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Woodland Carbon Code Financial Modelling Tools

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1. Introduction

The Woodland Carbon Code Financial Modelling Tools

The [Woodland Carbon Code](#) (WCC) is a leading voluntary standard for woodland carbon projects in the UK, ensuring that such projects are responsibly managed to sequester or reduce carbon dioxide emissions in the atmosphere. A critical aspect of project planning and validation under the WCC is the financial analysis. A suite of tools have been developed to support institutions to support this process, both in planning the project and understanding the potential long-term value of the sequestered carbon.

There are 3 Tools within the suite:

1. WCC Carbon Calculation Tool
2. WCC Cashflow Tool
3. EAUC Financial Modelling Tool

The tools have been developed as part of the [University and College Land for Carbon](#) project which aims to encourage universities and colleges to create woodland on their land and register with the [Woodland Carbon Code](#) (WCC). A verified UK-government-backed carbon credit which can help institutions achieve their net-zero targets through carbon sequestration. The carbon credits created can be used to offset institutions' own residual emissions or traded on the carbon market via the [Carbon Coalition](#). Institutions can create woodland without registered with the WCC but they will not be able to use this as part of their offsetting or net-zero strategy.

The tools have been provided with example data to illustrate how they work, institutions need to enter their own information when starting their own analysis. The tools can be found at the [project page](#). Blank versions of the WCC tools can be found at the [Woodland Carbon Code website](#).

There are the following resources which can further support institutions:

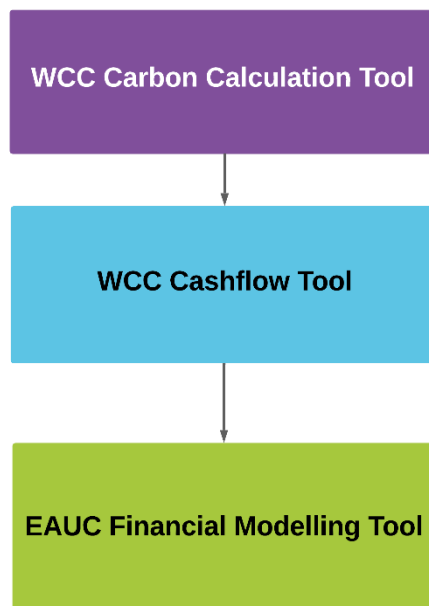
- 1) Business Case
- 2) Template Presentation
- 3) Institutions Guidance for Registration
- 4) Financial Modelling Guidance and Tools
- 5) Grants and Funding support
- 6) Case Study: University of Leeds - Gair Wood
- 7) Glossary

Disclaimer

Where information is copied it has been taken directly from its source document and is referenced. This document is intended for use in England, however most the information, especially the WCC information, can be applied UK wide. This guidance is intended for effective project execution under the Woodland Carbon Code guidelines at the time of writing but please refer to the Woodland Carbon Code guidelines directly for any changes. EAUC or MyCarbon are not responsible for any decisions based on this guidance and institutions should make decisions based on their own requirements.

Overview and Functionalities of the WCC Tools

The WCC have built these tools to support the specific needs of woodland carbon projects. They comprise models to support the initial project development both in designing the afforestation area, the resulting sequestered carbon and the financial estimates.



WCC Carbon Calculation Tool

This tool is where institutions input project-specific details, including project area, setup equipment and any information that might impact the cost of the project. By inputting all the information in this tool an accurate forecast of sequestered carbon over the lifetime of the project can be calculated. Much of the information regarding initial preparation of the land is included in this tool, this information is important as it helps calculate costs and initial carbon emissions associated with preparing the area for woodland creation.

The information required within this tool will be sourced from a variety of sources. In initial instances, the basic information will need to be sourced from the land owner about the state and size of the potential land plot. To increase the accuracy of the model additional information regarding tree species, planting and land preparation will be required which can usually be sourced with support from:

- Internal facilities management
- Forestry suppliers
- Local forestry commission
- Afforestation project developers
- The Woodland Carbon Code
- The EAUC
- Other suitable professionals

Detailed information regarding this tool can be found on the [WCC website](#).

WCC Cashflow Tool

This tool calculates annual cash inflows and outflows, considering both the costs (like site preparation and maintenance) and income (from carbon credit sales, forestry income and any applicable grants). This analysis is vital for understanding the project's financial sustainability over its lifetime and a requirement for passing the additionality investment test. It accounts for other sources of income that can be potentially generated throughout the project lifetime e.g. clear fell. The tool generates cashflow forecasts for sale of carbon credits generated during the project (both pending or verified) based on current carbon prices. Potential future pricing forecasts are discussed later in this report using the EAUC financial modelling tool to allow users to understand potential long terms gains as the carbon market increase in value. Any future pricing forecasts should not be used as part of the additionality testing, the standard cashflow forecast from the WCC Cashflow Tool should be used for this purpose using the current market price.

It is also important to ensure any grant funding (see [University and College Land for Carbon: Grants and Funding Support](#)) is included in this calculation as this will impact the additionality investment test required to verify the project. Accurate data entry is paramount as it directly influences the subsequent financial analysis. When all data is entered the tool provides a pass or fail for the additional investment test with can be found in the results tab.

Detailed information regarding this tool can be found on the [WCC website](#).

Understanding Additionality in WCC Projects

Additionality is a core principle in carbon offsetting, ensuring that the carbon sequestration provided by a project would not have occurred without the incentive of carbon finance. In the context of the WCC, projects must pass additionality test found in the results tab of the WCC Cashflow Tool to be certified. This ensures that the projects contribute to additional carbon savings beyond what would have happened in a "business as usual" scenario.

The WCC outlines specific criteria for additionality testing, which include:

- **Regulatory Additionality:** Projects must not be required by law. They should go above and beyond any legal requirements for land use or management.
- **Financial Additionality:** The project should be financially viable only with the income from carbon credits. This test ensures that projects need carbon finance to proceed, highlighting the role of the Cashflow Tool in demonstrating financial viability.
- **Barrier Test:** Projects must demonstrate that they face certain barriers (financial, technical, or social) that carbon finance helps to overcome. This test underscores the importance of detailed financial planning and analysis.

2. Long term carbon pricing

Introduction to WCC pricing

The WCC Cashflow Tool assumes fixed prices for WCC units when modelling long term cashflow forecasts. This is necessary due to the many unknowns involved in forecasting long term value within the carbon credit market. Historically, the carbon credit market has increased significantly in value but has also been highly volatile in nature due to factors such as bad press, changes in legislation and advances in the products available within the voluntary carbon credit market.

In general, WCC units are deemed to be high quality carbon credits due to a variety of reasons including:

- Promotion of a wide array of climate benefits in line with UK forestry guidelines
- Creation of new permanent woodland within the UK
- High demand for UK afforestation projects, of which WCC makes up the majority of this market resulting in a current outstripping of supply of verified units due to high demand
- WCC is a government backed scheme which mitigates many key risks that are currently present within the global carbon market:
 - **Cross border trading restrictions:** For UK based organisations, many carbon credits must be purchased from overseas due to the limited availability of voluntary carbon offsets in the UK. There are risks that governments may restrict the transfer of carbon offsets overseas, therefore having availability of UK based projects mitigates this risk. It's important to understand that WCC credits can only be used for offsetting purposes within the UK and are not suitable for offsetting international travel or supply chain emissions.
 - **Changes in legislation:** Because the WCC is a UK government backed scheme, it is expected that risks from changes in legislation regarding the development and use of WCC units are mitigated versus many other products in the carbon market.
- Removal based projects are often deemed to be higher quality than avoidance based because of the more direct nature of the carbon benefit e.g. direct sequestration.

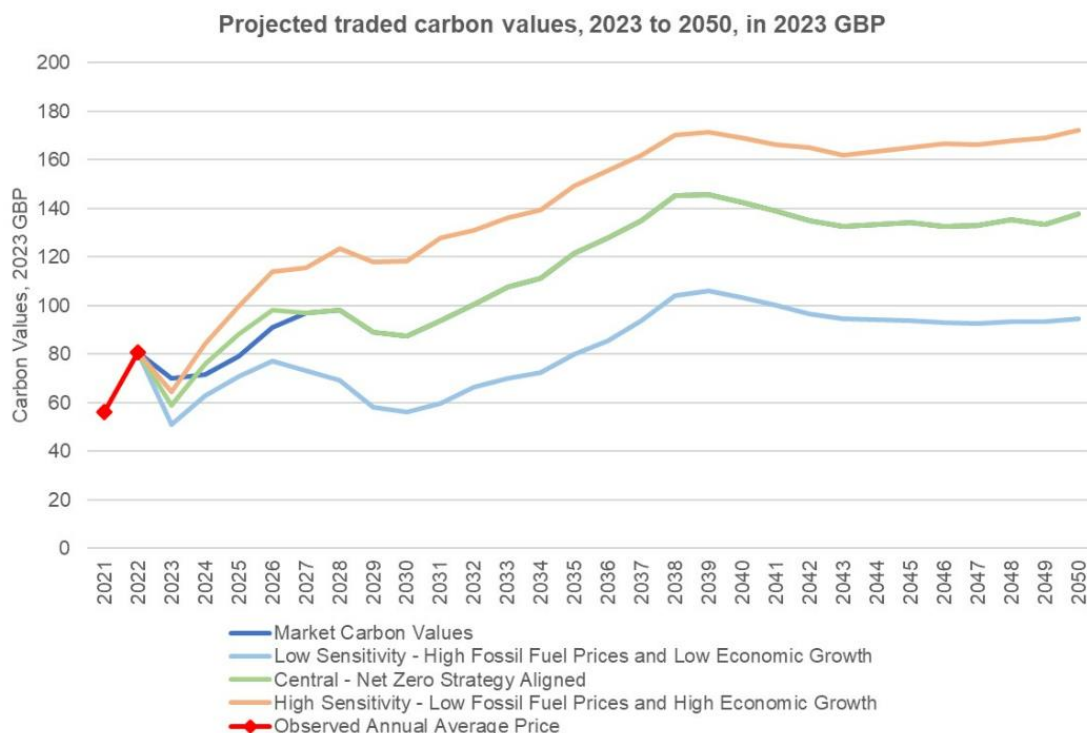
Carbon credit price forecasting

When assessing potential long-term value within the carbon markets and the impact of this value on WCC units there is a strong expectation that pricing will increase in the long term as demand for carbon credits increases. There are many forecasts available that can be used to predict how pricing will change over time for the voluntary carbon market. These are often based on different net-zero scenarios regarding how rapidly the global economy will decarbonise and the volume of carbon offsets required to meet these targets.

Due to the level of uncertainty in these forecasts, a selection of UK government-based forecasts for the compliance carbon market will be used to predict long term price increases for voluntary WCC units. These forecasts are reasonably conservative and are linked to the various scenarios the UK government is proposing to reach net-zero. Therefore, there are some logical comparisons that can be made with the WCC due to the requirements to develop and retire WCC units within the UK. The compliance market is the cap-and-trade system

applied to large industrial UK businesses that emit large quantities of carbon e.g. energy, concrete and steel. This is very different to the voluntary carbon market but there are strong arguments that the pricing systems may rise in a similar fashion as they are both driven by a necessity to reach national net-zero targets.

The traded carbon values for modelling purposes (2023) can be found on the [Department for Energy Security and Net Zero](#).



Three scenarios are modelled to 2050 to indicate potential price changes accounting for differences in economic growth and fuel prices. The baseline price of the compliance market carbon value is significantly higher than current WCC carbon unit prices, these will be adjusted for any modelling related to WCC project cashflow by only accounting for the changes in price over the net-zero timeline and not the initial value of the compliance market.

EAUC Financial Modelling Tool

As part of the University and College Land for Carbon project, a long-term pricing model has been developed to help institutions understand potential value of the WCC units beyond the current market value. This tool uses the three pricing scenarios from the UK government to predict long term value generation from WCC projects.

To use the EAUC Financial Modelling Tool the initial sequestration curves, need to be calculated in the WCC Cashflow Tool first. This information can then be copied into the EAUC Financial Modelling Tool in 10-year tranches to build pricing forecasts over a 50-year period across the three scenarios. This information can then be compared to the cashflow forecast generated in the WCC Cashflow Tool to understand the potential value creation above and beyond the fixed price cashflow model.

It is worth noting that these are only estimates and they should not be used for any formal purpose as part of the project development process, instead they should be used only internally to understand the potential future income and to justify the internal financial sign offs when deciding on whether to engage in a WCC project.

3. Future Considerations

- The carbon price forecasting data must be checked annually with the governments pricing scenarios to make sure they are kept up to date.
- When using tools provided by the WCC, it is important to make sure the latest versions are being used.
- The additional price forecasting tools could be integrated into the WCC Cashflow Tool if government forecasts can be deemed applicable for WCC units.

4. Further Reading and Useful Sources of Information

[EAUC University and College Land for Carbon resources](#)

Online Publications

- [The UK Forestry Standard](#) (FCFC001)
- [Woodland Carbon Code Standard Guidance](#)

Other Publications

- Design for outdoor recreation (Taylor & Francis)
- Designing sustainable forest landscapes (Taylor & Francis)
- Elements of visual design in the landscape (Spon Press)
- Guidelines for landscape and visual impact assessment (Spon Press)
- Practical forestry for the agent and surveyor (Alan Sutton Publishing)
- Protected trees: a guide to tree preservation procedures (Department for Communities and Local Government)
- The design of forest landscapes (Oxford University Press)
- The history of the countryside (Phoenix Press)
- Trees and woodland in the British landscape (Phoenix Press)

Websites

- Forestry Commission – www.forestry.gov.uk/ukfs
- Environment Agency – www.environment-agency.gov.uk
- Scottish Environment Protection Agency – www.sepa.org.uk
- Natural Resources Wales – www.naturalresourceswales.gov.uk
- Northern Ireland Environment Agency – www.doeni.gov.uk/niea

Legislation

Legislation and other regulatory information that should be considered during the forest management planning process can be found at www.forestry.gov.uk/ukfs or in full at www.legislation.gov.uk

This guidance has been developed by EAUC, in partnership with MyCarbon, as part of the Environment Agency NEIRF project – University and College Land for Carbon. For full details please visit https://www.eauc.org.uk/university_and_college_land_for_carbon

