

Arkaig Natural Capital
Achnacarry Estate

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ARKAIG NATURAL CAPITAL EXPLORING BLENDED FINANCE: A CASE STUDY

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1.0 Introduction and project background

Achnacarry Estate spans more than 28,000 hectares surrounding Loch Arkaig, in the Northwest Highlands, and falls within Scotland's 'Rainforest Zone'. The Estate's aim is to enhance the ecological health of the catchment, with Peatland and Woodland Carbon Code projects, and their potential to generate carbon credits, providing the means to do this.

With the support of two rounds of FIRNS funding, the Estate have been working to create a landscape scale project that can attract and secure private investment to support project delivery.

2.0 Purpose of report

It is widely acknowledged that public funding alone is not sufficient to meet national climate and nature targets. As we mark completion of a second round of FIRNS exploring private finance mechanisms, we have compiled this short report to share some of the lessons learnt.

The report is not exhaustive, nor is it intended as a step guide for navigating natural capital markets. Instead, it summarises key elements that have impacted this project. If you would like further detail on anything described within the report, then please contact fernanda.white@bidwells.co.uk.

3.0 Project costs

The below describes the elements that have or will constitute the biggest costs to the project.

3.1 Project Development

3.1.1 Professional forestry services

Instructing the services of a professional forester is crucial for creating woodland expansion projects. Specialist knowledge is required to develop planting plans that are ecologically and logistically viable, prepare budgets and timelines, engage with suppliers, and to write grant and consent applications. The project's forester has also played a vital role in engaging effectively with statutory and community stakeholders.

Robust budgets, timelines and carbon forecasts are fundamental for modelling cashflow and potential returns on investment. The more advanced designs are, the better and more informative the estimates will be.

3.1.2 Community engagement

In addition to allocating time for regular communication and meetings with community groups and individuals, costs have arisen from preparing focused engagement events, contracting specialist consultants, and preparing documentation.

The specialist consultants were engaged to conduct a focused process to understand the needs and wants of the community and provide a basis for structured co-development of benefits going forward. Whilst not essential to employ external consultants, it helped ensure that community responses weren't influenced by existing relationships, to disaggregate from existing Estate engagement, and ensure that the process aligned with best practice guidance and expectations, at a time when these were evolving rapidly.

3.1.3 Investor engagement



Time was invested initially to create a high-level summary report of the project and to meet with a range of interested parties. Once we had chosen a partner to proceed with, more detailed negotiations were extensive.

Budgets and carbon calculations for multiple forestry and peatland projects were combined into a single carbon and cashflow model. This was a time-intensive process in itself, further complicated by the need to explore different scenarios, due to uncertainties in grant support and project timelines, and ongoing design changes.

Time required for investor engagement is difficult to predict, but the requirement both for financial modelling and communicating with investors significantly exceeded expectations.

3.1.4 Baseline surveys

One of the constraints to producing a viable business model at the start of the project was that a proportion of costs and carbon revenues could only be based on very high-level estimates. Therefore, refining project design was a priority for improving confidence in the project and financial models, both for the Estate and investor.

Baseline surveys are essential for identifying suitable areas for planting/natural regen to inform project design, as well as supporting grant and consent applications to statutory bodies.

The larger the area, the greater the survey effort required, which amplifies costs. For a landscape scale project such as this, the cost would have been prohibitive for the Estate without support from grants such as FIRNS.

3.1.5 Legal costs

The Estate has engaged lawyers to provide legal advice and prepare agreements. This is not a well-established area of law, and it is vital that the terms of any contract are carefully explored to ensure the Estate are not burdened with undue risk or obligations. Since the conception of the project, a standard carbon contract has been produced by leading Scottish law firms, which is helpful, but does not supersede the need for project-specific legal input.

3.1.6 Operational costs

Depending on specific project requirements, operational costs, such as fencing, planting, creating or improving access, ground preparation (if used) and crop establishment support (weeding and beat up), may amount to ~£7,500-£8,500/ha. Beyond this, there is a requirement for operational oversight and contract management from a professional forester.

3.2 **Ongoing management and maintenance**

Deer management

The Estate see deer as an integral part of the area's ecology, however, significant management of the population is required to support establishment of trees and protect the recovery of peatland. This is likely to require a significant concentrated effort at the start of the project, with ongoing surveys and maintenance culls required in perpetuity.

Carbon Code costs

There are costs associated with the accreditation of projects under both the Woodland Carbon Code and Peatland Code. Although not accounting for a large share of total project costs when compared to project development and capital works, they will be incurred at regular intervals for the life of the project. These relate to registry fees per PIU and verified unit issued, fees paid to third party verification and validation bodies, and professional fees for preparing paperwork and liaising with validation bodies. There are some savings to be made to the latter two elements by grouping projects.



Works maintenance

Areas must be regularly checked for signs of failure, and remediation will need to be designed and undertaken if issues are found. This includes checking several km of fencelines, which is particularly time consuming in upland terrain. The Estate are also working with neighbouring landowners to devise a landscape-scale monitoring strategy for measuring the biodiversity impact of the projects. This will involve ongoing surveys in addition to general monitoring for failure.

4.0 Policy and market context

This is not a detailed whole of market summary, but the following are elements that have had significant influence on the project

4.1 Carbon price

4.1.1 UK Carbon price index

The reported volume weighted average price per carbon unit for Woodland Code projects is £26.85, as of 2024.¹ However, this is based on limited and self-reported data, within which there is significant spread, and also reflects the price of PIU sales, rather than verified units. Combined, this means that the £26.85 figure may be a misleading benchmark for the current or future value of verified units.

Carbon price forecasts

These vary widely, with the upper end forecasts projecting north of £500/unit by 2050.² There have been landmark trades in the past year, achieving carbon prices of £100+, but these had not yet taken place at the time we started engaging with investors, and the total values of these transactions are relatively small in the context of this project.

Impact on project

There is a disparity in what is publicly reported as average price for carbon currently and future forecasts. Coupled with variability in both these estimates, it creates significant uncertainty in IRR calculations. The project has also found public reporting of carbon sales (via UK Carbon Price Index) to be used as a benchmark for current PIU values, suppressing the amount that buyers are willing to pay above this.

4.2 Demand for carbon units - SBTi and corporate targets

The Science Based Targets Initiative helps corporations to work towards Net Zero by 2050, primarily by reducing emissions, with offsets applied for up to 10% of total emissions once this has been achieved.

Exclusion of Peatland Carbon

Currently, SBTi does not allow credits from Peatland Carbon to be used by corporates to offset residual emissions, as they are not considered active removals of carbon. This is dampening demand and all investors we engaged with were primarily interested in the potential woodland carbon units to be generated by the project.

¹ [UK Carbon Price Index | IUCN UK Peatland Programme](#)

² Oxygen Conservation, Oxygen Conservation Carbon Curve 2025.



Timing

Because SBTi is aiming to support Net Zero by 2050, companies who have signed up require verified units before this date, if they are to be used to meet their targets. As illustrated in 5.0, this creates a mismatch between peak supply and demand.

4.3 Woodland Carbon Code and Peatland Code

Although not the only standards available for quantifying carbon emissions/abatement, they are the only ones backed by government and it was a stipulation of some of those we engaged with that carbon credits should be registered with these standards.

Both standards enable projects to calculate estimated future emissions abatement/sequestration, from which PIUs are issued. These forecast PIUs are then converted to verified units as projects evidence that they have been achieved – based either on tree growth, or positive change in peatland condition.

It is important to recognise that the that PIUs represent maximum carbon emissions abatement/sequestration that could be achieved but do not account for likelihood of realisation. In the case of Peatland Carbon, in particular, these two things could be very different. For example, the more degraded a bog is, the higher the potential carbon savings are from restoring it. However, severely degraded bogs are also more challenging to restore, potentially leading to a high proportion of forecast carbon credits not being achieved.

Both standards are also under continual review, with the potential for future updates to impact carbon credit calculations.

4.4 Demand for other nature-based products, e.g. biodiversity

Although there is clear appetite for carbon credits to demonstrate wider benefits, we have found the primary product of interest to investors/buyers is the carbon itself, with biodiversity benefits seen as supplementary.

4.5 Evolution of standards and guidance

Since the project got underway, there has been development in guidance and available information. This includes the release of a Community Inclusion Standard, publication of Scotland's Natural Capital Market Framework and a standard carbon contract. The carbon standards themselves are regularly updating, with changes to both the Woodland Carbon Code and Peatland Code occurring since 2024. Whilst mostly helpful, it has been important to keep abreast of updates and changes.

5.0 Cashflow and carbon projections

5.1 Projections – cashflow

Most costs are expected to occur within the first 10 years of the project, of which approximately 60% may be covered by grants, depending on what level of grant support is obtained. FGS grants are paid in arrears, following completion of works, and therefore the more closely projects are condensed, the greater the impact on cashflow.



5.2 Projections - carbon

Figure 1 shows the expected profile of carbon credit realisation from the project.³

This is not a continuous curve (due to decadal verification events) and, because trees take time to grow, peak production occurs between 2045 and 2070. The red line represents 2050, which is the deadline for many corporate Net Zero targets (see 4.2).

As shown by figure 2, this means that there is a small window in which carbon credits could be issued from the project, and be used to meet 2050 net zero targets, with most carbon credits being produced after this date.

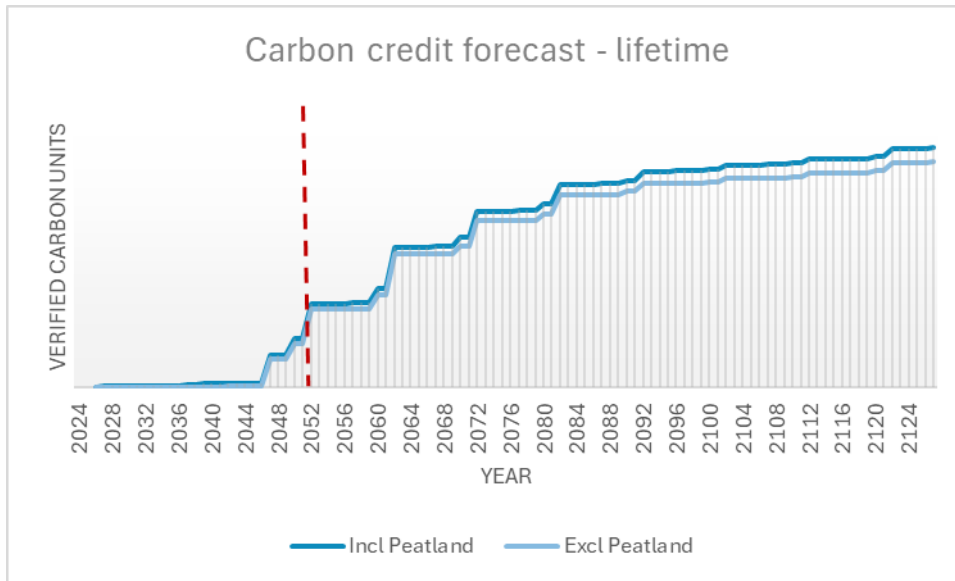


Figure 1: Forecast cumulative carbon credit profile over 100 years.

³ For the sake of this illustration, planting has been staggered in three main blocks and it should be noted that delivery schedules are still being developed.



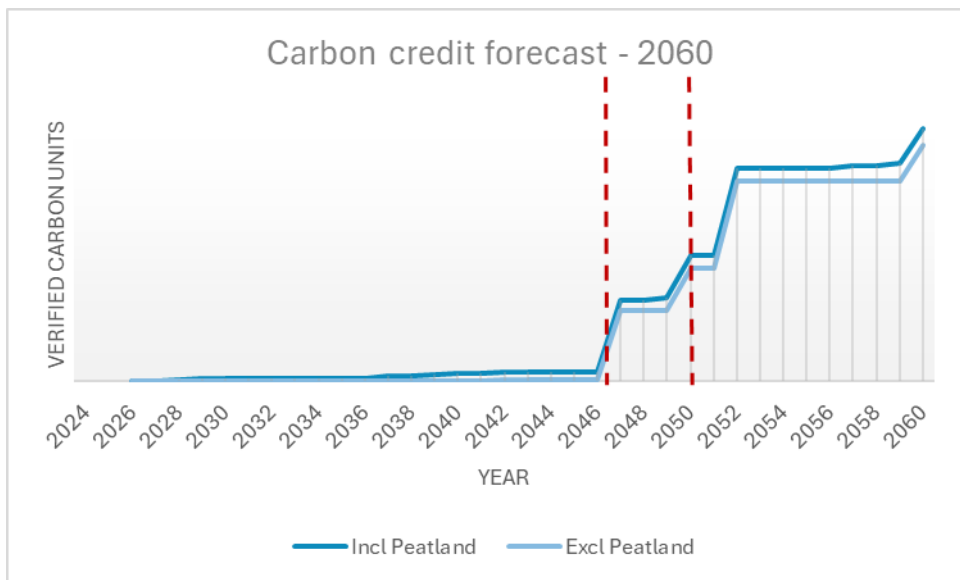


Figure 2: Forecast cumulative carbon credit profile up to 2060. The two red lines represent the time window in which significant volumes of carbon credits start to be realised and can be used to meet 2050 emissions targets.

6.0 Financing options

6.1 Public grant funding

6.1.1 Forestry Grant Scheme (FGS)

There is strong governmental support for forestry projects within this region, and a combined £19.5m was allocated to native woodland creation and natural regeneration within the 2025/26 budget. However, as mentioned in 5.2, even if the project were to secure the maximum grant available, it would likely only cover up to 60% costs for establishment. Further to this, the grant is competitive, making the value secured unknown until the point of award. This has created challenges in defining the funding gap and forecasting returns.

FIRNS

Achnacarry Estate has successfully applied for two rounds of FIRNS funding to support project development (see 3.1). This funding has been fundamental to engaging productively with investors, providing the means to refine project designs and financial forecasts, crucial for any agreement.

6.2 Private investment

The project has engaged with a range of potential investment partners. Potential mechanisms for investment included:

- Leasing the land to an investor to develop the project, in exchange for either an annual sum, or share of carbon credit revenues for a defined period (e.g. 40 years).
- Agreeing a split of project costs and delivery responsibility, in return for a split in carbon credits or revenues from sales for a defined period (e.g. 40 years).



- Payment upfront for carbon credits to be delivered in the future.

Key considerations for the Estate included level of control over project design and management, exposure to risk vs upside from future carbon price fluctuations, agency over the buyer of any carbon units sold and contract duration.

7.0 Managing risk

One of the main concerns for the Estate is how to manage risk of the project not delivering forecast carbon units. Although it is not uncommon for nascent markets to come with higher degrees of uncertainty, there are specific risks associated with nature-based carbon projects that have factored into our thinking:

- Under-delivery of forecast carbon units
 - Within Estate control, e.g.:
 - Deer management
 - Fence maintenance
 - Robust project design and management
 - Not in Estate control, e.g.:
 - Changes to carbon codes
 - Force majeure
 - Projects not delivering maximum forecast carbon units, despite all reasonable efforts (see 4.3)

7.1 Insurance

The project has engaged with insurers but not yet found any products suitable for managing the risks identified above. The first products to the market have focused on protecting the buyer, rather than seller. These are costly and cover short periods of time relative to project duration. This is a rapidly evolving area, and the project will continue to explore options.

7.2 Managing expectations

Because of the inherent uncertainties in the project, we have sought to ensure we are making conservative estimates of what the carbon returns might be, while ensuring that budgets are generous. We have also engaged lawyers to explore legal entities and contractual terms that manage exposure to risks.

8.0 Summary

The potential for the project to generate significant volumes of carbon credits, particularly Woodland Carbon Units, has been attractive to investors. However, because native trees do not start to sequester large volumes of carbon for the first 20 years, most of these won't be realised until after 2050. This creates a clear mismatch with anticipated peak demand from companies seeking verified units before their 2050 Net Zero deadlines.

Carbon prices remain too low to cover the full costs of project delivery, let alone development, necessitating a reliance on public funds. However, as operational grants can only be confirmed once an application is submitted and approved, it is very challenging to estimate investment need at an early stage, which impacts confidence in financial modelling.



Although a range of mechanisms for private investment exist, with some investors being more willing than others to absorb costs and/or responsibility for project development, investor engagement would have been significantly more challenging without an understanding of the project's financial requirements and potential returns. FIRNS funding has therefore played a crucial role in enabling the project to progress.





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