



More for People, More for Climate, More for Nature



3R Energy





Introduction to 3R Energy

3R Energy is a family owned and run business based at Lanark Market, employing 15 people locally as a direct result of our renewable energy and farming operations within the Hagshaw Energy Cluster. As developers but also landowners, we see both sides of the coin. We understand the responsibility that comes from the landowners' perspective, embedded in the local community, and are working hard to ensure the local area benefits from our commercial operations. Our team is invested in ensuring that developments are optimised, with community benefits front of mind. Partnership working is a key part of what we do.

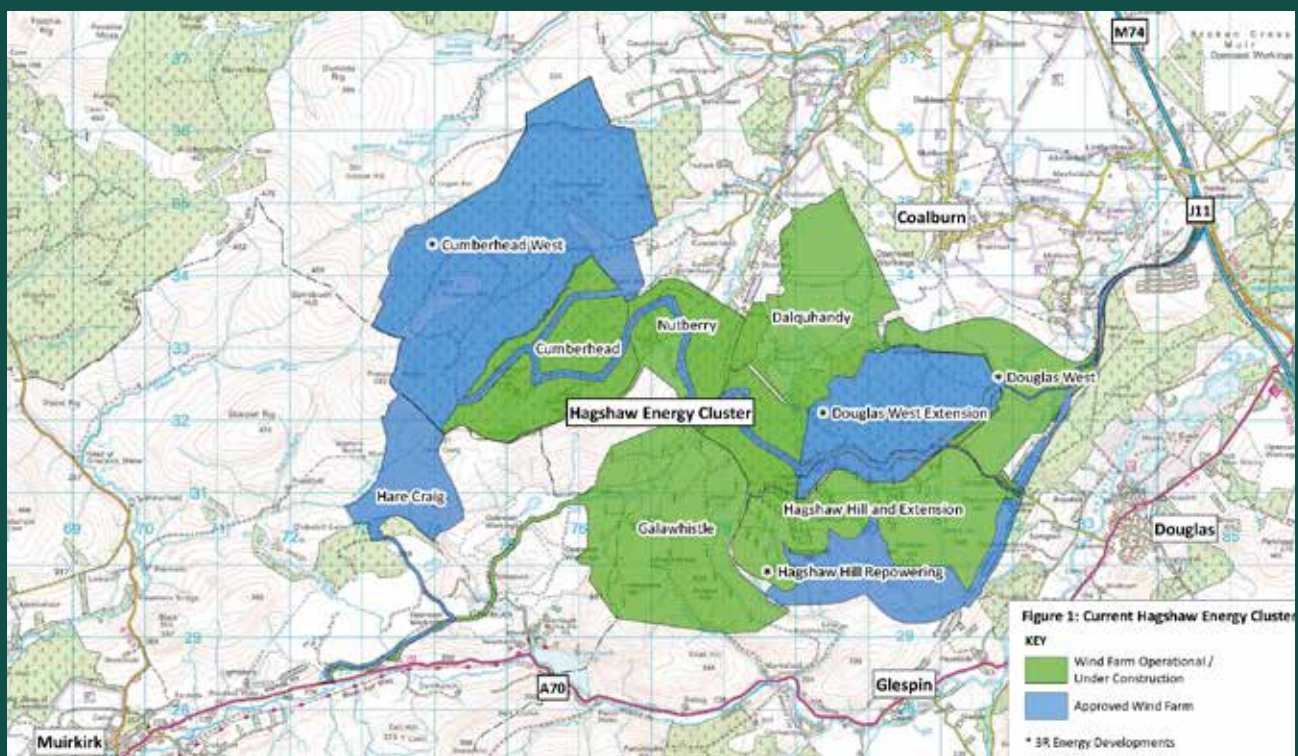
3R Energy originally developed and built farm scale wind turbines to increase the efficiency of farms and rural businesses. In our early days, we cut our teeth on consenting and constructing a fleet of 55 farm scale turbines for landowners across the UK. We then widened our reach to install 65 biomass boilers and 14 biomass combined heat and power (CHP) plants. We have worked in most corners of Scotland and other parts of the UK to obtain all necessary consents, grid connections, and successfully install energy positive projects.

In recent years, 3R Energy has diversified into larger-scale renewable energy projects and has developed over 330 megawatts (MWs) of onshore wind projects within the Hagshaw Cluster (including a further 80 MWs of energy storage) which together will make a substantial contribution to the local area and to national renewable energy and climate change targets.

The Existing Hagshaw Energy Cluster

The Hagshaw Energy Cluster is uniquely placed in central-southern Scotland at J11 of the M74, close to the national grid network, large conurbations, key transport and communication routes.

Wind energy has grown in the Cluster since the original Hagshaw Hill Wind Farm was constructed on our land in 1995. The Hagshaw Cluster now has a total of 585 MWs of consented renewable energy generation. 3R Energy has been responsible for developing 57% of that capacity through a number of wind energy projects within the Cluster including: Hagshaw Hill Wind Farm Repowering (84MWs), Douglas West Wind Farm (45MWs), Douglas West Extension (78MWs) and Cumberhead West Wind Farm (126MWs).



Community Benefit to Date

The onshore wind projects developed by 3R Energy within the Hagshaw Cluster to date will deliver:

- **£1.6m to local communities every year – which is £4,383 every day or £48 million over 30 years;**
- **Over 1,800 job years of employment in Scotland through the construction and development phases;**
- **Green electricity for over 240,000 average Scottish households; and,**
- **A saving of over 430,000 tonnes of CO2 entering the atmosphere each year.**

Working Together for the Future

As a local company, 3R Energy is committed to working with the communities closest to the Hagshaw Energy Cluster for the long-term to develop and deliver successful projects which create significant and tangible benefits for the local area.

In addition to onshore wind projects, we have also successfully consented 28 ha of commercial development land within the Hagshaw Cluster at Junction 11 of the M74, on land owned by our parent company Mitchell Energy Ltd. This site has been jointly branded with our neighbours, Hargreaves Land Limited, as '**Conexus**' and is being marketed by national agency Ryden.

In partnership with key stakeholders, we hope to encourage other industry and businesses to locate at Conexus West alongside our own Biomass CHP plant (constructed in 2018 which currently employs 6 people) and proposed Green Hydrogen Plant (see page 10) to create new employment opportunities in the local area. We consider our consented industrial land at Conexus West can play a key role in delivering more carbon-positive opportunities from the Hagshaw Cluster going forward.



Our Land Playing Its Part

Alongside renewable energy generation and the Conexus West development on our land, we consider that developing the potential for the Hagshaw Cluster to enhance the recreational and tourism offering of the local area is a timely and exciting opportunity to bring about sustainable jobs and positive changes in perceptions of this former mining landscape.



Helping Address the Climate & Biodiversity Emergency

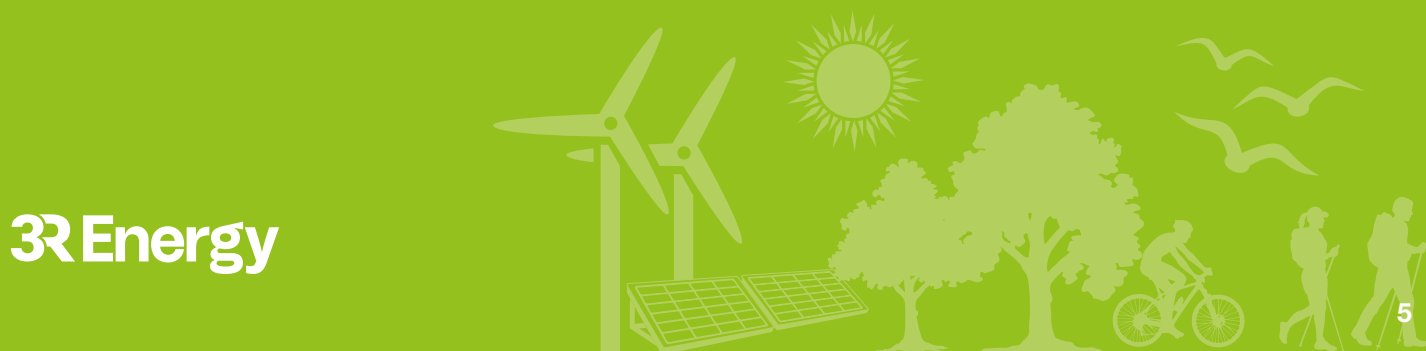
A twin Climate and Biodiversity Emergency has been declared in Scotland, and after the success of COP 26 in Glasgow, we must take a global view where the increased deployment of renewable energy technologies is going to be key in combating climate change and achieving Net Zero emissions, in the case of Scotland by 2045. There is unequivocal, clear and consistent policy support at all levels, from international to local, for the deployment of renewable energy generally (including onshore wind) to:

- **combat the global heating crisis**
- **diversify the mix of energy sources**
- **achieve greater security of supply**
- **attain legally binding emissions reduction targets.**

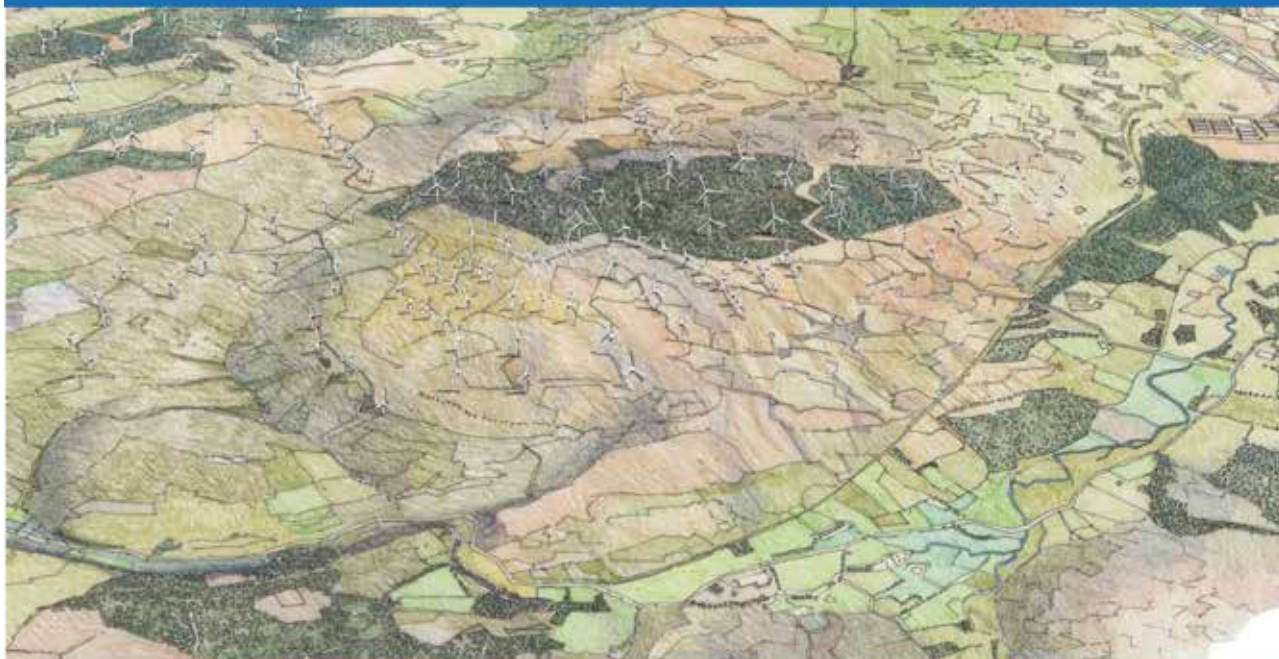
In terms of Scotland's ability to achieve Net Zero by 2045, it is clear that the 2020s will be a critical decade. This is referenced in the Ministerial Foreword to the draft National Planning Framework 4 where the Minister states: "we have set a target of net zero emissions by 2045, and must make significant progress towards this by 2030. This will require new development and infrastructure across Scotland." 3R Energy is working as part of the **Just Transition** to ensure that our projects:

- **are sensitively designed for people, place and planet**
- **deliver a mix of renewable energy technologies at scale**
- **are achievable within timeframes that will make a difference.**

Evolving Scottish Government policy indicates the bulk of onshore wind's remaining contribution to the targets should come substantially from established wind farm clusters, such as Hagshaw, through the repowering of existing assets or extensions of existing schemes. This approach makes a lot of sense in terms of utilising existing infrastructure in these established locations to maximise the amount of clean energy generation and local benefits that can be delivered within acceptable limits.



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



Draft Development Framework
June 2022

Renewable Energy : People | Place | Nature



Maximising Generation & Benefits from the Hagshaw Cluster: Our Ongoing Commitment to Responsible Development

Alongside other key stakeholders, 3R Energy has played a leading role in establishing a new framework to help shape the future evolution of the Hagshaw Energy Cluster which has been created through an innovative collaboration between NatureScot, East Ayrshire and South Lanarkshire Councils, other government agencies and local renewable energy developers with the aim of maximising the contribution of the Hagshaw Energy Cluster to:

- **Creating a prosperous post-mining future for the local area**
- **Decarbonising our electricity supply**
- **Restoring and enhancing nature**

The **Development Framework** identifies that the Cluster has the potential to deliver **1GW+** of renewable energy going forward which would in turn deliver a transformational level of investment in surrounding local communities.

In the context of maximising renewable generation and benefits from the Hagshaw Cluster, the team at 3R Energy have been working with a number of local landowners who lie to the west of the Hagshaw Cluster. We are exploring the potential to expand the existing Cluster in a westerly direction towards Muirkirk, which would **increase Muirkirk and East Ayrshire's share of generation capacity and community benefit funding from the Hagshaw Cluster.**

From initial assessments we consider that there is a strategic opportunity to deliver a significant amount of additional capacity and local benefits, with relatively limited additional impacts, from a Western Expansion of the Cluster.

HAGSHAW ENERGY CLUSTER WESTERN EXPANSION

Future Additional Generating Capacity and Local Benefits

As part of initial development works for our new Western Expansion proposal, 3R Energy has secured a grid connection agreement with National Grid to connect up to **500 MWs of additional wind generation, 50 MWs of solar generation and 100 MWs of battery storage capacity** from the Hagshaw Cluster by 2028 (with potential to advance to 2027).

Importantly, this means that this additional capacity from a Western Expansion of the Hagshaw Cluster can be online and contributing to Net Zero targets **pre-2030**. The Western Expansion project is an integrated renewable energy development capable of being accessed directly from Junction 11 of the M74 by reusing a network of over 20 km of existing private tracks. This maximises the benefit of that existing infrastructure as opposed to new 'greenfield' locations which in some instances create new access roads well in excess of that distance, to the detriment of the carbon balance of additional onshore capacity.

Our project to expand the Hagshaw Cluster westwards is of strategic scale. The development has:

- **the capacity to produce enough clean power for the equivalent of every home in Glasgow**
- **deliver a further £100m of funding to local communities (£2.5m every year over project life)***
- **invest £40m in the recovery of the Muirkirk & North Lowther Uplands Special Protection Area (SPA)****
- **produce 20,000kg of green hydrogen fuel a day for decarbonising freight transport on the M74/M6 motorway corridor**
- **Potential to fund a new Nature Education & Visitor Centre in Muirkirk**

Substantial Investment in Local Communities

The Western Expansion proposal will generate up to £2.5m a year, or up to £100m* (indexed) over its operational life, of additional investment in local communities. These are transformational levels of community funding which can act as the catalyst for a prosperous post-mining future for this part of rural East Ayrshire and South Lanarkshire. In addition, there will also be the opportunity for local community groups to explore the potential to obtain a stake in the project via a Shared Ownership initiative.

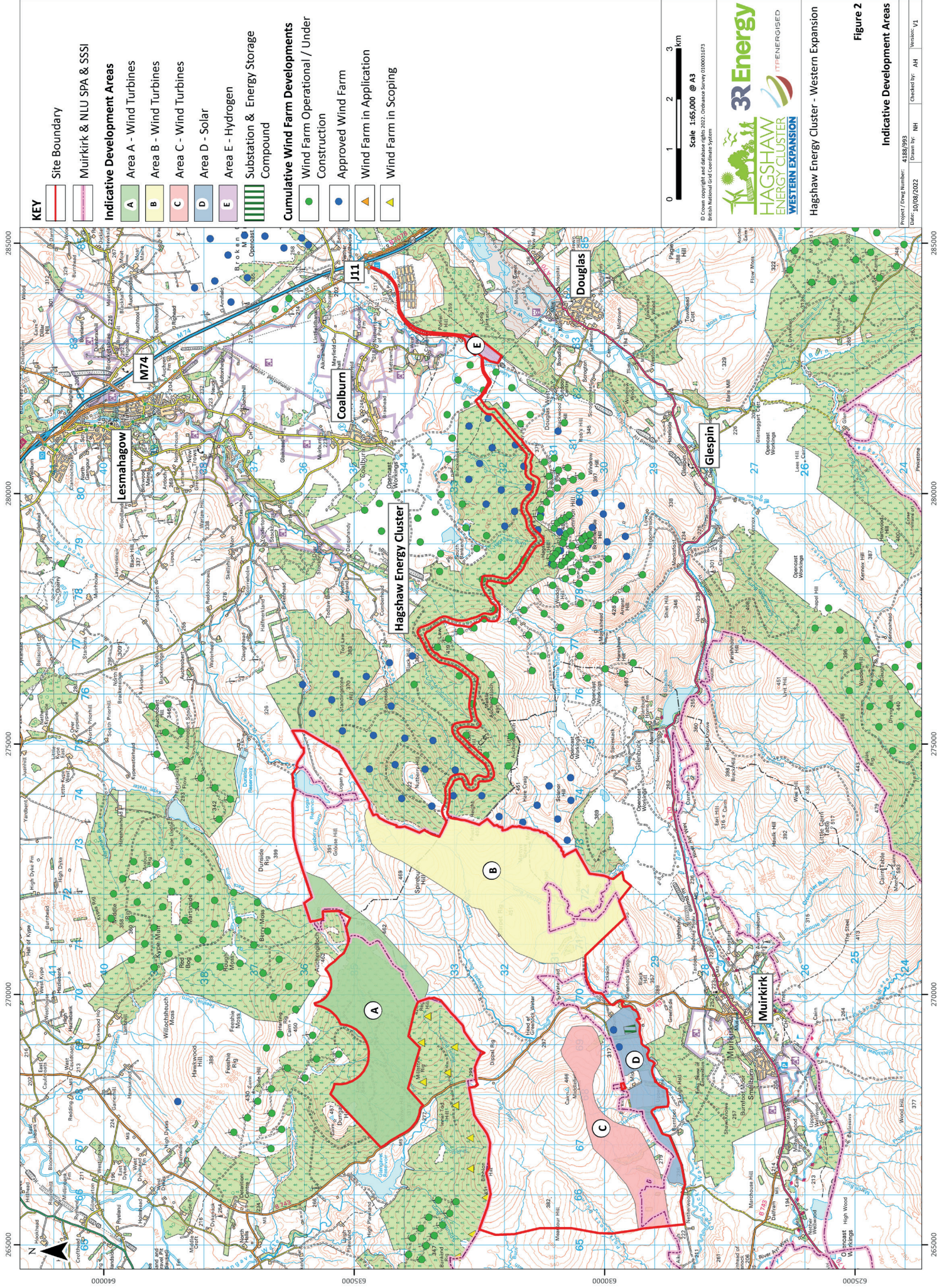
Boosting biodiversity with investment in the recovery of the SPA

As part of a £40m** private investment in nature, the Western Expansion project proposes to deliver a substantial new programme of habitat and land management improvements within the Muirkirk & North Lowther Uplands SPA targeted at returning the designated area to favourable condition. This innovative new scheme would pilot a new way of funding nature conservation in designated sites which secures both landowner commitment and private finance to deliver a positive new future for the SPA, ensuring this large area of open hill ground to the north of Muirkirk is delivering **more for nature, more for climate, and more for people**.

* Based on a project including 500 MWs of wind generating capacity, a community benefit contribution of £5,000/MW, and an operational life of 40 years.

** Based on a project including 500 MWs of wind generating capacity, an environmental fund contribution of £2,000/MW, and an operational life of 40 years.





Western Expansion Project Details

WIND ENERGY		DETAILS
No. of wind turbines		Up to 72
Max turbine height		Up to 230 m***
Turbine generating capacity		Up to 7 MWs
Total wind generating capacity		Up to 500 MWs
SOLAR ENERGY		
Solar generation capacity		Up to 50 MWs
ENERGY STORAGE		
Energy storage (battery) capacity		Up to 100 MWs
GREEN HYDROGEN		
Electrolyser capacity		Around 40 MWs
Green Hydrogen production		Around 20,000 kg / day
OVERALL		
Operational lifespan		40 years

*** Same as maximum tip height already consented within the Hagshaw Energy Cluster

Western Expansion Key Benefits



£100m*
**Community
Benefit Fund**



£40m Muirkirk &
N. Lowther SPA
Investment Fund**



**Local Energy
Discount Scheme
Option**



**Enough green
energy to supply
c.330,000 homes**



**Employment Catalyst
of New Green
Hydrogen Hub on M74**



**Around 525,000
tonnes of CO₂
saved every year**

Realising the Green Hydrogen Opportunity and Creating New Jobs

The Western Expansion project includes plans for a 'Green Hydrogen Hub' on our land at Conexus West at J11 of the M74 motorway. We are currently proposing to apply for consent for a circa 40 MW electrolyser at Conexus West as part of the Western Expansion plans. The electrolyser will make use of surplus electrical generation from the wind turbines within the Western Expansion at times of low demand to split water into oxygen and hydrogen which can be used as a fuel for decarbonising heavy freight transport and industrial processes.

The Green Hydrogen Hub on the M74 has the potential to create good, green jobs in the local area, and act as a catalyst to encourage logistics businesses to co-locate at Conexus West and convert their transport fleets to green hydrogen fuel. This project would optimise the Hagshaw Cluster's strategic location on the M74 motorway and enhance its place at the forefront of Scotland's green energy transition.



Commitment to Collaborative Working to Deliver Better Results

3R Energy is committed to continuing to work collaboratively in the development of the Hagshaw Cluster to ensure that we maximise its potential to deliver big benefits for the local area, for climate and for nature. We are part of the steering group for the Hagshaw Energy Cluster Development Framework and we believe this partnership is going to be important in helping determine local priorities for investment in the area going forward. It will also help to guide the deployment of community benefit funding to the right projects, in the right locations, to ensure that the area maximises the benefit from the opportunities that have been created by this 'green revolution'.

Thinking big and ensuring resources are in place to support an inclusive process

We believe a Strategic Investment Plan for the area is needed to help create a shared vision for a prosperous post-mining future for the area. Resources (both human and financial) will be key to firstly preparing the Strategic Investment Plan, creating the right framework for its delivery, and subsequently delivering real projects on the ground. Partnership working between industry, communities, government and agencies will be key to maximising the opportunity for the area.

As part of the Development Framework process, a dedicated project officer has recently been appointed by South Lanarkshire Council to work with the local communities (including Muirkirk in East Ayrshire) to develop local investment priorities and we are keen to work with all stakeholders on the preparation and delivery of an ambitious Plan to help shape a new '2030 vision' for the area.

The 2020s are going to be key in terms of delivery of additional renewable energy capacity to meet targets and underpin the decarbonisation of our energy system, transport, heat and other sectors. In the same vein, the 2020s will be key in making the most of the opportunity the additional deployment of renewables at the Hagshaw Cluster will bring for the area.

As stated in the Just Transition Commission's report it is vital to ensure that the transition towards a climate-neutral economy happens in a fair way, and no communities should be left behind in our national mission for a fairer, greener Scotland. 3R Energy feel passionately that there is a huge opportunity to deliver real benefits for the ex-mining communities in South Lanarkshire and East Ayrshire from the Hagshaw Cluster as part of a Just Energy Transition.





Summary and Next Steps

3R Energy will formally consult with local communities, key stakeholders and interested parties on plans for the Western Expansion of the Hagshaw Energy Cluster as the project develops over the remainder of 2022 and beyond. An indicative project timeline is set out below.

Proposed Project Timeline





Whilst in its early stages, we felt it important to highlight the emergence of the Western Expansion project to key stakeholders at the earliest opportunity given the significant potential it has to:

- **bring significant investment to the local economy;**
- **create new green jobs and local training opportunities in a former coalfield area;**
- **deliver a further £100m* of investment in local communities;**
- **make a substantial contribution to national renewable energy, climate change, green hydrogen, energy security and nature restoration targets; and**
- **mobilise a new, secure, ring-fenced, long-term funding stream of £40m** dedicated to delivering landscape-scale nature restoration within the Muirkirk & North Lowther Uplands SPA.**

To be kept informed of progress with the Western Expansion project, please send your email address and contact details to: communities@3renergy.co.uk

Public Consultation events to provide more detail on the Western Expansion proposal and to obtain initial feedback from the local communities will be arranged in late Autumn 2022, with the events advertised locally and information leaflets issued to closest properties in advance. If you have any initial questions or comments on the project in advance of the consultation events, please contact the project team at: communities@3renergy.co.uk or 01555 660244 who will be happy to discuss the project with you.

3R Energy
August 2022



Progress is in the hands of those who take bold steps





An Integrated Renewable Energy Development

3R Energy

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