Outline appraisal of the design principles and operational approaches of nature markets

Final Report

The Office for Environmental Protection

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Disclaimer

Document evolution

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Contents

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)
Aggregator	A company that negotiates with producers of a utility service such as electricity on behalf of groups of consumers.
Biodiversity net gain	An approach to development that requires developers to pay for biodiversity improvements at one site 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)
Catchment market	A place (often intangible) where buyers and sellers are brought together to trade environmental credits.
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 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, 2022)
Habitat banks	Privately or publicly owned land managed for its natural resource value and the delivering body that market enablers arrangements between developers and landowners/managers to provide a 'no-net-loss' policy of ecosystem services including biodiversity. (Environment Bank, 2010)
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 and adaptively, simultaneously providing human well-being and biodiversity benefits. (IUCN, 2016)
Market Enablers	Agents (individuals or organisations) which perform three core functions in NbS transactions: matching demand and supply, disseminating information and helping to manage risks. (eftec, 2022)
Payment for Ecosystem Services (PES)	Incentive 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)

Term	Definition (Ref/Source)
Reverse auction	In a reverse auction, the buyer puts up a request for a required good or service. Suppliers then place bids for the amount they are willing to be paid for the goods or service, with the winner being the supplier prepared to accept the lowest amount. (Crown Commercial Service, 2024)
Stacking	When various overlapping ecosystem services 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 tracked worldwide that are not purchased to meet mandatory GHG reduction obligations or predetermined targets under a regulated or compliance market. (UNDP, 2020)

1. Introduction

The overarching objective of this work is to support OEPs monitoring and assessments of the UK Government's policy in relation to nature markets framework. This work aims to build OEP's understanding of the prospects of nature markets for closing the finance gap for nature recovery, delivering additional and 'high integrity' nature outcomes, and operating coherently alongside wider environmental policy.

The focus for this project is on the design principles and governance approaches of nature markets highlighting:

- An understanding of the key issues and challenges relevant to scaling nature markets, and the key opportunities for improving market design and governance.
- How the OEP can engage effectively with the Government's upcoming consultations
- Priorities for OEP work in relation to nature markets

The statement of work required us to support the OEP in their project aims specifically through:

- The production of a set of briefings (four produced) relating to the design and governance of nature markets
- The delivery of two webinars and a workshop to disseminate learning, and support with interpreting the implications for the OEP in scoping future areas of focus

This report includes the four nature market briefings produced, and notes of key discussion points raised at the workshop held on 27th March 2025. The four briefings are:

- Briefing 1: Introduction to Nature Markets
- Briefing 2: Nature Market Drivers, Risks and Opportunities
- Briefing 3: Nature Market Governance Processes; and
- Briefing 4: Environmental Outcomes from Nature Markets.

2. Briefing 1: Introduction to Nature Markets

This is the first of a set of four briefings on nature markets[1] produced by eftec for the OEP. They cover key issues and challenges on the design, governance and opportunities relevant to scaling nature markets. The four briefings covering the following topics:

- Briefing 1: Introduction to Nature Markets
- Briefing 2: Nature Market Drivers, Risks and Opportunities
- Briefing 3: Nature Market Governance Processes; and
- Briefing 4: Environmental Outcomes from Nature Markets.

Key messages

- Nature markets are being developed with them aim of helping nature recovery.
- They can provide a new source of income for projects that enhance, protect, restore and manage nature, and as a result motivate private investment in those projects, and
- They can also create incentives to avoid damaging, or to enhance, nature.

Contents

1. What are markets and how can they apply to nature?

What is a market? A market is any mechanism that allows buyers and sellers to exchange any type of good or service for money. Market participants consist of buyers and sellers of a good/service who interact at a point in time to find an exchange price. Ideally, market participants have enough information so that demand is satisfied with the most efficient allocation of resources. The rules for market trading (including in law) and intermediaries who provide information (e.g. matching buyers and sellers) are important parts of market functions.

Markets can fail in many ways, and in the context of natural assets markets may be entirely missing or not incorporate positive or negative impacts of market activity on nature. In the absence of a market, there is no cost to damaging nature, and no benefit to protecting it – at least not directly. This result is overused and damaged natural assets, with consequent impacts on economic activity and human welfare.

Nature markets are seen as one potential route to addressing the failures of existing markets and

[1] 'Nature markets' are a market for trading of credits that represent additional benefits from nature.

increasing finance for improving nature towards achieving nature objectives, by explicitly enabling buyers to pay for the benefits from natural assets or improvements to them. For example,

- **BSI 701**: "New nature markets require interventions to establish the necessary market conditions to generate, trade and store units of benefits from nature, through either compliance markets to meet mandatory targets, or voluntary markets where parties choose to engage in trades."…" These sales provide resources for, and an incentive to, protect and enhance nature …"

However, it is important to recognise that there are other mechanisms that can be used to protect or enhance natural assets, and in principle, the mechanism which is most cost-effective in securing the required outcome should be chosen. Other mechanisms include:

- **Regulation,** usually passing laws to protect natural resources – Porter hypothesis, that environmental regulations can encourage firms to innovate to comply with regulations, potentially leading to cost savings and competitiveness gains, and
- **Government intervention** – to ensure polluter pays through taxes on pollution (such as environmental permits) or encourage enhancements through spending public money (such as ELMS payments for environmental benefits) or through tax incentives for investment in clean technologies and so on.

In fact, some level of regulation is needed for markets to operate effectively. Furthermore, the way that nature markets interact with policies, standards and regulations, and the governance mechanisms put place, will determine the opportunities, risks and impacts of nature markets on environmental outcomes, which will be covered in the subsequent briefing 2.

In practice, in a modern economy, a combination of these mechanisms is used to enable positive environmental outcomes and deliver them more effectively and cost-efficiently. However, if nature markets are not designed well, they risk failing, like the traditional markets do, and focus on the nature benefit they set up to provide at the expense of other natural assets or other benefits from them. It is also important that nature markets incorporate comprehensive and transparent monitoring systems to ensure anticipated environmental outcomes are verified and validated, and minimise unintended consequences.

2. Overview of actors and roles in nature markets

A generic market diagram is shown in Figure 1, and the roles of the various market actors is explained below.

Buyers purchase nature-based credits voluntarily or to comply with regulations (see Box 1 for distinction between compliance and voluntary markets). 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.

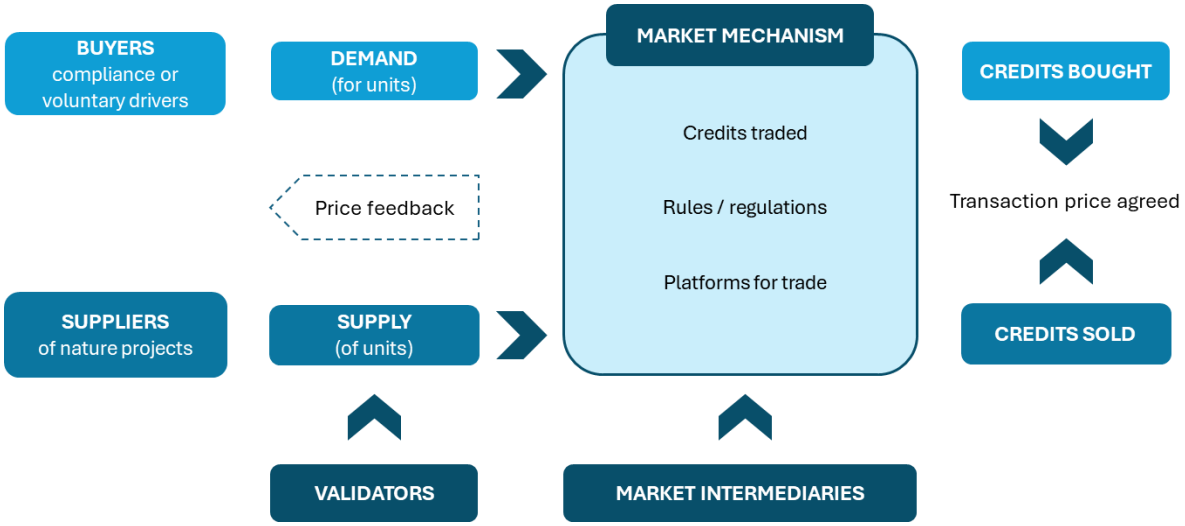


Figure 1: Generic nature market (Source: BSI)

Suppliers are the natural asset owners who are 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. They may be supported on specific supply side activities, such as environmental management and enhancement, financial planning, technical advisors, and brokers or sellers of credits (see market intermediaries below).

Suppliers can come together in consortia/ with market enablers to deliver multiple environmental outcomes (pooled, banked or warehoused credits). This is critical for the provision of large-scale projects which constitute a more investable scale for many institutional investors and helps lower transaction costs.

Box 1: Compliance vs. Voluntary Carbon Markets

Both compliance and voluntary nature markets are structured to facilitate the generation and exchange of environmental credits between prospective buyers and sellers. The key difference between these two market types is why buyers participate in the market.

In compliance markets, buyers are required to comply with a regulation (or face legal and/or financial penalties), and one way to comply is to participate in environmental credit markets. Because compliance is mandatory within a specific timeframe, prices tend to be higher than in voluntary market.

In voluntary markets, buyers have their own objectives and commitments which lead them to purchase credits. Compliance and voluntary ecosystem markets are regulated and governed through different international, regional and sub-national schemes, which can be managed by Government, private and/or third sector organisations.

Credits for compliance need to be purchased through markets that are explicitly accepted into the compliance regime by the regulatory body.

Transparency and monitoring are crucial for both for compliance and voluntary markets and involve organising registries of data about transactions. This is covered in depth in briefing 3.

Market intermediaries are defined as agents (individuals or organisations) which can perform important functions in transactions, including:

- matching demand and supply,
- disseminating information and
- helping to manage risks.

Market intermediaries can vary in nature, scale, focus, type of organisation (non-profit, commercial) and specific responsibilities, as well as in terms of their geographic proximity to the transaction. They may operate without charge (e.g. as a charity helping enable outcomes aligned to their objectives), or charge for their services, and undertake important functions to aid market functions, including:

- **Operators of market mechanisms.** These are the intermediaries which design the structure and underlying rules of a specific market and operate it. The roles performed by these actors depend largely on the specific mechanism being used for the transaction (e.g. auctions, codes, etc.). ***Example: Entrade***[2] is currently one of the main market operators operating in the UK. It performs many roles; it establishes and oversees the rules of operations in catchment market, supports the creation and application of standards, oversees contracts and risk management.
- **Aggregators/intermediaries.** These are individuals or organisations with a strong knowledge of the environmental context and an established relationships with sellers and/or buyers. They operate to reduce the distance between the market mechanism and sellers and buyers. They currently serve a crucial role in terms of mainstreaming projects and kick-starting the trading process. Depending on the nature of the local enabler, these can offer diverse support, from simply promoting opportunities, to aggregating supply, to helping develop the project, to managing the relationship with the operator of the market mechanism. ***An example is the Environment Bank***[3], which has created a bank of BNG projects to offer to potential buyers.
- **Information providers/advisors.** This covers a broad range of actors who can provide important information and advice to help both sellers and buyers to understand the benefits and risks of potential deals and so aid decision making and facilitating deals. These range from mapping platforms that help create land management plans, to project developers, to environmental consultancies and land management advisors which offer technical assistance for the design of nature-based projects. An ***example is the Planning Portal***[4] which makes information and services simpler more accessible for those involved in the BNG process.

Assurance, or validation and/or verification, can sometimes be performed by the operator of the market mechanism, but often it is independent third parties that provide accreditation, and monitoring and evaluation. These activities can be based either on internationally recognised standards or internal accreditation models. This is an important role as confirms alignment of suppliers to standards, giving confidence to buyers that the credits will deliver the desired environmental outcomes. ***Example***: The Woodland Carbon Code[5] includes a quality assurance standard for woodland creation projects in the UK.

[2] See: https://www.entrade.co.uk/
[3] See: https://www.environmentbank.com/
[4] See: https://www.planningportal.co.uk/
[5] See: https://www.woodlandcarboncode.org.uk/

In compliance markets, assurance gives buyers confidence that credits will be accepted by the relevant regulatory authority and gives the authority confidence that credits are genuinely used for compliance.

Role of Investors: Providers of Finance. For many types of nature market credit supply, the timing between the cost of delivery and payments for ecosystem services may not match (see Figure 2). Investors provide sources of finance which can fund upfront costs and are repaid from the future income streams from sales of outputs to buyers. This illustrates that investors/funders of projects and buyers can be different actors (although in some case they may be the same), hence it is important not to conflate sources of investment funding and revenue from buyers of nature credits. However, this example ***serves to illustrate that a source of income from buyers is an important element of incentivising the flow of investment in nature.***

Traditional financial intermediaries remain in the side-lines of nature markets, despite having trading experience, the infrastructure to support market mechanisms and access to a large investor base. While they are increasingly involved in financing environmental projects (such as net zero infrastructure), these projects rarely involve improvements to natural assets. They instead help to finance infrastructure projects which are repaid to investors through project cashflows.

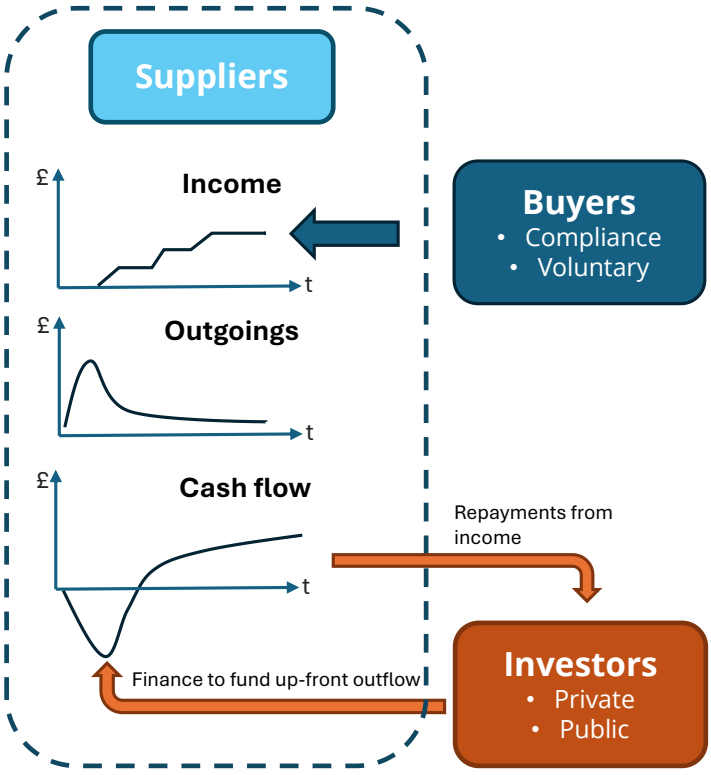


Figure 2: Relationship between Suppliers, Buyers and Finance

It is important to note that providers of finance may have many and varied motivations and interests. These may include:

- Traditional investors who will seek a return that is commensurate with the level of risk they are taking.
- Impact investors who make investments with the intention of generating a positive social and environmental impact.
- Philanthropic investors and providers of grants.

There may also be direct investors who have an interest in positive nature outcomes, for example:

- Water companies are major investors in the water environment – In the final determinations of the 2024 pricing review, £24 billion has been allocated to reduce pollution, reduce harm from storm overflows, improve river water quality, and increase biodiversity, and a further £12 billion on improving assets and resilience which should also benefit the environment. A greater proportion of

this could be directed to catchment and nature-based solutions.

- NFM - majority of NFM funding currently comes from EA. Upfront financing in NFM projects from the finance sector is available, but key challenge is there are often no revenue streams that would enable upfront investment to be paid back. Strategic Working Group[1] to remove these barriers and unlock private sector co-investment in NFM at scale.
- Commercial interests: Nutrient markets like Avon catchment are a better way of water co delivering WQ compliance.

A key consideration is the level of certainty in outcomes, which will have a significant influence on both buyers' and investors' willingness to commit to deals. Furthermore, if the deals are structured appropriately, then buyers, suppliers and investors have a vested interest in avoid damaging to, or to protect, enhance, or restore the natural assets upon which the transaction depends.

3. Defra Green Finance Strategy

The UK Government's Green Finance Strategy was launched in 2019 and updated in March 2023[6]. It's role is highlighted here, but discussed in more detail in briefing 2. The key actions from GFS involve:

- Align: Greening Finance - Enabling the market to align with UK climate and environmental goals
    - Information and Disclosure: Government is exploring mandating the 'Taskforce for nature related financial disclosures' (TNFD) – requiring corporations and financial institutions to report on their nature impacts, risks, and opportunities
    - Defining green investments: Government has developed a Green Taxonomy to define green economic activities, supporting ESG investment regulation
- Invest: Financing green - Mobilising and creating opportunities for green investment
    - Nature markets: Government aims to establish itself as a global hub for trading ecosystem services or benefits (biodiversity, carbon, nutrients).
    - Nature positive pathways: Government committed to defining nature positive pathways for key sectors, which determines and catalysed the investment needed
    - Monitoring private investment: Government committed to developing indicators that measure private investment flows into nature, enabling progress to be monitored against their new commitment.

[6] See: https://www.gov.uk/government/publications/green-finance-strategy

4. Overview of the main current nature markets

Existing Markets as mechanisms to buy and sell units (Note in context finance gap c£5-10bn/year)

Market	Units – what do they measure, and how do they relate to nature?	Buyer Motivations	Spatial Scale	Current (2024) Estimate of Value £'m/year	Timing & Development
Biodiversity Net Gain (BNG)[7] (compliance)	Biodiversity Units (Bus) – a score per ha/ km based on BD metric of habitat distinctiveness and condition. Meets a specific obligation so not tradeable post deal.	Compliance with development obligations to enable development which would be blocked otherwise.	England wide but size of market driven by planning authority demand and policy	£135-274 million annually 6,200 off-site Bus. ***Note c90% of spend is compensatory.***	Launched in 2024 in England. Scale depends on rate of development and extent to which mitigation can be on-site.
Nutrient Neutrality (NN) [8] (compliance)	Kg of nutrient (N or P) removed from water environment - based on NE's nutrient neutrality calculators, specific to 27 nutrient neutrality catchments. Meets a specific obligation so not tradeable post deal.	To enable development which would be blocked otherwise. Nutrient neutrality means that a new development will not cause increased nutrient pollution to specific protected sites.	27 protected catchments across 74 local planning authorities	£77m govt funding ***Note much of this spend is compensatory for impacts of development.***	National Nutrient Mitigation Scheme was launched in 2023. Depends on rate of development in sensitive catchments - estimated 120,000 new homes have been delayed due to NN regulations.[9]
Woodland Carbon Code (WCC) [10] (voluntary)	tCO_2e sequestered by new woods. No explicit link to natural woodland condition, but code aims to create woodland that benefits nature. Suppliers can release/sell units as desired.	Offset GHG emissions to support claims towards meeting net zero.	All UK >2,000 projects (2/3 under development) covering 92,000ha (>80% in Scotland)	£3.8m (160,000 at £23.30 in 2024)	Launched in 2011. Only limited by willingness to supply suitable land for woodland creation. Suppliers wary as conversion to woodland is permanent land use change.

[7] See: https://www.gov.uk/government/collections/biodiversity-net-gain

[8] See NE Nutrient Neutrality Principes at: https://publications.naturalengland.org.uk/publication/5031421117988864

[9] See: House builders Federation : Home Builders Federation

[10] See: https://www.woodlandcarboncode.org.uk/

Market	Units – what do they measure, and how do they relate to nature?	Buyer Motivations	Spatial Scale	Current (2024) Estimate of Value £'m/year	Timing & Development
Peatland code [11] (voluntary)	tCO_2e of GHG emissions abated by deep peat restoration. Rewetting likely to improve bog habitat. Suppliers can release/sell units as desired.	Offset GHG emissions to support claims towards meeting net zero. Possible motivation to improve peatland.	All UK > 250 projects (65 project validated to 2024)	£0.3m (11,000 at £23.95 in 2022)	Launched in 2017. Limited to degraded peat in UK.
Voluntary catchment markets	Land management actions, usually by farmers, that reduce nutrient pressures on water bodies, helping meeting water companies' regulated goals.	Avoid more expensive investments to comply with regulations	Poole harbour, Avon Catchment Other local arrangements	Poole: £1.1m total	Poole: since 2015. Others more recent

Note, issues of market units measurability, predictability and fungibility will be covered in more detail in Briefing 4.

There is potential supply for future/emerging markets in:

- Marine Net Gain,
- Natural flood management
- Soil carbon code/ agroforestry
- Surface drainage nature based solution payments (London)

Potential definitions of credits to support market formation:

- The Salt Marsh Code (UK Centre for Ecology & Hydrology, 2024);
- Wilder Carbon - sells bundle of carbon and biodiversity outcomes (Wilder Carbon, 2024)
- Blue Carbon Code for Seagrass (Nature-based Solutions Initiative, 2023).
- Woodland Water Code - initially for water quality and then for flood alleviation
- NFM on Wyre
- PlanVivo

[11] See; https://www.iucn-uk-peatlandprogramme.org/peatland-code-0

5. Further issues - Drivers, Governance and Environmental Outcomes

The development of nature markets is in progress with continued Government policy support but has many unanswered questions and unknown issues and outcomes. There are a range of drivers, risks and opportunities around scaling nature markets to achieve environmental outcomes and these are discussed in more detail in Briefing 2.

Proponents of nature markets argue that they can stimulate investment in supply of ecosystem services, giving landowners or farmers access greater financial incentives and new revenue sources, while also pushing down costs. Critics argue that they reduce ecosystems to tradable commodities, potentially oversimplifying their management, and with insufficient regulation will enable 'greenwashing' and/or provide a 'license to trash'.

3. Briefing 2: Nature Market Drivers, Risks and Opportunities

This is the second of a set of four briefings on nature markets produced by eftec for the OEP. They cover key issues and challenges on the design, governance and opportunities relevant to scaling nature markets. The four briefings covering the following topics:

- Briefing 1: Introduction to Nature Markets
- Briefing 2: Nature Market Drivers, Barriers and Enablers
- Briefing 3: Governance of Nature Market Processes; and
- Briefing 4: Environmental Outcomes from Nature Markets.

Key messages

This briefing covers the key drivers of growth in nature markets, the motivations and incentives for buyers and suppliers to take part, and the barriers to and enablers for future growth. Nature market Governance, and environmental outcomes of nature markets, are covered in Briefings 3 and 4, respectively. Key messages from this briefing:

- Nature markets have a wide range of spatial scales and characteristics, so have a wide variety of drivers, incentives, barriers and opportunities for expansion (see section 2).
- However, a ***significant proportion of risk factors are under Government control***, including, setting market requirements (including promotion of transparency and confidence in markets), providing relevant information and guidance, providing policy certainty and policy stability, coordinating policy with other government objectives and departments (e.g., water and carbon), and provision of seed funding to develop nascent markets.
- **For suppliers** the main motivation is attractive prices for nature credits with long term stability, particularly for land use/management change that is long term or permanent in nature. Other factors are important too (see section 3)
- **For buyers** the main driver is either a compliance driver, or other direct incentive (such as a cost saving), or an indirect incentive (such as reputation in the market). Another important consideration is integrity – buyers need to trust the product they are buying on the market.
- There are **many potential threats or barriers** to growth (see section 4), including the risk of poor market integrity, uncertainty around policy and confidence in the effectiveness of nature-based solutions for some benefits (e.g. natural flood risk mitigation).

Contents

1. Nature Market Drivers

There are several drivers for growth in nature markets, namely;

- **Compliance requirements**. Buyers may be obliged to purchase nature market credits. These obligations are usually legal requirements, such as Biodiversity Net Gain (BNG) offsets and nutrient neutrality credits for developers to meet their planning consents. The government has a major role to play in establishing these legal requirements, and hence the markets that these laws can create.
- **Voluntary drivers**, - to procure a benefit for an organisational purpose. This may be to profit from a particular nature-based benefit. For example, a water company may pay for nutrient recycling benefits that reduce its water treatment costs. Less directly, the motivation may be to meet stated environmental objectives, which may support the organisation's reputation (and hence a market benefit), such as purchase of carbon credits to offset residual greenhouse gas emissions.
- **Philanthropy** – Organisations may simply want to protect, restore or enhance nature for its own sake. These organisations can range from private businesses/donors [12] to the major nature-based NGOs.

The requirement for nature-based disclosures is a subtly different driver of demand for nature market services. The requirement to disclose impacts on nature may arise from a legal obligation, yet the motivation to purchase credits may come from a mixture of philanthropic or voluntary reasons. For example, the UK obligation for large companies to disclose climate-related financial information (TCFD), and the potential for the Task Force on Nature Based Disclosure (TNFD) requirements to become obligatory too, creates awareness of impacts (not previously evaluated) and makes them publicly visible. This in turn can create a motivation to reduce or offset impacts, or to gain from investment in natural assets upon which an organisation may depend or benefit.

2. Overview of Prospects for Growth,

Different markets have different potential for scaling up by market type:

- **Biodiversity Net Gain (BNG)** – market was established in Feb 2024. Drivers of the scale of the market are rate of land development and the extent to which biodiversity impacts can be mitigated on-site

[12] Recent £17.5m donation for woodland restoration in Scotland. Scottish Wildlife Trust news 3 March 2025 : https://scottishwildlifetrust.org.uk/press-office/latest-news/?_gl=1*gteurs*_up*MQ..*_ga*NDU5NTM0Mzk5LjE3NDExNjY0NDg.*_ga_5BH0XSGV9M*MTc0MTE2NjQ0OC4xLjAuMTc0MTE2NjQ0OC4wLjAuMA.

(thereby avoiding the need for market credits). The value of credits will depend on the interplay between supply and demand for offsetting Biodiversity Units (BUs) within each planning authority[13]. The market will also depend on the robustness of regulatory regime (e.g. validating and enforcing on-site regulation and closing loopholes in planning processes). The planning regulations require a net gain (usually 10%), thus in principle the quantity of quality habitat should increase over time.

- **Nutrient neutrality market** – was established in 2023 and is limited to catchments (currently 27) with a nutrient problem, (either Nitrogen or Phosphorus, or both). The market is driven by rate of development (mainly residential housing) within these catchments. Note these payments are compensatory, in that the nutrient reduction sold enables a similar level of nutrient load to be discharged by the proposed new development.
- **Woodland Carbon Code (WCC)** – is well established, and so far, 148 projects covering 2,930 ha have been validated in England (to 31 March 2024)[14]. The scope is limited to land for which woodland creation is ecologically suitable (much of the land in England). The main market driver will be the value of credits (currently around £20-25/tCO_2e, but which is expected to rise as the push to net-zero becomes more pressing). If prices are high and stable the market will inevitably attract more interest. The main barrier is that land conversion to woodland is a permanent change for landowners, hence long-term confidence in income from woodland (from all sources) is vital.
- **Peatland code**- was established in 2021 and is limited to deep peat which is in poor (drained or eroding) condition, expected to be up to c80-95% of the 350,000 ha of upland peat in England [15]. As with the WCC, future prices will be key to the scale of this market. Carbon credits will probably only scale rapidly if there is a strong compliance driver, like accepting some crediting into UKETS trading.

There is potential supply for future/emerging markets, but growth is difficult to predict:

- Soil carbon code. Soil has huge potential scale (applicable to almost all land in Engalnd) and needs a robust code to ensure carbon capture is robustly measured and validated.
- Marine Net Gain, - UK Government is actively encouraging the development of this. It will be more specialised than BNG as fewer organisations have an interaction with the marine environment.
- Natural flood management – is possible but limited by the challenge of securing a payee for the service.
- Surface drainage nature-based solution payments (London), are in development and can be very valuable, but are likely to be niche (high-value/high-risk urban centres).

3. Market Incentives and Opportunities

Motivating investment that enhances the environment - Motivations/incentives differ for buyers and suppliers.

- **For suppliers** – The main motivation is ***attractive prices*** with ***long term stability***, particularly for land use/management change that is long term or permanent in nature. Other factors are listed in Table 1.

[13] Note: most trading is primarily within (and not across) each planning authority due to incentives in the metric that encourage gains to be located closer to the original impact location.
[14] A further 697 projects covering 7,840 ha are still awaiting validation.
[15] RSPB (2022), England's upland peatlands - turning around a crisis.

- **For buyers** – The main driver is either a compliance driver, or other direct incentive (such as a tax break, or clear benefit stream), or an indirect incentive (such as reputation in the market). Another important consideration is integrity, in that there is clarity on what is being sold and confidence that claims are valid and not prone to greenwashing. ***Buyers need to trust the market*** and these considerations are discussed in Briefing 3. Further considerations are listed in Table 1.

Table 1: Incentives for participation of Suppliers and Buyers

For Suppliers	For Buyers
• **Encouraging market supply**, by providing information about markets and building trust and certainty in the policy and regulatory processes governing the market; • **Providing demand guarantees** to reduce risks of investment loss (similar to the floor price given within the Woodland Carbon Code). • **Clarity around the rules for stacking and bundling** the income from the multiple benefits of nature-based solutions. This provides greater certainty and confidence to support high value-long term investment. • **Encouraging credit/habitat banking**, which involves investment in supply ex-ante of demand, and helps smooth supply over time.	• **Compliance drivers**: o Current: BNG, NN o Future: Carbon reporting/ ETS? • **Tradability** – in some markets the ability to re-sell future credits (e.g. PIU carbon credits for re-sale or retirement later, or selling credits into UKETS) may be an important consideration for buyers. • **Integrity** – that credits will retain their worth

- Long term policy certainty - confidence that main policy rules will persist
- Low transaction costs. Typical transaction costs in the finance sector are 1% to 5% (max). The lower the costs (of setting up nature-based deals, ongoing monitoring, and validation tasks) the more attractive deals will be.

4. Barriers to scaling up Nature Markets

There are many potential barriers or threats to scaling up nature market income and investment, but the most significant are:

- **Lack of integrity is a major potential threat**. If units sold cannot support sound environmental outcomes, then confidence in the market will collapse. There are many aspects to integrity (e.g., concerns about double counting, additionality and fraud), and these are discussed in more detail in Briefing 3.
- **Lack of Clarity of governance and institutional architecture** - Currently there is seen to be a lack of clear, overarching governance, which in turn leads to a disaggregated set of market mechanisms. This is discussed in more detail in Briefing 3.

- **Uncertainty of policy is another**. Nature based investment usually entails long term land management commitments, hence consistency of policy is vital for planning and investment decision making. This is particularly the case when a substantial proportion of income for any intervention comes from the Government (e.g., ELMS funding).
- **Rules surrounding stacking of nature credits and ecosystem services are poorly defined**. Multiple nature credit and ecosystem service payment schemes are emerging in the UK, and individually these cover a range of ecosystem services. However, rules and regulations surrounding 'stacking' benefits (e.g. receiving multiple credits for one project) are currently poorly defined. Clear guidance should be created, taking care to address double-counting or additionality concerns
- **Investor and customer appetite for nature enhancements**. There are several dimensions to this, but much of this is about providing stronger compliance drivers to boost demand and secondly about being able to demonstrate/evidence the benefits to consumers, buyers and investors that flow to them from investment in nature. To increase demand for nature enhancements, there needs to be either an increase in compliance requirements (set by Government policy), or consumer values for nature must increase to the point where corporations have a clear incentive to seek investment in nature.
- **Scale can be a problem.** Many UK based projects are currently seen to be too small to provide sufficient scale to warrant the transaction costs of a finance deal. Note: that typical financial deals operate with transaction costs at around 1-2% but would be prohibitive if greater than 5%. The challenge for nature markets is to reach these levels of cost. Options for potentially reducing transaction costs include, rationalising market platforms and production of standard contracts and processes.
- **Effectiveness of Nature Based Solutions** (NBS). Sometimes the outcomes from any given NBS may be difficult to predict (for example the effectiveness of a nature-based flood mitigation solution, NFM), particularly when the benefits are highly context and spatially specific. This will tend to be an issue for certain types of market (such as NFM and water quality improvements), but for others it is less of an issue (e.g., carbon sequestration in woodland is highly predictable).
- **Long term risks of committing land to supplying markets**. This can be a potential opportunity loss for a supplier if a more profitable land use emerges in future. An example may be a fall in the value of carbon credits if global abatement or mitigation of GHG emissions is more successful than expected, thus making woodland for carbon schemes less attractive.

5. Enabling actions

Both Government and non-government actors have roles to play in enabling the growth of nature markets, however a significant proportion of risk factors are under Government control. For example, the Government has a key role in;

i. **Setting market requirements** and providing relevant information and guidance. The key government role is in establishing the regulations and requirements for each nature market (e.g. endorsing the WCC and establishing the BNG metric and market rules). Other markets are in development and similar clarity will be needed from the Government on which standards and rules are expected to apply. The government has also sponsored the BSI principles work which is discussed

in Briefing 3.

ii. **Policy certainty and policy stability.** Long term investment requires long term stability. In addition, there are some areas of uncertainty that need to be resolved to help boost the market. For example, a clear statement on the trajectory of compliance drivers (such as expansion of carbon offsetting requirements), and clarity of guidance on public sector funding and rules for blended funding, stacking and bundling of income streams.

iii. **Coordinating policy with other government objectives** and departments. For example,
   - DESNZ provides important guidance on pathways to meeting UK carbon budgets. Over time the reliance on different measures may change (e.g. abatement, versus sequestration etc). Providing clarity on the long-term policies for meeting targets will have a significant impact on the market for carbon credits.
   - Policy on the water industry has very significant impacts on the water environment. Co-ordination with nature policy is key to enabling investment in nature markets.
   - The government could make purchase of nature-based credits an obligation for some government contracts.

iv. **Provision of seed funding**. Initiatives such as Natural Environment Investment Readiness Fund (NEIRF) send strong signals as to Government's commitment to get projects 'investment ready'. Also supporting the bespoke Landscape Recovery projects to secure private funding alongside public funds in innovative ways carrying out numerous tests and trials looking at different mechanisms to crowd in private finance to improve nature's recovery.

Non-government actors can help via:

- Brokering demand and supply, via trusted advisers and other intermediaries.
- Providing information and advice. Navigating the many markets and providing clear advice to both suppliers and buyers.
- Development of emerging standards. Ensuring these are robust and pragmatically workable for participants, building confidence in the market, etc

6. Knowledge Gaps

Many markets are young and nascent so it is too soon to judge and forecast how they may grow. UK Government will need to monitor developments in the sector and update the Green Finance Strategy accordingly over the next few years. There are some priority gaps in knowledge or evidence needed to assess the future prospects of nature markets, and key aspects to monitor will be:

- Scale of each market (traded volumes) and prices (wherever possible)
- Ongoing surveys of suppliers and buyers will help to monitor progress on key issues of concern (e.g. clarity on stacking and bundling, etc.)
- See how carbon markets develop in response to global progress on net zero goals to 2050.

4. Briefing 3: Nature Market Governance Processes

This is the third of a set of four briefings on nature markets produced by eftec for the OEP. They cover key issues and challenges on the design, governance and opportunities relevant to scaling nature markets. The four briefings covering the following topics:

- Briefing 1 Introduction to Nature Markets
- Briefing 2 Nature Market Drivers, Barriers and Risk
- Briefing 3 Governance of Nature Market Processes; and
- Briefing 4 Environmental Outcomes from Nature Markets.

Key messages

- Good governance ensures stakeholders understand who controls nature market processes and rules, conflicts of interest are avoided, and appropriate skills are applied to decision-making (e.g. about rules for defining credits or trading).
- BSI 701 is providing a first step in the design of an overarching governance framework for nature markets.
- Good governance needs to be underpinned by principles of market integrity which in turn ensure the necessary certainty, trust and confidence for markets to operate.
- Robust governance includes the engagement of local communities in nature projects to ensure that benefits are equally distributed.
- Transparency of governance is key and can be supported by registries.

Contents

1. A definition of governance in nature markets

Good governance is key to ensure trust (and hence success) of nature markets. Governance of nature markets involves the common expectations, behaviours, principles, and rules and standards about good practice in how payments, information and environmental outcomes flow through the market. This involves both how the market is designed and the processes that make it work. Governance is crucial to support high-integrity markets which deliver real environmental and social benefits.

Good governance should be underpinned by and enforce the principles of market integrity outlined in the Government's 2023 Nature Market Framework, see Box 1. These principles have informed BSI's Nature Investment Standards Programme which has further refined and expanded upon them.

Box 1: Principles of Market Integrity

- **Additionality** - A real increase in value that would not have occurred in the absence of the intervention being appraised.
- **No double counting** – The same environmental benefits should not be claimed more than once or by multiple parties.
- **Robust quantification** - The benefits delivered should be measured using rigorous, science-based methodologies that are widely accepted and standardised.
- **Delivery of lasting benefits** – Benefits should be durable and sustained over time rather than transient, albeit recognising that there are risks in achieving different environmental outcomes.
- **Transparency** – publicly accessible data should allow for effective due diligence, oversight and monitoring.
- **Validation and verification (assurance)** – Projects should be validated and verified by qualified independent third parties.

Below we outline what good nature market governance looks like, and the main challenges it currently faces in UK nature markets.

2. Introduction to BSI's Nature Investment Standards Framework

The BSI Nature Investment Standards Programme, developed in partnership with the Department for Environment, Food & Rural Affairs (Defra) aims to establish a framework of standards for high-integrity nature markets. Work has initially focused on the development of Flex 701: Overarching principles and framework, which sets integrity principles and a common benchmark to be applicable across all UK nature markets, and Flex 702: Supply of Biodiversity Benefits which building on the overarching principles provides requirements to drive quality and consistency across the governance and measurement, reporting and verification (MRV) of UK biodiversity projects and units. There is also ongoing work on several other standards including Flex 703: Supply of Nature-based Carbon Benefits, a standard to support high quality nutrient reduction benefits and a new UK wide good practice for community benefit sharing.

The framework also aims to provide additional guidance on the provision of assurance activities, and on the verification and validation of projects.

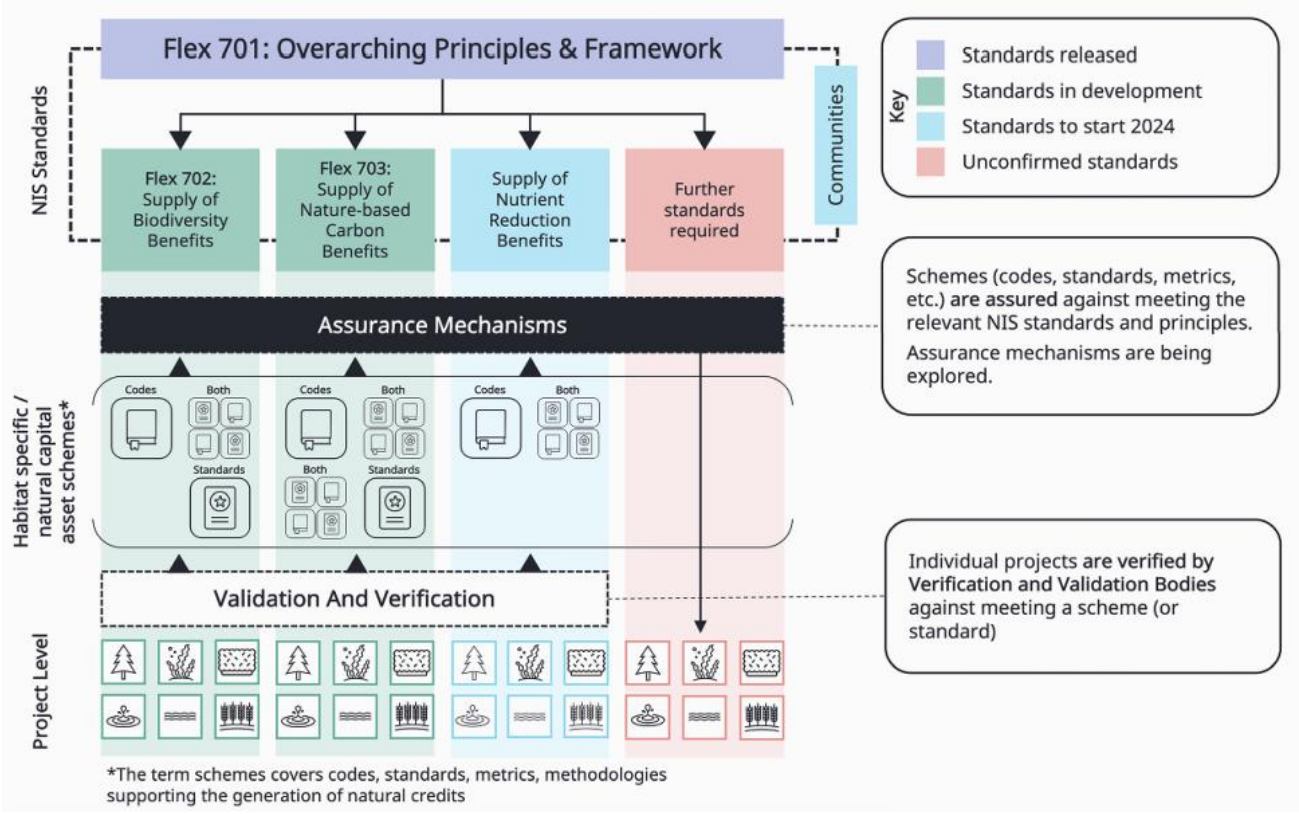


Figure.1: BSI's Nature Investment Standards Framework

3. Nature market governance structure and unit assurance systems according to BSI Flex 701

BSI Flex 701 provides the principles for a comprehensive governance framework that would apply to all nature markets. Key points envisaged in the BSI document include:

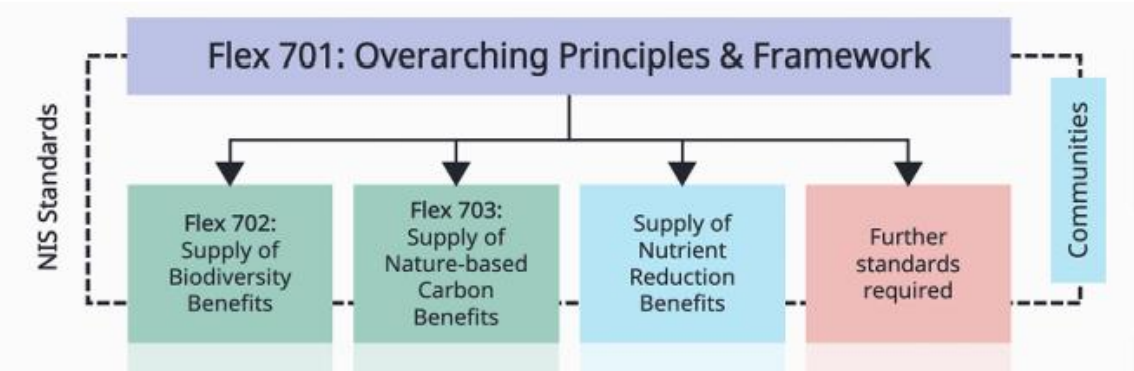
- Requirements for the design and operation of high-integrity nature markets, including processes to generate, trade and store nature units.
- Related Principle: The status and governance of a market participant, and the governance processes of a market standard, is stated to other participants and stakeholders.
- Organizations operating nature market initiatives shall state their legal status (e.g. charity, limited company), governance (e.g. through a board), ownership and management structures.
- The purpose and governance of nature market initiatives shall be independent of those of its users. This underpins independent governance and ensures that these initiatives operate transparently, avoiding potential conflicts of interest from users who might manipulate the system (design and processes) for their own interest.
- Organizations operating nature market initiatives shall state management and operational structures and procedures for:
    - standard development and review processes;
    - monitoring and enforcement of standards;

- grievance redress mechanisms;
- enabling community engagement;
- developing the skills and knowledge needed in the technical disciplines whose information they use (e.g. measurement of ecosystem services); and
- performance management against organizational objectives.

- Staff, and individuals in governance roles, in organizations operating nature market initiatives shall:
  - state that they do not have a conflict of interest (COI) with any part of the market initiative (for example: a senior executive with a governance role in the nature market should not also hold a significant financial interest in a private company that sells units in that same market);
  - inform the scheme as soon as possible if a COI arises, and not later than 5 working days after the change.
  - follow the principles of public life[16].

4. Community engagement

BSI's UK Nature Investment Standards Programme includes the development of a thematic standard covering requirements for community engagement and benefits, an area which it has flagged as high risk given the experience of conventional markets. This is currently being drafted and should be out for consultation in 2025. It is underpinned by the need to provide guidance and make sure that local communities are engaged in nature market projects with a view to ensuring the consideration of societal outcomes. The standard might leverage ongoing industry-led efforts and frameworks such as the National Standards for Community Engagement by Scottish Community Development Centre, Community Engagement in Decisions Relating to Land by the Scottish Land Commission and the Investment Readiness Toolkit by the Green Finance Institute.



Meanwhile, the government is exploring how local communities can be engaged through various projects such as the Local Investment in Natural Capital (LINC) programme, which aims to support local and combined authority areas in developing capability to secure private finance for delivery of local priorities for nature. or the Nature Returns project, which funds local partnership-led pilot projects to develop nature-based solutions for mitigating climate change across different landscapes.

[16] 1.Selflessness; 2. Integrity; 3. Objectivity; 4. Accountability; 5. Openness; 6. Honesty; 7. Leadership

A key principle around the engagement of local communities, also highlighted in the BSI Flex 701 entails the creation of benefits that are shared fairly and equitably between public, private and community interests. This requires the participation of key stakeholders, including local communities, in the governance of nature markets.

5. Storage of credits

Registries are pivotal for ensuring transparency and credibility within nature markets. These allow the tracking of credits from issuance to retirement and prevent double counting or fraudulent claims.

Box 2: UK Land Carbon Registry

The UK Land Carbon Registry is the Woodland Carbon Code and Peatland Code's electronic database that stores and publicly displays data about the status of projects and ownership and use of Carbon Units. Managed by IHS Markit now a part of S&P Global, it records transactions and provides a public and transparent picture of UK-based Carbon Units.

In general, once a unit (credit) is verified, it is issued on the registry and held there until it is used to offset emissions or meet sustainability goals. Every transaction throughout the lifetime of the unit (e.g sales, certification updates, etc.) is documented in the registry. Overall, registries should record the quantification, generation, trading, ownership and storage of units. Good communication and integration across different registries is also important to ensure no-double counting, and is particularly relevant for the monitoring of stacked credits.

The governance of the registry should be separate and independent of the governance of other actors participating in the market, such as project developers, buyers, sellers, etc to avoid potential conflicts of interest (see below).

A current challenge around registries is the lack of standardisation in practices across nature markets. Specifically, registries often use different methodologies to measure and verify credits and this inconsistency makes it difficult for buyers to compare different credits and make informed decisions. To facilitate comparison, individual nature market registries should also ensure consistent minimum standards, data requirements and aligned definitions.

6. Governance and conflicts of interest for market actors

As noted in Briefing 1, (Introduction to Nature Markets), the role of the government in these nascent nature markets often spans multiple functions and mandates, which at times may be conflicting or require balancing competing priorities. Table 1.1 shows a few examples of actors involved in the governance of key nature markets and highlights the presence of some actors across different roles.

Table 1.1: Examples of actors involved in the governance of key nature markets

Market	Governing organisations	Validators	Register
Biodiversity Net Gain	• **Department for Environment, Food & Rural Affairs (DEFRA)** – oversight and regulation • **Natural England** - delivers and administers aspects of statutory BNG on Defra's behalf, including selling statutory biodiversity credits as biodiversity provider of last resort • **Department for Levelling Up, Housing & Communities (DLUHC)** - oversees the planning system in England, integral to BNG implementation • **Local planning authorities** – manage statutory BNG responsibilities in their areas, including considering new development proposals, ensuring compliance, and enforcing statutory BNG locally	• **Local planning authorities** – validate BNG applications;	• **Natural England** – involved in the development of a net gain sites register
Nutrient Neutrality	**Natural England** – administers and oversees the system **Defra** - has overall responsibility for the policy and is investing in the nutrient mitigation scheme alongside DLUHC **Local planning authorities -** responsible for implementing nutrient neutrality requirements in their areas, including assessing planning applications, conducting Habitats Regulations Assessments, and determining whether developments meet nutrient neutrality criteria.	**Natural England** - accredits mitigation projects, providing developers with a Nutrient Credit Certificate • **Not-for-profit organisation –** certifies nutrient neutrality credits	• **Natural England -** involved in the development of a nutrient credit register
Woodland Carbon Code	**Scottish Forestry –** secretariat function **The Nature Markets Strategy Board** (Forestry Commission, Scottish Forestry, Welsh Government and Northern Ireland Forest Service) - oversees the direction and priorities of the Woodland Carbon Code and facilitates co-working across all four forestry authorities. **The Executive Board** (Forestry Commission, Scottish Forestry, Welsh Government and Northern Ireland Forest Service) - manages the day-to-day running of the code, its application, promotion, and strategic and technical development **The Advisory Board** (includes a broad range of forest sector and carbon market stakeholders) - advises the Executive Board on various aspects of the code's development, interpretation, and application	**Accredited independent third-party organisations** – validate and verify units. Currently two organisations are accredited: SGS and SFQC (Soil Association) These organisations are approved by the UK Accreditation Service	• **UK Land Carbon Registry**– stores and displays data on Woodland Carbon projects. It is managed by S&P Global
Peatland code	• **IUCN National Committee UK** • **Executive Board** - has final sign off and decision-making powers	• **Validation/Verification Bodies-** independent third-party organizations that	• **UK Land Carbon Registry**– stores and displays data on Peatland Code

Market	Governing organisations	Validators	Register
	• **Technical Advisory Board (TAB)** – provides technical oversight and recommendations	validate and verify units VVBs must meet specific eligibility criteria and be approved by the Peatland Code	projects. It is managed by S&P Global

In particular, a public sector body that is the nature market regulator, can in some markets also act as a regulator of related activities, a buyer or a seller, or a validator, sometimes taking multiple roles within the same market. This is in addition to Government's other priorities (e.g. economic development) and obligations (e.g. biodiversity duty).

A first challenge to the government's taking on a smaller role is that smaller suppliers such as individual land managers or farmers may find it harder to trust a process run by an unfamiliar organisation. However, trust should be established by processes working over time.

Rather, the overlap in roles might lead to (perceived, or real) conflicts of interest which can undermine the principles of market Integrity. Conflicts of interest may arise where there is a market information asymmetry (i.e. one party has more or better information than the other) and an actor uses it to benefit, often at the expense of another.

There should be no conflicts of interest for the bodies charged with determining, interpreting, and administering the rules, as this may hinder their independence. For example, in the BNG market, Local Planning Authorities, which approve biodiversity gain plans of suppliers can also develop and sell their own habitat banks and act as brokers for third party units. This suggests that LPAs both regulate and compete in the market and therefore could face incentives to favours their own supply over independent suppliers, ultimately undermining fair competition and the broader integrity of the market. In a well governed market oversight should be provided by a body that is separate from the body regulating the outcome that the market is aiming to achieve.

Conflict of interest also needs to be controlled within the provision of implicit subsidies. For example, there is potential illegality in public authorities selling units at below Full Lifetime Costs, which essentially equates to providing a subsidy to damaging biodiversity. This also entails a non-efficient use of resources.

Moreover, the role of the government as buyer risks crowding out other potentially important economic actors. In general, overconcentration gives the biggest actors across the value chain major influence. This is a particular problem when the businesses that can exert major influence (e.g. large buyers) are also the ones that are making significant contributions to causing damage to nature.

7. Gaps and opportunities

Poor governance of nature markets can hinder integrity, eroding the necessary certainty, trust and confidence for markets to operate. Current key governance gaps in the UK context include:

- Absence of a comprehensive governance framework, though the BSI initiative is a step toward addressing this gap by specifying requirements for the design and operation of high-integrity nature markets.
- No standardised independent mechanism for scientific review and approval of codes and standards before they are implemented.

This necessitates the implementation of centralised coordination and oversight, which can take the form of a single government strategy coordinating the actions of relevant ministries (including Defra, DfT, MHCLG, and HMT), with adequate resources, including their approach to using nature markets (e.g. complying with BNG on infrastructure projects). As well as ministries – there needs to be coordination across regulators (EA, NE, Local planning, OFWAT is a water co is trading). It could also entail an overarching regulatory body for coordination.

This emerging context also creates opportunities to streamline regulation. For example, there could be a single point of contact amongst public regulators for a trading process.

5. Briefing 4: Environmental Outcomes from Nature Markets

This is the fourth of a set of four briefings on nature markets produced by eftec for the OEP. They cover key issues and challenges on the design, governance and opportunities relevant to scaling nature markets. The four briefings covering the following topics:

- Briefing 1: Introduction to Nature Markets
- Briefing 2: Nature Markets: Drivers, Barriers and Opportunities
- Briefing 3: Governance of Nature Market Processes; and
- Briefing 4: Environmental Outcomes from Nature Markets.

Key messages

- To meet government nature targets the scale of investment is enormous (in the range of £5-10 billion per year), and as currently designed, nature markets will only partially fill this gap.
- Quantity of investment may not necessarily align to meeting nature goals, for a variety of reasons. For example paying for carbon sequestration may prioritise this ecosystem service at the expense of another.
- Nature market policy can be used to support achievement of other important environmental goals (such as water quality, climate change mitigation and land use/planning reform). Identifying these linkages and ensuring coherence of policy will be an important aspect of government performance to monitor.

Contents

1. What scale of investment is needed?

Over the next three decades, significant investment is needed to protect and restore nature to meet the Government's apex environmental goal (to reverse biodiversity loss and increase abundance by 2042). A precise estimate of the amount of investment required is difficult to forecast but estimates[17] in the range of £5-10 billion per year are widely acknowledged as in the right ballpark. This reflects the investment needed in nature and is distinct from the investment needed to address other goals (such as greenhouse

[17] The GFI Finance Gap for Nature report gives an estimate of the finance gap to meet the UK's nature-related outcomes to be at least between £44-97 billion only for the period from 2022 to 2032, with a central estimate of £56 billion, or c£5.6 billion per year.

gas abatement, creating a circular economy and using natural resources more efficiently).

Nature markets can fill some of this gap, but some expectations on scale are useful:

- BNG credits may bring in funding of £135-275 million per year[18], but this is mainly compensation, and will not provide the private investment needed to achieve the EIP goals.
- Nutrient markets may reach the similar levels of revenue, but similarly will represent only a fraction of what is needed.
- Water company investment is very significant, and whilst much of this (£36 billion over the next 5 years) will be in hard engineering solutions, a greater proportion could be directed towards nature-based solutions which can help address the nature funding gap.
- Carbon markets are likely to grow but forecasting this growth is speculative.

The funding gap will be met by both public and private sources. However, there can be problems if the roles of the two sources of funding are not clear (see Briefing 3: Governance of Nature Market Processes). For example:

- Conflict arises where the Government system tries to spend on best returns, which are going to correlate with best returns in the private market. So there is a risk of potential crowding out (replace / reduce the need) of private finance.
- Demand for BNG could displace funding for biodiversity outcomes that is currently provided by Government, eroding additionality of the policy.
- Sale of biodiversity units by the public sector could raise funds for land management activities that are currently funded by taxpayers, giving low additionality.

Of course, quantity of investment is only part of the issue. It is important to ensure that investment is wisely directed to provide the environmental outcomes needed.

2. Relationship between Nature Markets and Outcomes

The Government is bound by the legal objectives set out in the Environment Act (2021) and these do provide some clearly quantified targets. Furthermore, there are interim and additional targets as set out in the Environment Improvement Plan (EIP). These targets are under review and may change but are expected to be adjusted to meet the overall legal obligations of the Environment Act, rather than create a new direction for nature recovery. However, whilst there are targets, it is not clear what specific interventions (and hence investment) are needed to meet these targets.

The UK Government Green Finance Strategy (GFS) is also aligned to these targets, but it has been noted:

- Clear commitments are made, with reference to legally binding targets, ***however the roadmap for achieving these is not clear*** [19]
- Furthermore, the GFS does not provide a quantified pathway for meeting the funding deficit.

[18] eftec, wsp and ABPMer (2021), Biodiversity Net Gain: Market analysis study

[19] Arup (2024) OEP Green Finance Review Rapid Evidence Assessment

There are several reasons why the quantity of investment may not align to meeting nature goals, for example:

- Not all spend is necessarily additional. For example, in BNG and nutrient neutrality markets, most of the revenue is compensatory and hence the net gain in nature outcomes is limited to the gain targets set (i.e. 10% for BNG).
- Sometimes achieving robust nature outcomes and meeting the needs of markets can be seen as competing objectives. Investment may be directed towards the aspects of nature that provide a benefit to the buyer, rather than the nature outcomes in public objectives.
- Natural systems can take time to change and linkages between actions and outcomes can be unclear.

Credits sold in nature market align to nature objectives in varying degrees (see Table 2)

Table 2: How nature market credits relate to nature outcomes?

Market	What do credits represent	Links to nature outcomes
Biodiversity Net Gain (BNG)	Biodiversity Units (BUs) – a score per ha/ km based on BD metric of habitat distinctiveness and condition.	Relates to nature to the extent that the metric captures distinctiveness and condition of habitat. Majority of provision is compensatory (net gain is usually 10%).
Nutrient Neutrality (NN)	Kg of nutrient (N or P) removed from water environment	Largely compensatory so little net change in catchment loading
Woodland Carbon Code (WCC)	tCO_2e sequestered by new woods	New woodland is of benefit to nature but no explicit recognition of distinctiveness or contribution to nature recovery
Peatland code	tCO_2e of GHG emissions abated by deep peat restoration	Rewetting will improve bog habitat but no explicit recognition of contribution to nature recovery
Voluntary catchment markets	Land management actions, usually by farmers, that reduce nutrient pressures on water bodies	Can be targeted at priority problems in catchment and improve the water environment.

In addition to the markets shown in Table 1, there are exemplar trades or code developments underway for natural flood management actions, and soil, agroforestry and saltmarsh carbon. Understanding investment priorities and the necessary links to outcomes across all markets is a complex challenge.

3. Interactions with Related Polices

Investment in protecting and restoring biodiversity inevitably interacts with other important environmental objectives, policies and spending.

The current developments in nature markets will raise new questions and challenges for environmental policy delivery. For example:

- **Water industry**. In the environmental obligations outlined in the Water Industry National

Environment Programme (WINEP) for water companies in England:

  - Does OFWAT regard credit purchase as a good approach to delivering performance objectives and a good use of customer's money?
  - Does EA support using nature markets to achieve environmental objectives, and give flexibility (e.g. if markets supply reductions in diffuse nutrient sources, but regulations monitor point sources)?

- **Climate change mitigation.** Land use/management change is required to provide carbon sequestration and some GHG abatement (i.e., from degraded peatland) as major contributions to net-zero, but these do not necessarily emphasise nature recovery as an important co-benefit. For example:
  - Contribution to nature recovery benefits can be indirect – woodland planting linked to forestry standards, which have minimum requirements for nature, but do not necessarily make the most of each opportunity.
  - Carbon sequestration incentives are well-supported, but not clearly linked to nature recovery benefits. For example, the £50 million Woodland Carbon Guarantee incentivises landowners to participate in carbon sequestration, but the link to nature is weak.
- **Land use and planning reform**
  - To what extent does BNG provide an incentive to avoid damage to biodiversity? Does this lead to a more effective use of brownfield development/development space, and so reduce pressure on the natural environment?
  - Is this incentive aligned to other planning reform objectives?

4. Risks from nature markets to environmental targets

There are several risks to achieving nature targets:

- Trade-offs between targets can lead to undesired outcomes (e.g. maximising one benefit such as carbon sequestration may be at the expense of other more valuable nature outcomes).
- Potential mismatch between the areas supplying ecosystem services and the areas where people demand benefits from them. Spatial scale over which trades for offsetting occur can vary across different ecosystem services.
- Additionality concerns – uncertainty about what qualifies as an "additional" environmental benefit (i.e., improvements that would not have occurred otherwise).
- Poor governance and fragmented regulation can lead to an uptick in the risk of mainstreamed harmful practices, green washing, etc.
- Stacking - There may be risks associated with stacking, particularly when it comes to the 'compliance' markets for biodiversity net gain and nutrient neutrality. Biodiversity net gain units, and in some cases nutrient neutrality credits, are purchased to meet legal obligations to replace a habitat lost through development and contribute to nature recovery. If this new habitat delivers other benefits such as carbon sequestration, these may only be replacing what was lost (though this is not

measured – a risk known as 'asymmetrical accounting').

- Also time scales. The buyer activity is often short-term (e.g., development for BNG, annual carbon offsetting), but the outcomes need to be lasting – so contracting form is complex to share the incentives effectively.

Approaches to mitigate these risks are being laid out in the British Standard Institute's suite of nature market standards (BSI Flex 700's) - the first 'Overarching Integrity Principles' was released on 25/2/25).

5. Knowledge Gaps

The knowledge gaps or evidence needed to assess the environmental effects of nature markets are significant. This is partly because a lot of market activity is new, but also due to inadequate transparency, governance and information. For example, the registries available for different nature markets are weak (e.g. for BNG) and lack interoperability. This inhibits understanding of trading and outcomes, and the ability to monitor and regulate additionality, and market processes such as secondary market trading, and stacking and bundling.

A better quantification of nature market activity is also needed to monitor and understand the scale of actions and funding, and how investment through nature markets is contributing to meeting the Government nature targets. If/ when nature market activity is scaled up, there will be a number of issues that will require regulatory oversight to maintain a balance between the commercial viability of markets to the private sector, and their contribution to nature targets:

- Competitive returns → conservation and restoration projects can have high transaction costs (e.g. on-the-ground monitoring, due diligence and enforcement, etc.) relative to their financial/ spatial scale. Aggregating small/ local projects to meet the minimum ticket sizes of larger investors requires standardisation of processes (e.g. quantifying credits). Within this there are trade-offs between monitoring the complexity of nature and ecological outcomes, the scale of transactions costs, and the level of risk that private investors are willing to bear.
- Market information → There are risks from opaque pricing and trade practices in nature markets. This is why transparency, and consistent measurement processes, feature in the BSI Flex 701 nature market standard.
- Shorter timelines → nature outcomes often require large up-front investments with uncertain long-term returns. Contracts and monitoring need to ensure lasting outcomes for nature.

6. Notes from Workshop

The final workshop was held at OEP's offices in Worcester on 27th March 2025. The objectives of the workshop were:

- To increase OEP staff knowledge around the fundamental aspects of nature markets in the UK.
- To highlight the key interdependencies between nature markets and positive environmental outcomes.
- To stimulate discussion on the implications for OEP: what to monitor, what questions to ask of the Government, and priority areas of future research.

The agenda and key themes of the workshop were:

1. Summary of the Nature Markets briefings
2. The prospects of nature markets towards the funding gap for nature goals
3. Blending nature markets with government subsidies to deliver nature restoration
4. Lessons from nature market design and governance to appraising government reform of planning regulations
5. OEP's role on nature markets as policy watchdog with a broad remit

Key points of discussion by theme are presented below:

Growth of markets and blending nature markets with government subsidies to deliver nature restoration:

- eftec discussed the need for a single nature market regulator for the UK, with the following points made:
    - Single Regulator: the establishment of a single nature market regulator for the UK could streamline regulatory processes and help ensure market integrity. A unified regulator could provide consistent oversight and reduce complexity.
    - Clear Framework: a clear regulatory framework, including practises and standards, is important to ensure the integrity of nature markets. This framework should address potential conflicts of interest and ensure transparency.
    - Risks of Weak Regulation: the risks of weak regulation, could lead to insufficient environmental outcomes and undermine confidence in nature markets.
- Government could increase compliance requirements to boost demand, but there are political/ social constraints and limits.
- How can blending government funding (e.g. ELMS) be more effectively coordinated with private sector funding? Several points raised:
    - There is a strong case for ELMS to pay for pure public goods (i.e. those with no private payment stream) but the scheme needs to be much clearer on what benefits funding pays for.
    - A problem is that government planning timescales (up to five years) don't match nature's recovery timescales, nor most nature market timescales.

- There are key lessons that can be drawn from other markets. For example, it is beneficial to be proactive (e.g. water regulation) as well as enforce penalties. Attention to markets is important too – e.g. in the past, setting low targets in the EU ETS led to low prices.
- More clarity on which nature credits can and can't be stacked, and under what circumstances, is necessary – This can be provided through a combination of policy and requirements in standards.

- What data will be available for regulators to track market activity, including OEP to assess outcomes? Information availability to market participants is also a key part of market efficiency. Registries should be a key source of data for this.

Lessons from nature market design and governance to appraising government reform of planning regulations

- When discussing the design of a nature levy, the importance of maintaining incentives for developers to avoid harming sensitive habitats was considered. Biodiversity net gain provides this incentive via the metric, and the application of the mitigation hierarchy principles in law.
- Effective governance and skills - focus on the necessary skills of staff in organisations defining methods to quantify credits and regulating markets. There is a need for technical scientists and regulatory skills, including economics of regulation, to avoid repeating past mistakes in new regulated markets.
- Resources and planning approval processes - the capacity to implement regulatory processes is critical for the success of biodiversity net gain strategies. Market participants have expressed frustration with delays in approval processes due to regulatory body staff capacity issues slowing down the development of nature credit supply projects. Other problems such as insufficient capacity to deliver strategic mitigation, could negatively impact the environment - transferring delays from developers to the environment does not solve the problem but rather shifts the burden.
- Registries - it is acknowledged that the NE BNG register does not currently comply with BSI standards. Registries are key to providing data on the scale, development and performance of nature markets, so it is important that they are designed appropriately. The BSI 701 Flex Standard requires interoperability between registries to facilitate information sharing and analysis. This includes functions like recording project locations to regulate stacking, and to detect and prevent the double-selling of units, which is crucial for maintaining market integrity.
- NE is not necessarily enabled to commission and manage habitat restoration (its functions have moved away from on the ground conservation). The third sector, and to some extent private organisations, can be incentivised to deliver more effectively. Also, government bodies are not best placed to haggle, hence other organisations may be better at negotiating flexibly to achieve the desired environmental outcomes.
- The Nature Restoration fund could achieve economies of scale, but low cost isn't the only factor that matters. Convenience and speed can be important too (e.g. for developers).
- How to achieve more involvement of the private sector to fund Local Nature recovery Strategies? These improvements will deliver many benefits, and it is important to be clear on what each entity is paying for (e.g., government for pure public goods like biodiversity and recreational access, and

private sector for BNG, carbon nutrient credits etc.).

- How to transfer regulatory knowledge from other markets into nature markets policy development and regulation will be important.
- Contracting can take time, and suitably expert lawyers are in short supply to write conservation covenants. Developing standard form contracts can help. These are important as they define rights and responsibilities within transactions, which then links to assurance, risk management measures (like insurance/ buffers), regulatory priorities, etc.

OEPs role on nature markets as policy watchdog

- The key OEP role is holding Government to account to develop high integrity nature markets, including ensuring alignment with BSI principles and standards, and facilitating transfer of learning from other areas of market regulation (e.g. energy, water, emissions trading, etc) to nature markets.
- Monitoring of nature market outcomes - using registries to monitor funding and outcomes, while also scrutinising the adequacy of registries for monitoring and evaluation, and how they can be improved.
- Monitoring governance - continuously monitoring the development of the governance ecosystem, including the bodies and rules involved. This ongoing oversight is crucial to ensure the framework evolves appropriately over time.
- Monitoring how nature markets interact with wider policy - understanding how regulatory/policy drivers are influencing the prospects of nature markets towards the funding gap for nature goals, how subsidies and nature markets can best be blended, and which nature credits can/should and can't/shouldn't be stacked to comply with various compliance requirements.

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