

The Carbon Illusion: Why “Net Zero” Is Not Environmental Neutrality.

Description



Tree planting on the Ralia Estate validated under the Woodland Carbon Code. The landscape is now being reshaped in the name of “natural capital” and carbon offsetting.

Across Scotland’s Highlands, a quiet transformation is underway. Estates once used for grazing or sporting are being rebranded as “natural capital assets,” supported by public grants, enclosed for regeneration, and entered into carbon markets. The narrative is compelling: restore nature, capture carbon, and allow industry to offset its emissions. It presents itself as a virtuous circle.

But beneath that narrative lies a more complex and more uncomfortable reality.

Recent estate transactions illustrate the shift. Properties such as Kinrara and Far Ralia have been bought, repositioned, and marketed explicitly around their carbon and natural capital potential. In these cases, the projected future value of carbon sequestration is not simply an environmental outcome it becomes part of the financial logic of the land itself. Carbon is not only being stored; it is being priced, forward-sold, and embedded in valuation.

At the heart of this system are carbon credits issued under frameworks such as the Woodland Carbon Code. These credits are sold to companies – airlines, manufacturers, energy firms – seeking to balance their emissions. The idea is straightforward: carbon released in one place is offset by carbon absorbed elsewhere.

The difficulty is that this apparent symmetry does not hold under scrutiny.



Large-scale planting schemes generate carbon credits based on projected future absorption, not measured removal. Photo credit Richard Evans.

Carbon credits generated from woodland creation or peatland restoration are not based on direct measurement of carbon removed today. They are based on models — projections of what might be absorbed over decades, sometimes a century. They rely on assumptions about tree growth, soil conditions, management practices, and the long-term stability of the ecosystem. They also depend on a counterfactual: what would have happened to that land in the absence of intervention. That counterfactual cannot be empirically verified.



Much of the claimed carbon storage exists in fragile biological systems – soils, mosses, and vegetation, but how much, for how long? Photo credit Richard Evans.

More importantly, the carbon is not permanently removed. It is stored – in biomass and soils – and remains vulnerable to fire, disease, land-use change, or mismanagement. In contrast, emissions from fossil fuels are effectively permanent on human timescales. Treating these two as equivalent is not a scientific conclusion; it is a policy choice.

This distinction matters.



Ardroe wildfire (21:21h) 20th April 2023. Stored carbon can be released in hours. Biological sequestration is not permanent – it is contingent. Photo Credit Richard Evans.

Once carbon credits are sold, the future carbon value of that land has effectively been monetised in advance. The land is then committed to long-term management obligations – often extending 40 to 100 years – to maintain that storage. Its flexibility, a core component of land value, is reduced, yet market pricing does not always fully reflect that constraint.

This creates a subtler risk: not of double counting carbon units, which are tracked through registries, but of double counting economic expectation. The same – green value – can be priced into the initial acquisition, realised through credit sales, and then implicitly assumed again in subsequent valuations. When that occurs, the system begins to resemble speculative finance as much as environmental restoration.

Concerns about this dynamic are not limited to critics of carbon markets. Practitioners within the sector have raised similar questions. One woodland adviser has argued that some schemes risk becoming

• highlighting the extent to which financial structuring can shape land-use decisions.

There is a further, more fundamental issue. Carbon accounting captures only one dimension of environmental change. It does not measure biodiversity outcomes, hydrological impacts, soil disturbance during establishment, or the broader ecological consequences of large-scale land-use conversion. Even within carbon itself, the picture is more complex than commonly presented. Research on tree carbon dynamics in Great Britain suggests that a significant proportion of carbon storage and sequestration occurs outside formal forests – in hedgerows, field margins, and dispersed trees. These systems are rarely monetised or incorporated into carbon markets, which instead favour large, discrete, and measurable projects such as plantation woodland.

The result is a structural bias: capital flows toward what can be monetised and traded, not necessarily toward what is most effective or ecologically appropriate.

Early-stage impacts further complicate the picture. On certain soils, particularly carbon-rich or peaty ground, site preparation and planting can release stored carbon before any long-term sequestration benefit is realised. Outcomes vary by location and management, but the assumption of immediate climate benefit is not universally valid.

Alongside these environmental and financial considerations are emerging social and economic questions. In parts of the Highlands, the shift toward carbon-driven land use is already generating debate about employment, land management, and local decision-making. Documentaries and sector commentary, such as *The Last Keeper*, have highlighted concerns about the displacement of traditional rural roles and the concentration of control in externally driven investment models. These concerns are contested, but they underline an important point: land-use change at this scale is not a neutral technical process. It produces distributional effects, with different groups experiencing gains and losses. Yet these transitions are often framed – particularly in investment and policy narratives – as inherently positive and environmentally necessary, with insufficient scrutiny of their underlying assumptions or their local consequences. They are presented as unambiguously beneficial, an impression that reflects the logic of carbon accounting more than the full complexity of environmental and social reality.

None of this is an argument against woodland creation or peatland restoration. Both can deliver real and lasting benefits when appropriately designed and managed. Nor is it an argument against carbon markets themselves. They can play a role in directing capital toward environmental outcomes that might otherwise struggle to secure funding.

But it is an argument for clarity.



Industrial emissions occur immediately and at scale â?? raising the question of equivalence with long-term biological storage. Photo credit Richard Evans.

A carbon credit is not proof that an environmental impact has been cancelled. It is evidence only that a project meets a particular accounting methodology under a defined set of assumptions. Those assumptions may be reasonable â?? or they may prove optimistic â?? but they are not equivalent to physical or ecological equivalence.

The same applies at the corporate level. Offsetting mechanisms can form part of a broader transition strategy, but where they are materially cheaper than emissions reduction at source, they risk delaying more fundamental change.



In engineered carbon systems, volumes are measured, verified, and enforceable – a fundamentally different standard. Photo credit Richard Evans.

In other jurisdictions, particularly where carbon management has been tied more directly to industrial regulation, greater emphasis has been placed on measurement, verification, and enforceable outcomes. The UK approach has been more flexible, more model-driven, and more dependent on long-term projections. That flexibility has enabled rapid growth in natural capital markets. It has also introduced ambiguity.

If we are serious about both climate and environmental integrity, that ambiguity must be addressed.



The question is not whether these landscapes matter â?? but whether we are being honest about how we value and protect them. Looking North West from Ardverikie towards Creag Meagaidh. Photo credit Richard Evans.

At a minimum, policy and planning frameworks should make explicit that compliance with a carbon standard does not demonstrate overall environmental neutrality. Carbon metrics should inform decisions â?? but not determine them. Land valuations should reflect the reality that once carbon rights are sold, they are no longer available. And a broader set of ecological and social metrics should sit alongside carbon accounting in assessing outcomes.

Above all, the public deserves an honest account of what these schemes do â?? and what they do not do.

Because if we mistake accounting for reality, we risk constructing an entire system on projections, assumptions, and financial expectations â?? and calling it certainty.

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2. carbon offsetting
3. climate change
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