Wind Farm was constructed and became the first commercial wind farm in Scotland, with 16 MW of installed capacity from 26 turbines. The wind turbines of Hagshaw Hill Wind Farm are now 25 years old, forming an established feature within the landscape, but are at the end of their operational life. The site will be repowered with 14 turbines of 200m delivering a generating capacity of 79MW along with 30 MW of on site energy storage.

## Timeline





## Evolution of Wind Turbine Technology

Since the original turbines of the Hagshaw Hill were deployed, turbine technology, planning and financial support mechanisms for onshore wind development have evolved significantly. The cluster hosts not only some of Scotland’s earliest wind turbines, but will soon host some of the largest, with recent consented developments consisting of turbines between 200m and 230m to turbine blade tip height.

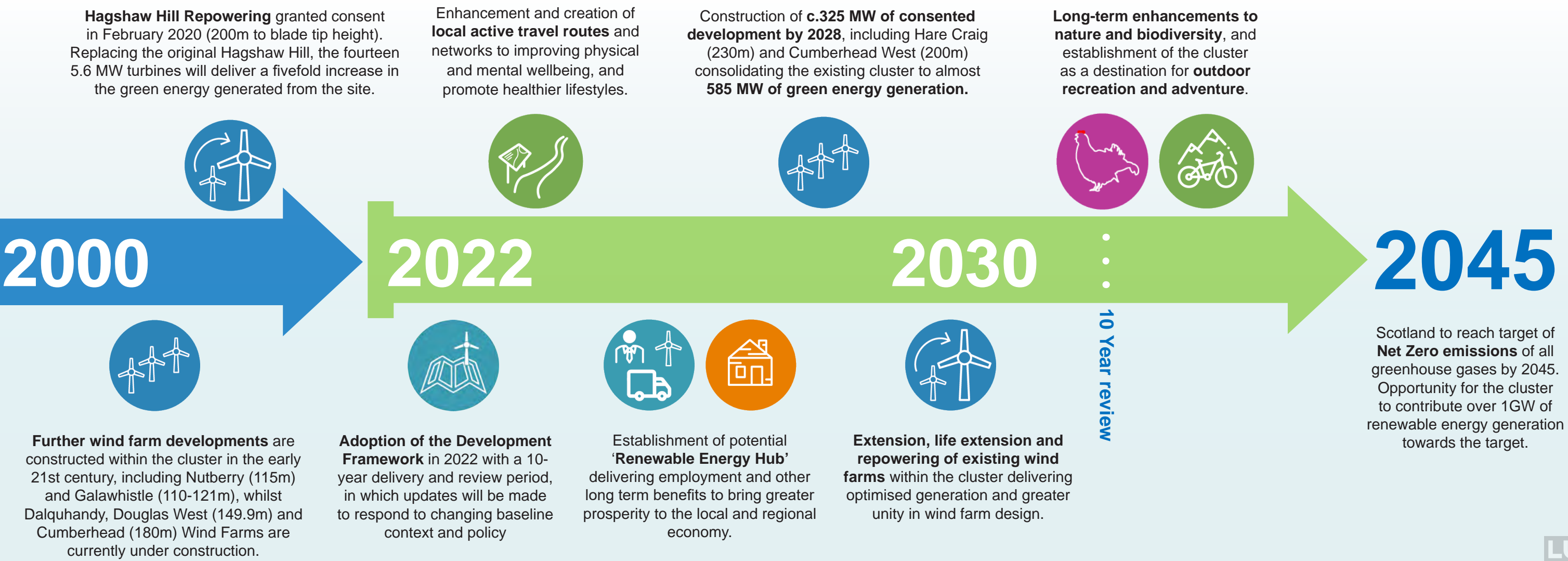
These advances in technology and co-located complementary technologies are delivering greater efficiencies and reduced intermittency to the harnessing of renewable green energy, and contributing towards rapid decarbonisation of electricity generation in Scotland.

The next decade will see the build out of the other consented wind farms in the cluster, and the potential repowering of other existing operational wind farms. The Development Framework seeks to help influence and maximise the renewable energy opportunity of the cluster, whilst seeking to create other opportunities for business, industry and local employment.

## A Pilot for the Future

The landscape surrounding the cluster continues to be influenced by a number of other forces for change, and climate change will likely influence the biggest changes yet. As Scotland continues its journey towards Net Zero emissions, via a Just Transition to a low carbon economy, it is important that a shared vision for the area acknowledges and manages these forces for change so that the distinctive character and identity of the area and its communities are retained, and wherever possible enhanced.

The Development Framework creates a vision for the future of the cluster, with the flexibility to evolve in order to address future challenges and priorities, and create a positive lasting legacy, which includes the presence of renewable energy development in the landscape in perpetuity.





# Renewable Energy: People | N

## “ The Vision

A place-based vision for the future development of the Hagshaw Energy Cluster, optimised renewable energy generation and contributes towards Scotland's Just Transition, whilst delivering sustainable and inclusive growth for local communities.

Integrated nature based solutions, with enhanced connectivity supporting healthy, resilient and ecosystems, in response to the challenges of the climate and biodiversity emergencies.



# Nature | Place

ter which delivers  
ransition to Net  
siliant communities  
ergency.

## Key Aims

The vision is underpinned by five key aims:

“

1. **Support the efficient delivery of the renewable energy potential of the cluster, taking account of all appropriate technologies and the optimisation, extension and repowering of existing wind farms**
2. **Maximise the social, economic and environment benefits of renewable energy development within the cluster**
3. **Support the Just Transition to a low carbon future through a place-based approach**
4. **Minimise adverse impacts of development on the environment and local communities**
5. **Deliver investment in nature to enhance climate change and biodiversity resilience**

”



# What are the Potential Benefits?

The Development Framework aims to maximise the range and scale of benefits from the Hagshaw Energy Cluster for people, nature and place, directed by local priorities and delivered through partnership working.

The potential benefits can be grouped as:

## Environmental Development

## Social Economic

Delivery of all committed and future renewable energy proposals within the cluster in a collaborative and coordinated way could act as the catalyst for a range of potential benefits which are transformative for local communities, the surrounding area and the wider central and southern Scotland region.

## When will the vision be delivered?

The Development Framework sets out a ten year vision for the cluster, however it is envisaged that some elements will be realised over a longer period of time. Throughout the framework short-term, medium-term or longer-term opportunities are identified, with delivery dependant on the progression of project feasibility, engagement of all relevant landowners and interested stakeholders and access to capital investment funds.

South Lanarkshire Council (SLC) appointed an Economic Development Officer for the Douglas Valley Initiative in summer 2022 to work with local communities to deliver projects which meet the aims of the Framework. The officer will help them to secure funding through the Renewable Energy Fund (REF) and other sources and provide a resource to help deliver projects. The role is part funded by Greencoat Energy, NatureScot and SLC.

## How will projects be funded?

The Development Framework doesn't identify specific sources of funding to support the delivery of the vision. It is anticipated that a partnership approach will be adopted to fund and deliver projects and proposals within the framework via the public, private and third sectors - along with the appropriate use of community benefit funds generated via development within the cluster.

## Environmental

- Space for nature and improved ecological resilience
- Support for landowners and land managers to make wildlife improvements
- Increased climate change mitigation via carbon capture and sequestration, on the journey to achieving Net Zero
- Improved air quality; improving human health and nature
- Reduced risk of flooding and improved water quality through nature based solutions
- Protection and enhancement of priority habitats & species across moorland, wetland, woodland, and farmland
- Investment in Natural Capital, delivering wider complementary benefits

## Development

- A clearer vision of what may represent appropriate and acceptable development
- Increased prospect and certainty of positive planning outcomes for stakeholders
- Increased opportunities for renewable energy generation and provision of green energy to communities
- Coordinated and innovative technical solutions
- Cost and time efficiencies to delivery of green energy developments on the route to achieving Net Zero
- Increased developer and investor confidence allowing the ability to plan for long-term investment





## The Benefits

### Social

- Improved access to high quality open spaces
- Improved physical and mental health, and wellbeing of communities and visitors
- Improved social and physical connectivity between communities around the cluster
- Land brought into community ownership, delivering local benefits
- Active travel opportunities such as walking and cycling
- Improved aesthetic value and reinforced sense of place
- Increased opportunities for play, education, and interaction with nature

### Economic

- Increased investment and annual spend into the local and regional economy from development within the cluster
- Increased and more coordinated community benefits, which can achieve better outcomes for communities
- Creation of new skilled industries, businesses and sustainable jobs in the green economy
- Increased economic activity and attractiveness for inward investment
- A local economic identity to serve the cluster and wider regional renewable energy development
- More productive and efficient use of land to deliver on strategic national targets, such as timber production



# Consultation and Engagement

## Online Exhibition & Survey

The initial public consultation and participation phase of the project ran for six weeks between October and December 2021. A virtual public exhibition room and online questionnaire formed the core aspect of the consultation process, hosting information about the project and the vision for the cluster.

Active participation of communities and interested parties was encouraged, providing an opportunity to shape the framework and reflect the ideas and aspirations of all.

An online questionnaire was hosted on the project webpage to obtain comments and feedback on the concept, vision and key aims and objectives of the Development Framework.

Over **325** individual visitors to online virtual public exhibition

Over **80%** respondents supportive of a more collaborative approach



**Working Group Meetings**  
January 2020 - March 2021



**Established the Development Framework Concept and Approach**  
March 2021



**Project Steering Group Established** March 2021



**Consultants Appointed**  
June 2021



**Stakeholder Project Briefing** August 2021



**Consultation & Participation Phase**  
October - December 2021

Spring **2020**

Winter **2020**

Spring **2021**

Summer **2021**

Autumn **2021**





An interactive virtual public exhibition was hosted online at: [www.thehagshawenergycluster.co.uk](http://www.thehagshawenergycluster.co.uk) © LUC

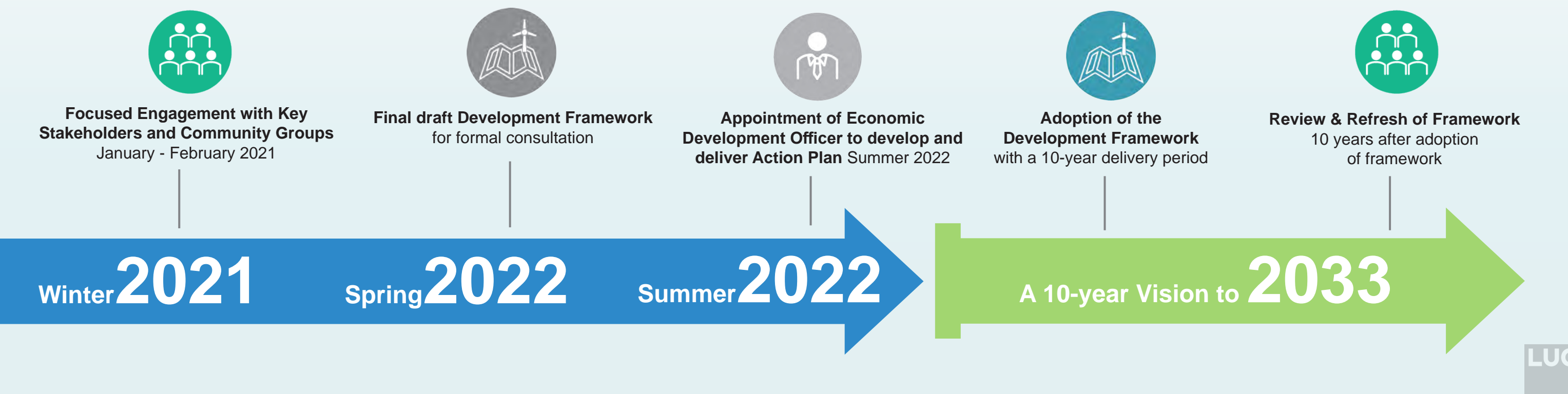
## Formal Consultation

Inclusivity and transparency were key in developing the framework, involving a wide range of interested parties and stakeholders with a direct connection to land within the cluster, and ensuring communities who may have an interest in the project area were given the opportunity to contribute ideas or concerns, and act as a sounding board for what is proposed.

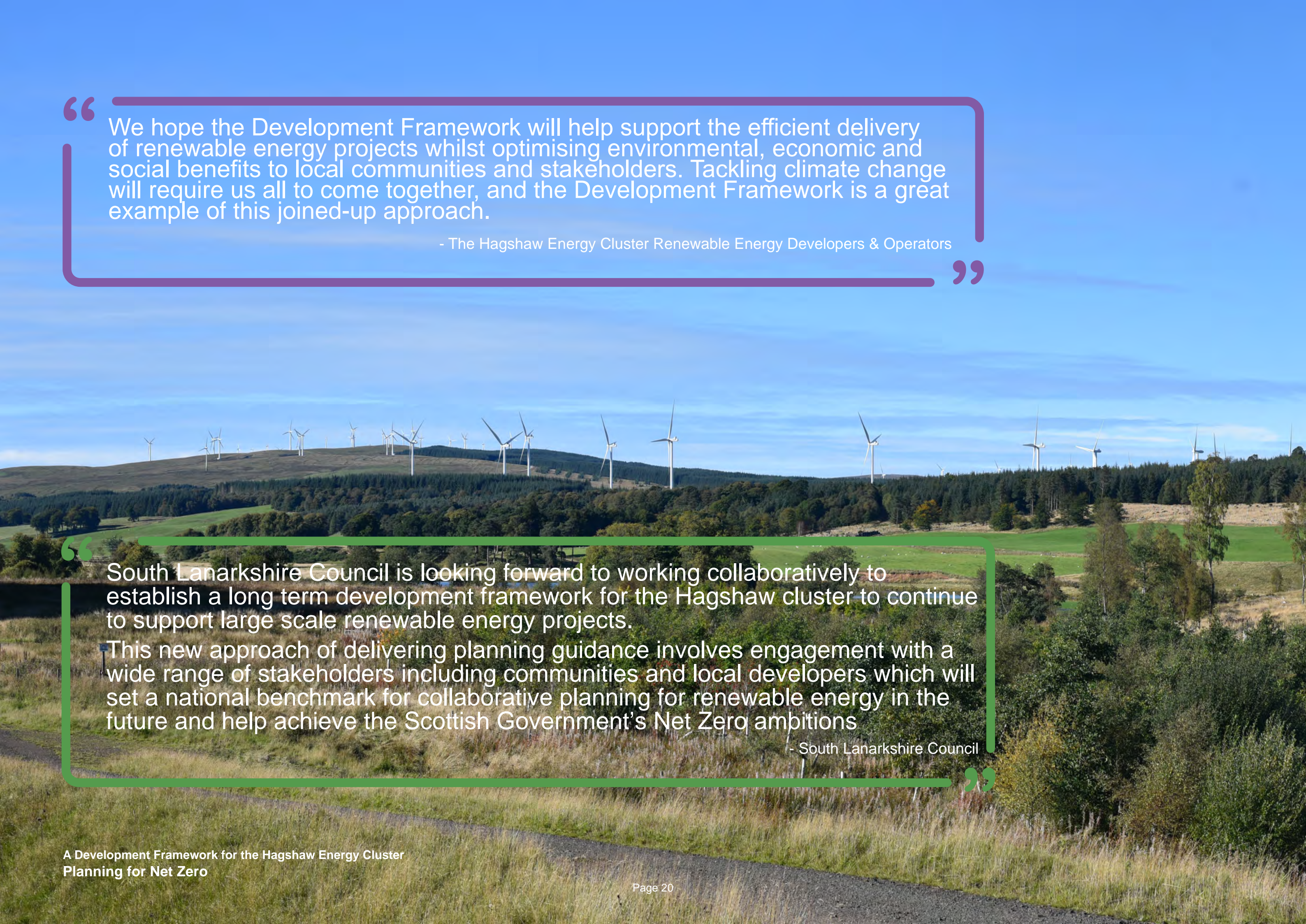
Follow up consultation with specific landowners, community groups and Community Councils was undertaken in early 2022.

Meetings were held with Coalburn Regeneration Group, and Muirkirk, Douglas and Lesmahagow Community Councils to understand the key priority issues for communities located close to the cluster, and explore how the framework could assist in addressing challenges and delivering opportunities. The Development Framework intends to assist in delivering these objectives, many of which are identified in local Community Action Plans developed by several communities which neighbour the cluster.

A Landowner Forum and Community Forum (Douglas Valley Advisory Group (DVAG)) have been set up to support the delivery of the vision and opportunities outlined within the Development Framework. Accompanying Action Plans are being developed, coordinated by the appointed Douglas Valley Initiative Economic Development Officer.







“ We hope the Development Framework will help support the efficient delivery of renewable energy projects whilst optimising environmental, economic and social benefits to local communities and stakeholders. Tackling climate change will require us all to come together, and the Development Framework is a great example of this joined-up approach.

- The Hagshaw Energy Cluster Renewable Energy Developers & Operators

“ South Lanarkshire Council is looking forward to working collaboratively to establish a long term development framework for the Hagshaw cluster to continue to support large scale renewable energy projects.

This new approach of delivering planning guidance involves engagement with a wide range of stakeholders including communities and local developers which will set a national benchmark for collaborative planning for renewable energy in the future and help achieve the Scottish Government's Net Zero ambitions

- South Lanarkshire Council





# Delivering the Vision - The Journey to Net Zero...

The Development Framework will be delivered via six interrelated themes:

-  **1. Realising the Renewable Energy Opportunity**
-  **2. Resilient and Connected Communities**
-  **3. Coordinated Enhancement of Nature**
-  **4. A Strong Identity, of Heritage, People and Place**
-  **5. Inclusive, Sustainable Growth**
-  **6. Outdoor Recreation to Support Health and Wellbeing**

## Key Objectives

Key objectives define what each delivery theme of the Development Framework is seeking to achieve.

## What does success look like?

Where relevant a series of metrics have been identified for each delivery theme, identifying how success will be measured in meeting the key objectives.





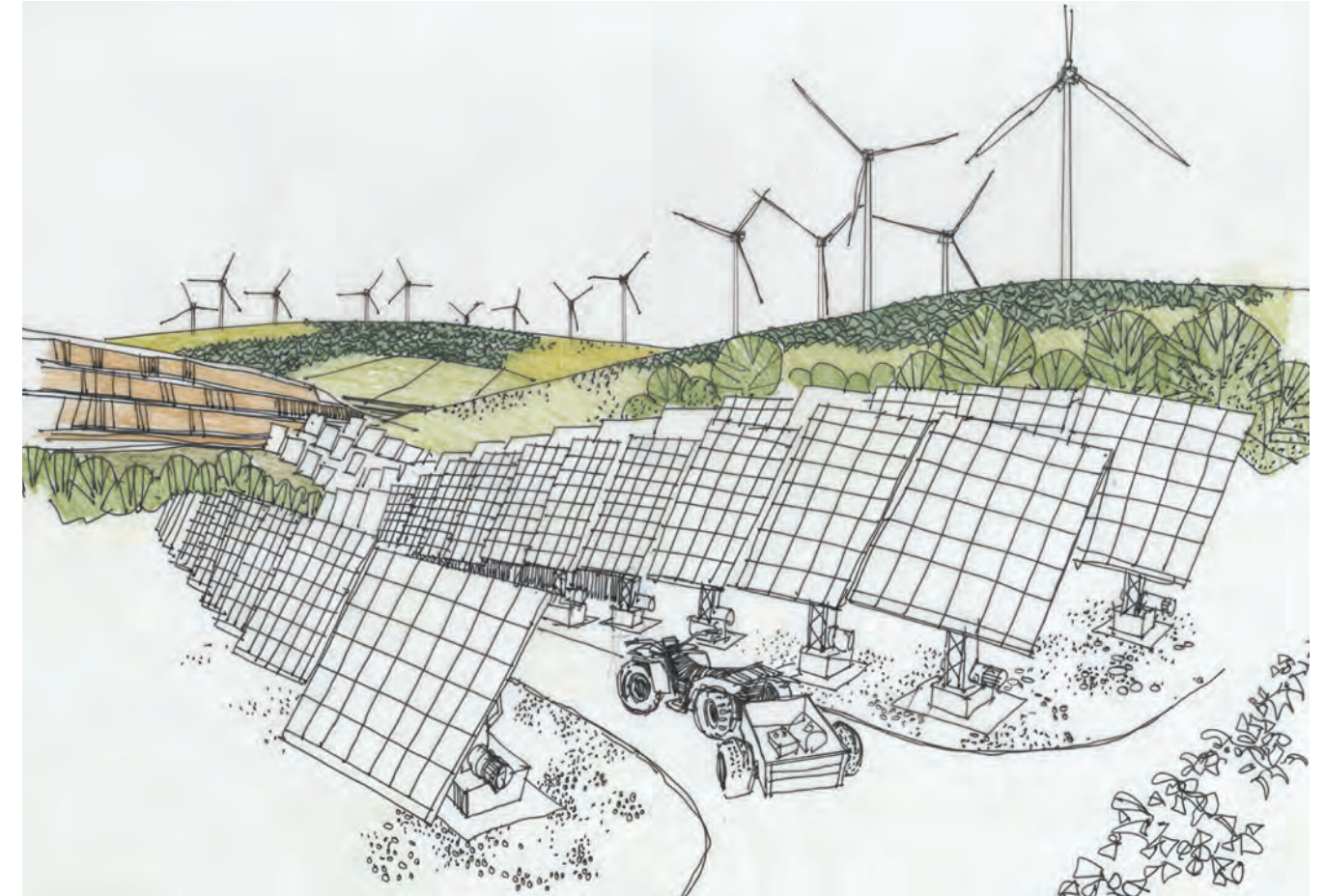
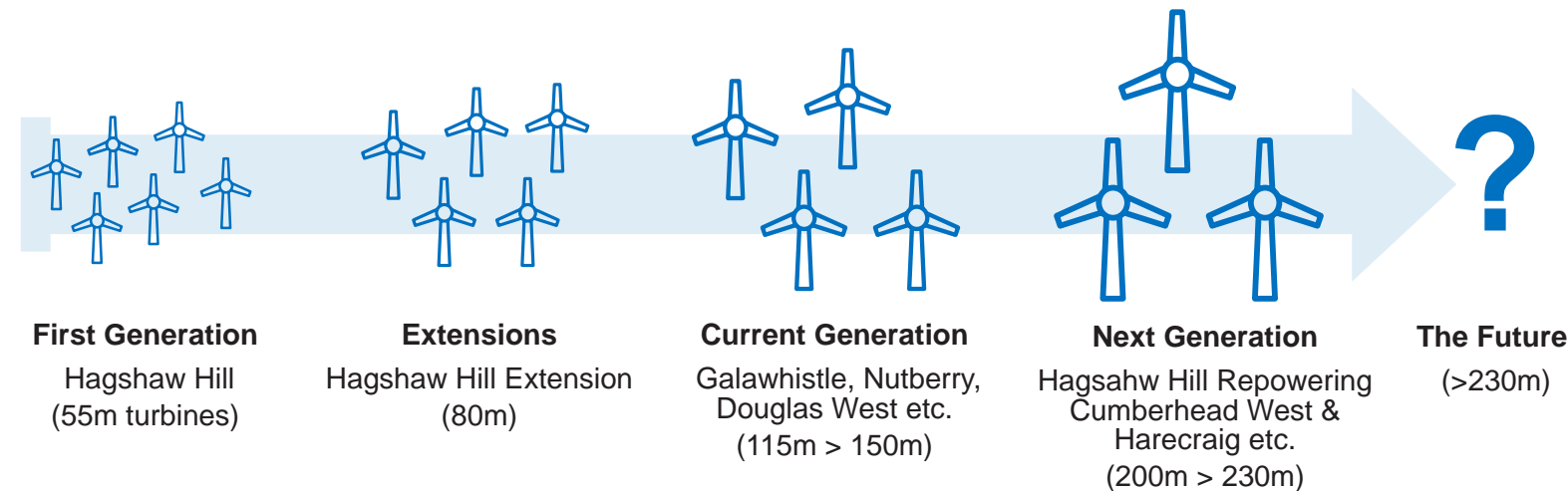
# 1. Realising the Renewable Energy Opportunity

*Maximising green energy generation, whilst minimising impacts*

With almost 585 MW of committed onshore wind capacity now operational, under construction or consented, the Hagshaw Energy Cluster will provide a substantial contribution to Scotland's Net Zero Ambitions. However, this may represent only a proportion of the real opportunity of the cluster.

Through a more coordinated approach to the design and implementation of extensions and repowering, coupled with the collocation of other complementary renewable energy technologies, this 'Regional Renewable Energy Hub' could utilise existing infrastructure to make a strategic contribution to national energy targets.

The repowering and extension of existing wind farm schemes to achieve Net Zero presents new challenges and opportunities. Optimisation of existing strategic clusters such as this, using the latest wind turbine technology and other renewable energy technologies could make a significant contribution, whilst continuing to minimise and mitigate adverse impacts on people, communities and the environment where possible.



Integration of other renewable energy technologies alongside wind energy development to maximise renewable energy generation and efficiency © Richard Carman

## Key Opportunities

### Cluster Wide Design Principles

Development of long-term design principles for future wind farm development within the cluster, with clear design objectives, to deliver optimised wind energy generation whilst avoiding unacceptable effects on the environment and communities. (see Technical Annex).

### New Green Energy Sources & Storage

Develop co-location of other renewable energy generation and storage technologies - including, but not limited to solar PV generation, battery storage systems and green hydrogen production, on appropriate sites across the cluster, and close to existing grid infrastructure.

### Technical Collaboration

Development of coordinated solutions to cluster wide technical challenges such as radar and aviation lighting, which minimise infrastructure costs and minimise impacts on operation, communities and the environment.

### Coordinated Access Strategy

Coordinated construction and operation access strategy for development within the cluster. Collaboration between renewable developers, operators and other businesses to reduce infrastructure costs, minimise disturbance to nature and reduce disturbance to communities from abnormal load and heavy goods vehicles.

### A Local Green Energy Network

Explore the development of a Community Renewable Energy Scheme with local electricity charging regime for communities, building on the work of Community Councils. Distribution of green energy via a local grid network generated from multiple renewables technologies across the cluster.





Co-location of solar PV (similar to the above) and energy storage technologies on appropriate sites across the cluster © LUC



Repowering with larger turbines may increase potential for long-term coexistence of productive timber forest beneath turbines © Airborne Lens



Collaboration between developers to share access routes for abnormal loads and coordinate construction activities © Airborne Lens



Work with ScottishPower Energy Networks to design an efficient grid network which is fit for the future © LUC

## Regional Renewable Energy Hub

The creation of a regional Renewable Energy Hub which supports the construction, servicing, maintenance, and eventual decommissioning (including recycling) and repowering of wind farms within the cluster and the wider region, and complements the development of Scotwind offshore wind energy hubs elsewhere.

## A Future Network Plan

Future proofing the transmission and distribution networks to support extension and repowering of wind farms, and diversified renewable energy generation from the cluster, to provide greater certainty to developers, grid operators, and neighbouring communities.



## Key Objectives

- a.) Optimise wind energy in cluster, through extension and repowering, and use of the most effective and efficient modern technology.
- b.) Avoid and mitigate unacceptable effects on the environment and surrounding communities through a strategic and coordinated approach to design.
- c.) Promote opportunities for co-location of other renewable energy technologies such as hydro, solar PV, energy storage and green hydrogen production.
- d.) Encourage developers and operators, to work together to identify innovative solutions to technical challenges, for example, grid, noise, aviation radar and lighting, abnormal load/construction access.
- e.) Promote opportunities for shared community ownership/location of renewable energy generation assets, and provision of green energy to communities via local green energy networks.
- f.) Encourage a strategic approach to the planning and delivery of increased grid transmission network capacity.





# 1. Realising the Renewable Energy Opportunity

*Maximising green energy generation, whilst minimising impacts*

## Designing Wind Energy of the Future

In order to achieve the optimum generation from wind energy and realise the renewable energy opportunity of the cluster, a more coordinated approach is needed. Through the collaboration of developers, landowners, communities, local authorities and statutory agencies, agreed principles for the future development and design of wind farms within the cluster could be achieved.

The cluster hosts some of the oldest commercial wind turbines in the country in the turbines of Hagshaw Hill Wind Farm at 55m to blade tip height, whilst the consented turbines of Hare Craig Wind Farm at 230m to blade tip height will be some of the largest turbines in Scotland once constructed.

The juxtaposition between small and large turbines will be unavoidable as modern consented developments are built out alongside existing wind turbines within the cluster. Through the potential extension and future repowering of the older wind farms within the cluster, utilising the very latest and future turbine technology, opportunities exist to rationalise the overall composition of turbines and deliver greater cohesion and consistency in design.

## Key Design Principles

Initial outline key design principles have been devised to provide a guide to help shape future wind energy development within the cluster. Further detail is presented in **Technical Annex - Wind Energy of the Future**.



Opportunities for promotion and educational interpretation of green energy technologies to communities and visitors © Richard Carman

## What does success look like?

### More Predictable Determinations

A streamlined and efficient planning process, with more predictable outcomes to determination for renewable energy proposals and their associated grid transmission and distribution connections, which align with the coordinated vision for the cluster.

### Cohesive Wind Farm Design

A more cohesive and consistent image of wind energy development within the cluster for surrounding communities and visitors to the area, as committed development is built out and future extensions and repowering consolidate development in the cluster.

### Optimised Renewable Energy

An increase in renewable energy generated from the cluster, from a range of different renewable energy technologies. Greater efficiency and reduced intermittency of renewable energy generated from a mix of innovative renewable technologies.

### Local Communities Invested in Energy

Community ownership of existing or additional renewable energy assets within the cluster, generating green energy which is distributed and used locally, via a green grid network.

### Hagshaw Renewable Energy Hub

Established regional flagship 'Renewable Energy Hub' driving efficiencies and innovation within the onshore wind sector, and providing sustainable jobs supporting construction and maintenance of renewable generation within the cluster and beyond.



Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered. Specific projects/proposals will be subject to landowner approval, further detailed survey and development, and all other necessary consents

Key

Key Settlements & Communities

Wind Farms outside of the Hagshaw Energy Cluster

Operational or Under Construction Wind Farms within the Hagshaw Energy Cluster

Consented Wind Farms within the Hagshaw Energy Cluster

Overhead Transmission Lines

Underground Transmission Line

Potential Shared Abnormal Access Route

Coalburn Substation

Proposed Coalburn Energy Storage

Potential Renewable Energy Hub

Key Design and Assessment Viewpoints

Potential Renewable Energy Opportunities

Wind Energy

Solar PV

Hydropower

Carbon Capture

Energy Storage

Green Hydrogen Production

Green Energy from Cluster to Main Grid Network

Green Energy from Cluster to Local Grid Network

Potential Supply Chain & Employment Opportunities

Development and Construction

Servicing and Maintenance

Manufacturing

The map illustrates the Hagshaw Energy Cluster and its surrounding areas. Key settlements are highlighted with orange circles: Muirkirk (A), Glenbuck (C), Glespin (D), Coalburn (G), Douglas (E), Rigside, and Lesmahagow. Wind farms are categorized by color: green for consented, light blue for operational/under construction, and grey for outside the cluster. Transmission lines are shown as pink (overhead) and blue (underground). A central hub features icons for Wind Energy, Solar PV, Hydropower, Carbon Capture (CO<sub>2</sub>), Energy Storage, and Green Hydrogen Production (H<sub>2</sub>). Dashed blue lines indicate potential energy flow paths from the cluster to the main grid and local grid. Key design and assessment viewpoints are marked with red triangles (A-J). A central hub also features icons for Development and Construction, Servicing and Maintenance, and Manufacturing. A scale bar at the bottom left indicates 0 to 2 km. The map is labeled 'Page 25' and 'LUC'.

Page 25

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## 2. Resilient & Connected Communities

*Enhancing and creating sustainable communities for the future*

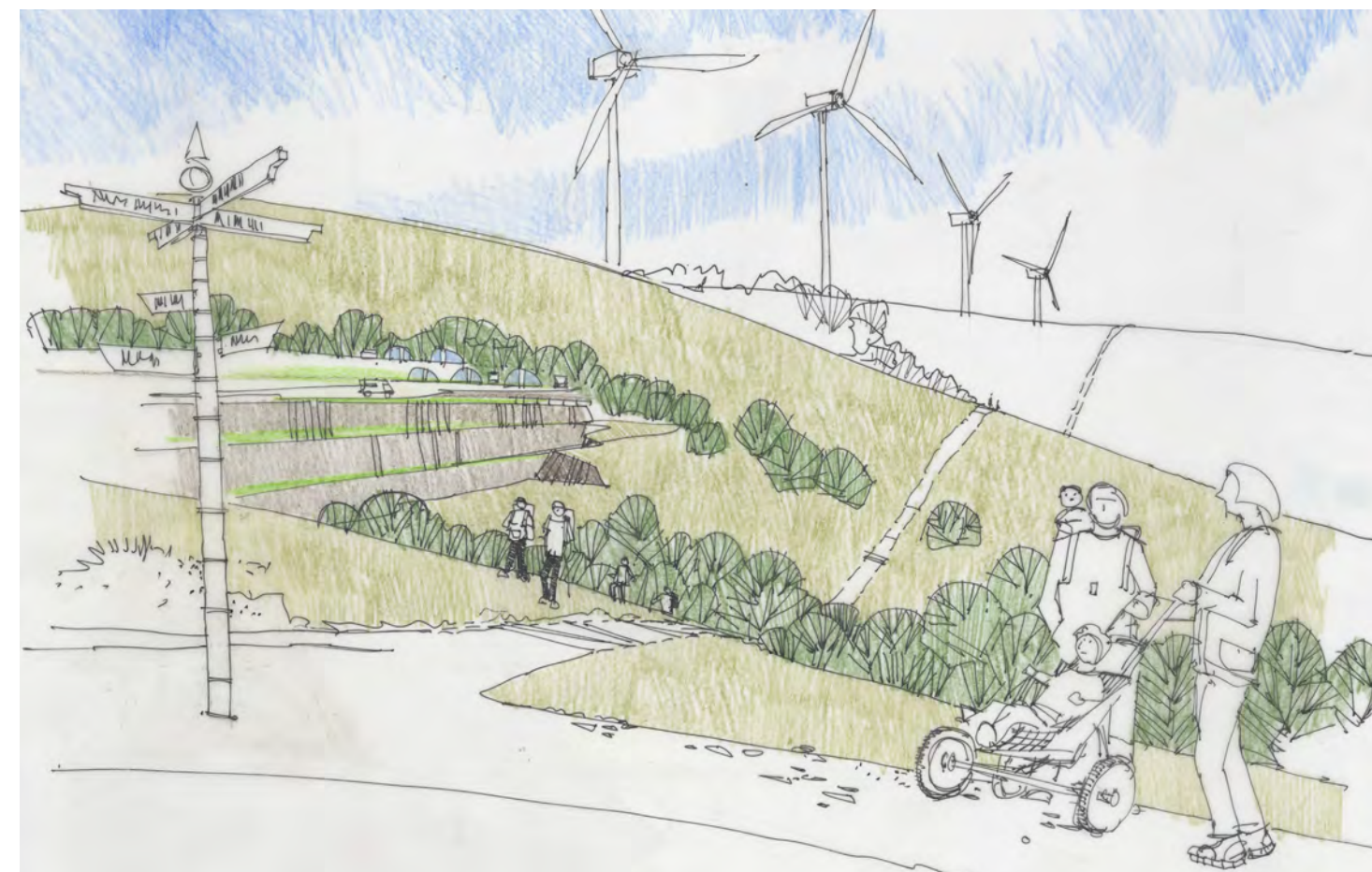
Supporting thriving, resilient, and diverse communities, which are inclusive, empowered, and safe places for people is central to delivering Scotland's National Outcomes. Taking a place-based approach which puts communities at the centre of decision making allows them to create and shape their own future, and NPF4 is expected to focus on 'A Plan for Resilient Communities' as one of its four key outcomes.

Resilience to climate change will be tested across many aspects of our lives in the coming years. The places in which we live, work and play, need to be adaptable and multifunctional, and be managed in a sustainable way which considers both current and future generations.

As advocated by Architecture and Design Scotland (AD&S), the Development Framework promotes a whole place approach to the challenge of planning for Net Zero, and supports a Just Transition to a low-carbon future in response to a changing climate. Informed by the Place Principle and the 8 Principles of Carbon Conscious Places, a coordinated vision for investment across the cluster can deliver greater resilience to local communities and deliver many of the objectives of existing Community Action Plans.

A focus on Community Wealth Building (CWB) could also deliver more and better jobs, community-owned assets and shorter supply chains creating greater resilience and supporting Net Zero ambitions.

The cluster offers extensive opportunities for safe active travel links to be enhanced, extended and created, linking local communities with access to goods and services – in line with the Scottish Government vision for 20-minute neighbourhoods. Opportunities to create and strengthen cross boundary links between communities in East Ayrshire and South Lanarkshire have been identified - linking Muirkirk and Glenbuck, with Glespin and Douglas via feasible off-road walking and cycling links.



Improved connectivity between communities, through the enhancement of existing and creation of new active travel and public transport links © Richard Carman

### Key Opportunities

#### Connected Communities

Improving connectivity between the communities across local authority boundaries which surround the cluster – supporting the concept of 'small distance places' (e.g. the 20 minute place concept) accessible via new or enhanced active travel walking and cycling links.

#### Community Placemaking

Involve communities in the planning and design of enhancements to existing public realm, townscapes and greenspaces. Focused on the creation of new, public spaces in key settlements around the cluster - with a focus on revitalising communities.

#### Low Carbon Living Initiatives

Promote and support shared local services and a circular system approach to community projects. Adoption of a local coordinated approach to energy and heat (e.g. Local Heat and Energy Efficiency Strategies (LHEES)), water, food production, greenspace, habitat, transport, waste, travel and housing, to support the transition to low carbon living.

#### Local Place Plans

Collaborate with communities to coordinate the development and delivery of Local Place Plans. Informed by Community Action Plans developed by organisations working with several communities around the cluster, these will identify shared benefits from development within the cluster.

#### Community Transport Initiatives

Explore opportunities for improved public and shared transport links between communities around the cluster and the wider region across local authority boundaries, providing easier access to public services and amenities (e.g. green energy fuelled public transport and car share initiatives).





## Key Objectives

- a.) Developments should help to create 'small distance places' – providing the infrastructure, links and assets that people need close to where they live.
- b.) Promote opportunities for active travel, play, education and interaction with nature, such as community growing.
- c.) Improve social cohesion through delivery of opportunities for greater social interaction and collaboration amongst communities around the cluster.
- d.) Promote the sharing of assets and services to enable lower carbon living and connect people to their neighbourhoods.
- e.) Promote multifunctional land use, with an emphasis on community, local and regional scale benefits, and function.



Improved connectivity between communities, through the enhancement of existing and creation of new active travel and public transport links © Richard Carman

### Spatial Planning for Future Resilience

Identification of appropriate sites for specific development opportunities on land around the cluster, and which is resilient to the challenges of a changing climate (e.g. avoidance of areas at risk of future flooding).

### Community Land Ownership

Support the development of local Community Right to Buy proposals to bring parcels of land around the cluster into community ownership and management, for delivery of community focused land use initiatives (e.g. energy, recreation, nature and biodiversity and community growing etc).



Creating opportunities for recreation and interpretation, with an ethos of access for all abilities, whilst engaging people in nature, biodiversity and the threat of climate change © NatureScot



Promoting sustainable and reliable methods of public and private transport to connect rural and semi-rural local communities with the wider region, in line with the draft Regional Transport Strategy for the west of Scotland. © Jaggery (cc-by-sa/2.0)





## 2. Resilient & Connected Communities

*Enhancing and creating sustainable communities for the future*

### Key community links

Through consultation with communities and other stakeholders a number of key community links have been identified:

- **Muirkirk and Glenbuck, to Glespin and Douglas via the River Ayr Way** - a local link providing connectivity between the isolated conservation village of Glenbuck with neighbouring communities in East Ayrshire and South Lanarkshire
- **Coalburn to Lesmahagow** - alternative pedestrian and cyclist link taking people off busy back roads to enable safe travel between nearby communities.
- **Douglas to Coalburn** - enhancement of existing Core Paths and cycle paths to provide important links between shared essential local services of neighbouring communities.
- **Muirkirk to Coalburn railway line link** - the former Caledonian Railway line reimagined as an off-road link which passes through the cluster, with opportunities for interpretation of heritage and nature along the way.
- **Douglas to Happendon and the National Cycle Network (NCN) Route 74** - a ready developed solution to a long-term opportunity, providing a safe link to the settlement of Douglas via an off-road route from the NCN near Happendon.
- **Regional strategic link between the River Ayr Way and Clyde Walkway** - linking two of Scotland's Great Trails, via some of the above links opening up regional opportunities to some of Scotland's extensive long distance routes.



Utilising and enhancing existing and historic infrastructure to create safe and accessible links between communities, helping people connect and feel connected with their neighbours © Richard Carman

### What does success look like?

#### Enhanced Connectivity

Greater social and physical connectivity between communities around the cluster, including those located across the boundary between East Ayrshire and South Lanarkshire

#### Increased Pride in Local Place

An improved sense of identity and pride in local communities and their public and shared urban and green spaces.

#### 20 Minute Neighbourhoods

Provision of local services shared amongst communities which surround the cluster in line with the Scottish Government vision for '20-minute neighbourhoods'.

#### Zero Carbon Communities

Communities which have embraced and delivered on the journey towards low carbon living and the path to Net Zero. Reduced energy consumption, shared and better re-use of materials and resources, energy efficiencies and climate consciousness - inspired by the Local Heat and Energy Efficiency Strategy (LHEES) Programme piloted elsewhere in Scotland.

#### Land that Works for All

Land brought into community ownership is delivering environmental, social and/or economic benefits for communities, including greater resilience to the challenges posed by a changing climate.



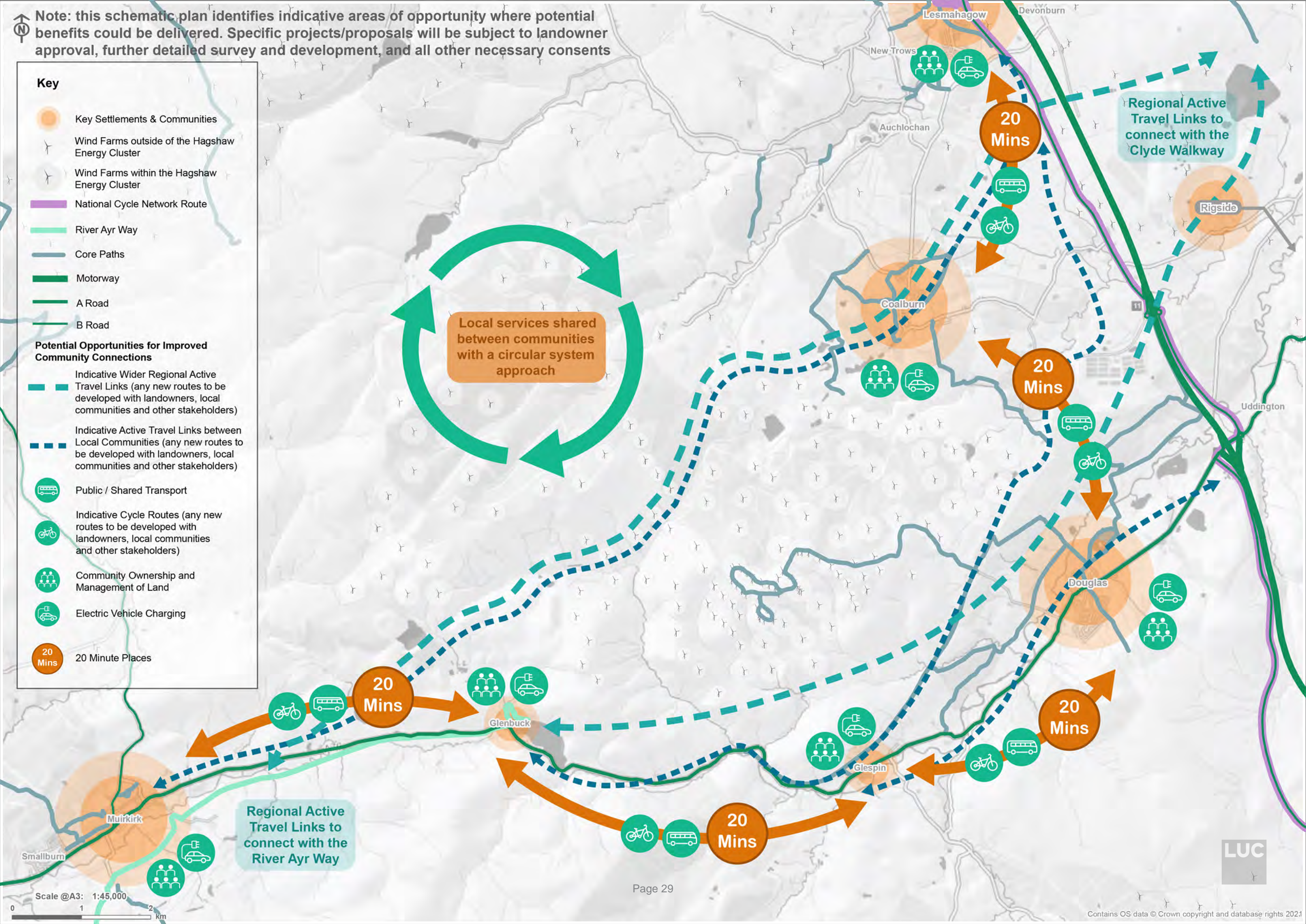
Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered. Specific projects/proposals will be subject to landowner approval, further detailed survey and development, and all other necessary consents

**Key**

- Key Settlements & Communities
- Wind Farms outside of the Hagshaw Energy Cluster
- Wind Farms within the Hagshaw Energy Cluster
- National Cycle Network Route
- River Ayr Way
- Core Paths
- Motorway
- A Road
- B Road

**Potential Opportunities for Improved Community Connections**

- Indicative Wider Regional Active Travel Links (any new routes to be developed with landowners, local communities and other stakeholders)
- Indicative Active Travel Links between Local Communities (any new routes to be developed with landowners, local communities and other stakeholders)
- Public / Shared Transport
- Indicative Cycle Routes (any new routes to be developed with landowners, local communities and other stakeholders)
- Community Ownership and Management of Land
- Electric Vehicle Charging
- 20 Mins 20 Minute Places







## 3. Coordinated Enhancement of Nature

*Making space for nature, delivering increased resilience*

Potential impacts on wildlife and natural heritage from wind farms in the cluster have been considered through the planning process. Developers and operators carry out species and habitat surveys to inform Environmental Impact Assessment (EIA) of proposals, and monitor birds, habitats, and other species during the construction and operation of developments. In many cases, developers and operators have also put in place Habitat Management Plans (HMPs) to avoid or reduce impacts, whilst restoring and enhancing habitats.

Working together, the cluster offers opportunities to deliver landscape-scale restoration, enhancement and creation of wildlife habitats and help connect these to other important areas for nature in the surrounding area, in line with the principles of the Glasgow and Clyde Valley (GCV) Green Network Partnership Blueprint for Strategic Habitat Networks - *facilitating the movement of wildlife through the landscape*.

In particular, as the local impacts of climate change become more evident, the value of peatland habitats as a carbon store is now fully recognised and improving their condition to increase carbon capture, expand wildlife habitats and deliver Biodiversity Net Gain (BNG) is a key priority. Opportunities exist within and around the cluster, including within the Muirkirk and North Lowther Uplands Special Protection Area (SPA), to influence land management decisions and deliver large scale peatland restoration, which as well as helping mitigate climate change, offer the potential to improve habitat for important birds such as black grouse, whilst development proposals which may adversely affect designated sites would still require a project-specific Habitats Regulations Appraisal (HRA) to be undertaken at the application stage.

Taking a co-ordinated approach to forest management as areas of plantation are felled and replanted also offers opportunities to improve the design of woodlands, leaving more space for wildlife, increasing the extent of native woodland, and expanding forest corridors. This could include opportunities to support and complement the objectives of the Clyde Climate Forest Initiative and those of neighbouring landowners, such as Forestry Land Scotland (FLS). The introduction of larger modern turbines may allow for alternative approaches to management of productive forestry - such as key hole felling with long-term cycles of felling and restocking beneath operational turbines.

Through investment in the enhancement of existing habitats and ecosystems, we believe these natural capital assets can provide social, environmental and economic benefits, and contribute to the wellbeing of those who live and work in neighbouring communities.

### Key Opportunities

#### Peatland Restoration

Develop a peatland restoration strategy for land within the cluster to maximise peatland habitat restoration and carbon capture opportunities, combining existing survey information on peatland extent, depth, and condition, with coordinated additional surveys.

#### Coordinated Habitat Management Plan

The preparation of a collaborative habitat management plan between landowners and managers to guide the coordinated management of land use across the cluster. Balancing existing and future land uses, including woodland and forestry expansion, habitat enhancement and peatland restoration, agriculture, and access.

#### Priority Species Conservation Plans

Develop conservation plans for black grouse and other moorland birds, including curlew, golden plover, and hen harrier, working with landowners and managers, to protect existing key areas for these species and identify other suitable areas for appropriate conservation management.

#### A Local Nature Knowledge Network

Working in tandem with local groups such as the South Strathclyde Raptor Study Group and the East Ayrshire Coalfield Environment Initiative, promote the collection of wildlife information, supporting education, training and development of wildlife monitoring skills.

#### Improved Access to Nature

Improve access and interpretation in areas of existing and enhanced greenspace, to make it easier for people to view and learn about wildlife, as part of promoting recreation and tourism, whilst ensuring wildlife is also protected from disturbance.



Creation, enhancement and restoration of habitats to support key priority species in the cluster and promote connectivity with other similar habitats © Richard Carman





Habitat enhancement to benefit key priority species, such as Hen Harrier within the Muirkirk and North Lowther Uplands SPA © NatureScot



Opportunities for peatland restoration, locking up carbon and contributing towards Net Zero © NatureScot



A collaborative approach to surveys and monitoring, bringing cost and programme efficiencies, and availability of shared data © LUC



Black Grouse habitat enhancement is a key focus across the cluster. By working together we can deliver a more coordinated response © NatureScot

## Agri-Environment Network

Creation of an agri-environment network amongst landowners, managers, farmers, and foresters to highlight opportunities for funding habitat restoration and enhancement works to maximise agriculture, forestry, biodiversity and climate change benefits from land across the cluster.

## Nature Education

Develop opportunities for educational visits and study programmes by children and young adults from educational settings in communities around the cluster and the wider region (e.g. schools and colleges), as well as adults via nature focused organisations and renewable energy developers and operators.

## Shared Survey & Monitoring Data Bank

Development of a centralised and coordinated depository for habitat, peat and protected species EIA survey and monitoring data. Being developed by RPS, it will be accessible to developers, operators, statutory agencies and local authorities to support the efficient future delivery of renewable energy development within the cluster



## Key Objectives

- a.) Protect the integrity of internationally and nationally designated areas, and important habitats and species during development of renewable energy and other projects in the cluster.
- b.) Promote a landscape scale approach to the enhancement and restoration of habitats across the cluster.
- c.) Support improved and coordinated management of habitats so important habitats and species benefit.
- d.) Promote new revenue streams for land managers from wildlife conservation, peatland restoration and native woodland expansion.
- e.) Support a coordinated approach to enhancing ecosystem services, including addressing flood risk and improving water quality.





## 3. Coordinated Enhancement of Nature

*Making space for nature, delivering increased resilience*

### Cluster Wide Habitat Management Plan

The sharing of existing habitat management and monitoring data between developers and operators, landowners and land managers, agencies and other stakeholders, will inform the development of a Cluster Wide Habitat Management Plan.

The schematic plan opposite identifies the broad areas of opportunity for the restoration and enhancement of peatland, and the enhancement and creation of habitats for key priority species found across the cluster. This has been devised using existing survey information and data, and will be supplemented by future survey and monitoring work with more detail to be developed in the Action Plans.

Through a more coordinated and focused approach the cluster could offer extensive opportunities for enhanced ecosystem services e.g. climate change and flood mitigation, and benefit the following key priority species:

- Black Grouse
- Hen Harrier
- Merlin
- Peregrine
- Short-eared Owl
- Golden Plover
- Curlew

### What does success look like?

#### Restored Peatland Habitats

Information will be available on the extent and condition of all important peatland areas in the cluster and will have been used by local land managers and local contractors to deliver peatland restoration.

#### Coordinated Land Management

A coordinated habitat management plan will be in place for the cluster, supporting the management and expansion of sensitively designed productive conifer plantation, and native mixed woodland, building habitat corridors, enhancing the landscape, and contributing to increased carbon capture/sequestration.

#### Shared Survey Efforts

Wildlife surveys needed for planning applications in the cluster will be more focused and coordinated through access to a shared databank of existing records, and the need for post-construction species and habitat monitoring, focused on the priority species list above.

#### Habitat Management & Enhancement

Habitat Management Plans will have contributed to the delivery of the peatland restoration strategy and land management plan, and populations of golden plover, curlew, black grouse, hen harrier and other wading birds will have stabilised and showed signs of sustained recovery.

#### Engagement in Nature

An increased number of local people will be involved in wildlife monitoring and survey, collecting information that can help guide habitat management, restoration and be used to help avoid disturbance to wildlife.



Opportunities for peatland restoration and the delivery of other nature based solutions in response to the challenges of a changing climate and the biodiversity crisis © Richard Carman



Promotion and support for agri-environment schemes and exploration of new models such as agro-forestry to diversify income streams and maximise carbon benefits © Richard Carman



Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered. Specific projects/proposals will be subject to landowner approval, further detailed survey and development, and all other necessary consents

**Key**

- Key Settlements & Communities
- Wind Farms outside of the Hagshaw Energy Cluster
- Wind Farms within the Hagshaw Energy Cluster
- Site of Specific Scientific Interest and Special Protection Area
- Site of Specific Scientific Interest and Special Area of Conservation
- Coniferous Forest
- Broadleaved Woodland
- Mixed Woodland
- Ancient Woodland
- Category 1 Peatland
- Forestry and Land Scotland Sites
- Water Courses / Water Bodies

**Potential Nature Enhancement Opportunities (subject to landowner agreements)**

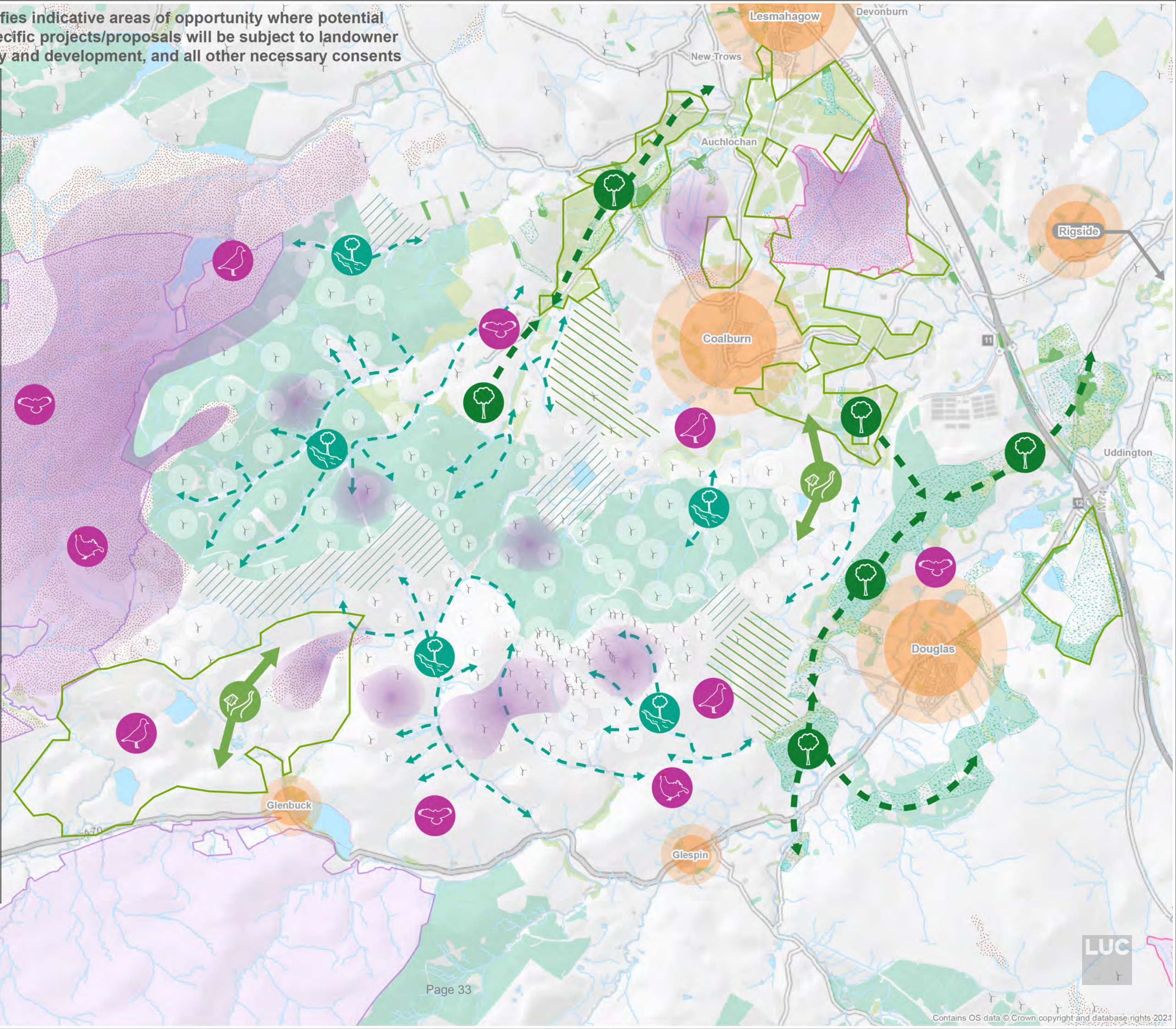
- Opportunities for Peatland Restoration
- Opportunities for Riparian Woodland Corridors
- Ancient Woodland Network Enhancement
- Black Grouse Habitat Enhancement
- Raptor Habitat Enhancement
- Wading Bird Habitat Enhancement
- Access and Interpretation
- Potential Native Woodland Expansion
- Potential Coniferous Forest Expansion

Muirkirk

Smallburn

Scale @A3: 1:45,000

0 1 2 km







## 4. A Strong Identity of Heritage, People and Place

*Respect and interpret the natural and cultural heritage of the area*

The cluster and the surrounding communities of East Ayrshire and South Lanarkshire are rich in their cultural and industrial heritage. The development of many of these communities was shaped by their support for the coal mining and associated industries, and they were once bustling industrial hubs supplying coal to Scotland's industrial heartlands and the ship building industry on the Clyde.

Communities are rightly proud of the history which has shaped their identity and preserving some of the remaining physical and cultural elements of this will be important as communities transition towards a low carbon future. The natural heritage of the area has also shaped its strong identity, from the rolling hills of open moorland and coniferous woodland to the river valleys of the River Ayr and Douglas Water, there is a rich and diverse history of land use across the area which continues to evolve.

A lack of employment options post-closure of traditional industries has adversely affected coalfield communities for many years, and has often seen economic, educational and health challenges intensify in some areas. Opportunities exist to enhance awareness and pride in communities around the positive role renewable energy plays within the surrounding communities, and the contribution made locally towards achieving Net Zero.

The economic benefits arising from renewable energy development within the cluster could make substantial improvements to the lives and opportunities of people in local communities. Ensuring that these benefits are delivered fairly and inclusively, whilst respecting the existing cultural heritage and historical identity of communities is a significant challenge, but one which the Development Framework will seek to achieve through collaboration and the involvement of all relevant communities.



Enhancement of existing and creation of new public spaces within settlements around the cluster, which respect the historic character and sense of place © Richard Carman

### Key Opportunities

#### Industrial Heritage Trails

Restoration and enhancement of industrial heritage assets within and surrounding the cluster, with potential heritage trails linking key cultural and historic assets which have influenced the existing distinctive identity of the area.

#### Reinvented Mineral Workings

Identify opportunities to address the legacy issues of open cast coal mining in a positive way, such as restoration of former open cast coal mining sites to create new greenspaces and points of interest to attract visitors and deliver environmental, social and/or economic benefits for local communities.

#### Enhancing Conservation Areas

Enhancement of the current condition and understanding of historic conservation areas within settlements and communities surrounding the cluster, and involve communities in the sympathetic planning and design of public realm and greenspaces within these areas.

#### Enhancing Local Landscape Character

Enhancement of the distinctive local landscape character of the area, including the key characteristics of unique natural and man-made local landscapes and features, including renewable energy as an established feature within the landscape, and the qualities of the Douglas Valley Special Landscape Area (SLA).



Glenbuck Viaduct, the remnants of a long lost village with strong socialist heritage of the area © Richard Webb (cc-by)





## Key Objectives

- a.) Improve aesthetic value and reinforce the existing sense of place of the area.
- b.) Respect and interpret local and regional heritage and history of area and its communities.
- c.) Enhance awareness and connectivity of cultural assets in the area, and their relationship to assets beyond the cluster.
- d.) Instil a sense of pride in place for communities and visitors alike, offering a unique and identifiable local and regional destination.
- e.) Ensure place quality and the low carbon agenda is prioritised in all decisions and investments.
- f.) Interested parties, developers and operators, and communities to work together through a place-based approach to develop opportunities.



Opportunities to reflect on and celebrate the past landuse, industry and employment of coal mining which has shaped the communities and landscape around the cluster, such as the including the Spireslack geological features - a Scottish Carboniferous Research Park © Richard Carman



representing the  
y-sa/2.0)



The unique exposed geology and scarred landscape of the former Scottish Coal site at Spireslack. Glenbuck.© Alan Pitkethley (cc-by-sa/2.0)



The remains of Douglas Castle originating from the 13th century, is a site with a rich history and vantage over the cluster © Billy McCrorie (cc-by-sa/2.0)





## 4. A Strong Identity of Heritage, People and Place

*Respect and interpret the natural and cultural heritage of the area*



Maintaining the integrity and character of the Douglas Valley Special Landscape Area (SLA) has been a key priority for the development of wind farms within the cluster. Opportunities to enhance and enrich the cultural and industrial heritage of the area will be explored as the area transitions to renewables, and land use evolves © Richard Carman

### What does success look like?

#### Local Place Identity

Greater involvement of communities in the planning and design of their local 'place', including public realm and green spaces within key settlements. Strengthening of distinctive local landscape character.

#### Maintained Local Heritage

Reflection and interpretation of local heritage and history in the planning and design of new development and green infrastructure within the cluster.

#### Enhanced Interpretation

An enhanced understanding and knowledge of what has shaped the distinctive identity of the area and its communities through locally and regionally promoted heritage interpretation. (e.g. potential heritage trails).

#### Sympathetic Urban Enhancement

Improved high quality public realm and open spaces within local communities, and repurposing of locally distinguishable buildings, creating healthy, happy places to invest, live, work and play within.

#### Evolution of Mining Heritage

Restoration of former open cast coal mining sites with inclusion of historic interpretation, whilst delivering environmental, social and economic benefits for communities.

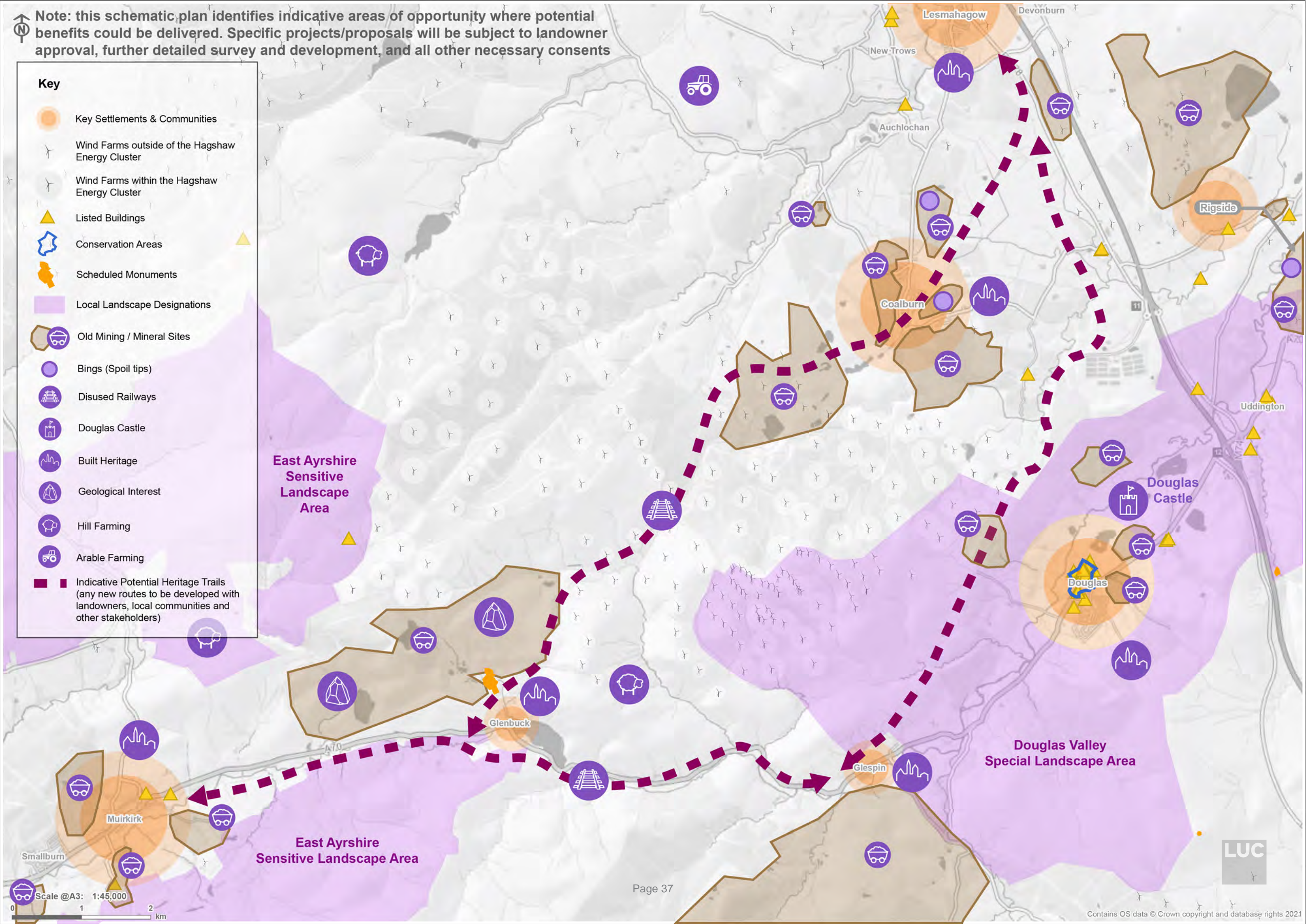




Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered. Specific projects/proposals will be subject to landowner approval, further detailed survey and development, and all other necessary consents

Key

- Key Settlements & Communities
- Wind Farms outside of the Hagshaw Energy Cluster
- Wind Farms within the Hagshaw Energy Cluster
- Listed Buildings
- Conservation Areas
- Scheduled Monuments
- Local Landscape Designations
- Old Mining / Mineral Sites
- Bings (Spoil tips)
- Disused Railways
- Douglas Castle
- Built Heritage
- Geological Interest
- Hill Farming
- Arable Farming
- Indicative Potential Heritage Trails (any new routes to be developed with landowners, local communities and other stakeholders)







## 5. Inclusive, Sustainable Growth

*Promoting and supporting a local economy which delivers locally*

The Hagshaw Energy Cluster has contributed to the local and regional economy for many years, however, it has the potential to deliver far more opportunities and benefits to the local communities of both East Ayrshire and South Lanarkshire.

The local area is in need of an economic boost, with relatively high deprivation, particularly in employment and income, and has an older ageing population suggesting a lack of opportunities for young people. As Scotland transitions towards a Net Zero economy, the impacts, and benefits of doing so must be fair – a Just Transition. By promoting a more strategic approach to development, with greater certainty and efficiency of investment, the local area could benefit from much needed and more sustainable employment opportunities.

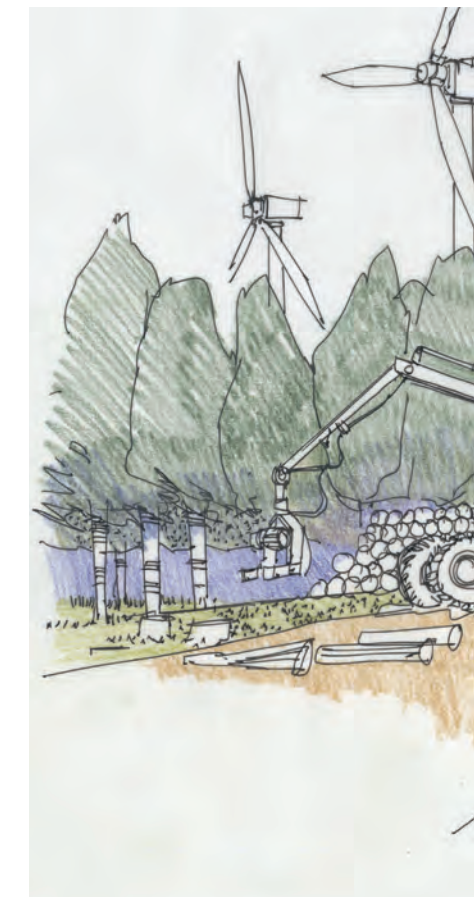
Future committed and proposed wind energy development within the cluster alone is predicted to result in capital investment of approximately £525 million, with an operational spend of approximately £18 million annually. A greater share of this investment could flow directly into the local economy and wider region through a more coordinated approach.

Key sectors and employment areas in the local area include:

- Construction (17% of employment)
- Accommodation and food services (10%)
- Transportation and storage (8%)
- Professional, scientific and technical activities (5%)



The construction and long-term maintenance of the existing and committed wind energy developments could be facilitated via shared construction and lay-down areas within a Renewable Energy Hub © Richard Carman



Productive timber forests are a key land use for the processing of timber locally for construction

### Key Opportunities

#### Strategic Investment Plan

Coordinated by the Douglas Valley Initiative Economic Development Officer. Development of a strategy to maximise and realise the regional economic opportunities from a collaborative approach to development within the cluster.

#### Coordinated Local Procurement

A collaborative procurement strategy with an aim of ensuring that existing and new local and regional businesses secure a greater proportion of tender opportunities.

#### Diversifying & Building Local Skills

Identification and enhancement of existing skills within the local and regional economy which could be utilised and developed to support local, long-term sustainable jobs in the green economy, and building on the example of the Connect2Renewables initiative. Working with local employability and training providers, to identify skills gaps, with a focus on groups furthest from the employment market.

#### Tourism & Visitor Strategy

Creation of a recreation and tourism strategy for the cluster to identify opportunities for outdoor recreation, and visitor and tourism attractions focused on education and learning about renewable energy and nature.

#### Hagshaw Renewable Energy Hub

The creation of a regional 'Renewable Energy Hub' which supports the construction, servicing and maintenance, and eventual decommissioning (including recycling) and repowering of developments within the cluster and wider region, whilst supporting other Net Zero business opportunities.





Induse within the cluster, with opportunities to expand production and construction and biomass supply chains © Richard Carman

## Circular Economy Strategy

Promote a local and regional circular economy strategy where local skills, and materials are utilised to create a society where resources are valued and nothing is wasted. This could include the eventual reuse and recycling of renewable energy infrastructure, such as wind turbines.



The prospect of new industrial and logistics development at the Conexus hub adjacent to the M74 brings opportunities to establish a green energy hub and local employment © 3R Energy



The construction of over 300 MW of committed wind energy development within the cluster has the potential to bring temporary and permanent jobs to the local economy © Alan O'Dowd (cc-by-sa/2.0)



## Key Objectives

- Maximise opportunities to support the development of local supply chain and skills as part of a green and circular economy.
- Promote longer term investment in infrastructure, through longer duration or in perpetuity consents for renewable energy developments and development envelopes.
- Ensure that communities benefit from the opportunity offered by the transition to a low carbon future.
- Deliver more effective and larger scale benefits to communities and the environment by working together to manage and invest community benefit funds.
- Promote opportunities for shared community ownership/location and investment in renewable energy development by communities.





## 5. Inclusive, Sustainable Growth

*Promoting and supporting a local economy which delivers locally*

Financial benefits from wind energy developments are currently delivered through grant initiatives such as the South Lanarkshire Renewable Energy Fund and Foundation Scotland. With 584 MW of committed wind energy development within the cluster to be delivered in the coming years, this could generate up to £2.7 million in direct annual benefit payments to communities around the cluster. Subject to community-led decision making on how to use and invest funds, potential recreation and tourism facilities could bring further economic benefits to communities.

A significant opportunity for employment land exists at the proposed Conexus hub. Promoted as a strategically located logistics, energy & industrial hub at the crossroads of Scotland, it provides the ideal foundation to establish a new thriving local economy of industries around green energy.

The committed wind energy development in the cluster could deliver the following economic benefits locally:

Up to **£47m**  
Gross Value Added  
(GVA) and 650 job years  
during construction

Up to **£6m**  
GVA and 80 jobs  
annually during  
operation

Up to **£2.7m**  
per year in community  
benefit payments for  
25-30 years

Source: Data collated and analysed by Biggar Economics, 2021



A Renewable Energy Hub, creating sustainable jobs supporting the deployment, servicing and maintenance of renewable technologies within the cluster and beyond © Richard Carman

### What does success look like?

#### Enhanced Local Economy

A greater share of capital investment and annual spend flowing directly into the local and regional economy from development within the cluster.

#### Investment in Communities

An increase in community benefit payments into communities around the cluster from deployment of additional renewable energy development, including wind energy and co-located technologies, and other businesses and activities.

#### Skilled Green Energy Jobs

Creation of new skilled industries, businesses and sustainable jobs in the local and regional green economy.  
  
A decrease in local deprivation and unemployment, through creation of opportunities for the local population.

#### Diversified Visitor Economy

The creation of jobs and businesses indirectly related to renewable energy development, and increased visitor numbers through the creation of new recreation and tourism opportunities.

#### Renewable Energy Hub

Establishment of flagship regional 'Renewable Energy Hub' providing sustainable jobs within renewable technologies within the cluster and beyond.



Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered. Specific projects/proposals will be subject to landowner approval, further detailed survey and development, and all other necessary consents

**Key**

Conexus Hub Sites

Key Settlements & Communities

Wind Farms outside of the Hagshaw Energy Cluster

Wind Farms within the Hagshaw Energy Cluster

Potential Renewable Energy Hub

Regional Connectivity

Capital Investment and Community Benefit

Employment Opportunities

**Potential Renewable Energy Opportunities**

Wind Energy

Solar PV

Hydropower

Carbon Capture

Energy Storage

Green Hydrogen Production

**Potential Supply Chain & Employment Opportunities**

Development and Construction

Servicing and Maintenance

Manufacturing

**Potential Recreation and Tourism Opportunities**

Mountain Biking and Adventure Sports

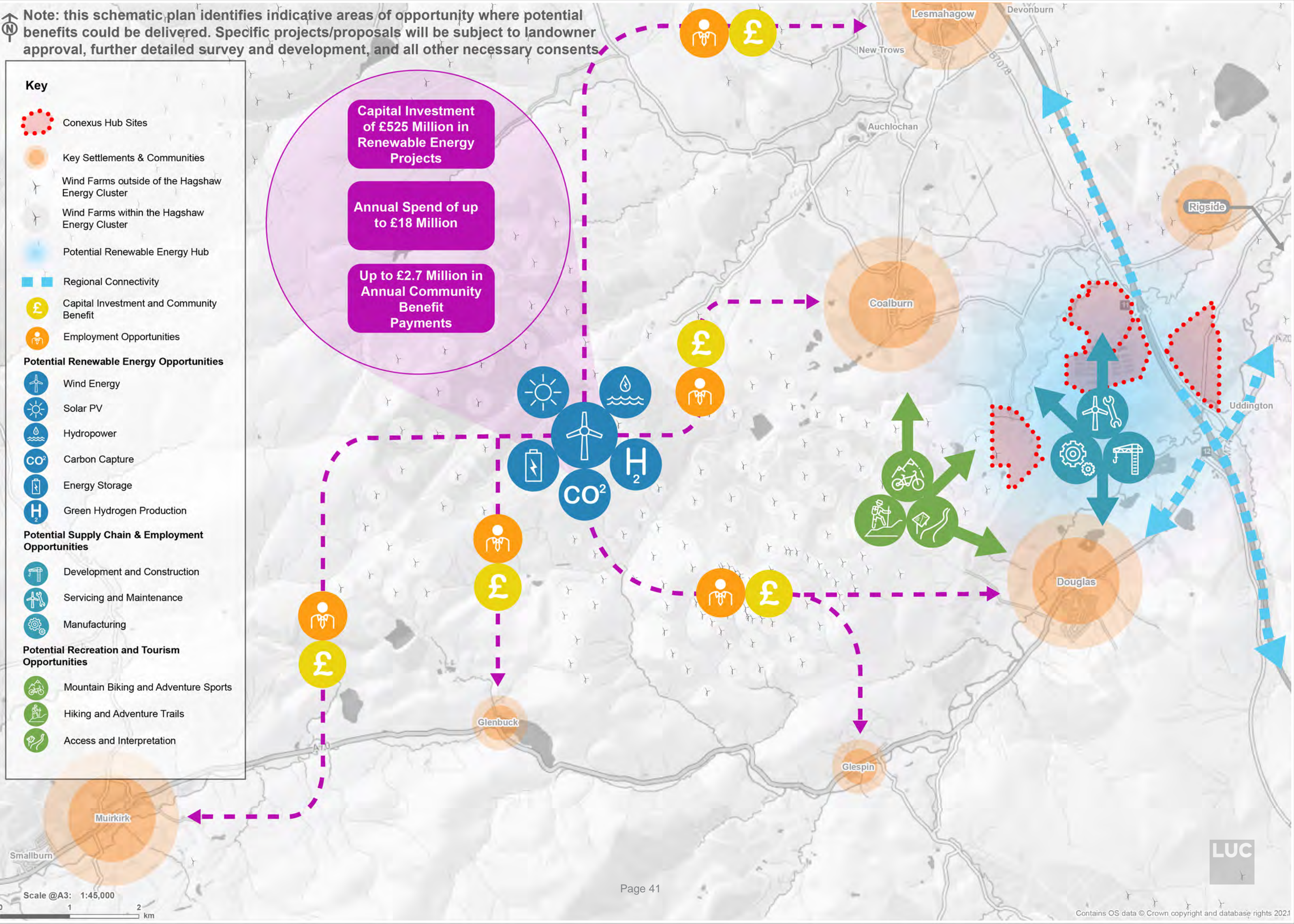
Hiking and Adventure Trails

Access and Interpretation

Capital Investment of £525 Million in Renewable Energy Projects

Annual Spend of up to £18 Million

Up to £2.7 Million in Annual Community Benefit Payments







## 6. Outdoor Recreation to Support Health and Wellbeing

*Creating opportunities for healthy, happy and active communities*

The Scottish Government is committed to creating a wellbeing economy which secures sustainable, inclusive growth for everyone, in all parts of Scotland. Promoting opportunities for improved access to outdoor greenspace and participation in outdoor recreation and learning, regardless of any physical or mental disability, can help build social cohesion and promote active and healthy lifestyles. This is at the heart of creating and maintaining sustainable communities, and a National Public Health Priority.

The Development Framework promotes a more inclusive approach to identifying ways to work together to support and enhance the health and wellbeing of communities and visitors to the area. Whilst extensive networks of local Core Paths exist within East Ayrshire and South Lanarkshire, the cluster offers opportunities to deliver aspirational and crossboundary links between communities, as identified in existing Core Path Plans.

Promoting active travel, via walking, running, cycling or other alternative means can play a role in improving physical and mental wellbeing, as well as assisting in the transition to a low carbon economy.

Ensuring communities are connected via functional green networks is a key principle of the GCV Green Network Partnership Blueprint for Strategic Access Networks - *facilitating the off-road movement of people around and between communities through Green Active Travel routes and greenspace.*

The Hagshaw Energy Cluster also offers a unique opportunity to promote the area as a regional visitor destination for organised outdoor recreation and adventure sports, accessible to large population centres via the M74 and A70 road links, with an initial focus on areas in the south and east of the cluster, close to communities, local businesses and other existing local amenities.

### Key Opportunities

#### Connected Local Green Spaces

Enhancement and creation of connected formal and informal outdoor open spaces which are accessible to all – within the key communities around the cluster, and connected by an enhanced and maintained Core Path Network.

#### Active Play for All

Delivery of high-quality infrastructure for formal and informal outdoor play in communities around the cluster, e.g. traditional and natural play areas, pump track for cycling, roller skating, skateboarding etc.

#### Local Active Travel Links

Delivery of safe active travel links for walking and cycling between the key communities surrounding the cluster. Including Lesmahagow, Coalburn, Douglas, Glespin and Muirkirk, reducing the need to travel by car, and improving residents health and well-being.

#### A Regional Active Travel Network

Development and delivery of an active travel strategy which provides local links between communities, and wider regional links to communities and the River Ayr Way, Clyde Walkway, and the National Cycle Network east of Douglas.

#### Access & Recreation Strategy

Development of a recreation and access strategy for the whole cluster which identifies coordinated opportunities for promoting responsible access, connectivity and delivery of infrastructure, whilst respecting nature, existing land use and business activities, communities, and management of existing crime and antisocial behaviour.



Enhanced outdoor spaces to live, work and play in and creation of opportunities for community and visitor destinations © Richard Carman



Enhanced and new infrastructure for recreation neighbouring communities © Richard Carman





onal activities within the extents of the cluster and

## Outdoor Recreation & Adventure Hub

Creation of an outdoor and adventure recreation hub which promotes use of existing infrastructure, such as on site wind farm access tracks for walking, running and mountain biking, e-biking (powered by renewable energy), creating a local identity and providing facilities for visitors and local employment opportunities.



The network of existing wind farm access tracks offer endless opportunities for physical recreation and exploration, similar to the successful Whitelee Wind Farm - now renowned as Greater Glasgow's 'largest park' © Alan O'Dowd (cc-by-sa/2.0)



Providing public access to woodlands and forests around the cluster and surrounding area to support both mental health and wellbeing. Spending time in woodlands has been proven to have a positive effect on alleviating conditions such as depression and anxiety © LUC



## Key Objectives

- a.) Promote outdoor recreation across the cluster and beyond, to support the physical and mental health and wellbeing of local communities and visitors to the area.
- b.) Maximise the suitability of existing paths and roads and to provide a coherent network of access opportunities.
- c.) Deliver enhanced local and regional active travel and transport networks, with links to wider walking and cycling routes.
- d.) Develop and promote the cluster as a hub destination for organised formal recreation such as walking, running, mountain biking, e-biking etc.
- e.) Promote opportunities for inclusive outdoor recreation, through infrastructure which provides access for all abilities.





## 6. Outdoor Recreation to Support Health and Wellbeing

*Creating opportunities for healthy, happy and active communities*



Creating safe and secure opportunities for commuting via active modes of transport between communities and potential employment centres © LUC



Waymarked trails for mountain or gravel biking, walking or horse riding to be developed around the cluster, initially focusing on areas close to population centres and existing amenities © Valenta (cc-by-sa/2.0)



Recreation and tourism hub facilities to promote and support local and regional visitors to the cluster, and diversified employment opportunities © Richard Carman

### What does success look like?

#### Contribution to Healthier Lifestyles

Improved health and wellbeing of all age groups within communities, through access to opportunities for outdoor recreation and adoption of more active lifestyles.

#### High Quality Open Space

Improved access to high quality open spaces connected by green corridors for local communities, creating healthy, happy places to invest, live, work and play within.

#### An Active Landscape

A network of diverse, accessible and high quality rides and trails for all abilities of cyclist e.g. mountain/family/beginner/trials/pump-track.

Networks of paths for walking, cross country skiing and roller skiing activities.


#### Enhanced Active Travel Links

Increased participation and visitor numbers to the area through the creation of new active travel links through the area, and recreation and tourism opportunities.










#### An Outdoor Destination

Establishment of a hub destination for outdoor recreation and adventure sports which is identifiable and promoted locally and regionally for the benefit of communities and visitors alike e.g. a potential Outdoor E-bike National Centre, powered by renewable energy.











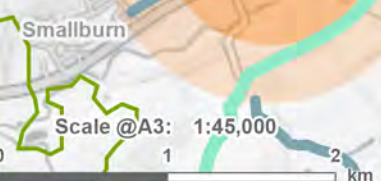
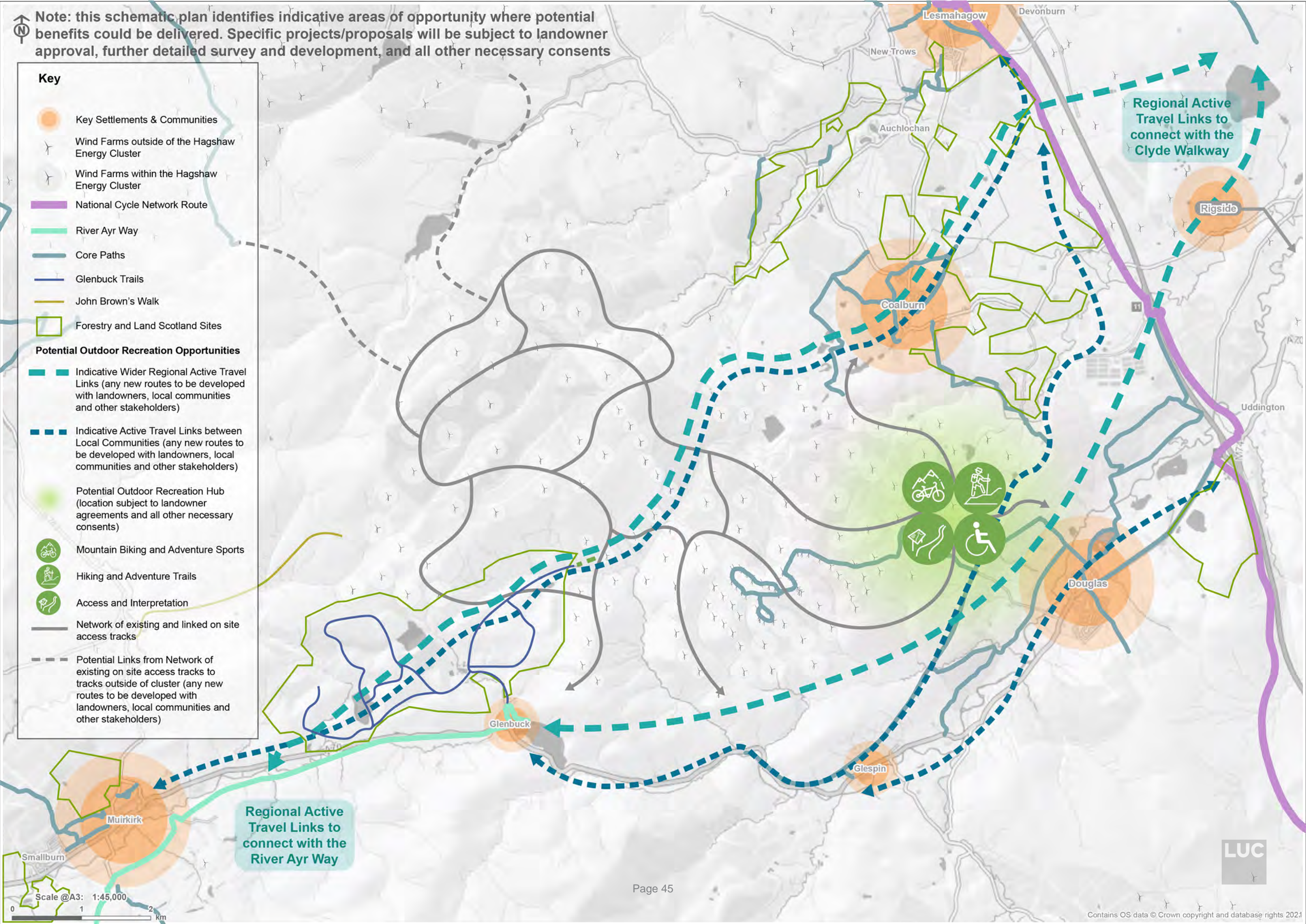
 **Note: this schematic plan identifies indicative areas of opportunity where potential benefits could be delivered. Specific projects/proposals will be subject to landowner approval, further detailed survey and development, and all other necessary consents**

**Key**

-  Key Settlements & Communities
-  Wind Farms outside of the Hagshaw Energy Cluster
-  Wind Farms within the Hagshaw Energy Cluster
-  National Cycle Network Route
-  River Ayr Way
-  Core Paths
-  Glenbuck Trails
-  John Brown's Walk
-  Forestry and Land Scotland Sites

**Potential Outdoor Recreation Opportunities**

-  Indicative Wider Regional Active Travel Links (any new routes to be developed with landowners, local communities and other stakeholders)
-  Indicative Active Travel Links between Local Communities (any new routes to be developed with landowners, local communities and other stakeholders)
-  Potential Outdoor Recreation Hub (location subject to landowner agreements and all other necessary consents)
-  Mountain Biking and Adventure Sports
-  Hiking and Adventure Trails
-  Access and Interpretation
-  Network of existing and linked on site access tracks
-  Potential Links from Network of existing on site access tracks to tracks outside of cluster (any new routes to be developed with landowners, local communities and other stakeholders)





# Future of the Hagshaw Energy Cluster...

## Restoration of Valuable Peatlands

Opportunities for peatland restoration and the delivery of other nature based solutions in response to the challenges of a changing climate and the biodiversity crisis.



## Repurposing of Existing Infrastructure

Utilising and enhancing existing and historic infrastructure to create safe and accessible links between communities, helping people connect and feel connected with their neighbours, whilst adding valuable opportunities for safe recreation.



## Reinvented Mineral Workings

Reflecting and celebrating the past landuse, industry and employment of coal mining which has shaped the communities and landscape around the cluster, including the including the Spireslack geological features - a Scottish Carboniferous Research Park.



## Coordinated Enhancement of Nature

Creation, enhancement and restoration of habitats to support key priority species in the cluster and promote connectivity with other similar habitats.



## Enhanced Connectivity

Improved connectivity between communities, through the enhancement of existing and creation of new active travel and public transport links - and linking of existing long distance promoted trails such as the River Ayr Way and Clyde Walkway.



The Hagshaw Energy



# gshaw Cluster

## Optimised and Diversified Renewable Energy Generation

Integration of other renewable energy technologies alongside wind energy development to maximise renewable energy generation and efficiency.

## Outdoor Recreation to Support Health and Wellbeing

Enhanced and new infrastructure for recreational activities within the extents of the cluster and neighbouring communities.

## Inclusive, Sustainable Growth

The construction and long-term maintenance of the existing and committed wind energy developments could be facilitated via shared construction and lay-down areas within a Renewable Energy Hub.

## A Strong Identity of Heritage, People and Place

Enhancement of existing and creation of new public spaces within settlements around the cluster, which respect the historic character and sense of place.

## Enhanced Agricultural Practices

Promotion and support for agri-environment schemes and exploration of new models such as agro-forestry to diversify income streams and maximise carbon benefits.

## An Outdoor Destination

Recreation and tourism hub facilities to promote and support local and regional visitors to the cluster, creating diversified business and employment opportunities.





This technical annex sets out key design principles for wind energy development within the cluster, including new projects, extensions and the repowering of existing sites.

The Development Framework does not seek to define the extent of the cluster, which to date has been largely influenced by the presence of the following designated areas and physical features:

- The River Ayr Valley to the south-west, and River Douglas Valley, encompassing part of the Douglas Valley Special Landscape Area (SLA) to the south, south-east;
- The settlements of Coalburn, Douglas, Glespin, Lesmahagow and Muirkirk, and scattered residential properties to the south, south-east, east and north-east;
- The M74 corridor to the east, and the A70 to the south within the Douglas Valley;
- and
- The Muirkirk and North Lowther Uplands SPA and Muirkirk Uplands SSSI to the west and south-west.

The presence of the above, and the suitability of the Rolling Moorland landscapes found across the cluster and now defined as the Plateau Moorland Landscape Character Type (LCT), to accommodate large scale wind energy development has influenced the organic evolution of the cluster over the past 25 years. It is anticipated that these considerations will continue to influence and inform future wind energy development in the cluster.

The design advice contained in this technical annex does not replace or supersede existing Supplementary Guidance published by East Ayrshire and South Lanarkshire Council's, such as the South Lanarkshire Landscape Capacity Study for Wind Energy (2016), but instead complements this where relevant, and sets out a locally specific design response for potential future wind energy development in and around the Hagshaw Energy Cluster.

## Key Design Principles

These design principles provide a guide to help shape further wind energy development within the cluster. They should be used at the scoping stage to inform both design and assessment throughout the Environmental Impact Assessment (EIA) and Landscape and Visual Impact Assessments (LVIA) process, informed by the existing principles of good wind farm siting and design and alongside other planning policy and guidance. They do not alter or supersede existing planning policy, but are provided to help inform scoping and subsequent assessment.

- **Protect the residential amenity of the closest residents and communities to the cluster by avoiding unacceptable, adverse impacts informed by the EIA process;**
- **Protect the integrity of designated sites, including the Muirkirk and North Lowther Uplands Special Protection Area (SPA), firstly through sympathetic design and layout;**
- **Relate to and where possible enhance the existing underlying landscape character of the area, taking account of existing wind farm developments and delivering the landscape opportunities set out in this Framework;**
- **Protect the integrity of locally designated landscapes (e.g. Douglas Valley Special Landscape Area (SLA) and East Ayrshire Sensitive Landscape Area), by avoiding unacceptable, adverse impacts;**
- **Avoid visual coalescence with other nearby wind farms or clusters of wind farms beyond the cluster; and**
- **Promote greater consistency and cohesion in turbine composition and scale across the cluster e.g. turbine spacing, elevation, rotor diameter and/or blade tip height.**

## A Development Framework for the Hagshaw Energy Cluster Planning for Net Zero

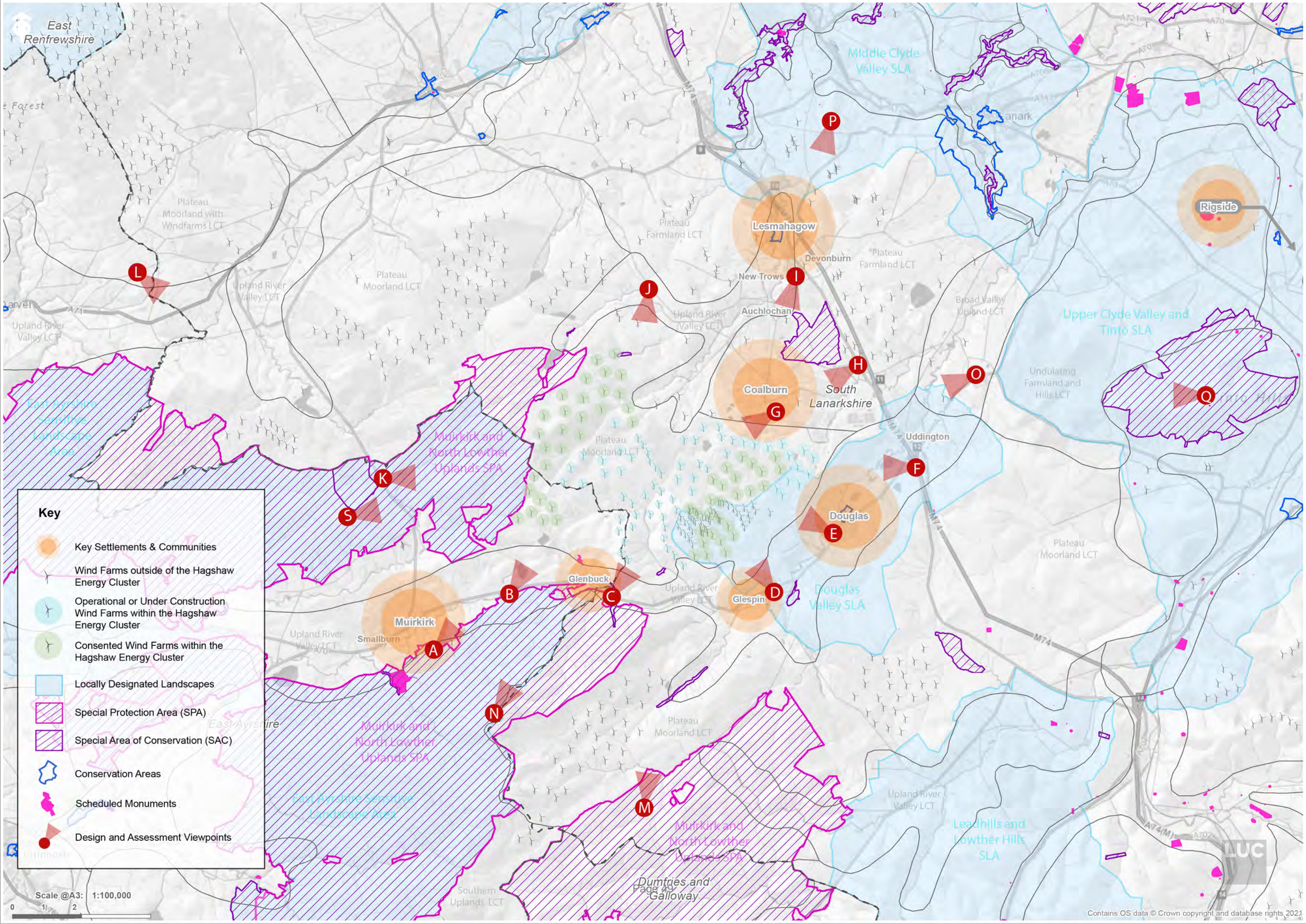
## Design and Assessment Viewpoints

The key design and assessment viewpoints have been informed by desk and field based survey, and a review of past LVIA's for developments within the cluster. The relevance of each viewpoint to the design and assessment of specific proposals will be dependent on the location, extent and scale of wind energy development proposed. Not all viewpoints will necessarily be included in future assessments – this is a standard list from which to identify the best ones to use for each project which are likely to capture the key considerations. In collaboration with relevant stakeholders, viewpoint(s) should be agreed on a case by case basis and may be micro-sited to represent maximum visibility and the highest sensitivity receptors. Where applicable, additional viewpoints will be required to allow for a visual assessment of any impacts on heritage assets.

The approximate location of each viewpoint is shown on the map (right), and a description of the key receptors detailed below:

- **A - Muirkirk** - Representing views from the historic settlement and important cultural landscape within East Ayrshire.
- **B - River Ayr Way** - Representing views experienced by recreational users of the long distance walking route through East Ayrshire, following the River Ayr from source to sea.
- **C - Glenbuck** - Located in the historic conservation village of Glenbuck in East Ayrshire, and representing views experienced by local residents and visitors to village and nearby Ponesk-Spireslack FLS site.
- **D - Glespin** - Representing views experienced by residents within this small settlement located on the A70 within the Douglas Valley SLA.
- **E - Douglas** - Viewpoint to represent settlement located on the A70 within the Douglas Valley SLA to the south-east of the cluster, and protected heritage assets of Douglas Castle and Douglas Conservation Area.
- **F - M74/A70 near Uddington** - To represent views experienced by receptors travelling on the M74 and A70, and nearby NCN Route 74, and within the Douglas Valley SLA.
- **G - Coalburn** - Representing views from the settlement east, north-east of the cluster.
- **H - B7078/NCN Route 74** - Viewpoint represents views experienced by receptors travelling on the B7078 and NCN Route 74 to the east of the cluster.
- **I - Lesmahagow** - Viewpoint to represent settlement located to north-east of the cluster.
- **J - Logan Water** - Viewpoint located at transition to *Plateau Farmland LCT* and *Upland River Valley LCT* to north, north-east of the cluster.
- **K - B743 Muirkirk - Strathaven** - Located on the B743 passing through the upland *Plateau Moorland LCT* between Muirkirk and Strathaven.
- **L - Loudon Hill** - Viewpoint located at local hill summit near Darvel in East Ayrshire and within protected Inventory Battlefield. Representing views experienced by recreational receptors.
- **M - Cairn Kinney** - Scheduled hilltop cairn, located at hill summit in Southern Uplands of South Lanarkshire to the south of the cluster, representing views experienced by recreational receptors.
- **N - Cairn Table** - Scheduled hilltop cairn, located at hill summit in Southern Uplands on boundary between East Ayrshire and South Lanarkshire to the south-west of the cluster, representing views experienced by recreational receptors from edge of East Ayrshire Sensitive Landscape Area.
- **O - Rigside** - Viewpoint to represent settlement located on A70 above the Douglas Valley to east of the cluster.
- **P - Blackhill Cairn Fort** - Viewpoint at site of Scheduled Monument (SM) to the north-east of the cluster and overlooking the Middle Clyde Valley.
- **Q - Tinto Hill** - Scheduled hilltop cairn, located on distinctive landmark hill within the Upper Clyde Valley & Tinto SLA to the east of the cluster.
- **R - Lowther Hill** - Distinctive landmark hill on the Southern Upland Way long distance trail, and within the Leadhills and Lowther Hills SLA (location not shown on map).
- **S - Middlefield Law** - Local hill summit to the north of the Ayr Valley and settlement of Muirkirk, within the East Ayrshire Sensitive Landscape Area.

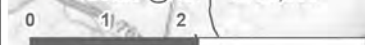




### Key

- Key Settlements & Communities
- Wind Farms outside of the Hagshaw Energy Cluster
- Operational or Under Construction Wind Farms within the Hagshaw Energy Cluster
- Consented Wind Farms within the Hagshaw Energy Cluster
- Locally Designated Landscapes
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Conservation Areas
- Scheduled Monuments
- Design and Assessment Viewpoints

Scale @A3: 1:100,000





# Glossary of Terms

**20 minute neighbourhood** - A method of achieving connected and often compact neighbourhoods designed in such a way that people can meet the majority of their daily needs within a reasonable walk, wheel or cycle (within approx. 800m) of their home.

**Active travel** - Making journeys by physically active means, like walking or cycling.

**Biodiversity** - The variability in living organisms and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems (UN Convention on Biological Diversity, 1992).

**Biodiversity Net Gain (BNG)** - an approach which aims to leave the natural environment in a measurably better state than beforehand.

**Blue infrastructure** - Water environment features within the natural and built environments that provide a range of ecosystem services. Blue features include rivers, lochs, wetlands, canals, other water courses, ponds, coastal and marine areas.

**Brownfield** - Land which has previously been developed. The term may cover vacant or derelict and, land occupied by redundant or unused buildings and developed land within the settlement boundary where further intensification of use is considered acceptable.

**Carbon sequestration** - The long-term removal, capture, or sequestration of carbon dioxide from the atmosphere to slow or reverse atmospheric carbon dioxide (CO<sub>2</sub>) pollution and to mitigate or reverse climate change.

**Circular economy** - A circular economy is one that is designed to reduce the demand for raw material in products; to encourage reuse, repair and manufacture by designing products and materials to last as long as possible in line with the waste hierarchy.

**Community** - A body of people. A community can be based on location (for example people who live or work in or use an area), common identity (for example a shared ethnicity, language, age) or common interest (for example the business community, amenity, sports, social or heritage groups).

**Community Wealth Building (CWB)** - The Scottish Government has adopted the internationally recognised Community Wealth Building (CWB) approach to economic development as a key practical means by which we can achieve our wellbeing economy objectives

**Conservation Area** - Conservation areas are areas which have special architectural or historic interest that are considered worthy of protection. To be designated as a conservation area it must meet the criteria of ‘special architectural or historic interest the character or appearance of which is desirable to preserve or enhance’, as set out in Section 61 of the Planning Listed Buildings and Conservation Areas (Scotland) Act 1997.

**Community Hub** - A community hub is a multipurpose centre, such as a community centre, medical centre or school, that provides a range of high quality and cost effective services to the local community, with the potential to develop new services in response to changing community needs.

**Community facilities** - Buildings or services used by the community, including community halls, recreation centres, libraries, etc.

**Cumulative impact** - Impact in combination with other development. That includes existing developments as appropriate, those which have permission, and valid applications which have not been determined. The weight attached to undetermined applications should reflect their position in the application process.

**Decarbonisation** - Reducing the amount of gaseous carbon compounds released by buildings, activities or operations.

**Ecosystem services** - The benefits people obtain from ecosystems

**Energy storage** - Energy storage is the capture of energy produced at one time for use at a later time to reduce imbalances between energy demand and energy production.

**Environmental Impact Assessment (EIA)** - A process of evaluating the likely significant environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.

**Flood Risk** - The combination of the probability of a flood and the potential adverse consequences associated with a flood, for human health, the environment, cultural heritage and economic activity.

**Forestry and Woodland Strategy** - A strategy prepared by a planning authority either singly or in collaboration with other planning authorities, which sets out policies and proposals for the development of forestry and woodlands in their area, according to the Planning (Scotland) Act 2019.

**Green hydrogen** - Hydrogen and oxygen produced by splitting water by electrolysis, stored hydrogen can then be used to provide heat and power, with only oxygen vented to the atmosphere with no negative impact. To achieve electrolysis requires electricity, which can be generated from renewable energy sources such as wind.

**Green infrastructure** - Features or spaces within the natural and built environments that provide a range of ecosystem services.

**Green networks** - Connected areas of green infrastructure and open space, that together form an integrated and multi-functional network.

**Green Space** - Space which provides a recreational function, an amenity function, or aesthetic value to the public such as areas of grass, trees, other vegetation and water.

**Habitat Management Plan (HMP)** - Provide a guide for land managers to facilitate works that will result over time in maintenance of, or increase in, the biodiversity value of retained and/or newly created habitats.

**Historic Environment** - The physical evidence for human activity that connects people with place, linked with the associations we can see, feel and understand.

**Just Transition** -The Climate Change Act 2019 embeds the principles of a just transition; this means as we reduce our emissions and respond to a changing climate, our journey is fair and creates a better future for everyone – regardless of where they live, what they do, and who they are. It is both the outcome – a fairer, greener future for all – and the process that must be undertaken in partnership with those impacted by the transition to net zero. It supports a net zero and climate resilient economy in a way that delivers fairness and tackles inequality and injustice.

**Landscape Character** - Created by the way the physical and cultural components of the landscape come together and can be defined as “a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another”. Scotland has a digital map-based national landscape character assessment (published in 2019) which defines Landscape Character Types (LCTs) across Scotland.

**Landscape and Visual Impact Assessment (LVIA)** - The process of evaluating the landscape and visual effects of a development proposal, as a component of a multi-topic Environmental Impact Assessment (EIA).

**Local Landscape Designation** - Designated landscapes where the scenery is highly valued locally. Defined and protected by policy at a local level across Scotland, where local development plans show their location (and associated policy). Referred to as Special Landscape Areas (SLAs) in South Lanarkshire and Sensitive Landscape Areas in East Ayrshire.

**Masterplan** - A strategic scheme within which a location is proposed to be regenerated or changed in order to meet a perceived challenge or strategic need.

**Natural Capital** - Natural capital is a term for the habitats and ecosystems that provide social, environmental and economic benefits to humans. Scotland has a wide range of these habitats and ecosystems - each of which makes a unique contribution to the wellbeing of those who live and work in Scotland.

**Nature based solutions** - Nature-based solutions use nature to help tackle environmental and social challenges, providing benefits to people and nature, and help us to mitigate and adapt to climate change.

**Nature network** - A Nature Network is a joined-up system of places important for wild plants and animals, on land and at sea. It allows plants, animals, seeds, nutrients and water to move from place to place and enables the natural world to adapt to change, providing plants and animals with places to live, feed and breed. Effectively functioning nature networks will connect existing nature rich areas through habitat corridors, habitat ‘stepping stones’ or habitat restoration areas.

**Net Zero** - Scotland has set a target to become ‘Net Zero’ by 2045. This means the amount of greenhouse gas emissions we put into the atmosphere and the amount we are able to take out will add up to zero.

**Open space** - Space within and on the edge of settlements comprising green space or civic areas such as squares, market places and other paved or hard landscaped areas with a civic function.

**Placemaking** - Placemaking is the process of creating good quality places that promotes people’s health, happiness and wellbeing. It concerns the environment in which we live; the people that inhabit these spaces; and the quality of life that comes from the interaction of people and their surroundings. Placemaking is a collaborative approach involving the design and development of places over time, with people and communities central to the process.

**Priority species** - Animals, plants and habitats included on the Scottish Biodiversity List considered to be of principal importance for biodiversity conservation in Scotland.

**Renewable Energy** - Renewable energy, often referred to as green energy, comes from natural sources or processes that are constantly replenished from a source that is not depleted when used. Renewable sources of energy, such as wind, wave, tidal, solar, hydro and biomass are widely available and can substitute sources of fossil fuel.

**Scheduled Monument** - Monuments of national importance that have legal protection under the Ancient Monuments and Archaeological Areas Act 1979.

**Sustainable development** - Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (The Brundtland Definition. Our Common Future, The World Commission on Environment and Development, 1987.)



# List of Stakeholders

Blackwood and Kirkmuirhill Co-ordination Group  
Blackwood and Kirkmuirhill Community Resilience group  
British Horse Society  
British Trust for Ornithology (Ayrshire and Cumbrae)  
Butterfly Conservation Scotland  
Carluke Community Council  
Carluke Development Trust  
Central Scotland Bat Group  
Central Scotland Green Network  
Clyde River Foundation  
Clydeplan  
Coalburn Community Council  
Coalfields Communities Federation  
Coalfields Regeneration Trust  
Community Action Lanarkshire  
Community Land Scotland  
Community Links Scotland  
Cooper Farms  
Development Trusts Association Scotland  
Douglas Community Council  
Douglas Water and Rigside Community Council  
Douglasdale Recreation, Environment, Access, and Leisure Group  
East Ayrshire Coalfield Environment Initiative Board  
East Ayrshire Council  
East Ayrshire Leisure  
East Ayrshire Woodlands  
Electricity Supply Nominees Forestry Ltd. (ESN(F))  
Fisheries Management Scotland  
Forestry and Land Scotland  
Foundation Scotland  
Glasgow and Clyde Valley Green Network Partnership  
Greenspace Scotland  
Hargreaves Land Limited  
Heads of Planning Scotland  
Historic Environment Scotland  
John Muir Trust  
Joint Radio Company  
Lanarkshire Area Tourism Partnership  
Landscape Institute / Landscape Institute Scotland  
Lesmahagow Community Council  
Lesmahagow Development Trust  
Local Energy Scotland  
Mitchell Energy Ltd  
Muirkirk Community Council  
Muirkirk Enterprise Group  
National Farmers Union of Scotland  
NATS Safeguarding  
NatureScot

Ofgem  
Outdoor Access Trust for Scotland Paths for All  
Public Health Scotland  
Rigside & Douglas Water Residents and Tenants Association  
Royal Society for the Protection of Birds  
RSPB Scotland  
Sandford/upper Avondale Community Council  
Scottish Development International  
Scottish Enterprise  
Scottish Environmental Protection Agency  
Scottish Forestry  
Scottish Government  
Scottish Government Energy Consents Unit  
Scottish Land and Estates (Clydeside)  
Scottish Outdoor Access Network  
Scottish Renewables  
Scottish Water  
Scottish Wildlife Trust  
ScottishPower Energy Networks  
Scotways  
Skills Development Scotland  
South Lanarkshire Biodiversity Partnership  
South Lanarkshire Council  
South Scotland Red Squirrel Group  
South Strathclyde Raptor Study Group  
Spirit of Lanarkshire Wind Energy Co-operative  
St. Brides Community Group, Douglas  
Stonehouse Community Council  
Sustrans Scotland  
The Coal Authority  
The Ramblers Association  
The Rural Development Trust Ltd  
University of the West of Scotland  
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## A Development Framework for the Hagshaw Energy Cluster Planning for Net Zero

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