

Nature Markets Review

Final Report

The Office of Environmental Protection

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Disclaimer

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Executive summary

Context

Mobilising private market finance at scale, will be crucial for the government to achieve its apex goal of ensuring nature's recovery. UK Government policy is to encourage and grow nature markets to help achieve these aims. To hold the Government to account, the OEP has identified the need to adopt a framework for monitoring and assessing the impact of investment flows into nature.

The objectives of this work are to:

- Develop a monitoring framework and assess trends in performance metrics for key nature markets;
- Gather perspectives from nature market participants and appraise the barriers and enablers to nature markets operating efficiently and effectively, and
- Develop transferable lessons on how to make nature markets and wider environmental offsetting schemes efficient and effective, prioritising key issues and solutions.

The project covers the four largest established markets in the UK: Woodland Carbon Code, Peatland Code, Biodiversity Net Gain offset market and Nutrient Neutrality market.

Development of the Monitoring Framework

The aim of the monitoring framework is to assess trends in performance of key nature markets (See Section 3 for details). Aspects of performance considered include scale of the markets and their efficiency and effectiveness:

- Scale can be measured by the volume and value of transactions in a market overtime.
- Efficiency of nature markets is about how well resources are managed to achieve the stated market output (e.g. carbon unit sold). Measuring the different aspects of efficiency (transaction costs, market information efficiency, etc) is challenging and at present there is insufficient data to allow a full assessment of this. Consequently, we have not included any measure of this in the monitoring framework.
- Effectiveness is a measure of the extent to which nature markets contribute to environmental outcomes (how additional they are), and the scale of this impact. We recommend that these two aspects are key for inclusion in the monitoring framework.

The framework should distinguish the performance of the nature markets and the performance of the policy context or legal mechanisms within which they exist. The framework focuses on the former, that is the performance of nature markets only, and not the performance of how the mitigation hierarchy and other policy levers perform. For example, the legal policy around Biodiversity Net-Gain (BNG) market is that developers should utilise the mitigation hierarchy to minimise offsets required from the traded BNG market. The effectiveness of this policy is out of scope.

Our proposed framework is informed by the Theory of Change (ToC) model (see Figure 3.2). The model assesses four key elements in a causal chain to quantify changes and highlight the link between market

outputs to outcomes and impacts. While available data may not allow a causal link to be established, having a model to guide the framework development is essential.

For example, in the context of the nature market for the Woodland Carbon Code (WCC) the model can be explained as:

- **Inputs**, or what activity is undertaken. For the WCC, this would be area of new woodland created.
- **Outputs** or what is produced. For the WCC, this would be the verified or validated carbon units (either Pre-Issuance Units (PIUs) for future sequestration or Woodland Carbon Units (WCUs) for verified sequestration).
- **Outcomes**, or what result is achieved. For the WCC, the prime outcome is the quantity of additional carbon sequestered, but other co-benefits may result too (such as improvements in water quality, biodiversity or increased provision of recreational space).
- **Impacts**, or the long-term results of the intervention. The prime impact of the code being its contribution to meeting climate mitigation targets, but other co-benefits may arise too, such as a contribution to the reversal of biodiversity loss.

For each market, we propose that the OEP monitor inputs, outputs and outcomes as described in section 3.2, and as illustrated in the accompanying spreadsheet [File name Nature markets - indicator framework workbook_281125.xlsx"]. Some markets have readily available data (WCC and Peatland Code), but others lack a single national data set to provide the necessary market information. We make recommendations for the OEP to pursue to remedy these shortfalls.

Current State of Key Nature Markets

An overview of how each of the main nature markets is performing, their current state, key trends, barriers and enablers, the future growth prospects and key conditions/dependencies (e.g. rate of development) is given below.

The Woodland Carbon Code (WCC) is an established market, recognised for its level of integrity, having one of the most robust application processes and aligning with national and international standards. The WCC is limited in scale due to competing land uses and regulatory implications for establishing woodland (a permanent land use change). For context, the Government aims to create 1.5m ha of woodland to meet climate and habitat targets, which is ambitious but sets an upper bound to the scale of the market. The rate of market growth has declined in the last few years. Although there is not a clear reason for this decline, some explanations include: a global downturn in voluntary market demand impacting the UK, uncertainty in future market prices. Proposals to allow WCC units to be used to offset emissions in the UKETS may boost demand.

The Peatland Code (PC) is established and recognised as high-integrity, abiding by the same national and international standards as the WCC. The scale of the PC market is limited by the scale of the UK's peat requiring restoration (around 2m ha). The PC has also experienced a decline in growth, and proposed reasons for this are similar to the WCC.

The state and scale of the **BNG market** is known only as far as the market has been in operation since 2024, and the future of the market is dependent on regulatory rulings. Responses to Defra's consultation on the BNG Market in 2025 after a year of operation has resulted in some evidence to the scale and

effectiveness of the market, with caveats given data availability and accuracy (eftec et al, 2025), and has highlighted that the market has underperformed compared to expectations due to a higher percentage of exemptions (60%). Stakeholders stressed that performance of the BNG market is speculative given a lack of coherent evidence and changing regulatory landscape.

The Nutrient Neutrality market is limited to the catchments in which it operates (29 in England) as it is not possible to trade across catchments. It is difficult to ascertain the size of the market given that data collection is decentralised across 74 local authorities. The development of the market is tied to housing developments and regulatory rules, which are likely to be reviewed in future as the effectiveness of this market on environmental targets is highly debated (Bakker et al (2025)). Furthermore, interviewees are not confident that developers should be responsible for mitigating nutrient pollution when farming can cause greater pollution.

Expert consensus is that well-designed and governed nature markets can be powerful tools for attracting private investment to achieve environmental policy goals. Nature markets can:

- **Create incentives to protect nature.** Regulations set ceilings on environmental impacts, and pollution taxes penalise for damaging, but neither incentivise improvement. Nature markets have the potential to encourage doing better.
- **Provide a mechanism that allocates resources towards nature enhancement** potentially more effectively than other policy levers. For example, voluntary carbon markets may provide a cheaper way of offsetting the carbon emissions for a given organisation

However, these markets are still nascent, small and not growing at a pace that is likely to make a major contribution to the UK environmental enhancement goals. The common challenges across these markets are:

- **The market demand is weak.** To make a greater contribution to nature recovery targets these markets need to be combined with sufficient drivers of demand. UK Government has a key role to play in strengthening demand, e.g., through more compulsory measures, financial incentives or through encouraging reputational motivations.
- **An effective governance system is needed to scale up high integrity nature markets.** Integrity is vital for confidence in the markets. Existing systems of governance are diverse, disjointed and complex. Options for improvement include a legally-underpinned framework of governance to regulate standards, metrics and ensure transparency, or a centralised regulator to oversee environmental markets. BSI Flex 701 is developing standards for nature investment and provides a guide to the form of future governance.
- **Political and legislative uncertainty weakens market demand.** Recent suggested policy changes to compliance drivers (e.g., the review of BNG applicability to small developments) have undermined investor confidence and hence demand. Stronger signals of the trajectory of policy are needed to boost long term confidence.
- **In some markets (notably BNG and NN) lack of national market data systems to provide market transaction information hinders the measurement of performance.** In the case of BNG a national register has been established, but it is not structured in a way that enables useful information on market transactions and value to be provided.

Key recommendations

The most important priority for Government is to review and increase the regulatory and policy stimulators of demand. The following actions by the public sector could help growth of nature markets:

- Focus on its enabling role for nature markets, including through setting clear rules, governance systems and collection of market information. The public sector should be discouraged from taking on other roles in the market (e.g. as a broker or a seller), to avoid conflicts of interest and crowding out of private sector.
- Establish processes to improve the data quality, transparency and accessibility, in line with BS Flex 701 as soon as possible. This will improve the functioning of markets, as a result of better information for buyers and sellers, and trust in market processes.
- Ensure these improvements enable comparison of spatial, financial and timing details of transactions across markets, and identification of the locations of supply areas for credits sold. The data system should also have inter-operability between different nature market registries. Some market data exists within the private sector, but as this is gathered using methods to search public sources, it is inefficient for any public sector organisation, including the OEP, to face significant search costs to obtain it. Government should enable/create market registries with the same functionality as the UK land carbon registry.
- Clarify rules on stacking. Stacking incentivises multi-functional nature-based projects by allowing payments for each ecosystem benefit delivered. Whilst there are strong arguments in favour of stacking, there are cases where it can undermine additionality, and hence there are advocates of a more considered system of what may be allowed. There is an urgent need for the government to settle stacking rules in a way that balances economic, legal, and environmental principles, including what tests for additionality should apply.

Some examples that could be applied in existing markets are outlined under specific market recommendations (see section 4.3).

Contents

Glossary	vi
1. Introduction	7
1.1 Objectives	7
1.2 Outputs	7
1.3 Structure of report	9
2. Method	10
2.1 Data collection for Nature Markets	10
2.2 Stakeholder engagement and literature review	10
3. Findings	12
3.1 Monitoring Framework	12
3.2 Key statistics and data collection options by market	19
3.3 Nature market assessment	36
4. Conclusions and recommendations	45
4.1 Current State of Markets	45
4.2 Implications for the OEP's objectives	46
4.3 Recommendations	46
References	50
Appendix 1 Stakeholder engagement	52

Glossary

Term	Definition (Ref/Source)
Additionality	A real increase in social value that would not have occurred in the absence of the intervention being appraised. (Green Book, HM Treasury, 2023)
Biodiversity net gain	A requirement for developers to pay for biodiversity improvements in order to mitigate biodiversity loss due to development, such that an overall increase in natural habitat and ecological features is achieved.
Broker	A person/organisation who buys and sells goods or assets for others.
Bundling	When a suite of ecosystem services produced on a piece of land is sold as a single package (typically as a single unit of trade or credit) to the same buyer. (BBOP, 2018)
Co-benefit	The positive effects that a policy or measure aimed at one objective might have on other objectives. (IPCC, 2014)
Double counting	A situation where the benefit of the same environmental outcome is counted more than once within or across compliance regimes. (eftec, 2022)
Environmental credit	A tradeable permit that corresponds to the generation of one environmental unit, which can be purchased to mitigate equivalent environmental loss elsewhere. (Finance Earth et al, 2022)
Habitat banks	Sites where gains in environmental outcomes, including biodiversity, are generated and stored prior to being traded in a nature market.
Leakage	The extent to which effects “leak out” of a target area into others. (HM Treasury, 2023)
Nature-based solutions/projects	Actions/projects to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively, providing human well-being and biodiversity benefits. (IUCN, 2014)
Market Enablers	Agents (individuals or organisations) which perform three core functions in transactions: matching demand and supply, disseminating information and helping to manage risks. (eftec, 2022)
Payment for Ecosystem Services (PES)	Payments from a beneficiary/user of an ecosystem service to the provider of that service (in particular, those who preserve or maintain the ecosystem).
Permanence	A project providing a continuous flow of benefits beyond the period in which the project is established. (eftec, 2022)
Stacking	When multiple ecosystem services are produced on a given piece of land are measured and separately ‘packaged’ into a range of different credit types or units of trade that together form a stack. (BBOP, 2018)
Voluntary carbon markets	Collective transactions of carbon credits that are not purchased to meet mandatory GHG reduction obligations or predetermined targets under a regulated or compliance market. (UNDP, 2021)

1. Introduction

This is the report for eftec's review of nature market measurement and monitoring for the OEP. It accompanies a workbook that presents the metrics we propose the OEP develop to track the performance of nature markets in the UK and describes the monitoring framework and the method data sources used in the process. This report also provides a nature market assessment from the stakeholder interviews and literature review.

1.1 Objectives

In response to the evolving public policy landscape surrounding nature markets, the OEP needs to maintain an up-to-date understanding of the role of nature markets in delivering environmental policy objectives. The aim of this project is to enhance the OEP's ability to monitor the scale of key nature markets in the UK and assess their future prospects and policy dependencies. Specifically, the project objectives are to:

- 1) Develop **a monitoring framework** to track and interpret the state of nature markets via the collection of appropriate data;
- 2) Gather perspectives from nature market participants and systematically **appraise the barriers and enablers to nature markets** operating efficiently and effectively; and
- 3) **Develop transferable lessons**, from across the markets on how to make nature markets and wider environmental offsetting schemes efficient and effective, **prioritising key issues and solutions**.

The outputs from this work support the development of the OEP's Annual Monitoring Report, and its wider role to protect and improve the environment by holding government and other public authorities to account.

The scope of the project covers the four largest established markets in the UK: Woodland Carbon Code (WCC), Peatland Code (PC), Biodiversity Net Gain (BNG) offset market and Nutrient Neutrality (NN) market. However, the monitoring framework and lessons learned are intended to be applicable to emerging nature codes and markets, too.

1.2 Outputs

There were two key activities of the project;

- **Part A:** Data collection and analysis of nature market performance; and
- **Part B:** Stakeholder engagement and literature review for appraisal of the major barriers and enablers to nature markets operating efficiently and effectively.

For Part A, the main output is **a monitoring framework (Objective 1)**, which is a process designed to help the OEP to track and interpret the state of nature markets. This is supported by a data repository which logs the sources of data required to produce the metrics of the monitoring framework. These are described in more detail in section 3.1.

The monitoring framework is designed to help assess the current and future performance of nature markets. It shows the inputs, outputs, outcomes, and impacts of nature markets and is designed to enable OEP staff to update and adapt the framework elements as the markets evolve. The framework and data repository facilitate assessments that identify:

- The organisation(s) managing data collection and storage, and the expected frequency of updates.
- The steps for future collection and analysis of data to ensure consistent collation of data and provision of market indicators.

The data repository is organised in an Excel™ workbook (eftec - Nature Markets Review - Indicator Framework - December 2025) with:

- A clear structure for consistently combining data from different markets (e.g., aligning data to consistent indicators, annual time-period and geographical areas) and enabling future updates.
- A record of data sources, covering public data sources (e.g., planning portal for BNG, woodland carbon code registry, etc) and other sources (e.g., the Wildlife Trusts BNG Map, Ecosystem Marketplace).
- Both physical data of credit volumes, their timings, land areas and/or other physical data available (e.g., location, habitat types), and financial data on credit prices and overall transaction values.
- The type of market (compliance or voluntary) and the gross and net environmental gain delivered, taking into account compensatory market structures.
- Market governance structures (credit issuing and storage bodies and processes), and any verification that takes place as part of those and/or delivered by third parties.

Objectives for Part B are to provide a **nature market assessment (objectives 2 & 3) and recommendations for helping to grow nature markets**. This will help develop advice and actions that can be recommended to Government, regulators and other market operators on how to make nature markets and wider environmental offsetting schemes efficient and effective. This assessment covers:

1. Current state of nature markets and wider environmental offsetting schemes, assessed in terms of:
 - **Scale** of intervention and the level of outputs from the relevant markets
 - **Integrity** of market outputs
 - **Effectiveness** assessed by looking at the environmental outcomes likely to be achieved by the market outputs.
2. The barriers and enablers to nature markets operating efficiently and effectively, including, but not limited to:
 - Cross-cutting market actions, including how Governance can be improved to support growth in markets, such as on nature market regulation, and an independent review and critique of the pros and cons of the Broadway Initiative's proposals to give a legal basis for nature markets;
 - Through other compensation instruments, such as the government's proposed nature restoration fund; and
 - Identifying commonalities and differences across nature markets.

3. The ***potential future scale of nature markets***, updating the understanding of market trends looking over short (1-2 years) and longer term (5-10 year) perspectives. .

1.3 Structure of report

Following this introduction, the main report has three sections:

- Section 2 explains the method used in this project.
- Section 3 is a description of the findings.
- Section 4 is a list of conclusions and recommendations.
- References and Appendix 1 on stakeholder engagement.

The report is accompanied by an Excel file (eftec - Nature Markets Review - Indicator Framework - December 2025) that contains an example of the dashboard metrics for the woodland carbon code.

2. Method

This section summarises the approach adopted to meet the objectives of this project, which consists of two main parts:

- Part A: Data collection and analysis of nature market delivery performance;
- Part B: Stakeholder engagement and appraisal of the major barriers and enablers to nature markets operating efficiently and effectively. This has been combined with a review of selected literature.

2.1 Data collection for Nature Markets

Initially key data sources for the four main nature markets below have been considered and used to establish how these markets can be monitored within the OEP's resources:

- Woodland Carbon Code (WCC)
- UK Peatland Code
- Biodiversity Net Gain (BNG) Offset market
- Nutrient Neutrality (NN) Market

Data sources for these were assessed for measures of supply, market transactions and price. Data was also assessed for comparability across these markets, to test whether a common framework may be naturally applied.

A Theory of Change model was also applied to these markets to test whether this could provide a workable framework for assessing these markets in a consistent way.

Findings are presented in section 3.1. Implications of other emerging markets have been considered, but as these are still in development, no data gathering options have been developed for these markets.

2.2 Stakeholder engagement and literature review

In parallel to Part A, the team interviewed a representative sample of relevant market actors to assess: (i) the main enablers and barriers that determine whether nature markets operate efficiently and effectively; and (ii) how much environmental investment and enhancement they can deliver. The information and insight collected from interviewees has been used to refine the data collection and analysis in Part A, including informing the development of future market performance scenarios.

Stakeholder engagement took the form of semi-structured interviews with key market actors known via both eftec's and the OEP's networks. Types of market actors were categorised as in Table 2.1, and stakeholders were identified with the objective of achieving perspective from all categories. We have conducted a total of 15 interviews. Organisations interviewed, and interview script are provided in Appendix 1.

Table 2.1: Categories of actors in nature markets

Categories	Definition
Demand-side: buyers and their representatives	Buyers purchase nature-based credits voluntarily or to comply with regulations. Voluntary purchases may be motivated by commitments to customers or shareholders to reduce/offset their impact on the environment or generate benefits to their business.
Supply-side: landowners and managers, and their representatives	Suppliers are the natural asset owners responsible for delivering the nature-based benefits. The market can provide them with a new income stream. Suppliers include landowners, land managers, public sector bodies with natural asset management duties, and NGOs who own and/or manage natural assets.
Investors: lenders, investment funds	Investors provide sources of finance which can fund upfront costs and are repaid from the future income streams from sales of outputs to buyers.
Market intermediaries (e.g., brokers, standard setters)	Agents (individuals or organisations) which can perform important functions in transactions, including: <ul style="list-style-type: none"> • matching demand and supply, • disseminating information and • helping to manage risks.
Market shapers (e.g., public bodies, academic institutions)	Market shapers influence the design, structure, and functioning of the market. They help set enabling conditions for market development by providing governance, data, research, assurance, or policy support. They foster transparency, integrity, and long-term sustainability by guiding best practices, shaping regulations, and supporting standardisation and innovation.

Findings were summarised around key themes of interest and are presented in section 3.3.

Literature used: We reviewed Defra's nature markets consultation, efttec's BNG market review (efttec 2025a) and sources identified in our Introductory review of nature markets project for the OEP (efttec 2025b). Other documents reviewed included:

- **Broadway Initiative** (2025) Towards a Governance Framework for UK Nature Markets. UK Nature Markets Dialogue. Available at: <https://www.broadwayinitiative.org.uk/new-report-towards-a-governance-framework-for-uk-nature-markets-key-findings-and-proposal>.
- **ARUP (2024), Green Finance Review** - Rapid Evidence Assessment, commissioned by the OEP and retrieved here Green Finance Review - Rapid Evidence Assessment | Office for Environmental Protection
- **Green Alliance** (2024), Briefing: How to increase private investment in nature. Retrieved from <https://green-alliance.org.uk/wp-content/uploads/2024/11/How-to-increase-private-investment-in-nature.pdf>
- **Corry Review** - DEFRA (2025), Delivering economic growth and nature recovery: an independent review of Defra's regulatory landscape, Retrieved from <https://www.gov.uk/government/publications/delivering-economic-growth-and-nature-recovery-an-independent-review-of-defras-regulatory-landscape>
- **HM Government (2023) Environmental Improvement Plan**. Defra. Available at: <https://assets.publishing.service.gov.uk/media/64a6d9c1c531eb000c64fffa/environmental-improvement-plan-2023.pdf>.
- Ongoing **development of BSI standards** (702, 703, 704 etc), and related policies

3. Findings

This section describes the design of the monitoring framework and provides a summary of messages from the stakeholder interviews and literature review.

3.1 Monitoring Framework

The aim of the monitoring framework is to assess trends in performance of key nature markets. A monitoring framework can help compare the use of nature markets to other policies. While such comparison, and assessment of the effectiveness of the overall government policy in this area, are out of scope, changes to policy that would improve the performance of these markets are considered.

3.1.1 *Background to Analysis of Nature Markets Performance*

Nature markets are a mechanism, that can operate alongside other levers, to achieve positive environmental outcomes. They operate to correct a market failure through a policy and legal context which determines the role, scale and effectiveness of the market mechanism (Figure 3.1).

Conventional markets fail to take account of impacts and dependencies on nature, unless they are regulated (or driven by socio-economic drivers) to do so. To correct this market failure, the 'polluters pay principle' (like taxes or fines for damage to nature) could be applied. This principle and these instruments have been used for decades. Their effectiveness is dependent on political and social support and enforcement. However, they are not very good at incentivising doing better than the regulation.

There can be application of the 'beneficiary pays principle' - the main example of this is payments for ecosystem services. The rationale is, that those who can afford to, should pay for the free services of nature or the benefits provided to them, because someone else incurs costs in providing these benefits and may no longer do so. For example, a farmer reducing water pollution benefits a water company downstream and paying farmers for this will incentivise them to reduce pollution. This helps but it's direct from single (groups) of buyers and sellers and location specific.

Nature markets are set to benefit from the beneficiary pays principle (buyers of credits are beneficiaries) and conventional markets. With the right rules, conventional markets are very good at maximising what they are set up to provide. Nature markets are likely to bring effectiveness and efficiency because they are designed to work at large scale to gain economies of scale (both for costs and large ecological change). But nature markets are untested at large scale. It is not known if they are working as effectively and efficiently as conceptual analysis would predict, and if not, what needs to happen to improve them. This is the rationale for setting up a monitoring framework

Furthermore, markets can work in combination with other levers to increase effective outcomes. For example, effective application of the mitigation hierarchy in land development reduces biodiversity losses. However, a market process can complement the hierarchy by providing a way to efficiently address residual losses and creating a cost incentive to reduce losses in each stage of the hierarchy (driven by the market price). In some situations, the nature market may be a more effective tool in delivering positive outcomes than regulations or other policies. The distinction between the operation of nature markets, and the

broader policy and legal context is important as the effectiveness and efficiency (see definitions below) of each can be assessed separately to monitor the performance of each component.

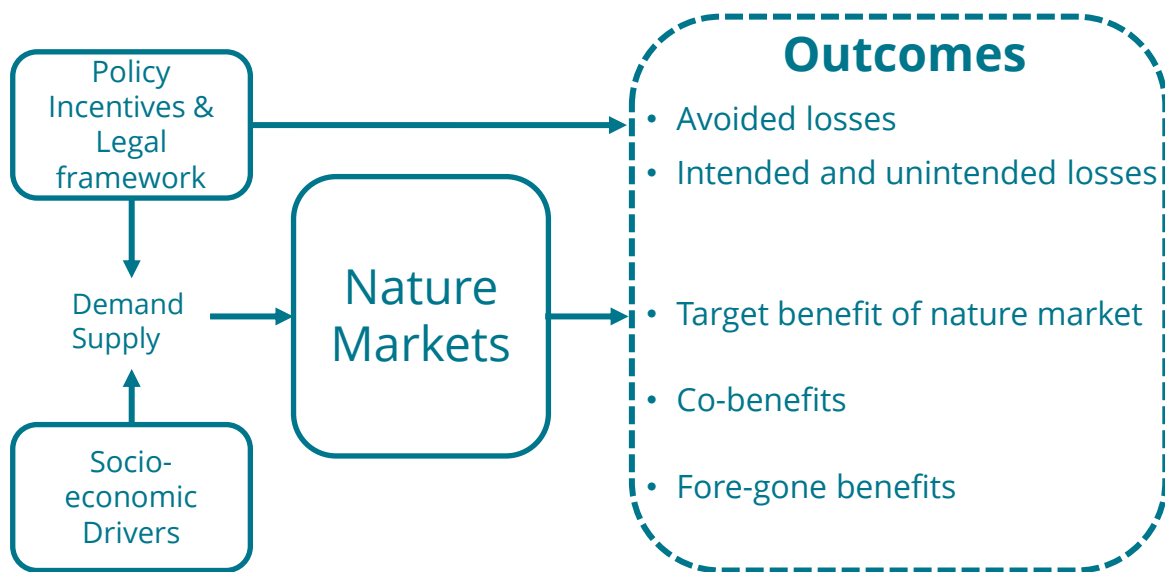


Figure 3.1: Overview of Role of Nature Markets

Socio-economic drivers in combination with government policy and legal frameworks influence what the outcomes are and how they are delivered both with and without nature markets. Government policy can:

- Decide the mix of nature market and other incentives to achieve environmental goals. This can be avoided losses or the delivery of additional environmental benefits. It can also take into account the foregone benefits of land use change, so that the most suitable resources are utilised in achieving environmental goals;
- Set the rules for the operation of nature markets, to support integrity and confidence and avoid the potential failures conventional markets suffer, and
- Stimulate nature market demand and supply through appropriate levers (e.g. legal obligations or tax incentives).

As well as delivering the specific nature-based outputs they are designed to deliver, nature markets can also generate important co-benefits. For example, the Woodland Carbon Code produces carbon credits and also enables the creation of biodiverse woodland habitat and potential water quality and flow benefits.

Aspects of outcomes that are important to monitor in assessing performance:

- **Scale:** To what extent can nature markets contribute to nature goals (both now and in future)? Ideally this would be captured by a measure that has a clear correlation to beneficial outcomes (e.g. tCO₂ sequestered). This can be monitored by various measures of scale such as:
 - volume of units traded, which may or may not have a clear link to environmental outcomes
 - areas of land they are supplied from, and
 - market value over time, which does not indicate beneficial outcome, but does indicate the level of demand in the market (a composite of volume of transactions and unit price).

- **Effectiveness:** Do these markets achieve desired outcomes? Are there unintended adverse impacts?
- **Additionality:** To what extent are benefits greater than what would happen without the nature market?
- **Durability/resilience:** Are the benefits long lasting and resilient to future risks/changes?
- **Co-benefits:** Do the markets produce other benefits in addition to those traded?

3.1.2 *Assessing efficiency and effectiveness*

In developing a monitoring framework, it is useful to consider what measures of market efficiency and effectiveness may be relevant for assessing the performance of nature markets. Within this framing the **efficiency** of nature markets is around how well resources are managed to achieve the stated market output (i.e. carbon unit sold), whilst **effectiveness** is a measure of how well the market outputs support environmental objectives. Economic efficiency is concerned with the optimal allocation of resource which is complex to analyse but has the following components:

- **Transaction efficiency:** This is measured by the cost of transacting trades per unit (either as a £ per unit or as a percentage of overall transaction value). This is influenced by scale as well as the administration costs of processing transactions. This is not something that can be readily quantified (doing so would require detailed primary research), but it can be assessed qualitatively through stakeholder opinions. A potential drawback to nature markets may be the high cost of transactions, and we recommend that the OEP encourage Defra to research participants' views of this aspect of the markets.
- **Productive efficiency:** As the achievement of outputs at low/minimum cost per unit, measured by the cost of achieving the market output (e.g. cost of sequestering a unit of carbon, including recognising the opportunity cost of land use change). In principle this could be compared to the cost of other approaches to carbon abatement or sequestration to assess which is most efficient. In practice assessing the cost of producing a unit to be sold on a nature market is not straightforward as income from other markets can be used for co-finance. For example, timber income and income from the sale of carbon credits can be used to finance creation of woodlands needed to generate the credits).
- **Market efficiency:** Credit prices should reflect levels of supply and demand and respond to market information. Markets can be distorted by lack of information, but if all market participants have access to sufficient market data (and ability to interpret such data), then the market will function efficiently, and prices will reflect the preferences of, and incentives faced by, buyers and sellers.

Measuring these different aspects of efficiency is challenging and at present there is insufficient data to allow a full assessment. There are actions that Defra could take to assess them in more detail, such as quantifying market transaction costs relative to overall market value of trades. For example, a benchmark for efficiency can be agreed based on what is a realistic cost to make the market work (% of transaction value). If the cost exceeded this value, it would suggest a high administration cost burden. Perhaps better environmental outcomes would need to be demonstrated to justify the higher transaction costs.

Effectiveness of Nature Markets is about how well the market outputs support environmental objectives. As mentioned above, it is important to distinguish between the environmental impacts of the market transactions and impacts of wider policy to ensure the contribution of the market mechanism can be identified. For example, the obligation to follow the mitigation hierarchy before entering the BNG offsite market may have more or less influence on the desired and achieved outcomes.

The effectiveness of nature markets can be measured by:

- **The additionality of outcomes.** To what extent are the outputs producing an outcome greater than baseline and that occur as a consequence of the nature market? The assessment depends on the baseline used.
- **Additionality also depends upon the test applied,** for example;
 - Environmental additionality tests measure the increase in environmental outcome relative to the baseline case. This is built into the unit measurement methods of all nature market codes.
 - Legal additionality tests whether a positive environmental outcome is already legally required, so that only outcomes that are not already required by another legislation are counted as additional.
 - Financial additionality tests whether a project is financially viable without revenue from nature credits. If it is, then the outcome would have occurred without the existence of the nature market so does not provide financial additionality. This is a key test in the Woodland Carbon Code and assures that revenues obtained through the code are necessary for the woodland to be created, and carbon sequestered. However, applying financial additionality too strictly could hinder development of projects with multiple benefits that require multiple sources of funding to be viable.
 - These tests can be used in combination with each other, and with other tests such as barrier and common practice tests, which are used in certain contexts (e.g. where new markets are being established).
- **Scale.** What contribution do outputs and outcomes from nature markets make to national targets? For example, the forecast of carbon sequestered by validated carbon credits can be compared to the quantity of sequestration required in the Climate Change Committee's net-zero pathway for woodland creation. As these figures are readily available, this is the test that can be readily evaluated and assessed.
- **Integrity.** To what extent are physical outcomes assured by the sale of the unit.
- **Durability & resilience.** What are the timescales for benefit delivery and the risks of losses and reversals. For example, some BNG offsets are provided for 30 years only.

Conclusion from the above:

- The various types of market efficiency are difficult to measure and are not a recommended priority for the OEP to monitor as part of the monitoring framework. To a significant degree, markets give an incentive to increase efficiency to increase returns to participants, and a proxy test of this is the

extent to which markets are growing. Consequently, we **recommend that the scale of each market is monitored overtime.**

- Of secondary interest is a deeper understanding of nature market efficiency (as distinct from associated policy), and the OEP could encourage UK Government to conduct research into the efficiency of the various nature markets.
- The effectiveness of nature markets is of more interest in assessing their performance in terms of scale and additionality of outcomes. This is the key measure of their contribution to environmental goals. **Recommend – the scale of each market is assessed relative to overall progress towards policy targets.**

We recommend that it is more useful to monitor activity in these markets through use of a Theory of Change model, which helps to reveal the link between inputs, outputs outcomes and impacts. This is explored below.

3.1.3 Theory of Change Model for Tracking Nature Markets

Our proposed framework is informed by the Theory of Change (ToC) model (Figure 3.2) from HMT Magenta Book (2020) which aims to assess the economic impact of proposed interventions.

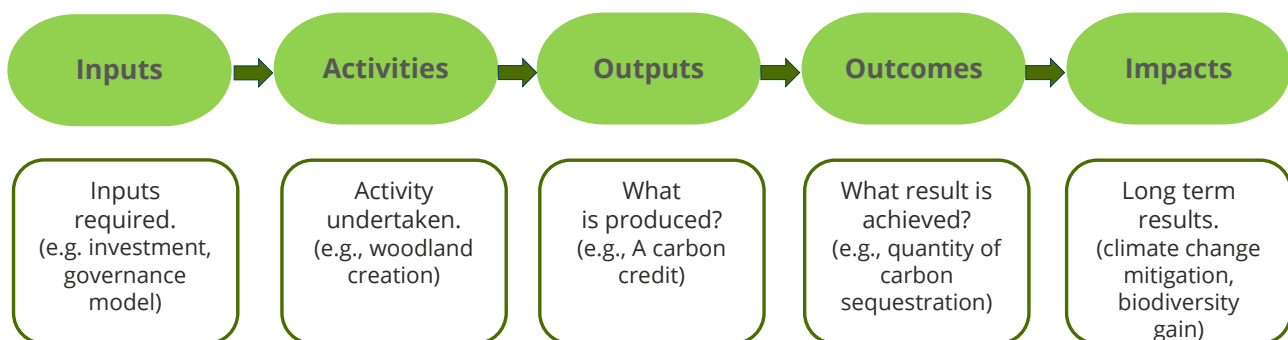


Figure 3.2: Proposed model to track the impact of nature market activity

The model assesses four key elements in a causal chain to quantify changes and highlight the link to outcomes and impacts. In the context of the nature market for the woodland carbon code the model can be explained as;

- **Inputs**, or investment from different sources that enable the activities to be undertaken. Investment is different to income from the sale of the credits (that occur in the 'output' box).
- **Activities** undertaken. In the WCC case this would be area of new woodland created.
- **Outputs**, or what is produced. In the context of the WCC market, this would be verified or validated carbon units (either PIUs for future sequestration or WCUs for verified sequestration).
- **Outcomes**, or what result is achieved. The prime outcome is the quantity of additional carbon sequestration, but other co-benefits may result too (such as improvements in water quality, biodiversity or increased provision of recreational space).

- **Impacts**, meaning the long-term results of the intervention. The prime impact of the code being its contribution to meeting climate mitigation targets, but other co-benefits may arise too, such as a contribution to the reversal of biodiversity loss.

To monitor the effectiveness of nature markets, we propose that it is important to measure each stage of this chain (where data allows) and use this analytical model to define the appropriate metrics for the nature market under consideration. The advantage of this framework is that it can be used to reveal the relationship between biophysical change, the level of nature market activity and the resultant environmental outcomes and impacts. Hence to apply the framework in general terms:

- **Inputs** are the initial investment of resources into the activities that will provide the outputs and contribute to the intended outcomes. The expected demand for the outputs influences investment, especially if investors expect a share of the income from the sale of the outputs.
- **Activities** consider the biophysical change that the market intends to provide and how that change can be brought about. For example, this would be area of habitat created or restored, which can in some cases contribute to other Government goals (e.g. the woodland creation target under the Environment Act (2021).
- **Outputs** are the quantity of traded units produced and/or sold (which will vary with each market). An additional measure here would be the value of these outputs (e.g., average price per unit), with price being an indicator of market confidence and value, and important to monitor for trends over time.
- **Outcomes** are a measure of the primary outcome that the market was intended to support. In the case of the WCC this would be quantity of carbon sequestered cumulatively and annually.
- **Impacts** assess the extent to which the outcomes have contributed to national targets. In the case of voluntary carbon codes, the quantity of carbon sequestration or abatement can be compared to intended pathways to national targets. This step may also include an assessment of additionality and a consideration of any adverse or unintended consequences (e.g. maximising carbon sequestration at the expense of enhanced biodiversity).

For each nature market, evidence has been structured within this analytical framework (see data in Excel workbook: eftec - Nature Markets Review - Indicator Framework - December 2025) designed to assess the current and future performance of nature markets. It is organised to capture these key components, (inputs, activities, outputs, outcomes, and impacts). This will enable the OEP staff to update and adapt it as the markets evolve.

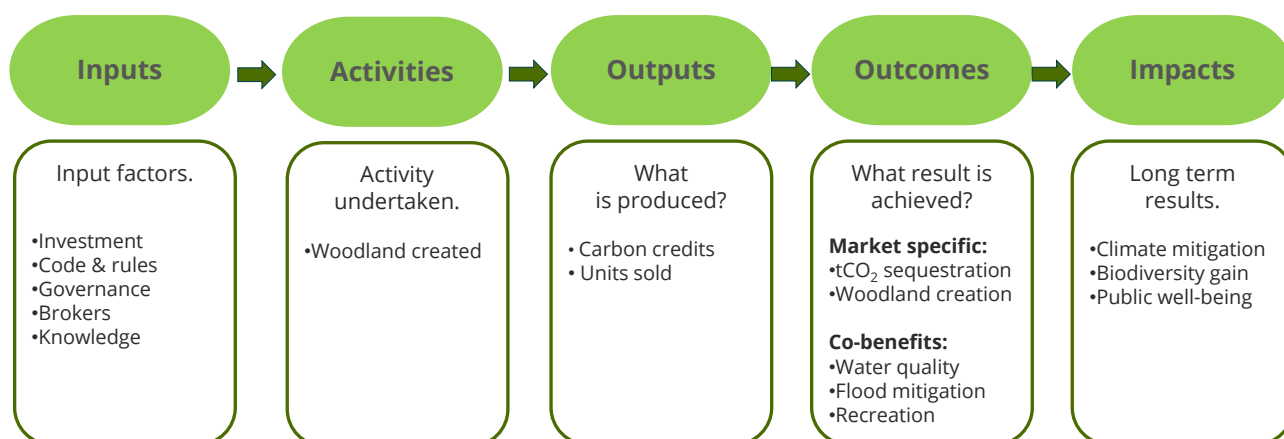


Figure 3.3: Theory of Change model for the WCC

Figure 3.3 shows the application of the theory of change to the WCC including measurable items such as investment, supply of land offered for woodland creation, credit supply (tCO₂e of PIUs and WCUs), demand, and other income required to make woodland creation viable. Other inputs include enablers that are important for the function of the market, such as a workable code with rules, brokers/technical experts and a suitable system of governance, which cannot be quantified.

The chief outputs of the market are verified carbon units for sale (PIUs and WCUs), units sold and the market value of these transactions. The market specific outcomes are carbon sequestration and storage (both actual and forecast, see Figure 3.4) and area of woodland creation that would not have occurred without the existence of the WCC. ***The extent to which these are additional is a key part of the assessment.*** In addition, there may be co-benefits such as improved species recovery, air quality, water quality, flood mitigation and recreational access, but these are difficult to fully measure or forecast. These outcomes in turn lead to contributions towards climate change mitigation and adaptation, biodiversity recovery and gain, and public well-being.

Data Attributes

In addition to selecting appropriate metrics for each market, it is important to consider the attributes of data that are available, as this will influence the choice of measures to monitor. Key objectives to be considered in selecting appropriate data sources are:

- **Accuracy**, is the data correct? To what extent is it subject to assumptions?
- **Completeness**, does the data cover all transactions, or is it partial?
- **Consistency**, is the data uniform across sources – tricky as data may be measuring different things across different markets?
- **Validity**, does it conform to established or recognised rules?
- **Timeliness**, is the data up-to-date and consistent with reporting timeframes (e.g., by financial year)?
- **Reliability**, will the data be provided consistently over time?, and
- **Accessibility**, how easily can the data be accessed or retrieved?

To some extent compromises may need to be made between these attributes to establish a workable monitoring system. Here we assess the data gathering options for each market against these objectives.

3.2 Key statistics and data collection options by market

This section reviews the data available for each of the four key markets assessed. There is good data for the WCC and peatland code which is published annually and publicly available. However, there is no comprehensive market information system for the BNG or NN markets.

Prices reflect a range of market factors, which differ with market context and characteristics. These include but are not limited to: the current and expected future costs and benefits of buyers and sellers; the prices and availability of complementary and substitute goods and services; and risks, both internal to the buyers and sellers' activities, and external (e.g. policy change, inflation).

Several nature markets are connected to the land use planning system (e.g. BNG and NN), and data on activities in the different markets described in the report exists within various public bodies (NE, LPAs) and connected organisations (e.g. Planning Portal). Hence the data exists somewhere in public sector, but insufficient effort is being made to collate the data and make it available in a transparent and accessible form. This is restricting the efficient tracking of nature market activity, and therefore also limiting implementation of evidence-based iteration and improvement of policy.

3.2.1 *Woodland Carbon Code (WCC)*

The WCC is one of the most established nature markets and has been publishing data on market activity for several years. The main metrics we propose that the OEP monitor are included in the Excel workbook (eftec - Nature Markets Review - Indicator Framework - December 2025), and reproduced here as shown in Figure 3.4, and with data rationale described in Table 3.1.

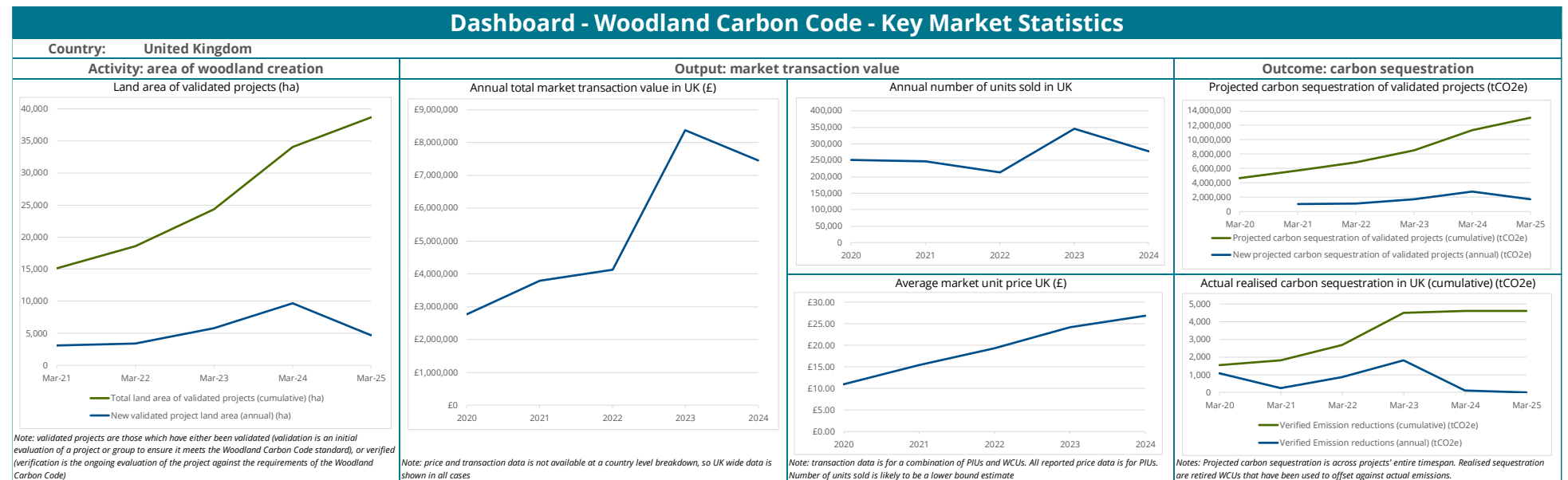


Figure 3.4: Illustration of proposed metrics for WCC

Note: Data by nation and for the UK in total is available for area of woodland creation and for actual and projected carbon sequestration. The Excel workbook (eftec - Nature Markets Review - Indicator Framework - December 2025) enables selection of nation and the dashboard will update for the appropriate country. However, the volume of market transactions and prices are not available by home nation and so are presented for the UK in total.

Table 3.1: Proposed metrics for WCC

Measure	Source/calculation	Rationale for selection
Activity measure: Area of woodland planted (ha) This covers woodland that is either validated or verified under the code.	Woodland carbon code statistics in Forestry Statistics, (data from UK Land Carbon Registry, run by S&P Global) at: https://www.woodlandcarboncode.org.uk/statistics	A measure of woodland creation and hence directly relates to national woodland planting goals.
Output: Units sold , split by: <ul style="list-style-type: none"> • Pending Issuance units (PIUs) • Woodland Carbon Units (WCUs) 	Woodland Carbon Code annual transactions (data from Forest Trends) at: https://www.woodlandcarboncode.org.uk/uk-carbon-prices	A measure of buying activity, hence a key indicator of the state of the market.
Output: Average price of units sold (£/unit): <ul style="list-style-type: none"> • Pending Issuance units (PIUs) • Woodland Carbon Units (WCUs) ¹ 	Woodland Carbon Code average annual prices (data from Forest Trends) at: https://www.woodlandcarboncode.org.uk/uk-carbon-prices	Price is a strong indicator of both demand and confidence in the woodland carbon market.
Output: Market value of transactions (£'m) <ul style="list-style-type: none"> • Pending Issuance units (PIUs) • Woodland Carbon Units (WCUs) ¹ 	Units sold (by type) * weighted average price per unit. Valued in nominal market terms.	Total value of market transaction is an indicator of confidence in the market and the level of private revenue flow into the voluntary carbon market.
Outcome: Projected tCO₂ sequestration from woodland planted. This covers sequestration achieved and forecasts for validated and verified projects only.	Woodland carbon code statistics in Forestry Statistics, (data from UK Land Carbon Registry, run by S&P Global) at: https://www.woodlandcarboncode.org.uk/statistics	A direct measure of CO ₂ e sequestered and hence contribution to national climate targets. This measure includes both historic and projected future sequestration.
Outcome: Realised tCO₂e abatement from WCUs. This is based on the number of retired units.	Woodland carbon code statistics in Forestry Statistics, (data from UK Land Carbon Registry, run by S&P Global) at: https://www.woodlandcarboncode.org.uk/statistics	A measure of the actual amount of carbon sequestration and storage.

Note 1: the volume of WCUs is relatively small and hence a separate average price for PIUs and WCUs is not yet published, but we expect this to be provided once the supply of WCUs becomes relatively significant in the next few years.

For the woodland carbon statistics, the assessment of data characteristics is shown in Table 3.2.

Table 3.2: Data attributes for WCC supply statistics

Attribute	Notes
Source	Published by Forestry Research using data on WCC projects: https://www.forestresearch.gov.uk/tools-and-resources/statistics/publications/forestry-statistics/
Accuracy	The standard is precisely defined; hence measures are considered of high accuracy.
Completeness (Coverage)	Registry covers all projects validated and verified by the code, hence is complete. Data is available for all four home nations as well as UK in total. Transaction price and volume data is based on voluntary disclosures through Ecosystem Marketplace's Global Carbon Markets Hub. The figures will likely be an underestimation of the total market volume.
Validity	All planting and projected carbon sequestration figures are verified and validated according to the WCC standard.
Timeliness/ Frequency of update	Published annually for financial year to end March for the supply statistics, and at year-end for market transaction statistics. Annual updates are suitable for the purposes of the OEP
Reliability	The WCC is a major voluntary carbon market in the UK, and its importance means ongoing publication of these statistics is high confidence.
Accessibility	Statistics are downloadable from website so are easy to access. Each year's statistics need to be downloaded separately. More detailed data must be requested from the WCC.

For the woodland carbon price statistics, the assessment of data characteristics is shown in Table 3.3.

Table 3.3: Data attributes for WCC Price statistics

Attribute	Notes
Source	Published by WCC here: https://www.woodlandcarboncode.org.uk/uk-carbon-prices
Accuracy	Prices are voluntarily added and not audited, so accuracy is hard to assess
Completeness (Coverage)	Transaction price and volume data is based on voluntary disclosures through Ecosystem Marketplace's Global Carbon Markets Hub. The figures will likely be an underestimation of the total market volume. Price and transaction data is not broken down by country.
Validity	Prices are transaction values, hence a valid measure.
Timeliness Frequency of update	Published annually for financial year to end March for the supply statistics, and at year-end for market transaction statistics Annual updates are suitable for the purposes of the OEP
Reliability	The WCC is a major voluntary carbon market in the UK, and its importance means ongoing publication of these statistics is high confidence.
Accessibility	Statistics are published on WCC website so are easy to access.

Note on price sources from EMGCM Hub: "Our pricing information is calculated by data collected through Ecosystem Marketplace's Global Carbon Markets Hub. Project developers and resellers use this platform to disclose information about sales of Woodland Carbon Code and Peatland Code units. Ecosystem Marketplace aggregates the sales data to provide average prices and protect the confidentiality of project developers and resellers."

Other points to consider:

- Both validated and verified units are reported in the statistics. An analysis of ***units available for sale*** may provide useful insight into the state of market supply and future market trends and inform judgements around the balance of supply versus potential demand.
- The market includes trades in PIUs which are payments for future carbon sequestration services. Splits of actual carbon sequestered, and future projections of carbon sequestration are a useful measure of the timing of impacts.
- The registry also tracks registered projects (i.e., before validation and verification). Monitoring these could help understand the state of the supply pipeline.
- The WCC also publishes average price by type of woodland (i.e., broadleaf, mixed, conifer), but we suggest this price analysis is of secondary interest.
- These metrics include only the supply of projects established under the code and market transactions of sales. It does not include the costs of woodland planting, or the extent of other income streams to help fund planting. WCC registered projects do need to provide financial information in order to pass the additionality tests in the code. This information is logged in the registry and could be aggregated, to help inform the extent to which sale of WCC credits support woodland creation. We understand this issue is under discussion.

3.2.2 *Peatland Code*

In many respects the peatland code has followed the approach of the WCC and uses the same registry process. However, the peatland code differs in some important ways:

- This market is about abatement of greenhouse gas losses rather than carbon sequestration. Consequently, some buyers will not be in the market for these kinds of credits.
- The profile of credit supply is more steady overtime compared to the “S” curve profile of sequestration provided by the WCC. This may be an advantage for suppliers wanting an early income stream.

The main metrics we propose that the OEP monitor are as shown in Table 3.4.

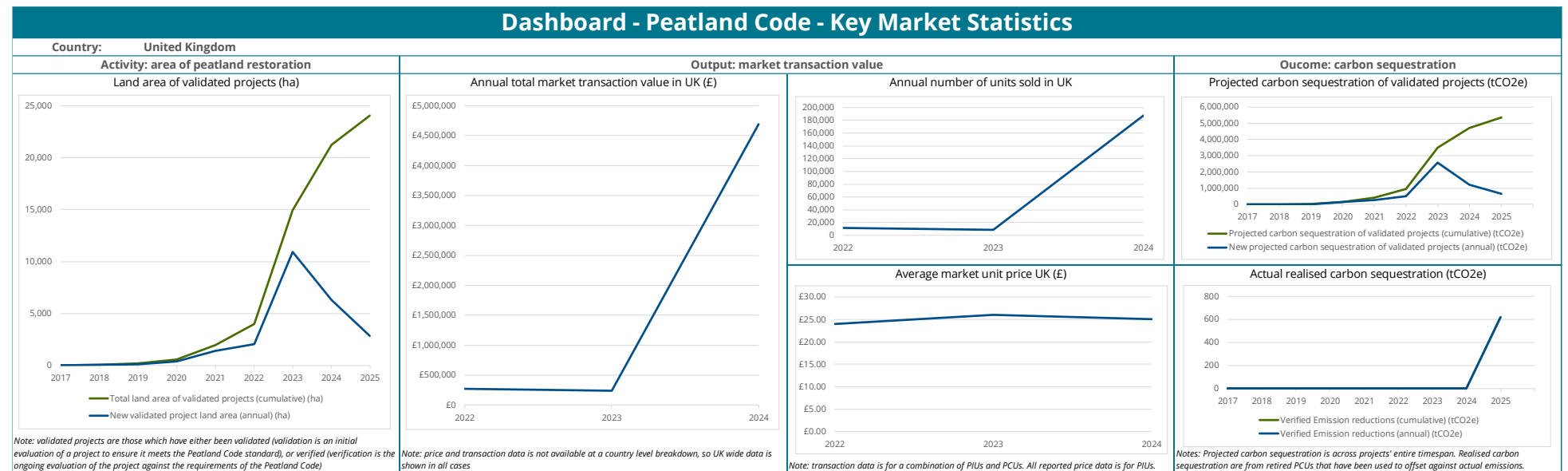


Figure 3.5: Illustration of proposed metrics for the Peatland Code

Note: Data by nation and for the UK in total is available for area of peatland validated for creation and for actual and projected carbon sequestration. The Excel file (eftec - Nature Markets Review - Indicator Framework - December 2025) enables selection of nation and the dashboard will update for the appropriate country. However, the volume of market transactions and prices are not available by home nation and so are presented for the UK in total. The vast majority of project area is currently based in Scotland.

Table 3.4: Proposed key metrics for Peatland Code

Measure	Source/calculation	Rationale for selection
Activity measure: Area of peatland restored (ha) This covers peatland that is either validated or verified under the code.	Peatland code statistics published by IUCN (data from UK Land Carbon Registry, run by S&P Global) here: https://www.iucn-uk-peatlandprogramme.org/peatland-code-project-stats	A measure of peatland restoration and hence directly relates to national peat restoration goals.
Output: Units sold , split by: <ul style="list-style-type: none"> • Pending Issuance units (PIUs) • Verified emissions reductions 	Peatland Code annual transactions (data from Forest Trends) at: https://www.woodlandcarboncode.org.uk/uk-carbon-prices	A measure of buying activity, hence a key indicator of the state of the market.
Output: Average price of units sold (£/unit): <ul style="list-style-type: none"> • Pending Issuance units (PIUs) • Verified emissions reductions ¹ 	Peatland Code average annual prices (data from Forest Trends) at: https://www.woodlandcarboncode.org.uk/uk-carbon-prices	Price is a strong indicator of both demand and confidence in the peatland carbon market.
Output: Market value of transactions (£'m), split by: <ul style="list-style-type: none"> • Pending Issuance units (PIUs) • Verified emissions reductions ¹ 	Units sold (by type) * weighted average price per unit. Valued in nominal market terms.	Total value of market transaction is an indicator of confidence in the market and the level of private revenue flow into the voluntary carbon market.
Outcome: Projected tCO₂e abatement from restoration. This covers sequestration forecasts for validated and verified projects only.	Peatland code statistics published by IUCN (data from UK Land Carbon Registry, run by S&P Global) here: https://www.iucn-uk-peatlandprogramme.org/peatland-code-project-stats	A direct measure of GHG emissions avoided and hence contribution to national climate targets. This measure includes both historic and projected future abatement.
Outcome: Realised tCO₂e abatement from PCUs. This is based on the number of retired units which have offset actual carbon emissions.	Peatland code statistics published by IUCN (data from UK Land Carbon Registry, run by S&P Global) here: https://www.iucn-uk-peatlandprogramme.org/peatland-code-project-stats	A measure of the actual amount of carbon sequestration which has resulted in offsetting actual current CO ₂ emissions.

Note 1: the volume of verified units is relatively small and hence a separate average price for PIUs and verified units is not yet published, but we expect this to be provided once the supply of units becomes relatively significant in the next few years.

The data above is published from two publicly available sources:

- IUCN Peatland Code statistics, for area, projected emissions reductions, and units sold
- Peatland code price statistics for volume weighted average price per unit (nominal terms) is published on the same site as for the WCC.

For the peatland code statistics, the assessment of data characteristics is shown in Table 3.5.

Table 3.5: Data attributes for Peatland Code statistics

Attribute	Notes
Source	Published by IUCN here: https://www.iucn-uk-peatlandprogramme.org/peatland-code-project-stats
Accuracy	The standard is precisely defined; hence measures are considered of high accuracy.
Completeness (Coverage)	Registry covers all projects validated and verified by the code, hence is complete. Data is available for all four home nations as well as UK in total.
Validity	All restoration and emission reduction figures are verified and validated according to the peat code standard.
Timeliness Frequency of update	Published monthly for previous years and current year (to-date). Annual updates are suitable for the purposes of the OEP.
Reliability	The peatland code is a major voluntary carbon market in the UK, and its importance means ongoing publication of these statistics is given high confidence.
Accessibility	Statistics are published on website so are easy to access. More detailed data in a downloadable format would have to be requested from the Peatland Code.

Table 3.6: Data attributes for Peatland Code price statistics

Attribute	Notes
Source	Published by WCC here: https://www.woodlandcarboncode.org.uk/uk-carbon-prices
Accuracy	Prices are voluntarily added and not audited, so accuracy is hard to assess
Completeness (Coverage)	Transaction price and volume data is based on voluntary disclosures through Ecosystem Marketplace's Global Carbon Markets Hub. Therefore, the figures will likely be an underestimation of the total market volume. Price and transaction data is not broken down by country.
Validity	Prices are transaction values, hence a valid measure.
Timeliness Frequency of update	Published monthly for previous years and current year (to-date). Annual updates are suitable for the purposes of the OEP.
Reliability	The peatland code is a major voluntary carbon market in the UK, and its importance means ongoing publication of these statistics is given high confidence.
Accessibility	Statistics are published on WCC website so are easy to access.

Other points to consider for the peatland code include the following (which are similar to the WCC): :

- An analysis of **units available for sale** (both validated and verified are reported in the statistics) may provide useful insight into the state of market supply and inform judgements around the state of supply versus potential demand.
- The market includes trades in PIUs which are payments for future carbon sequestration services. Splits of actual carbon sequestered, and future projections of carbon sequestration may be a useful measure of the timing of impact.
- The registry also tracks registered projects (i.e., before validation and verification). Monitoring these could help understand the state of the supply pipeline.
- These metrics include only the supply of projects established under the code and market transactions of sales. It does not include the costs of peatland restoration, or the extent of other income streams to help fund projects.

3.2.3 Biodiversity Net Gain (BNG)

The Biodiversity Net Gain (BNG) requirement was launched in 2024 to deter development on land of high biodiversity value, and to encourage the creation and restoration of biodiversity in England. At this stage the market is only active in England, but there are initiatives to develop biodiversity markets in devolved nations. The aim is to ensure development results in more quality natural habitat than before development. The policy is a legal requirement for developers to replace any habitat they destroy through creation or restoration actions. Following the mitigation hierarchy¹ if developers cannot avoid or minimise destruction of habitat, they must compensate for this loss, by restoring habitat on-site or restoring other habitat off-site, or purchasing biodiversity units (BUs). The latter two options create the conditions for a market in BUs. This off-site BNG market brings together demand from developers who require BUs and suppliers of BUs who create or enhance habitat, which must be maintained for 30 years. The gain sites that generate BUs could be either stand alone or part of a wider habitat bank.

A key aspect of BNG policy is to make compensation more expensive thereby creating an incentive to avoid or minimise damage that needs to be compensated. The effectiveness of this incentive is not an easy thing to monitor. While the volume of BU trade shows the scale of the market, the incentive to prevent or reduce residual damage in the first place is a more important drive for the policy. It may be possible to track to the biodiversity footprint of developments over time, to track the effectiveness of this incentive. A reduction in the footprint would show developers are putting effort in to reduce residual damage that needs to be compensated.

The key statistics for the BU market are:

- **Activity:** Area of habitat to be enhanced, (from analysis in BNG registry)
- **Output:** Volume and value of the BU market transactions, measured by:
 - Volume of BUs sold

¹ The mitigation hierarchy requires developers to Avoid – Minimise – Restore – Offset/Compensate
<https://www.gov.uk/guidance/biodiversity-net-gain>

- Average price of BUs
- Market value– number of BUs sold multiplied by price
- **Outcome:** Extent to which BUs and land are additional over and above compensating the residual BU damage (i.e., the 10% net gain part, over and above the no net loss part)

There is a mixture of public and third-party data sources on the BNG market. None of the data sources contain all the key metrics, making it a challenge to assemble the information needed to assess the state of the BNG market. Each source also has advantages and disadvantages in terms of coverage, accuracy and accessibility. The data source, description, data that it contains, and the advantages and disadvantages are presented in Table 3.7.

Note that data presented in the Excel file (eftec - Nature Markets Review - Indicator Framework - December 2025) is partial and used to illustrate how the data should be presented. ***This should not be mistaken for actual market data.*** Consequently, the dashboard has not been presented in this report.

Table 3.7: Summary of available data sources for assessing the BNG market

Data source	Description	Metrics contained	Advantages	Disadvantages
Biodiversity Gain Site Register	The official BNG public registry, which records information on registered gain sites, and data on recorded transactions for each site. Maintained by Natural England.	<ul style="list-style-type: none"> Supply sites – site size (ha), types of habitat, condition, and area, for the baseline and planned habitat improvements Market transactions – individual allocation of BUs for each site: details on planning application that has bought it, number of BUs sold, type of habitat, condition, and area for the number of BUs sold 	<ul style="list-style-type: none"> Complete, contains data on all active supply sites Only source that records transactions of units sold Public source – available at https://environment.data.gov.uk/biodiversity-net-gain Contains data on area of land affected, and some transaction data is available in BUs 	<ul style="list-style-type: none"> Data is not exportable in an easy-to-use format (e.g., excel, csv file), and no summary of the market is provided. Extracting this data would require data-scraping², which can be done (see The Wildlife Trusts BNG map) but would be resource intensive and require specialised expertise No timing data for when sites joined the register, and date of transactions No BU data for supply, and BUs sold not broken down by habitat type No data on demand There is a lag in the market process between reserving/purchasing units and the transaction appearing on the register
The Planning Portal	Data provided by The Planning Portal on full planning applications, with more detail about BNG parameters	<ul style="list-style-type: none"> Planning applications – number per month, by site area (in bands, e.g. 0.1-0.2 ha), per local planning authority, and whether subject to BNG or not Applications subject to BNG – inclusion of their pre-development biodiversity value (in BUs) Applications exempt from BNG with reason for exemption 	<ul style="list-style-type: none"> Allows assumptions to be applied to estimate market demand for BUs, based on actual planning applications Data can be provided monthly Flexible dataset meaning a wide range of analysis can be carried out Data is shared in an excel format that is reasonably easy to work with Data can be used to provide more detailed insights on the operation of the market (e.g., around use of exemptions) 	<ul style="list-style-type: none"> No data on actual market BU supply or transactions Planning applications give indication of BU demand, but requires several broad underlying assumptions to produce an estimate of BU demand³. While there are some sources of data to support these assumptions, they have uncertainty and rely on expert judgement, and may be revised in future as more market data becomes available. Does not account for the time element of the planning process, and needs more assumptions to do timing analysis Reliant on continued access to Planning Portal data, which is a private company

² Data scraping is the automated process of extracting information or data from websites, and saving it to a file, which can then be analysed. It can be done using coding software such as Python, and requires technical expertise. Note: not all websites can be data-scraped, and care must be taken to avoid violating the terms and conditions of a website.

³ See for example: [Microsoft Word - 859 Well-functioning BNG Final report eftec 050825.docx](#)

Nature Markets Review

Data source	Description	Metrics contained	Advantages	Disadvantages
The Wildlife Trusts' BNG Map	GIS map produced by The Wildlife Trusts using data from the BNG register	<ul style="list-style-type: none"> • Map containing spatial data of active BU supply sites • Some tables provide aggregating data • Option to few more detailed statistics in table 	<ul style="list-style-type: none"> • Contains data on supply sites • Provides some basic summary statistics which are easy to collect • Proof of concept on gathering data from the BNG register (see also Duffus et al. 2025) 	<ul style="list-style-type: none"> • Based on data scraping of the BNG register (the code for this is not made public, which reduces reliability) • Unable to access underlying data easily • Reliability: Unsure if this will be maintained in the future, and may be updated sporadically (states that it is updated daily, but last update was two weeks ago at time of writing) • Doesn't contain data on number of BUs, even though that data is on the register
Third party BNG market places (e.g., Gaia, Future Homes Hub)	Various private companies that connect buyers and sellers of BNG. Often also selling their own BUs or selling advice on BNG	<ul style="list-style-type: none"> • Various unstructured data in tables, maps, etc. about available BNG sites (both active and upcoming) • For sites, can contain data of available BUs, habitats, and price of BUs 	<ul style="list-style-type: none"> • Provides supply data on upcoming sites, not just ones currently on the register, giving a look at future supply pipeline • BUs can be reserved/ bought ahead of time • Only source that has some limited price data on BUs 	<ul style="list-style-type: none"> • Missing a number of key data points • Can't reliably extract information • Would require pulling data from several sources, which would be resource intensive • Do not give a complete view of the market, and unclear what proportion of the market is captured at any point in time.

Given the relative merits of each source, data from multiple sources could be collected to provide an assessment of the operation of the offsite BU market. However, ***this would require considerable resource and would be beyond the level of resource that the OEP could deploy on this task***. Furthermore, other sources are not guaranteed to be maintained into the future depending on the organisation's priorities (such as The Wildlife Trusts BNG map).

Hence, ***our suggested approach is:***

- **Recommendation:** The OEP should request that Government produce a complete BU market registry providing access to market data as a priority.

A further point to consider is that the BNG register is more likely to improve in its usefulness over time because it is a complete and public source, and would be used as the definitive source of market data. It may also be improved to help the BNG market become aligned with the developing BSI Flex standards (701, and further standards being drafted, which contain requirements for nature market registries) and support better market regulation. A priority for the OEP and Central Government is to **recommend** what data the registry should provide, and guidance around transparency and data accessibility.

Finally, some other points that should be considered when monitoring the state of the BU market, particularly when assessing future trends, include:

- Market has only been in operation for 18 months and has not yet reached its expected full size with respect to the scale of annual land use development. Therefore, current trends reflect growth of the nascent BU market, rather than trends in how BNG policy delivers biodiversity outcomes,
- Policy is subject to uncertainty about its future, meaning analysing future trends is difficult and
- Policy change could significantly alter the rules and/or size of the market, making future interpretation of trend data difficult.

3.2.4 Nutrient Neutrality (NN)

Nutrient neutrality is an environmental approach designed to ensure that new development does not add to the existing nutrient load in protected water bodies. The goal is to prevent further deterioration of habitats affected by excess nitrogen and phosphorus, which can lead to issues like algal blooms and the degradation of sensitive ecosystems. Note that this market is distinct from nutrient reduction activity which aims to reduce nutrient load for other reasons, typically to improve water quality to comply with pollution regulations and/or for public water supply.

Under this approach, developers across 74 Local Planning Authorities (LPAs) and 27 catchments in England are legally required to offset any additional nutrient pollution that development projects would cause. It is important to note that these are discreet catchment markets, and it is not possible to trade between catchments (unlike BNG). Following the mitigation hierarchy, if developers cannot avoid or sufficiently reduce nutrient inputs through on-site measures, they must compensate for the impact through off-site mitigation, such as funding land use changes that reduce nutrient runoff (e.g., converting farmland to woodland or wetland).

Off-site catchment nutrient mitigation markets were introduced in 2023 (Burke, 2023). NN market demand comes from developers who need to purchase nutrient credits to comply with regulations and nutrient credits are supplied by organisations that deliver nutrient reductions such as farmers; intermediaries are often involved in the process.

- **Activity:** Actions that offset the quantity of nutrient offset to be mitigated (Kg of relevant nutrient, N or P).
- **Output:** Volume and value of NN market transactions, measured by:
 - Volume of credits sold (Kg by nutrient type)
 - Average price of credits (noting that there may be substantial price variations between catchments)
 - Market value – number of NN credits sold multiplied by price
- **Outcome:** Extent to which NN credits are additional, over and above mitigating the extra nutrient load.

There are several mechanisms by which developers can purchase NN credits, which are set out in Table 3.8. Understanding the different quantities and prices of NN credits sold under each of these mechanisms will be important for the OEP to understand changes in market activity.

Table 3.8: Mechanisms for obtaining nutrient credits

Mechanisms for obtaining nutrient credits	How price is determined
Direct purchase from a landowner or conservation body	Negotiated between developer and provider
Purchase through Natural England nutrient mitigation scheme (Natural England act as a broker between developers and landowners)	Standard price (£/kg) is set by Natural England, i.e., not competitively determined
Local authority led credit schemes e.g., Local Authority collects levies from developers and delivers mitigation themselves or through partners	LPAs set fixed levies based on cost estimates (£/kg or £/dwelling)
Third party markets: emerging platforms or intermediaries match developers and landowners via a marketplace e.g., Environment Bank or EnTrade	Competitive pricing including auctions, offers or off-the-shelf prices
In-house: large developers secure their own land for mitigation, generating internal credits	Developers conduct internal costing with no recourse to a market
Credit stacking and bundling e.g., with BNG	Emerging: market is still developing but prices are competitive and may reflect bundled products

Currently, there is no single comprehensive public registry for nutrient credits delivered by UK local authorities. Regardless of how the developer acquires credits, they must submit information relating to

their nutrient mitigation plans to the LPA (Table 3.9). However, due to the large number of LPAs in the scheme (74) and the lack of a centralised database, accessing this data in a cost-effective and consistent manner is not currently possible.

Table 3.9: Information submitted to LPAs by developers

Submission type	Description
Nutrient Budget Calculation	This requires using catchment-specific tool to calculate the annual nutrient load (kg/year) from the development.
Nutrient statement	Developers provide a written nutrient statement outlining the mitigation measures being used and any resulting nutrient loads that need to be mitigated through the purchase of nutrient credits. For example, <i>the statements would contain the kg/year of nutrient credits that require offsite mitigation.</i>
Nutrient credit certificate	If there is excess nutrient load, developers need to obtain nutrient credit certificates. This will typically include the number of credits, the details of the development, the total cost of credits for mitigation and the source of the credits.
Habitats Regulations Assessment	Usually provided by developer or consultant. The assessment shows whether the project passes the test of "no adverse effect" under the Habitats Regulations.

There are several options to obtain market data for NN markets set out in Table 3.10. The Planning Portal is currently the only nation-wide data source that potentially has full market coverage, as developers are required to upload NN supporting documents to the portal. There are no questions related to NN requirements in The Planning Portal form, but questions could be added, which would allow consisted data to be collected. At present, The Planning Portal can only determine the number of developments that have NN requirements and not detailed information on the number or price of credits purchased, which is contained within supporting documents. In the period from March to December 2024, 572 planning applications contained NN supporting documents; in the period from January to September 2025, 599 planning applications contained NN supporting documents, with a total of 1,171 over the two time periods.

LPAs, on the other hand, receive all planning documents related to nutrient requirements and have access to the most granular data, including how NN credits are obtained and price (Table 3.8). However, there is no centralised database with information from LPAs, and there is no obligation for LPAs to provide this information in a database format. However, insights can be drawn from other policy areas, for example LPAs make use of Exacom software to store and report the Community Infrastructure Levy (CIL) data. This demonstrates that LPA data can be transferred to a national database.

Third party markets operators such as EnTrade are likely to hold information on transaction volume over time for their portion of the market. Despite a lack of total market coverage, this data could be useful for tracking market prices and comparing trends to other data sources. Finally, NN calculators can be used to

estimate market activity based on development rates, but this is not observed market data so isn't suitable for meeting the OEP's objectives.

Given that there is no single source of data and that the options to monitor the market entail varying degrees of effort, **key recommendation** is for the OEP to request Defra (or Natural England on its behalf) to set up registers to monitor offset obligations and trading on nutrients and biodiversity, in line with the requirements of BSFlex701.

Note that data presented in the Excel workbook (eftec - Nature Markets Review - Indicator Framework - December 2025) is partial and used to illustrate how the data should be presented. ***This should not be mistaken for actual market data.*** Consequently, the dashboard has not been presented in this report.

Table 3.10: Options for obtaining Nutrient Neutrality market data

Potential data source	Description of potential data sources	Advantages	Disadvantages
The Planning Portal	<ul style="list-style-type: none"> Supporting documents that must be uploaded by developers include nutrient statements and nutrient credit certificates; however, it is not currently possible to obtain this data in a database format without data-scraping The number of planning applications that contain supporting information if there is a NN requirement can currently be calculated by the planning portal It may be possible to add questions into the planning application form on NN to obtain data that way 	<ul style="list-style-type: none"> Only existing data source with total market coverage Potential to collect data systematically by adding questions to the planning application form or data scraping 	<ul style="list-style-type: none"> Extracting data from within the supporting documents is challenging and would require significant investment in a data scraping approach Reliant on continued access to Planning Portal data, which is a private company Amending the planning application form would provide data on future applications but not past market transactions
LPA reporting software	<ul style="list-style-type: none"> LPAs with NN markets hold HRAs, nutrient budget calculations and nutrient credit certificates; some may collate market data in databases LPAs use Exacom software to store and report data on the Community Infrastructure Levy (CIL); this approach could be used by LPAs for NN 	<ul style="list-style-type: none"> If LPAs adopted reporting software such as Exacom, detailed insights from the nutrient budget calculations and HRAs could be gained Moreover, this would allow for collection of nutrient credit price data, which is available in nutrient credit certificates 	<ul style="list-style-type: none"> Whilst Exacom would enable systematic LPA NN reporting, it would still require obtaining permissions to obtain and aggregate the data for each LPA Using a systematic reporting system may result in additional administrative time and cost to LPAs
Trading platforms (e.g. EnTrade)	<ul style="list-style-type: none"> May be able to access data for certain locations they cover to assess market trends 	<ul style="list-style-type: none"> Could provide advice on a data framework for the OEP/LPAs to adopt; data may be useful to sense-check other sources 	<ul style="list-style-type: none"> A large portion of the market doesn't use EnTrade
Nutrient budget calculators	<ul style="list-style-type: none"> Natural England's nutrient budget calculators (there is a different calculator for each affected catchment) contains key metrics; however, they are submitted to LPAs and it is unclear whether Natural England collates this data 	<ul style="list-style-type: none"> These excel files contain systematically reported information on the nutrient budget for a given development and if held by Natural England, would provide key insights into the quantity of nutrient offsets 	<ul style="list-style-type: none"> Many calculators for different catchments This data is not observed actual market transactions, rather a record of nutrient loads with no information on market price or quantity transacted.

3.2.5 *Emerging Nature Markets*

In addition to the currently operating markets discussed above, the framework is also intended to be used to monitor emerging markets. Examples of known markets under development or consideration include:

- Saltmarsh code
- Marine Net Gain
- Natural flood management markets
- Agro-forestry carbon code
- Soil carbon code
- Surface drainage nature-based solution payments (London)
- Voluntary biodiversity credits (e.g. Credit Nature)

The same process for assessing inputs, outputs, outcomes and impacts should be applied to determine the appropriate metrics to provide and guide the data gathering effort.

3.3 Nature market assessment

The purpose of this assessment is to systematically appraise the current state of nature markets, the barriers and enablers to nature markets operating efficiently and effectively (environmental outcomes), and their future scale. Evidence was gathered from a selection of key publications, and interviews with nature market participants. These perspectives and the assessment of available or feasible data inform the recommendations in Section 4. ***This section outlines the key findings from interviews with participants (see list in Appendix 1) and considering available literature.***

3.3.1 *State of UK nature markets*

Nature markets in the UK remain immature and slow to develop, with signs of stagnation across some areas. Demand for voluntary carbon credits is limited and inconsistent, as private sector credit purchase tends to be uneven and highly sensitive to wider macroeconomic conditions. While some optimism persists with suggestions that capital from funds could be drawn in, as highlighted in the *State of Market Report 2023* (Broadway Initiative), recent signals are less encouraging. One market shaper referenced a recent ministerial roundtable, which conveyed a strong message that businesses and finance are effectively pausing activity in nature markets. Current markets also remain largely siloed, typically focused on single benefits, even though nature-based solutions (NbS) inherently deliver multiple benefits. Interviewees consistently noted that clearer government frameworks will be essential to unlock nature market growth and provide confidence for investment.

The current state of each nature market in review is summarised here:

Woodland Carbon Code is an established market, recognised by interviewees for its level of integrity, having one of the most robust application processes and aligning with national and international standards

(Defra, 2025). However, the WCC is limited in scale due to competing land uses and regulatory implications for establishing woodland, making the process of applying to the WCC (supply side) limited to situations where it is environmentally and politically feasible to establish woodland. As shown in Section 3.2, the rate of market growth has declined in the last few years. For context, the Government aims to create 1.5m ha of woodland to meet climate and habitat targets, which is ambitious but sets an upper bound to the scale of the market. The rate of market growth has declined in the last few years. Although there is not a clear reason for this decline, some explanations include: a global downturn in voluntary market demand impacting the UK, uncertainty in future market prices. Proposals to allow WCC units to be used to offset emissions in the UKETS may boost demand.

Similarly, the **Peatland Code** is established and recognised as high integrity, abiding by the same national and international standards as the WCC. The scale of the PC market is limited by the scale of the UK's peat requiring restoration (around 2m ha). The PC has also experienced a decline in growth, and proposed reasons for this are similar to the WCC.

The state and scale of the **BNG market** is known only as far as the market has been in operation since February 2024, and the future of the market is dependent on regulatory rulings. Responses to Defra's consultation on the BNG Market in 2025 after a year of operation has resulted in some evidence to the scale and effectiveness of the market, with caveats around data availability and accuracy (eftec et al, 2025), and has highlighted that the market has underperformed compared to expectations due to a higher percentage of exemptions (60%). Stakeholders stressed that performance of the BNG market is speculative given a lack of coherent evidence and changing regulatory landscape.

The **Nutrient Neutrality market** is limited to within catchment trades as it is not possible to trade across catchments. It is difficult to ascertain the size of the market given that data collection is decentralised across 74 local authorities. The development of the market is tied to housing developments and regulatory rules, which are likely to be reviewed in future as the effectiveness of this market on environmental targets is highly debated (Bakker et al (2025)). Further, interviewees are not confident that developers should be responsible for mitigating nutrient pollution when farming can cause greater pollution.

Other emerging markets are complicated to assess as the scientific and market structures are still developing. For example, one interviewee discussed how the Salt Marsh Code is in testing phase and it is unclear the size of the market when launched, although believed to be under 10 projects in the first few years. The Code will also be limited to only wetland creation as the science to measure carbon benefits from restoring wetland is still in development. Other markets, such as compliance markets in food, water and construction sectors (polluter pays principle) are still in the conceptual stage (Green Alliance, 2024).

3.3.2 Barriers

Interviewees identified the following barriers that are common across all the markets this report covers.

Concerns around scale of markets

A recurring theme from interviews was concern over whether nature markets can reach the scale required to play a meaningful role in climate and biodiversity goals. While the WCC has stabilised after an earlier surge, there is growing recognition that supply is insufficient for companies to meet their 2030–2040 carbon

targets. Land availability for woodland creation is also limited, reinforcing the view that the UK will remain a relatively niche market. This is not necessarily negative — interviewees noted that high-integrity credits could provide the UK with a competitive edge — but it could restrict the overall volume of activity.

On the demand side, expectations for major growth have not materialised. Demand for credits remains piecemeal, limited by the voluntary nature of the market, and hampered by concerns around greenwashing and reputational risk. This weak demand compounds commercial challenges: revenues are still too low and costs too high to make many projects consistently viable, with private investment at insufficient levels to bridge the gap. An investor highlighted that current markets do not provide the scale, reliability, or revenue certainty needed to attract significant capital.

Interviewees also raised concerns about structural limitations. Nature markets are often conflated with voluntary carbon markets, creating confusion, and in practice the main driver of demand in compliance markets remains the sale of credits to offset development. This caps potential growth, since compliance markets linked to planning and development in England represent only a fraction of the investment needed to achieve biodiversity targets in England. That is, an estimated £27 billion (GFI, 2021) of private investment in nature recovery, compared to £250 million invested in the BNG market by Environment Bank⁴.

Alongside questions of scale, interviewees highlighted concerns about the effectiveness of existing nature markets. For example, the Peatland Code does not align well with recognised climate frameworks as peatland restoration avoids emissions rather than sequestering carbon, meaning it does not fit neatly within science-based targets. More broadly, interviewees cautioned that market incentives and conservation priorities are not always aligned. This misalignment risks narrowing the focus of projects to what can be monetised, potentially reducing the wider ecological benefits that nature-based solutions are meant to achieve.

Lack of coherence with environmental goals

Interviewees consistently noted a lack of coherence across the policies, frameworks, and delivery mechanisms underpinning nature markets as a key barrier. This incoherence undermines effective operation and investment, with governance frameworks and demand-creating policies often poorly aligned. For example, misalignment between Environmental Land Management schemes (ELMs) and BNG create uncertainty that deters private capital. Similarly, local planning authorities face obstacles in applying nutrient neutrality rules due to opaque regulation, further fragmenting the supply side.

The delivery landscape was described as particularly weak. Despite binding national targets under the Environment Act, there are no clear or joined-up delivery mechanisms to achieve them efficiently on the ground. This is a gap that was highlighted in the Corry review of Defra's delivery arrangements (2025). Interviewees noted that this fragmented approach is compounded by a lack of clear organisational targets, weak incentives for investment, and low transparency around market operations and outcomes.

⁴ Figure was reported in April 2025. Environment Bank is a major investor in the BNG market. At present, a total market value with high confidence is not available.

Transparency and registries

A lack of transparency and coherence in registries was highlighted as a major barrier to the development of credible nature markets. Interviewees noted that there is currently no single body responsible for recording market transactions across different schemes. This limits the ability to track individual projects and credits through trading processes and over time. Registries themselves are disparate and underdeveloped, creating significant information costs for market participants who must spend time deciding which registry to use, how to navigate them, and where to obtain the best price. Furthermore, registries do not facilitate checks of whether credits are being 'stacked' (e.g. different credits sold in multiple markets from the same area of land).

This fragmented system undermines confidence and raises broader concerns about integrity. Interviewees stressed that despite the robustness of schemes like the WCC, negative publicity surrounding international carbon markets has eroded trust more widely. Credibility remains limited in the absence of clear governance and regulation that could give businesses confidence in the quality of credits. The division of responsibilities across Defra, Natural England, and the Environment Agency, combined with limited market regulation expertise and involvement from financial regulators such as the FCA, was seen as leaving regulatory gaps and inconsistencies that weaken overall market integrity.

Concerns around costs

High costs were flagged as a key barrier to the growth of nature markets. The planning process itself is time and resource-intensive, while ongoing monitoring and verification costs make small projects difficult to justify, limiting participation and investment. Interviewees noted that even large-scale investors, such as the National Wealth Fund, require demonstration of clear economic returns, which can be difficult to achieve in many NbS projects. One interviewee noted that there is investment into significantly reducing the costs of monitoring and verification with the explicit purpose of removing the barrier to entry for small landholders, who are most disincentivised by these costs.

Cost concerns are further compounded by a lack of price transparency in some markets. Trades in BNG and Nutrient Neutrality markets occur across multiple platforms without a consolidated national view, making it difficult for participants to assess fair value or potential returns. In contrast, schemes such as the WCC and Peatland Code benefit from more centralised tracking, improving transparency and comparability.

Market Risks

Interviewees highlighted several market risks that undermine confidence and investment in nature markets. The risk of reversals, for example from forest fires remains a major concern for the WCC, and there is limited understanding among participants of how buffers work to mitigate these risks. Conversely, overly stringent risk management, such as large buffer requirements under the WCC (20% of carbon benefits are put in a reserve), can make projects commercially challenging, particularly in relation to additionality.

Fraud and credit storage are also key concerns. Disparate and complex registries make it difficult to track credits reliably so limiting the ability to uphold integrity criteria on additionality and inhibits detection of

fraud. The BNG market currently lacks processes to detect or prevent fraudulent activity. Similarly, unresolved issues around stacking credits across multiple schemes add further uncertainty.

Conflicts of interest in governance exacerbate these risks, particularly where regulators also act as administrators, as with Natural England. This dual role creates an uneven playing field and has been linked to challenges in Nutrient Neutrality markets. In the BNG market, Local Authorities have multiple market interests – as land use planning and market regulators, also sellers of credits and have economic development goals.

Government policy is subject to uncertainty about its future, adding to a lack of confidence. For example, possible changes to BNG rules undermine investor and supplier appetite to engage in the market.

Finally, reputational risks, including concerns about greenwashing, weigh heavily on companies that could participate in markets due to fear of public criticism. Interviewees also noted a broader systemic risk: an expansion of nature markets could reduce political appetite for public funding for nature restoration, potentially limiting the overall resource base for conservation.

Skill and knowledge gaps

Across the Defra group, there is limited economic and legal expertise available to design and regulate markets that are well-functioning, credible, and scalable. Similarly, local planning authorities often lack the capacity to act simultaneously as market facilitators and regulators. While some progressive authorities are experimenting with new approaches, most are constrained by competing responsibilities, such as delivering central government priorities or grant-funded programmes, rather than enabling markets or supporting mechanisms like Section 106 agreements and Local Nature Recovery Plans.

Interviewees emphasised that this lack of integrated expertise, combining legal, economic, and environmental knowledge, undermines the ability to support coherent, high-quality markets. Without targeted support and the application of market design and regulation expertise, opportunities for effective and efficient nature market development are being missed.

Lack of coherent monitoring

Monitoring practices in nature markets are fragmented, with no consistent national standards in place across markets. Larger market players hold extensive datasets, yet these are not routinely accessible to government, weakening oversight and reducing transparency.

There are examples of good practice. EnTrade operates its own registry and produces quarterly market reports, with independent auditing by the Soil Association. Similarly, the WCC and Peatland Code provide supply information publicly and are open to the OEP's data requests, though both codes rely on data supplied by project applicants. Critically, these examples are not legally mandatory reporting, and therefore, their continued publication is not 100% reliable.

As discussed, concerns remain around the monitoring of the BU market under the BNG requirement. While Natural England designates responsible bodies for managing BNG, interviewees questioned whether Natural England is effectively monitoring and regulating these activities.

There is more data held within the public sector for the NN and BU markets than is made available to market participants and stakeholders. This is problematic for integrity (e.g., not fulfilling the transparency requirements in BS701) and efficiency, as markets work better with better information. Time spent by the OEP or other public organisations to search for data that is collected by, but not made accessible by, other public bodies, is a potential source of waste in the public sector.

3.3.3 Enablers

This section is structured by the key enablers identified by interviewees rather than by market as they are relevant across the markets.

High integrity markets

Interviewees emphasised that integrity and accreditation are critical enablers for credible and scalable nature markets. Schemes such as the WCC are actively pursuing accreditation through the Integrity Council for Voluntary Carbon Markets (ICVCM) and are already accredited by UKAS, while the Peatland Code is in the process of obtaining accreditation by UKAS and is already accredited through the ICVCM. Accreditation builds confidence among investors and buyers by demonstrating that markets adhere to rigorous standards. Initiatives such as the Science Based Targets Initiative (SBTi) were also highlighted as key drivers of demand, helping to standardise how carbon credits are understood and applied in voluntary markets.

Transparency is closely linked to integrity. The WCC has robust disclosure processes, which boosts confidence and can help expand market scale. However, interviewees cautioned that improved transparency alone does not guarantee better environmental outcomes; most sustainability disclosures are focused on financial materiality rather than ecological impact.

Finally, alignment with standards and principles was highlighted as a vital enabling factor. Demonstrating that trades are sustainable typically relies on coherence with established standards, and Standards organisations play an active role in shaping these principles. Work by the British Standards Institution (BSI) to increase cohesion across markets was welcomed, with expectations that it could reduce confusion and further strengthen confidence in nature markets.

Demand stimulators

Experts highlighted the need to boost compulsory demand for nature-based solutions by using regulations to create nature-positive obligations that generate a consistent market signal. One proposed approach is the expansion of the UK Emissions Trading Scheme (UK ETS) to include nature-based carbon credits. Proponents argue that this could signal government commitment, incentivising greater supply-side participation by offering higher prices for credits. However, interviewees emphasised that schemes like the WCC would need to allow stacking of credits first, or else there is a significant risk of prioritising carbon sequestration above other important benefits.

There are also notable drawbacks to expanding the UK ETS. Concerns include the impermanence of nature-based removals, the unreliability of accounting for natural carbon sequestration, and uncertainty around future supply of nature-based removals. These factors, highlighted by Wildlife and Countryside Link (2024), could threaten the overall integrity of the UK ETS. In addition, the science underpinning some schemes,

such as the Peatland Code, may not align with UK ETS requirements, potentially creating perverse incentives where woodland creation is prioritised over alternative land uses that could deliver better environmental outcomes. Another option discussed is the creation of a nature market specific ETS, although this would be costly and complex to implement.

Alternative schemes were proposed as potential means of stimulating market demand. These include:

- Expanding market-based disclosures by mandating TNFD reporting, making organisations more aware of and publicly accountable for their impact on nature and so being more likely to invest in nature, albeit on a voluntary basis.
- Expanding compliance markets, such as going beyond 10% gain in the BNG market
- Create new compliance markets, such as in food, water and construction sectors. These markets are not yet in development, and more thought would need to be given to how they would interact with existing compulsory markets.
- A nature levy (e.g., Natural England Nature Restoration Fund) could generate a new mode of market demand, though the precise operational details remain unclear. Wildlife and Countryside Link has proposed a levy depending on nature impact, which could be organised at a local level. However, as the proposals are broadly to replace the BNG requirement, this would mainly represent a shift in the mode of demand, rather than a change in the amount of investment into nature recovery. The fund could continue to use the BU market to procure nature recovery actions or could deliver them through other mechanisms. If the market route was not used, this would result in a reduction in BU demand in the second year of the mandatory market. As well as weakening the quantity of demand, this would also reduce confidence in the market as it represents an increase in policy risk.

Coherent policy and regulation

Interviewees emphasised that clear, joined-up regulation and policy is essential for scaling nature markets. Mechanisms exist to enable growth, but this depends on regulatory clarity, stability, and trust. The *Financing Nature Recovery* (Broadway Initiative, 2025) paper highlights that well-designed funding and regulatory frameworks can help establish markets that deliver tangible benefits to communities. While private capital is available, investors are waiting for stability and confidence in the regulatory environment before committing at scale.

There is broad support for a single oversight body to coordinate standards, certify products, and improve market coherence. Interviewees argued that a UK-wide nature credit market should be regulated to prevent fraud, greenwashing and other malpractice, and ensure high integrity. Some interviewees also believed that a nature credit market should generate revenue for the Treasury. The oversight body would set standards, ensure that codes comply, and monitor trading activities. Existing schemes like the WCC and Peatland Code were cited as positive examples to act as templates for market structures. Importantly, public bodies should not be the sole source of regulation or verification; lessons from other markets show that international standardisation and independent verifiers at multiple stages of trade and reporting can enhance credibility and confidence.

Stacking

Although there is uncertainty on how stacking credits should operate in the market, particularly relating to concerns around integrity, stacked credits potentially offer higher value returns to land management, that may increase incentives to supply and purchase credits. For example, one interviewee said that Wilder Carbon is trying to move from bundled credits (carbon and biodiversity sold as one unit) to stacked credits (carbon and biodiversity sold as separate units) as this will result in higher and more targeted credit sales. Additionally, introducing a wellbeing credit was proposed as helpful for ESG monitoring, such as recreational benefits.

Attracting investment in nature (more effective public spend)

Interviewees largely agreed that, if well designed, nature markets offer a major opportunity to combine and allocate public and private funding more efficiently than conventional mechanisms. Properly structured markets could help identify, locate, and finance projects that deliver the greatest environmental benefits, rather than acting solely as the last step in the mitigation hierarchy to offset harm. By joining up the delivery of public policy goals with private capital, markets could unlock new sources of investment while ensuring better value for money. Realising this potential will depend on clear government policy on the role of markets, alongside a coherent regulatory framework of enforceable standards, transparent metrics, and independent oversight to secure integrity.

Opportunities also lie in building mechanisms that aggregate projects and create more liquid markets for environmental services. This could attract larger pools of private finance and incentivise cross-sector cooperation, enabling the most efficient allocation of resources. Lessons can be drawn from the renewable energy sector, where clear targets and long-term delivery frameworks provided the certainty needed for industry to scale and attract billions of pounds of investment.

There is also significant political interest in making nature markets work, particularly given fiscal constraints; private finance could reduce the need to increase public spending to meet environmental targets. Specific opportunities include expanding BNG requirements, for example raising the minimum gain percentage or extending requirements to cover infrastructure development.

3.3.4 *Environmental Outcomes*

Interviewees stressed that improved transparency in nature markets does not necessarily translate into improved environmental outcomes. While greater disclosure can boost confidence, it does not guarantee that projects deliver genuine ecological benefits.

Technical barriers further complicate outcome measurement. For some habitats, such as water systems and saltmarshes, the impacts of investment are still poorly understood. For example, it remains uncertain how restoration activities affect water quality or flood regulation, and while some short-term effects of saltmarsh restoration are now better understood, the medium- and long-term outcomes remain unclear.

Finally, interviewees noted that corporate investment in environmental outcomes often focuses on supply chains and operational impacts, many of which are global. Unlike carbon, where offsetting mechanisms are relatively straightforward, it is much less clear how companies should offset their nature-related impacts.

This creates ambiguity and weakens the link between market activity and tangible improvements in environmental outcomes.

3.3.5 *Prospects for scale*

Woodland Carbon Code: In physical terms, the potential scale of this market is limited by the availability of land in the UK that is suitable for woodland creation. In practical terms, landowners will only take up this option if in the long run the income from woodland creation is greater than the opportunity cost of the land, recognising that by law in the UK, a shift to woodland is a permanent land use change. Indication of scale can be provided by the legally binding targets for woodland creation (927,000 ha woodland creation in UK by 2050). This would provide 34 MtCO₂e of carbon sequestration by 2050 (Defra and DESNZ, 2025), and much more in the period beyond 2050. Current rates of woodland planting are insufficient to achieve this target.

Peatland Code: In physical terms, the limit to this market is the extent of degraded peatland in the UK. The UK Peatland Strategy (2018) targets two million hectares of peatland in good condition, under restoration or being sustainably managed by 2040, which can be used to establish an upper limit to the peatland code scale. Based on average claimable units per ha so far for the Peatland code, this would suggest a total market in the region of 350 million units.

The BU market can be scaled based on the annual area of land for development, multiplied by % requiring offsite BUs, multiplied by average offset BU required per ha and multiplied by a representative price per BU. The area of land required for development is reasonably well known, but the other factors require assumptions from samples of reasonable size to provide a sufficient degree of confidence. Previous estimate was in the range £135-274 million annually 6,200 off-site BUs. Note c90% of spend is compensatory. At the time of writing this report, there is expectation that the current regulatory review of the market is expected to result in diminished requirements, further limiting the market's potential.

The NN market can be scaled by annual area of development requiring NN offset * typical Kg offset per ha. The scale of the NN market is limited within the catchments where the market is compulsory, and all payments are compensatory, not achieving an additional 'gain' for nature. Given that information about current market transaction is inconclusive, it is difficult to estimate a future market size.

4. Conclusions and recommendations

The data reviewed about existing nature markets allows some conclusions to be drawn about their current state but also has implications for how the OEP can deliver its objectives. Based on those conclusions, recommendations are made to improve the functioning of nature markets as a policy instrument.

4.1 Current State of Markets

Expert consensus is that well-designed and governed nature markets can be powerful tools for attracting private capital to achieve environmental policy goals⁵. They can:

- **Create incentives to protect nature** as mechanisms that reflect environmental costs in market prices. For example, BNG requires greater compensation when more distinctive and/or better condition habitats are damaged.
- Provide **a mechanism that allocates resources towards nature enhancement** actions efficiently, and potentially more effectively than other policy levers. For example, the UK voluntary carbon markets provide transparent and additional carbon sequestration credits that buyers can use to make claims on additional carbon sequestered. In offset markets, BNG can provide additional biodiverse habitat that would not be created in the absence of the market.

However, these markets are still small, embryonic and not growing at a pace that is likely to make a major contribution to the UK environmental enhancement goals. **The critical issue is that market demand is weak.** To make a greater contribution to nature recovery targets **these markets need to be combined with sufficient drivers of demand** (policy or other). UK Government has a key role to play in strengthening demand, e.g., through more compulsory measures, or incentives.

In addition, other important limitations in the current use of market mechanisms include:

- An effective system of nature market governance is needed to support the scaling of high integrity nature markets. **Integrity is vital for confidence in the markets.** Existing systems of governance are diverse, disjointed and complex: options to improve them include a legally-underpinned framework of governance to regulate standards, metrics and ensure transparency, or a centralised regulator to oversee environmental markets⁶. Government should be focussed on providing an enabling framework with independent oversight, rather than performing multiple roles in the market.
- **Political and legislative uncertainty weakens market demand.** Recent suggested policy changes to compliance drivers have undermined investor confidence and hence demand. Stronger signals of the trajectory of policy are needed to boost long term confidence.
- For some markets (notably BNG and NN) **there is no national market data system** to provide market information on the scale and value of the market. In the case of BNG a national register has been established, but it is not structured in a way that enables useful information on market transactions

⁵ Broadway Initiative (2025) Towards a Governance Framework for UK Nature Markets. UK Nature Markets Dialogue.

⁶ See Freeths note on nature markets event 24 September 2025.

and value to be provided. The WCC and PC provide a good example of the useful level of market information that can be provided if the system is carefully designed.

Even with improvements to address the weaknesses above, it is still not certain that nature markets will grow to the degree needed to make a strong contribution to UK environmental goals. The UK has **succeeded in establishing multiple nature market mechanisms** at a relatively small scale. The extent to which demand can be stimulated by Government policy is difficult to forecast, but the challenge is significant⁷. From this perspective, it is important to monitor the contribution of nature markets to national targets, and constantly review the effectiveness of these markets to achieving national goals.

4.2 Implications for the OEP's objectives

To pursue its environmental policy and compliance monitoring objectives, it is essential that the **OEP has sufficient information to track the activity** in key nature markets over time, and to assess whether they are achieving the scale needed to make a significant contribution to environmental goals. It is also necessary to understand and measure how the outputs of each market impact the environment in order to assess their effectiveness addressing policy goals.

Consequently, we suggest the following:

- The scale of **each market is monitored overtime to follow trends**, this being a key measure of the usefulness of the market. The OEP can use an inputs, outputs and outcomes Theory of Change model to track the impacts of each market.
- The scale of each market is **assessed relative to overall progress towards policy targets**. For example, the quantity of carbon sequestered by voluntary markets compared to the scale of land use change action required to meet the net-zero goal.

There are major gaps in monitoring data for some current markets, which makes it difficult to track the scale and performance of these markets at a national level. Current **data limitations**, reflecting gaps in the available evidence compared to the requirements on BS701 (such as on transparency of registry data, and interoperability of registries). eftec's outlined registry processes and data needs to the OEP in a recent 'introductory review of nature markets' report.

4.3 Recommendations

Recommendations to the OEP include actions across all nature markets, and actions that relate to specific markets.

Across Nature Markets

The most important priority for Government is to review and **increase the regulatory and policy stimulators of demand**. Some examples that could be applied in existing markets are outlined under specific market recommendations, below. UK Government can explore other levers for stimulating demand

⁷ GFI (2021) assessed the funding gap at £56bn in the 2020's and habitat creation targets are challenging (e.g., 1.5m ha of new woodland creation, 0.7-1.1 m ha of peat restoration to meet net zero targets).

(compulsory requirements, levies, etc). One suggestion has been the establishment of sector specific nature positive pathways⁸ (similar to sector targets for net zero). These would provide clarity and could drive land use change which is required to meet the existing EIP targets. Many sectors may be encouraged to voluntarily improve impacts in their supply chains, but these drivers may not be as effective as compulsory drivers.

The public sector should focus on its enabling role for nature markets, including through clear rules, governance and market information. The public sector should be discouraged in taking on other markets role (e.g. as a broker or a seller), to **avoid conflicts of interest and disincentives for private sector involvement**.

The Planning & Infrastructure Act will have significant impacts on nature markets:

- The option for developers to contribute to the Nature Recovery Fund (NRF) will weaken demand for BNG credits.
- The Act creates a major role for Natural England in developing Environmental Delivery Plans (EDPs) and managing these plans with funding from the NRF. Whilst this provides an opportunity for more strategically focused investment in nature recovery, it raises questions about NE capacity to manage this level of planning, negotiation with suppliers, and long-term delivery.
- The pros and cons of market-led approaches versus alternatives (e.g., Natural England's compulsory powers).

Processes to **make data on all UK nature markets accessible and transparent**, in line with BS701, should be established as soon as possible. This will improve the functioning of markets, as a result of better information for buyers and sellers, and will improve trust in market processes. Current market data is patchy and hard to compare. It should be possible to compare the spatial, financial and time scales of transactions across markets, and check the locations of supply areas for credits sold in different markets. This can be achieved through **improving data availability through, and inter-operability between, nature market registries**.

This data exists within the public sector, and therefore it is inefficient for any public sector organisation, including the OEP, to face significant search costs to obtain it. Some data sourcing methods (e.g. automated data scraping processes), and analysis combining different sources of data (e.g. analysis of the first year of the BNG market⁹) can generate better data. But they are also significantly less efficient than **transparent data disclosure by the public body that holds the market data**.

Improvement to the clarity of rules supporting nature market processes would reduce transaction costs and risks associated with participating in them. Examples of such rules include:

- **Clarify rules on stacking.** Stacking incentivises multi-functional nature-based projects by allowing payments for each ecosystem benefit delivered. Whilst there are strong arguments in favour of stacking, there are cases where it can undermine additionality, and hence there are advocates of a

⁸ See Freeths note on nature markets event 24 September 2025.

⁹ See [BNG in Small Developments](#)

more considered system of what may be allowed. There is an urgent need for the government to settle stacking rules in a way that balances economic, legal, and environmental principles, including what tests for additionality should apply.

- **Clarify taxation and accounting rules and practices** with respect to nature market credit transactions, and the land used to supply them, in both voluntary and compliance markets.

There are also actions around governance issues that the Government could take to better enable the growth of markets:

- There is a **case for a role of a single regulatory authority to oversee nature markets**, this would create capacity for consistent and proactive regulation of nature markets.
- Undertake an assessment of the cost and benefits of introducing a **legally under-pinned framework for nature market governance**¹⁰. Some market stakeholders hold a strong view that while the work of BSI in developing standards for nature investment is an important step forward, it is insufficient to provide certainty and confidence in the integrity of UK nature markets. A nature market framework would empower a body to oversee and enforce compliance, recommending amendments to market rules, and technical standards.
- The BNG and Nutrient Neutrality markets are founded on the **planning system, which is not necessarily the best basis for the development of a nature market**. A review of the regulatory triggers for participation in nature markets should consider how to strengthen and/or change these current triggers, and how best to establish any new nature markets. This role could be performed by the regulatory body suggested above.

Specific Nature Market(s)

Woodland carbon code:

- Demand could be stimulated by extension of UKETS to allow woodland carbon units to be traded to offset the emissions of businesses in the scheme. The government could also increase the scope of businesses included in the scheme.
- It is **recommended that the woodland carbon code is linked to the UKETS with safeguards** so that it does not damage opportunities to achieve other environmental policy targets, in particular species recovery targets.

Peatland code:

- The peatland code could, with the similar safeguards, also supply carbon credits to the UKETS.
- The code requires further development to be applied to lowland peatland, where actions to reduce carbon emissions can also have significant biodiversity benefits. Methods to develop the code the apply to **lowland peatlands, possibly through a bundled carbon and biodiversity credit**, should be supported by Government.

Biodiversity net gain:

¹⁰ UK Nature Markets Dialogue (2025), "Towards a Governance Framework for UK Nature Markets"

- The Government can increase market demand through:
 - The proposed introduction of BNG for NSIPs from May 2026. This will expand the scale of the BNG market.
 - Reducing the mis-application of de-minimis exemptions in the BNG system, which available data suggests is reducing BU market demand by nearly half⁸.
 - Consider increasing the 'gain' requirement in BNG above 10%. This could be one nationally, or in specific locations, such as protected landscapes and/or severely nature depleted areas.
- It is unclear how the Planning and Infrastructure Act may influence the market. To reduce uncertainty, the Government should allow the BNG policy and BU market to mature for 3 years before introducing policy changes.

Nutrient neutrality:

Nutrient neutrality is the least transparent of the existing UK nature markets. Therefore, it is recommended that:

- Transparency of the market is improved immediately by publishing data on all transactions to date, covering both payments for nutrient credits, and payments to suppliers of nutrient credits.
- Government reviews the cost-effectiveness of the Nutrient Neutrality policy mechanism and other mechanisms to achieve reductions in nutrient pressures (such as EnTrade's Somerset catchment market¹¹, and payments by water companies to farmers¹²).

¹¹ See [Somerset Catchment Market](#)

¹² See for example: [Upstream Thinking 2 - Westcountry Rivers Trust](#) and [catchment-nutrient-balancing-approach.pdf](#)

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Appendix 1 Stakeholder engagement

Organisations that have participated in the stakeholder engagement include:

- Aldersgate
- Aviva
- Broadway Initiative
- Carter Jonas
- Crown Estate
- Entrade
- Financial Conduct Authority (FCA)
- Green Alliance
- Nature Asset Management
- Peatland Code
- Scottish Bank
- Scottish Forestry, Woodland Carbon Code
- UKAS
- UKCEH
- The Wildlife Trust

The following interview script was used to introduce the project and guide conversation.

Project description [to be read at beginning of interview]

eftec has been commissioned by the Office for Environmental Protection (OEP) to conduct a review of current nature markets.

The OEP has a statutory duty to monitor the progress of the UK government in improving the natural environment in accordance with the latest Environmental Improvement Plan (EIP) and towards the targets in the Environment Act 2021. To support their work, the OEP is developing it's understanding of green finance, and the potential role of nature markets in mobilising nature finance at scale.

Recognising these markets are still nascent, complex, and with separate governance frameworks, the aims of the review are:

- A. Develop a standardised monitoring framework to assess trends in performance metrics for key nature markets,
- B. Gather perspectives from nature market participants, and systematically appraise the barriers and enablers to nature markets operating efficiently and effectively and,
- C. Develop transferable lessons on how to make nature markets and wider environmental offsetting schemes efficient and effective, prioritising key issues and solutions.

We are interested in your perspective and kindly request your input into this review. The interview will focus on gathering perspectives but will also help assess broader trends in nature markets and to confirm assumptions to be used in the development of the monitoring framework. The knowledge created through this stakeholder engagement will inform the OEP's advice to Government on the role of nature markets in financing nature recovery.

The interview will take about 30-45 minutes. The answers you give will be treated in confidence and no personal information will be shared.

Outline Interview Questions

Question	Response
General questions	
1. Could you briefly describe your role and responsibilities?	
2. How has your organisation been involved in nature markets to date?	
a. What areas have been of greatest concern or focus?	
b. How do you see your organisation's role evolving in these markets?	
Current Market Activity and Performance	
3. From your perspective, how would you describe the current state of nature markets (e.g., carbon credits, biodiversity net gain, etc)?	
4. To what extent is the current regulatory framework adaptable to nature markets, or are new approaches needed?	
5. What challenges do you see in policing behaviours in nascent nature markets and more established ones?	
6. How do you think oversight should work to ensure quality, standardisation, and integrity of credits or units traded?	
Data and metrics	
7. Does your organisation currently track activity in nature markets? If so, which sources do you use?	
8. Where do you see the biggest gaps in terms of data/ information to monitor these markets and statements related to these markets?	
Market enablers and Barriers	
9. Do you have a view on which future trends will help shape nature markets going forward? (e.g., integration into broader ESG frameworks, or new financial instruments linked to natural capital)	
10. What do you see as the main drivers of growth in these markets at the moment?	
11. What are the biggest barriers to their development and credibility?	
12. Are there particular lessons from other financial markets or sectors that could be applied to nature markets?	
Risks and Confidence Issues	
13. Where are the risks (e.g. mis-selling, greenwashing, fraud, etc) most acute?	
14. Are there particular compliance or market integrity risks—such as conflicts of interest—that concern you?	

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