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## WOODLAND CARBON

# Releasing income from woodland carbon



In this five-part series of articles for FTN **Matt Hay** explains the basic concepts of woodland carbon and carbon markets.

The Woodland Carbon Code exists to make financially unattractive woodland creation projects attractive. In doing this, it enables trees to be planted that otherwise wouldn't be, and additional carbon sinks to be created in the UK. But how does woodland carbon improve a project's economic prospects in practise? And how can the carbon income actually be released?

The answer is via two routes: the upfront sale of future carbon, or the future sale of sequestered carbon. Both options have advantages and drawbacks, which lend themselves to different types of woodland creation projects.

[www.forestcarbon.co.uk](http://www.forestcarbon.co.uk)



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Eucalyptus Renewables works across the supply-chain from farmer & forester through to end user. We specialise in:

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## Upfront sale of future carbon (PIUs)

The upfront sale of future carbon revolves around a carbon product known as a 'Pending Issuance Unit' (PIU). PIUs can be thought of as the promise of future carbon sequestration. The number of PIUs a woodland creation project has at its inception is identical to the number of tonnes of carbon dioxide (CO<sub>2</sub>) that project will sequester over an agreed contract duration. In other words, 1 PIU = 1 future tonne of CO<sub>2</sub>.

### Verifications

Over time, Woodland Carbon Code projects undergo successive verifications. The first of these happens five years after the trees were planted, with further verifications every ten years, subsequently. The purpose of these verifications is to confirm that a woodland creation project is 'on track', ie that it is delivering the amount of carbon that was agreed at the outset. This involves counting the growing trees, making sure the right number and right species are there, and that they aren't being damaged by herbivores, disease or extreme weather.

## Sale of carbon that has been sequestered already

After each verification, a certain amount of CO<sub>2</sub> can be confirmed as sequestered in the growing trees. It is there, visible as solid carbon in the wood of their trunks. At this point, the tonnage that has been sequestered is represented through the conversion of an equivalent quantity of PIUs into 'Woodland Carbon Units' (WCUs).

### Example case study

If a woodland creation project is going to sequester 10,000 tonnes of CO<sub>2</sub> over its contract duration, that gives the project 10,000 PIUs to sell at the outset. After five years, and assuming a successful verification, the project's saplings may have sequestered 50 of those 10,000 tonnes. As a consequence, 50 PIUs will be converted to WCUs at this point, in recognition of the 50 tonnes of CO<sub>2</sub> that are now locked up in the trees.

Ten years later this woodland will be due its second verification, at which point the trees could have sequestered another 1500 tonnes of CO<sub>2</sub>. This would enable another 1500 PIUs to be converted to WCUs, giving the project a total of 1550 WCUs after 15 years.

## Cash flow timeline

The above example illustrates two important points:

### 1. The rate of carbon sequestration in a growing woodland changes throughout its lifetime.

Slow growth initially, combined with the soil disturbance that occurs during ground preparation, means woodland creation projects are often barely breaking even carbon-wise at year 5. After 15 or 20 years, however, the trees have laid down extensive root networks and are growing quickly, with the sequestration rate increasing correspondingly.

### 2. Releasing income from the sale of WCUs takes a very long time but prices achieved are higher.

Whereas PIUs can be sold upfront, most projects won't have many WCUs to sell until 15 or even 25 years down the line. For many landowners, that is simply too long to wait.

For landowners who can afford to wait, selling WCUs can be lucrative. The most recent 'Woodland Carbon Guarantee' auction saw WCUs achieving an average price of £19.71, which compares favourably to the sale price of £5 - £8 currently achieved by most PIUs. However, we must account for the fact that we're comparing a future price for WCUs with the current price of PIUs. Applying an appropriate discount rate brings the future price of WCUs back to their present value, allowing for a fairer comparison with PIUs.

## What drives prices for PIUs and WCUs?

In the UK, the market is largely voluntary, because most businesses are not required to offset their carbon emissions (yet). As a result, it is buyers of carbon who ultimately dictate the market price. Businesses will only pay what they want to for carbon credits, because they aren't mandated to buy any, and cheaper offsets can always be procured overseas.

As a result, what we at Forest Carbon term the 'charisma' of a woodland creation project is often critical to the price its carbon can achieve. Most businesses want to buy carbon from woodlands with a strong narrative, woodlands that offer clear benefits to society, be they social, hydrological or ecological. Rightly or wrongly, this means that carbon from woodlands comprised (primarily) of native species, which enhance biodiversity, mitigate flooding and/or have amenity value for local communities, commands the highest price.

Even the latest round of the 'Woodland Carbon Guarantee', where the government (in England) acts as a buyer of carbon, has ring-fenced 75% of the available budget for 'predominantly native woodland' projects. At the time this article went the print, the results of that auction were not yet available. They will be the focus of my next article, in the February edition of Forestry and Timber News, along with the 'Woodland Carbon Guarantee' itself.