

Carbon offsetting in the UK

Executive summary

Limiting global warming to the 1.5°C set out in the Paris Agreement will require rapid and deep emissions reductions across all sectors of the global economy *and* large-scale removal of carbon from the atmosphere by natural ecosystems.

Nature-based carbon offsetting — the idea that emissions in one sector can be “cancelled out” by paying for a project to reduce emissions or remove carbon from the atmosphere — is becoming an increasingly prominent part of climate action plans. Offsetting can take place as part of a compliance market to meet regulatory requirements, or in the voluntary market to meet wider corporate or public sector decarbonisation goals.

However, there are concerns about the increasing focus on carbon offsetting as a meaningful way to tackle climate change. This is largely due to inappropriate legislation (wrong context and weak safeguards) and poor implementation. For example, many projects have sold emissions reductions that would simply have happened anyway or “avoided emissions” that would never have happened. Others have sold investments in poorly implemented nature-based solutions that do not last, such as monoculture plantations with short lifespans, or projects that have a negative impact on the natural environment.

Rather than abating climate change, there is a risk that poor-quality offsetting schemes (and nature-based solutions) are a way to let industrial emitters off the hook, both reputationally and in terms of their emissions reduction commitments. There are also concerns about the permanence of carbon stored in the biosphere and the potential for carbon sinks to switch to a source of emissions in the future. More broadly, by including a “net” emissions figure in carbon accounts without separate accounting of genuine emissions reductions and removals through offsetting, the widespread use of offsets by companies and public authorities can give a false impression of progress.

The scale of the climate crisis and uncertainty about the effectiveness and land demands of offsets means that we should take a precautionary approach. To guarantee long-lasting emissions reductions, offsets are no substitute for leaving fossil fuels in the ground and hard work in mitigation.

Of course, we recognise that carbon offsetting is an opportunity to drive investment in nature, at the same time as making things easier for businesses. The biodiversity crisis is fundamentally linked to the climate crisis and we cannot tackle one without addressing the other. However, offsets can only play a small role in delivering nature-based solutions at scale. There is a clear need to establish when offsetting can be used beneficially as well as improving the policy and implementation landscape for carbon offsetting so that it can deliver real climate and biodiversity benefits.

We recommend a similar system to the biodiversity mitigation hierarchy, which sets out a four-step prioritisation approach to minimising environmental damage from development projects. In the context of offsetting, this would mean prioritising emissions avoidance and protecting existing carbon stores in the first instance, followed by taking action to reduce emissions as much as possible and drawing down carbon through nature-based solutions to account for historic emissions.

Offsetting should only take place in the voluntary market as part of a third party-verified net zero plan, and only utilised temporarily whilst sectors decarbonise or to compensate for the most stubborn of residual emissions. The UK government, public authorities and companies should also account for their carbon emissions separately from carbon sequestration to ensure that progress is being made on both fronts.

While there is a limited role for offsets with robust safeguards in the voluntary market, there is an unacceptable risk that promoting nature-based offsetting as part of the UK's compliance with net zero commitments could slow down the UK's progress toward net zero and undermine the reliability of accounting for industrial emissions. As such, sectors covered by the UK Emissions Trading Scheme (UK ETS) should not be allowed to purchase external credits.

Importantly, limiting the use of offsets for specific cases should not deflect from the necessary investments in nature here in the UK or internationally. Nature conservation, protection and restoration needs to happen in its own right irrespective of measures required to address climate change. Governments must set a clear trajectory in law for restoring nature, increasing investment in nature conservation, protection and restoration, including what have become known as nature-based solutions to climate change and other challenges.

Recommendations:

- **Keep agriculture and land use sectors out of the UK ETS**, to avoid potentially introducing large amounts of uncertainty and 'hot air' into the system.
- **Do not allow sectors covered by the UK ETS to purchase external credits**, as this has the effect of artificially raising the cap on emissions.
- **Keep separate national carbon accounts for greenhouse gas emissions by sources, and removals by sinks - natural sinks or technological carbon capture and geological storage**, to allow a more transparent year-on-year monitoring of progress towards emissions reduction targets.
- **Strong standards for both buyers and sellers of voluntary offsets in sectors not covered by the ETS to support a higher carbon price**, with no Government support for upscaling of the voluntary offset market, either financially or through policy frameworks to avoid offsetting being mis-used.
- **Increase emissions reductions and carbon removals within the agricultural and land use sectors**, outside of the voluntary offset market and UK ETS through stronger regulation and incentives under the Environmental Land Management Scheme.

1 | What is offsetting and does it work?

An offset is a “tradable unit” of a tonne of carbon dioxide equivalent (CO₂e) that can be created when emissions are reduced or removals increased to compensate for a tonne of emissions elsewhere in the economy. Offsets can be generated in a range of ways (for example, avoided emissions or natural sequestration of carbon), both domestically and internationally.¹ Offsetting occurs if this tradable unit is sold on the market to allow a country, company or an individual to compensate for a tonne of their own emissions.

Offsets fall into two broad categories: compliance and voluntary. The former covers emissions that are counted under legally-binding emissions caps, such as the EU Emissions Trading System (EU ETS), or the UK’s new, post-Brexit ETS. The voluntary offset market is open to all individuals and companies, who often use the credits to support claims of being “carbon neutral”.²

The UK Government has set out its intention to meet the 2050 net-zero target within the UK’s borders, i.e. without the use of international offsets.³ However, domestic sinks will be needed to compensate for residual emissions in UK carbon accounts.⁴

In principle, domestic offsets appear to be a relatively straightforward solution to the climate crisis and net zero, minimising the need for transformational change across the UK economy whilst simultaneously tackling the nature crisis. In reality, it is a far more risky and complicated matter.

Several characteristics of offsets are necessary to ensure that they deliver genuine emissions reductions. They must be:

1. **Permanent:** fossil fuel emissions can abide in the atmosphere for centuries. To be equivalent, a carbon removal must not be short-lived, but last as long as the carbon contributes to global warming.
2. **Additional:** projects offering carbon credits must guarantee that they would not have gone ahead without the funding made available from offset purchases.
3. **Real:** offsets must lead to an actual net reduction in emissions in the atmosphere. Leakage effects—whereby emissions are reduced in one area but increase in another area as a result—must be avoided and, where they do occur, accounted for to avoid exaggerating the level of emissions reductions achieved by a project.
4. **Verifiable:** offsets placed on either the voluntary or compliance market should be verified by an independent third party to ensure that they meet the criteria outlined above.
5. **Enforceable:** to avoid inflated estimates of the amount of emissions reductions achieved through offsets, credits can only be used once (i.e. avoid “double-counting”⁵) and there must be a robust governance framework to track offset ownership.

¹ See Annex for a summary of the difference between offsets and carbon removals.

² *Edie*, October 2019, ‘[Half of UK businesses 'targeting carbon neutrality by 2030'](#)’

³ Committee on Climate Change, October 2020, [CCC Insights Briefing 3: The UK's Net Zero target](#)

⁴ Committee on Climate Change, June 2020, [Reducing UK emissions Progress Report to Parliament](#)

⁵ Schneider, L, et al., (2019), ‘Double counting and the Paris Agreement rulebook’, *Science*, 180-183

What actually happens?

In reality, very few offsets have met those strict criteria. The **additionality** of carbon offsetting projects is notoriously difficult to prove and, even in the most tightly regulated offsetting schemes, the quality of offsets has been shown to be very low.^{6, 7} One 2016 EU research project on the Clean Development Mechanism found that around 85% of the projects it looked at almost certainly overestimated carbon reductions or created no additional carbon reduction, with only 2% reliably creating carbon reduction benefits.⁸

Very often the carbon market mantra that “a tonne is a tonne” of carbon (no matter where it comes from or how) is simply not true. Aviation emissions for example include non-CO₂ and occur mainly at altitude with a multiplier effect.⁹ Many have raised concerns about the **equivalency or “fungibility”** of biological carbon taken up by natural ecosystems, and the fossil carbon released through the burning of fossil fuels.¹⁰ The “negative” tonne of a carbon sequestration or avoidance offset is much more unreliable than the certainty of the damage that will be caused by burning fossil fuels.

For example, there can be rapid fluxes in biological carbon stores and the release of carbon back into the atmosphere. This could be as a result of natural processes such as fires, or the impact of rising temperatures on respiration processes in natural ecosystems.¹¹ One way to address this would be through an exchange rate requiring the amount of carbon stored through the offset to exceed the amount released by the activity the offset is designed to cover. However, avoiding burning fossil fuels from the outset should be prioritised to eliminate the uncertainty and risk of reversibility associated with biological carbon stores.

Many offsets also rely on the principle of **avoided** carbon emissions e.g. paying to protect an area of habitat which otherwise would have been destroyed or lost through lack of management, although avoided emissions offsets may risk diverting funds from projects which can lead to genuine emissions reductions.

We recognise that there may be a need for such credits in international projects where alternative financing mechanisms are unavailable and where the **additionality** arguments are robust.¹² **Leakage** effects (resource demand moving elsewhere), can be very hard to prove in some countries and contexts and should be carefully considered in project design and monitoring. In the UK, priority should be given to protecting natural carbon stores through regulatory approaches. However, there may be a limited role for avoided emissions projects in the voluntary market to complement and scale up ambition to restore habitats if they can be shown to meet strict standards and the tests set out above.

⁶ Seyller, C. et al, 2016, ‘The ‘Virtual Economy’ of REDD+ Projects: Does Private Certification of REDD Projects Ensure Their Environmental Integrity?’, *International Forestry Review*, 18(2): 231-246, DOI:10.1505/146554816818966336

⁷ *Bloomberg Green*, December 2020, ‘[These Trees Are Not What They Seem](#)’

⁸ Oko-Institut e.V., 2016, [How additional is the Clean Development Mechanism?](#)

⁹ *Carbon Brief*, March 2017, ‘[Explainer: The challenge of tackling aviation’s non-CO₂ emissions](#)’

¹⁰ Carbon Market Watch, 2015, [Fossil and biological carbon: a tonne is not a tonne](#)

¹¹ Allen C.D., et al., 2010, ‘A global overview of drought and heat-induced tree mortality reveals emerging climate change risks for forests’, *Forest Ecology and Management*, 259 (4), pp 660-684, <https://doi.org/10.1016/j.foreco.2009.09.001>

¹² However, tackling the climate and ecological crises means addressing the need for proper funding in nature conservation, protection, and restoration in the UK and internationally, without this having to be justified through a climate lens. It also needs high quality standards to avoid land grabs and other threats to people’s rights, which is a risk associated with international offsets.

Relying on nature-based offsets could also lead to an **unrealistic demand for land**. Whilst large-scale restoration of natural ecosystems is needed for both carbon removals and tackling the biodiversity crisis, this needs to be understood alongside growing competition for land in the UK for food production and settlements. Deploying nature-based offsets at scale driven by private investments without a landscape-based approach could lead to negative impacts on people and biodiversity.

Finally, credible emissions removals projects require adequate **governance structures** that can accurately quantify the carbon removed as a result of the project, ensure that there are no adverse impacts on wildlife or local communities, and that the carbon is stored permanently. Implementing such a framework both in the UK and internationally remains one of the major uncertainties¹³ around offsetting, and international processes have demonstrated the risk of issues such as ‘double-counting’, whereby the carbon reduction is measured both in the purchasing and delivery countries.¹⁴ Even if a robust system could be established, measuring carbon removals in the land use sector using current methodologies is particularly prone to error.¹⁵

Overall, these risks and uncertainties mean that large-scale deployment of domestic carbon offsetting projects could give false confidence that genuine, additional CO₂ has been locked away permanently. There is a limited role for high-quality offsets that meet the conditions outlined above, but these cannot be regarded as a substitute for rapid and deep decarbonisation across all sectors.

¹³ Greenpeace, 2021, [Net Expectations: Assessing the role of carbon dioxide removal in companies’ climate plans](#)

¹⁴ Stockholm Environment Institute, 2019, [‘Carbon offsets are all the rage again. But can they be used to raise global climate ambitions?’](#)

¹⁵ UK Government, 2019, [Mapping Carbon Emissions & Removals for the Land Use, Land Use Change & Forestry Sector](#)

2 | The compliance market: a false solution to net-zero

The UK is currently designing a replacement UK Emissions Trading Scheme (UK ETS) in place of UK participation in the EU Emissions Trading System.¹⁶ The “cap and trade” emissions market is an important mechanism for limiting overall emissions in the energy and industrial sectors and setting a trajectory for emissions reductions.

Following the UK’s departure from the EU, the final list of sectors included under the UK ETS is under review. Around a third of the UK’s emissions—covering the power sector, aviation, and heavy industry—are currently included under the cap and trade system. Concerns about how well a standalone UK system would function has prompted the consideration of including new sectors to improve the liquidity of the market and reduce volatility of the carbon price.

Emissions and carbon removals from agriculture, Land Use, Land Use Change and Forestry (LULUCF) and blue carbon are currently not part of the emissions trading scheme, but they could be included under the new reforms in one of two ways:

- (1) Including land use sectors in the ETS directly, capping their emissions, with two-way trade between land use and industrial sectors, as proposed by the CCC.¹⁷
- (2) Allowing offsets to be generated in the land use sector or from marine-based projects and sold into the ETS without a cap on land use emissions: a one-way system.

At the moment, the agricultural sector is a net emitter.¹⁸ According to the Committee on Climate Change’s 6th Carbon Budget, agricultural emissions in 2018 totalled 54.6 MtCO₂e, accounting for 10% of the UK’s emissions, the majority of which come from livestock and soils.¹⁹ Although agricultural emissions have reduced by 16% since 1990, reductions have flatlined since 2008. Including agriculture under the ETS is regarded as a route to drive emissions down further, with Government able to pass on the costs of mitigation to farmers and land managers.

In the LULUCF sector, greenhouse gas removals currently outweigh emissions, making the sector a net carbon sink. In 2018, the sector cancelled out 2% of UK emissions, equivalent to 10.3 MtCO₂e. However, amendments to land use accounting from 2022 to include emissions from peatlands will see the sector shift to become a net carbon source, accounting for up to 2% of UK emissions.²⁰ Degraded peatlands and croplands would account for most of these emissions, with forestry and grasslands generating most of the carbon removals. Incorporating the land use sector in the UK ETS would disincentivise practices that generate emissions, such as poor management of peatlands or deforestation, and incentivise landowners to increase carbon removals to generate credits which could be sold on.²¹

¹⁶ BEIS, 2020, [‘Participating in the UK Emissions Trading Scheme \(UK ETS\)’](#)

¹⁷ BEIS, 2020, [‘The future of UK carbon pricing’](#)

¹⁸ Agricultural emissions (e.g. from on-farm machinery, fertiliser use, and livestock) are accounted for in a separate category to emissions from the LULUCF sector, which includes agricultural land and emissions from settlements.

¹⁹ Committee on Climate Change, 2020, [‘The Sixth Carbon Budget: The UK’s path to Net Zero’](#)

²⁰ Committee on Climate Change, 2020, [‘The Sixth Carbon Budget: Agriculture and land use, land use change and forestry’](#)

²¹ German Federal Ministry of the Environment, Nature, Conservation and Nuclear Safety, 2011, [‘Important aspects of sinks for linking emission trading systems’](#)

What are the challenges?

The difficulty of measuring emissions from land use and agriculture means that including these sectors under the ETS is likely to introduce a great deal of uncertainty and “hot air” into the system. For a market predicated on being able to measure emissions in order to trade them, the imprecise nature of calculations within the sector risks undermining its credibility. Overestimations of emissions reductions or carbon removals in these sectors would have implications for genuine progress towards net zero.

To generate real offsets under either of the scenarios outlined above, it would be necessary to ensure that individual positive projects were not covering up continued emissions elsewhere in a particular holding or landscape. This would require accurate carbon accounting in a range of different administrative scales, for example across whole farms, or the entirety of a designated landscape. However, calculating these emissions using current methodologies is likely to be costly and inefficient, with smaller players unable to participate in the market.

Solutions like targets and carbon taxes would arguably be a simpler way to drive more sustainable practices across all parts of the economy. The UK Government consulted on the possibility of introducing a carbon tax instead of a UK version of the EU ETS, which was welcomed by some as a result of concerns about the success of a UK-only system.²² Carbon taxes could be a better route to incentivise the necessary carbon reductions and to raise funds for quality nature activities.

In addition to the challenge of accurately measuring land use emissions, concerns surrounding the permanence of carbon stored in the biosphere, leakage effects, land availability, and the impact of large-scale land-based offsetting on biodiversity and local communities are still relevant. Nature-based solutions cannot guarantee permanence and therefore a tonne sequestered is not the same as a tonne emitted. There are also fears that allowing carbon sinks into the system would flood the market with credits, lowering the carbon price, or that the inclusion of removals would crowd out genuine emissions reductions in other sectors, e.g. industry and power.

Given these risks and uncertainties, following the precautionary principle and front-loading efforts to find long-lasting solutions to emissions now, rather than delaying emissions reductions until a later date, must be the UK’s approach. This means prioritising rapid ambition mitigation across all sectors to deliver deep emissions cuts without the use of offsets.

Climate models are unequivocal in their recommendations to aim for negative emissions in the second half of this century if we hope to limit global temperature rise below 1.5°C, and so it would minimise risk to reduce as much of these emissions now rather than relying on unpredictable biological carbon stores or undeveloped technical solutions for carbon removals in the future.²³ Reducing emissions from the agricultural sector and increasing carbon removals through land use will still be an important part of this strategy, but should be incentivised independently of a carbon market. This is addressed in more detail in the final section of the paper.

²² Sandbag, 2019, [UK carbon pricing after Brexit: Sandbag's consultation response](#)

²³ IPCC, 2018, [Special Report on Global Warming of 1.5C](#)

The issue of ‘unavoidable’ emissions

Many argue that offsets should be made available for the hardest-to-abate emissions, so long as they are time-limited. Not all emissions can be eliminated by 2050, and amongst the sectors covered by the compliance market, residual emissions are expected in sectors like aviation.²⁴

However, through innovation and the development of new technologies and practices, we know that many emissions can be abated, although with regards to aviation, it should be noted that these have been talked of for many years while widespread application remains a distant prospect. Whilst there are low-carbon options in development, this is at an early stage and they are unlikely to be commercially viable by 2050²⁵, with aviation emissions projected to grow even under the CORSIA offsetting scheme.²⁶

The Government should prioritise looking for these solutions before surrendering to claims of unavoidable emissions. Moreover, alternative fiscal instruments, such as a carbon tax could be simpler to implement to deal with residual emissions under the compliance market and would not give a false impression of progress. Carbon removals would still be required in this scenario in order to reach net zero, but would be accounted for separately to emissions reductions. With an appropriately high carbon price to incentivise a shift to more sustainable practices, this approach could reduce emissions further whilst generating revenues which could be hypothecated for other uses such as restoring natural habitats or supporting an equitable transition to a low-carbon economy.

The strength of any cap-and-trade system is the integrity of its cap—the overall limit on the amount of emissions allowed by the sectors included.

Domestic offsets could be included in a future UK ETS by including land use sectors in the cap, or by allowing a one-way flow of offsets into the system. Because of the unreliability of accounting for carbon sequestration and the lack of equivalency between biological and fossil carbon, both options are liable to failure. Including land-use in the cap is fraught with accounting uncertainty and would likely lead to large amounts of “hot air” in the system. A one-way route for offsets from land into the trading scheme would raise the cap, allowing industrial emitters to continue to burn fossil fuels.

The UK ETS should not include land use sectors within the cap, or allow domestic offsets to be bought by covered sectors.

²⁴ Committee on Climate Change, 2019, [Net Zero The UK's contribution to stopping global warming](#)

²⁵ Committee on Climate Change, 2020, [The Sixth Carbon Budget: Aviation](#)

²⁶ Carbon Brief, 2019, [CORSIA: The UN's plan to 'offset' growth in aviation emissions](#)

3 | The role of the voluntary carbon market

For organisations not bound by the legally binding limits of the ETS, the voluntary market is a way to take some responsibility for ongoing emissions. Following the announcement of the UK's 2050 target, countless businesses, organisations, and institutions joined in with their own net zero targets, many of which will rely heavily on offsets from the voluntary market.

Many view the voluntary market as an exciting opportunity to mobilise funds for conservation to help tackle the nature crisis. Several codes have been established to verify nature-based offset to assure buyers that any credits bought meet the principles outlined previously, including the Woodland Carbon Code and the Peatland Code in the UK.²⁷

However, as useful as this source of funds might appear to close the nature funding gap, offsets cannot be treated as a major solution to the climate and nature crisis, as a reliable source of funds for nature conservation, protection and restoration, nor as an alternative to rigorous emissions reduction plans. Reaching the 2050 net zero target will require viable net zero plans involving rapid decarbonisation across all businesses and public authorities, both within and outside of the UK ETS. Relying on voluntary offsets to meet this target undermines these plans and carries the same risks of reversibility and unrealistic land demands that were outlined previously.

More recently, the *Mark Carney Taskforce on Scaling Voluntary Carbon Markets (TSVCM)* has heightened concerns about the damage that the voluntary offset market could cause to climate progress worldwide.²⁸ The taskforce has failed to emphasise the need for organisations to cut emissions as much as possible as the first priority, and the importance of strong protections for nature or alignment with science-based targets. By calling for further growth of the voluntary market to reach net zero without addressing the proven problems experienced with offsetting operates in practice, there is a serious risk that these problems will simply be scaled up at a global level.

Support for scaling up of the voluntary market in the Treasury's recent budget is another potential cause for concern for similar reasons.²⁹ Without implementing the necessary safeguards, such an approach risks embedding poorly defined voluntary offsetting schemes and allowing businesses to continue with business-as-usual without seeking genuine solutions to reduce emissions. We should be wary of creating markets which are not in lock-step with what is needed to address the climate and ecological emergencies as evidenced by the science.

Nevertheless, in certain tightly defined circumstances, some voluntary offsetting may provide an effective way for businesses to contribute to their climate goals. We encourage companies to commit through the Business Ambition for 1.5°C campaign to achieve net zero.³⁰ **However, there is only a role for offsetting when these purchases are part of a broader, science-based strategy to reduce emissions in line with economy-wide net zero targets.** Businesses should apply caution when considering whether to make "carbon neutrality" or "net-zero" claims or describing the company's purchase of carbon credits as "offsetting" because it could signal that a company's work on climate is done when a company or its product's entire footprint has not actually been eliminated.

²⁷ Woodland Carbon Code, <https://woodlandcarboncode.org.uk/>; IUCN UK, [Peatland Code Projects](#)

²⁸ Institute of International Finance, 2021, '[Taskforce on Scaling Voluntary Carbon Markets](#)'

²⁹ HM Treasury, 2021, [Budget 2021](#)

³⁰ Science Based Targets Initiative, [Business Ambition for 1.5C](#)

In the limited instances where voluntary offsets can form part of a scientifically-credible plan for emissions reductions, the following criteria should apply:

1. **Businesses should prioritise executing a transparently disclosed strategy approved by the Science-Based Targets initiative** to reduce Scope 1, 2, and 3 emissions over the purchase of carbon credits. Carbon credit purchases should only be made in addition to such a strategy. This would almost certainly rule out the use of offsets by oil and gas companies.³¹
2. **Voluntary offsets should only be used as a last resort for the hardest- and most expensive-to-abate emissions** only once an organisation has demonstrated that it has used all available technologies and best-practice to decarbonise as much as possible.
3. **Offsets should be high quality and follow a recognised standard**, in line with the principles set out above (real, additional, enforceable, permanent, and verifiable) and be compatible with good social and biodiversity outcomes. Historic offsets—those for which the emissions reductions were achieved many years ago, but the credit still remains—must not be claimed or sold.
4. **The Government should establish separate accounting requirements for private and public sector carbon emissions and removals**, to ensure that offsets are not being used to cover up business-as-usual emissions, as double-claiming or half-hearted attempts to decarbonise.

Businesses and public institutions wanting to address their *historic* emissions using the voluntary market should purchase credits so long as they are quality offsets and deliver good outcomes for both people and nature. Improvements to the accounting system will be necessary to ensure that any credits purchased to offset historic emissions do not contribute towards accounts of current emissions.

Setting the standard for voluntary offsets

Alongside improvements to the accounting system, the Government must do more to ensure that only quality offsets are sold in the voluntary market and only for the most appropriate uses. This should include establishing a stronger set of offset standards for both buyers and sellers, ensuring that offset schemes can generate a wider variety of benefits, such as good biodiversity outcomes. Covenants could be used to secure long-term storage of carbon and protection of biodiversity within nature restoration projects.

Crucially, stronger standards would also drive a higher carbon price. Cheap offsets are a disincentive to reducing emissions, with companies perhaps more likely buy up cheap carbon offsets than more expensive, high-quality ones, or investing in solutions to decarbonise. This works against the fundamental structural changes which are needed to reach net zero.

New standards should also recognise the variety of options for carbon sequestration in natural ecosystems alongside woodlands and peatlands. These habitats are often the focus of most conversations around nature-based solutions, but the UK's grasslands, heathlands, saltmarshes,

³¹ <https://sciencebasedtargets.org/>; Scope 1 emissions refer to the direct emissions from an organisation that are under their control. Scope 2 includes indirect emissions from the generation of heat, electricity, and steam purchased by an organisation. Scope 3 covers all other indirect emissions that aren't owned by the organisation, including purchased goods, business travel, and use of sold products. In most cases, scope 3 emissions account for the majority of an organisation's total footprint.

seagrass beds, and reefs are also examples of natural carbon stores which could support delivery of negative emissions, if managed properly.³² This also means following the principle of ‘right tree in the right place’ and ensuring that tree planting is not pursued in biodiverse habitats such as grasslands where conversion to forest would come at a high cost for biodiversity and ecosystem services.³³ The Government should support the creation of rigorous and effective offset standards for this wider range of habitats, alongside the Woodland Carbon Code and Peatland Code. These should be regularly updated to keep pace with carbon accounting science and robustly implemented to ensure ecosystems and biodiversity are restored and their carbon stores are protected, including peatland soils. Strengthening the Woodland Carbon Code should include improving modelling for soil carbon impacts and a wider range of native woodland types and establishment approaches.

Alongside enforcing standards for buyers and sellers in the voluntary carbon market, there is a need to assure consumer protection with an offsets consumer code and protections. Currently, consumers are at risk of being misled by claims that companies are offsetting their emissions or achieving net zero through projects that do not meet the basic criteria.

Finally, there is a danger of viewing the purchase of carbon credits as the only option for restoring our natural world. Leveraging private investment in nature is an obvious opportunity, but offsetting should not be the default position. Aside from an important intrinsic value, protecting natural ecosystems for the crucial role they play in resilience and adaptation to climate change should be enough incentive for businesses to invest in nature over the coming decades. Moreover, whilst we welcome the Government’s recognition of the interdependence of our natural world, climate, and economy, this rhetoric must be met with more investment and legal protections for nature in its own right.

Overall, there is a limited role for high-quality voluntary offsetting to go beyond compliance and as an addition to credible decarbonisation plans:

- **The Government should improve standards of accreditation and reporting, requiring clear separation in accounting between emissions and removals. This will support a higher carbon price, allowing offset schemes to deliver wider benefits than carbon, including good biodiversity outcomes.**
- **Buyers should think of the voluntary market only in addition to verified science-based decarbonisation plans.**
- **Sellers should be discerning, only marketing offsets after dealing with their own emissions profile, and only selling to buyers approved by the Science Based Targets initiative.**

³² Nature Based Solutions Initiative, 2020, [The Role of Nature-based Solutions for Climate Change Adaptation in UK Policy](#)

³³ Veldman, J.W. et al. 2015, ‘Where Tree Planting and Forest Expansion are Bad for Biodiversity and Ecosystem Services’, *BioScience*, Volume 65, Issue 10, pp 1011–1018, <https://doi.org/10.1093/biosci/biv118>

4 | Emissions in the land use sector

Excluding land use and agriculture from offset markets does not mean that reductions or increased removals in these sectors will not be an essential part of meeting the UK's climate targets. Achieving net zero emissions by 2050 and negative emissions thereafter will require urgent reduction of emissions and increased carbon sequestration in the land use sector.³⁴

For the UK to achieve any meaningful contribution from nature-based solutions towards these targets, immediate and substantial investment is needed in nature, but this should not be dependent on offset markets. Strong policy interventions will be crucial to achieving change in the agricultural and LULUCF sectors, including:

- **Stronger regulation**

Stronger regulations can be used to support emissions reductions and increased removals in the agriculture and land use sectors, such as regulations for good soil management and clear legal targets around emissions reductions. These must be supported by a robust monitoring, reporting, and verification framework.

- **Incentives under Environmental Land Management**

According to the CCC, the new Environmental Land Management scheme should “sit within an integrated response to climate change, food provision and the environment”.³⁵ Components of ELM must be designed to address climate change through nature-based solutions, but must also be designed to address the biodiversity crisis. Farmers and other land managers must be given the tools and incentives to manage their land to meet the Government's environmental and climate objectives, including raising awareness of low-carbon options, and upskilling amongst farmers.

- **Taxation**

A clear, increasing carbon price is a valuable tool to enforce the polluter pays principle and incentivise a shift to more sustainable practices. Instead of a UK ETS, or for sectors not included under the ETS, a carbon tax would play a similar role in pushing organisations and institutions to reduce emissions in line with net zero, with any voluntary offsets bought on top of tax payments.

Increasing emissions removals through the land use sector should be carried out *in addition* to any emissions reductions that happen across the entire economy. The Dasgupta review has clearly articulated the economic value in protecting nature and, done properly, nature-based solutions have the potential to increase the resilience of communities to the effects of climate change whilst simultaneously delivering benefits for public health.³⁶

³⁴ This must be done in a way that avoids “offshoring” of UK emissions through the need to import food and other products from other jurisdictions, so the precise profile of emissions reduction will need careful analysis.

³⁵ Committee on Climate Change, 2020, [Letter: Environmental Land Management \(ELM\) scheme](#)

³⁶ Dasgupta, P., 2021, [The Economics of Biodiversity: The Dasgupta Review](#). (London: HM Treasury)

Conclusion

We welcome the Government's focus on nature-based solutions, where these are of high quality and do not obscure the basic need to invest in nature conservation, protection and restoration irrespective of climate aims. We hope the interdependence of nature and climate will be recognised in all of this year's multilateral environmental negotiations: IGC-4 for a new High Seas Treaty; G7; COP15 of the Convention on Biological Diversity; and COP26 of the Framework Convention on Climate Change.

At COP26, a main focus of the discussions will be Article 6 of the Paris Agreement and attempting to reach a global consensus on the rules around carbon markets. As hosts, the UK Government must set an example through its own actions around carbon pricing, and these must be compatible with other commitments made on climate and nature.

In our 1.5°C constrained world and with a well-established body of evidence pointing to the risks and uncertainties around offsetting, relying on offsets to meet our 2050 net-zero target would set us up for failure. The IPCC has warned that the world's reliance on ineffective carbon-offsetting puts our ability to limit global warming in jeopardy – models show the Paris agreement 1.5°C goals cannot be reached without rapid reductions in emissions.³⁷

High quality nature-based solutions are an essential part of the solution to mitigation and adaptation to climate change. But nature-based offsets—turning natural carbon removal into a marketable commodity to cancel out other emissions—is fraught with difficulty. We must ultimately achieve net negative emissions from land use in a way that does not export the UK's carbon footprint abroad, but we must not depend on unreliable market mechanisms to do it.

Widespread use of offsets risks masking or even increasing ongoing industrial emissions and carries concerns around the permanence of carbon stored within the biosphere, and the impact it could have on availability of land, biodiversity, and local communities. Allowing agriculture and land use into the UK ETS would require a complex governance framework that is likely to be extremely costly to operate.

The Government should rule out the obfuscating use of offsetting in its net zero plans to demonstrate that it is serious about tackling the climate and nature crises with long-lasting, genuine solutions, not just quick fixes. This includes ruling out domestic carbon offsets for compliance with regulatory carbon emissions reduction goals, creating stronger standards for voluntary offsetting to support a higher carbon price, and regulating to ensure that companies and public authorities account clearly and separately for ongoing emissions and removals by sinks. At the same time, farmers and land managers must be supported to increase carbon removals within UK's natural ecosystems. Only then can we be confident that nature can play its role in beating climate change without slowing down our trajectory toward decarbonisation.

³⁷ IPCC, 2018, [Special Report on Global Warming of 1.5C](#)

Annex

Carbon removals versus offsetting

Although the terms “offsets” and “carbon removals” both involve the sequestration of carbon from the atmosphere, there is an important distinction that could have implications for genuine progress towards net zero targets and ultimately achieving negative emissions.

Offsets are a market-based mechanism whereby the creation of carbon credits – through projects that lead to emissions reductions or carbon removals - each equivalent to a tonne of carbon dioxide equivalent, allows the same amount of emissions to continue elsewhere. These two actions effectively “cancel out”, meaning that overall, or “net” emissions stay the same. However, due to widespread concerns about the permanence of carbon sequestered in biological systems, there is a serious risk that these carbon stores could release carbon back into the atmosphere in the future, leading to dangerous concentrations of greenhouse gases in the atmosphere and further global temperature rise.

Even if it were possible to guarantee permanent storage of carbon within biological systems, climate models demonstrate that negative emissions are needed in the second half of this century if we hope to limit global temperature rise below 2°C. Achieving this through a whole-landscape approach and accounting for other land demands will require genuine emissions reductions alongside increased removals, not simply balancing out existing emissions through offsets.

Carbon removals also involve the sequestration from carbon dioxide from the atmosphere, but removals are not necessarily linked to the continuation of an equivalent amount of emissions elsewhere. Carbon removals may be generated through nature-based solutions or through technological options such as carbon-capture and storage, and could play a crucial role in the UK reaching net zero. By accounting for carbon removals separately from gross emissions reductions, we can create a clearer picture of genuine decarbonisation across the economy.

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