# North Kyle Wind Farm

## A case study of considerate, community-focused development

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brockwell energy

# Summary

**North Kyle is a nationally significant project accounting for 28% of the new onshore wind capacity for 2025, almost twice the capacity of the next biggest project constructed in the same year.**

The North Kyle wind farm project will generate electricity sufficient to power over 191,000 homes and save over 270,000 tonnes of carbon emissions per year.

Wind farms deliver important renewable energy, but they also have impacts - that cannot be avoided. 49 turbines of 149m tip height cannot be hidden from view. The construction itself cannot happen without some impacts on local communities. It is therefore essential that wind farms are carefully designed and located to minimise such negative impacts.

North Kyle Wind Farm project is an exemplary example and case study of how wind farms should be planned and built in close consultation with local communities, the local planning authority and environmental stakeholders to deliver real benefits in addition to a green source of energy.

**49**

**Number of turbines**

**220.5 MW**

**Generating capacity**

**191,000**

**Homes powered**

**Each year, North Kyle will prevent over 270,000 tonnes of carbon emissions from entering the atmosphere.**

# North Kyle's Coal Mining Legacy

**The North Kyle forest area has been at the heartland of coal and ironstone mining for centuries, initially by deep mining from several collieries in and around Kyle forest and more recently by opencast methods.**

### A long history of extraction

Opencast mining of the Chalmerston site was initiated by the former British Coal in 1988 and those workings slowly migrated from the southern end of the site in a north easterly direction into the Kyle Forest area. Following the privatisation of the coal industry in 1994 operations were continued by Scottish Coal who also opened the House of Water opencast mine in the mid-90s further north near Dalgig.

### A legacy from failure

In 2013 Scottish Coal failed leaving large areas of the Chalmerston opencast and its extensions in a derelict state, and the House of Water mine largely unrestored.

The cash and profit from the coal mining had been stripped out and there were insufficient funds left to restore the sites and remaining coal in the ground at Chalmerston unviable to extract.

### A huge restoration challenge

Coal mining at Chalmerston had ceased prior to Scottish Coal failing in 2013 leaving large water filled mining voids at Pennyvenie, Chalmerston North, and Chalmerston North Extension; with vast areas of excavated material spread across the land.

There were totally insufficient sources of soil available to contribute towards restoration as soil reserves had not been stored and cared for during opencast operations as they should have been.

The water filled mining voids contained such volumes of water that it was unviable to pump them out.

## The site was the biggest problem left by Scottish Coal

# Overcoming a £35m+ Hurdle - From Dereliction to Opportunity

**The monies that had been bonded by Scottish Coal were only a fraction of the £35m needed to restore the derelict opencast workings and to pump dry the mining voids. Innovative alternative ways to deliver restoration of these vast areas had to be considered.**

In 2016, East Ayrshire Council started some works to fence off the most dangerous areas of the Chalmerston sites and to regrade some steep slopes. There were insufficient funds to do much else.

In 2015, the option of mining further coal reserves in the Benbain area to allow a revised and improved restoration solution to be delivered was ruled out by the falling price of coal at the time.

The site looked like it was destined to left entirely unrestored and unfit for future public access. The lack of restoration was a stumbling block preventing the Forestry Commission (now Forestry and Land Scotland) from delivering its North Kyle Masterplan that envisaged the site being opened up for public access after decades of being closed of to allow the coal mining to take place.

In 2016, Hargreaves Services (now Brockwell) saw one final opportunity to deliver funding to make a meaningful improvement to the site.

**What began as a legacy of abandonment and dereliction has now become a story of recovery and renewal.**

# Wind – The Restoration Solution

**Hargreaves had been working hard and effectively with several local authorities across Scotland and with the Scottish Mines Restoration Trust (that it had helped to establish) with the aim of finding innovative ways to fund to deliver restoration solutions across nine different derelict coal mine sites across Scotland.**

Hargreaves was committed to helping improve the restoration outcomes for all sites and to create opportunities for investment and reuse where possible.

A small team at Hargreaves, that later became the separate and independent Brockwell Energy, devised a plan to develop a large-scale wind farm now known as North Kyle to generate funding to restore the site and help with regeneration in the surrounding communities, many of which had been impacted through the demise of the coal industry.

## Clean Energy, Real Impact

## Next chapter: restoration delivered

**A once-derelict site, now restored with lasting value for the land and local communities**

# North Kyle: Ambition from the Outset

**When the scheme was born in 2015, the UK Government had just withdrawn all renewable subsidies for wind schemes. It was immediately clear that for any scheme to be viable it would need to be of a significant scale to deliver restoration of derelict coal workings and create a meaningful fund for local regeneration.**

As a result, the North Kyle Wind Scheme was initially an 82 turbine 300MW project spread across an area owned by both Forestry and Land Scotland and Hargreaves. Ultimately, it was reduced to 49 turbines due to grid constraints.

Despite the challenges facing the project after the subsidies had been cut, Brockwell did not dilute the scheme and remained committed to deliver meaningful change.

Brockwell separated from Hargreaves in 2018 and continued with the development of the North Kyle scheme with the backing of its new owners who specialise in green energy development and could fund the £300m needed to build the scheme.

**In a hostile policy climate, the project moved forward anyway - and set a new benchmark.**

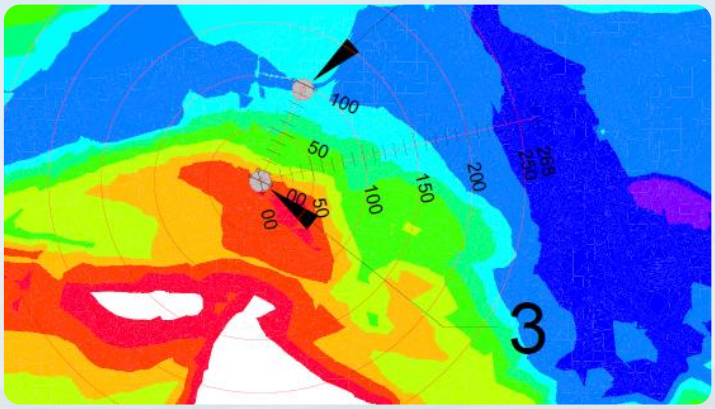
# Technical challenges navigated with robust design

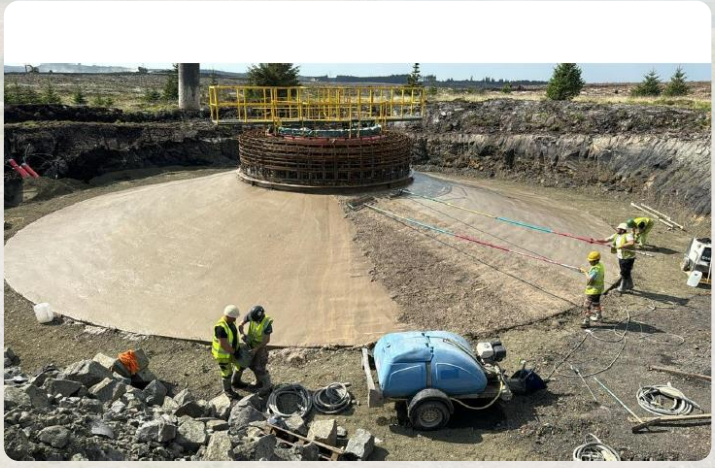
**Brockwell took great care over the site design to site the turbines sympathetically in the landscape and maximise the opportunities for site restoration.**

Developing wind turbines on opencast backfill presented a significant technical challenge and required an extensive suite of advanced geotechnical investigation techniques. This included geophysics and cross-hole logging.

The final foundation designs included an innovative range of ground improvement techniques that enabled the development of these brownfield areas.

By developing as much of the former opencast areas as possible, restoration benefit was maximised.



## Designed with care and diligence

# A construction plan designed to maximise restoration benefit

**Brockwell designed the construction of the North Kyle scheme specifically to deliver the greatest amount of site improvement and restoration. Additional costs and tasks were built into the design to remove the ugly bunds that ran down the sides of much of the old coal haul roads and to move and spread peat to areas where it could be used to green up derelict space.**

All cables were laid underground, with not a single metre visible.

We sourced almost all construction material from site, processing site-won stone to construct tracks, hardstands, compounds, concrete aggregate and even cable bedding material. This limited importation to a minimum, reducing traffic on the road and transport emissions.

**£5.2m of restoration funding planned**
At the time of planning Brockwell estimated that the value of the restoration that would be delivered simply by constructing the wind farm would be £2,600,000 (which was in addition to the £2,600,000 of cash donated to EAC to do their own restoration works).

Together, it was planned that we would deliver restoration works in excess of £5.2m.

**£7.2m delivered**
After having completed the works, we would now estimate that the construction of the scheme delivered far more than £2,600,000 of restoration value, the estimate being closer to £4,000,000 to bring the total restoration contribution to £7,200,000.

**More restoration & enhancement planned**
At the time of applying for grid only 212MW was available so the scheme was reduced from 300MW to fit onto the 212MW connection. A further 80MW was obtained in 2018 but by then the North Kyle scheme design had advanced.

A decision was taken to develop the 80MW as a separate scheme – this became the Breezy Hill scheme www.brockwellenergy.com/projects/breezy-hill-energy/

**With purpose built in from the start, every element played a role in restoration...**

**£7.2M of restoration delivered**

# Restoration in Action

- Coal haul road improvements over a length of 11km : Reducing width, creating green verges, improving drainage and removing the ugly bunds that obscured views from the road
- Re-grading of opencast backfill areas totalling 59 Ha (82 football pitches)
    - Bulldozed and prepared for topsoil placement and planting
    - Removed ugly back-tipped mounds
    - Improved drainage
- Placed peat on over 24 Ha opencast backfill areas (34 football pitches):
    - Peat placement will allow previously barren backfill areas to green-up.
    - FLS plan to plant native broadleaf species on these areas.
- Innovative ground improvement techniques used to allow turbine foundations to be built on opencast backfill areas to maximising the proportion of the site being built on brownfield land.
- We worked collaboratively with EAC to use the £2,600,000 we donated to be spent in parallel with wind farm construction, to accelerate the benefits to the site and community. Jones Bros, the project's contractor gave their full support to the restoration efforts.
- Site tracks completed to a high-standard which will benefit future access to the site for walkers and cyclists.

**Even the smallest design choices played a role in bringing the land back to life.**

# Balancing Infrastructure with Biodiversity

**Developing turbines in commercial forestry is allowing large blocks of Sitka Spruce to be broken up and bringing in more bog enhancement, broadleaf planting and natural forest edges.**

We have developed a Habitat Management Plan to improve black grouse habitats and enhance peat bogs.

We managed construction works sensitively around multiple protected species (red squirrel, badger, otter, pine marten) and schedule 1 birds (osprey, goshawk, red kite) – their numbers have increased even during construction

We constructed an osprey nesting platform offsite, which has been used for successful breeding two years running.

A healthy ecosystem with vibrant and diverse species will be a major asset for the site and will be a great draw for visitors and local communities.

## A thriving ecosystem is now part of North Kyle's long-term legacy

# Constructed with Care, Communicated with Clarity

**Brockwell has consulted and communicated with communities throughout the project.**

**Brockwell held regular Community Liaison Group meetings to ensure community concerns were identified as quickly as possible. These meetings were minuted and actions lists produced to ensure issues were tracked and addressed as quickly as possible.**

No issue was too small to be listed and addressed.

The detail with which even minor issues were recorded exemplified how carefully and considerately the construction project was managed.

The community was kept up to date on plans for turbine deliveries and project updates were published in the Doon Valley Gazette.

Local schools were visited to present to pupils on careers in wind energy and construction and hosted site visits for the local MP, councillors, planning officers, interested community members and local schools.

Brockwell ensured there were two different access routes to site so that construction traffic could be divided between these routes, even though delivered were taking place overnight.

# Investing in People, Not Just Projects

Brockwell is committed to provide £5,000 per MW installed capacity of community support funding. This would provide £60m of funding over the course of the project. As with most such packages these payments would not be starting until the construction and commissioning had been completed.

For this reason, Brockwell devised the following improvements to the standard £5,000k per MW that was already set to deliver for £1m per year.

Brockwell saw an opportunity to create a scenario where a group of local communities that would benefit from funding starting much sooner.

A commitment was made to deliver an additional £3,500,000 as soon as the project started construction - this was in addition to the standard £5,000 per MW

Brockwell provided £2,600,000 to EAC to help boost the funds available for restoration and an additional £600,000 to help fund broadleaf planting once some of the areas had been restored with peat and other soil making material extracted during the construction of the wind farm.

Brockwell had always recognised the importance of making sure that local communities were empowered to decide and control how these monies were spent - especially given the huge sums of money that can be delivered from these schemes.

All parties and communities recognised that these were game changing sums and care would need to be taken to ensure that far greater long term legacy benefit was delivered compared to that achieved by the previous coal mining funds.

Brockwell had devised a North Kyle Trust to manage the monies arising from the North Kyle project. As developments grew in the area both Brockwell and the communities recognized the importance and need to coordinate how funds from different projects were used.

This realisation was the catalyst for the development of the unique 9 Community Council Group (the “9CCG”). Brockwell encouraged and supported the development of the 9CCG providing £200,000 before the North Kyle project even started construction, to help the 9CCG put in place proper governance and reporting procedures and to test these out with some initial pilot projects.

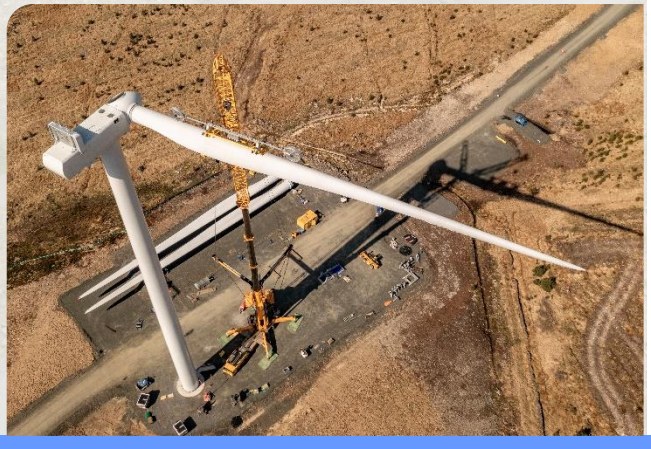
**Brockwell have delivered the UK’s most generous package of community support**

# Investing in the Local Economy

**Every effort was made by Brockwell and its main contractor Jones Bros to engage and utilise support from local business as much as possible**

- Ground investigation contractor (Natural Power)
- Construction management services (Natural Power)
- An East Ayrshire company (Speednet Scotland) selected to provide a communications solution
- The Port of Ayr was used to for deliveries of all towers, nacelles, hubs and drive trains.
- Various local plant hire companies used to supply machinery and drivers
- Local plant drivers and operators have been hired by Jones Bros, the civils contractor – including some who drove plant in the North Kyle surface mine.
- Drone photography services
- Use of local stationery printers
- Local cleaners for site offices
- Use of local garages for vehicle repairs and servicing .
- Brockwell itself hired local administration staff and contractors directly to support the project

The workforce, that peaked at 300, used local shops, hotels, cafes and accommodation throughout the two-year construction period.

**From plant drivers to printers, local people helped bring the project to life.**

# Supporting Local Life Beyond the Project

**Brockwell remain committed to supporting development in the local area and will continue to operate a local office in Dalmellington to provide an information point for the community.**

Over and above all the North Kyle benefits Brockwell has been an active supporter and sponsor of local clubs and charities including being proud sponsors of the Scotland Power chair football teams and the Drumgrange and Kiers Angling Club as well as supporting local festivals, repairs to the Rankinston football pitch and donations to foodbanks. Brockwell have done this quietly and without fanfare.

# In conclusion....

**As construction at North Kyle nears completion, we can confidently reflect on the success of the restoration programme. Areas once scarred by the collapse of the coal industry have been transformed, delivering environmental renewal and creating a platform for long-term community benefit.**

## Community Leadership with Real Impact

The 9CCG (9 Community Council Group) is now in its second year of operation and going from strength to strength. With a well-established and capable team, the group has developed a clear vision for delivering a lasting legacy for former coalfield communities.

- ✓ Over £600,000 invested in local initiatives so far
- ✓ Recognised with the 'Community Wealth Building' award at the 2024 Ayrshire Chamber of Commerce Business Awards
- ✓ A growing network of support, collaboration and local participation

## Restoration Continues Beyond Construction

While construction may be concluding, the regeneration journey is far from over.

- ✓ A significant habitat enhancement and replanting programme will continue in the years ahead
- ✓ The site will gradually establish and green over time, improving biodiversity and visual amenity
- ✓ North Kyle stands as an evolving example of how former industrial land can be successfully repurposed

## Ongoing Community Benefit

North Kyle, along with Brockwell's wider portfolio, will continue to contribute funding to the 9CCG. As awareness of the funding opportunities grows, so too does the potential for even more meaningful local improvements.

- ✓ Future projects will continue to be led by communities
- ✓ The funding model ensures decisions remain local, flexible, and impactful

The site is now close to full operation and will soon begin exporting renewable electricity to the UK grid. A former coalfield will now power homes, reduce carbon emissions, and continue to give back to the communities it once supported.

**From coal to clean energy - a legacy transformed**