



# Financing the Built Asset Adaptation Gap

Short Report



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# Introduction

On the 21<sup>st</sup> July 2021, UKGBC hosted an event on behalf of the IGNITION project with support from the Environment Agency and the Greater Manchester Combined Authority. The event brought a range of key financial and built environment stakeholders together to discuss the role of Nature-based Solutions (NBS) in adapting built assets to climatic risks (see Figure 1). It sought to define the barriers to, and opportunities for, further investment in nature-based climate adaptation. The event also considered the work and progress of the IGNITION project, discussing its successes and innovations, as well as the persistent complexities that surround financing NBS in practice.

This short report summarises those discussions and sets out recommended next steps for industry.



**Figure 1: Stakeholder groups engaged in discussions**



# Background

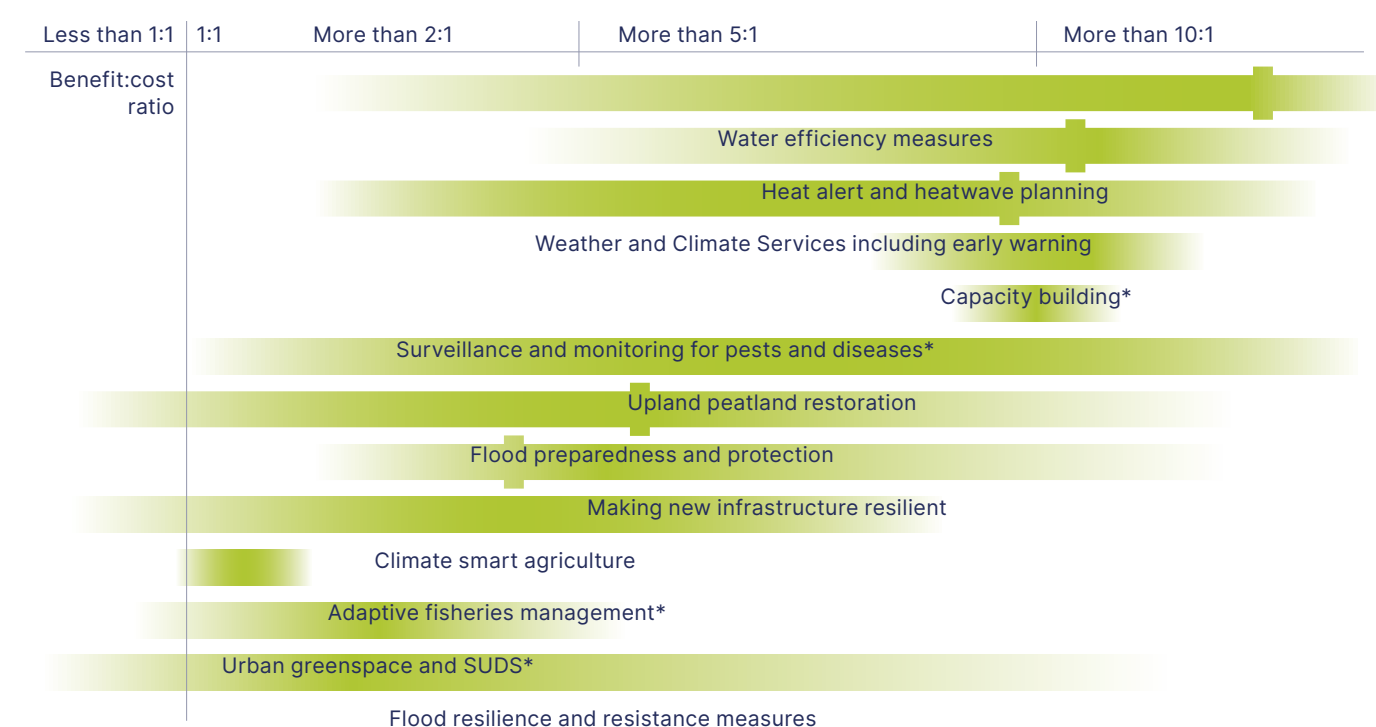
Since 2000, four major flood events have cost the UK economy £6 billion in damages and at present there are 5.2 million buildings at risk of flooding across the UK.<sup>1, 2</sup> Flooding is just one in a suite of climatic risks to built assets that will become more physically and financially costly if swifter action towards climate adaptation and resilience is not taken. The Third Independent Assessment of UK Climate Risk (CCRA3) from the Climate Change Committee (CCC) echoes this, stating explicitly that a lack of action on climate adaptation heightens the danger of both financial and societal costs in the future, with the UK at greater risk now than ever before.<sup>3</sup>

## The built asset adaptation gap

At present, the UK’s built assets are inadequately prepared for mounting climatic risks, presenting an ‘adaptation gap’ that must be overcome if communities, businesses, and investments are to be protected in the long-term. Ensuring such climate resilience requires greater investment in alternative approaches to the design, delivery, and management of our built environment.

An increasing amount of evidence is available which demonstrates the positive financial returns from adaptation actions (see Figure 2). Prioritising nature-based approaches to adaptation, via SuDS or urban greenspace interventions for example, can deliver up to a 5:1 return on investment. However, these returns could be even higher, given that these calculations only include quantifiable benefits rather than the additional non-adaptation co-benefits that Nature-based Solutions (NBS) provide, such as improvements to public health and wellbeing or social justice and community cohesion.<sup>4</sup>

**Figure 2: Cost-benefit ratios of multiple climate adaptation measures<sup>5</sup>**



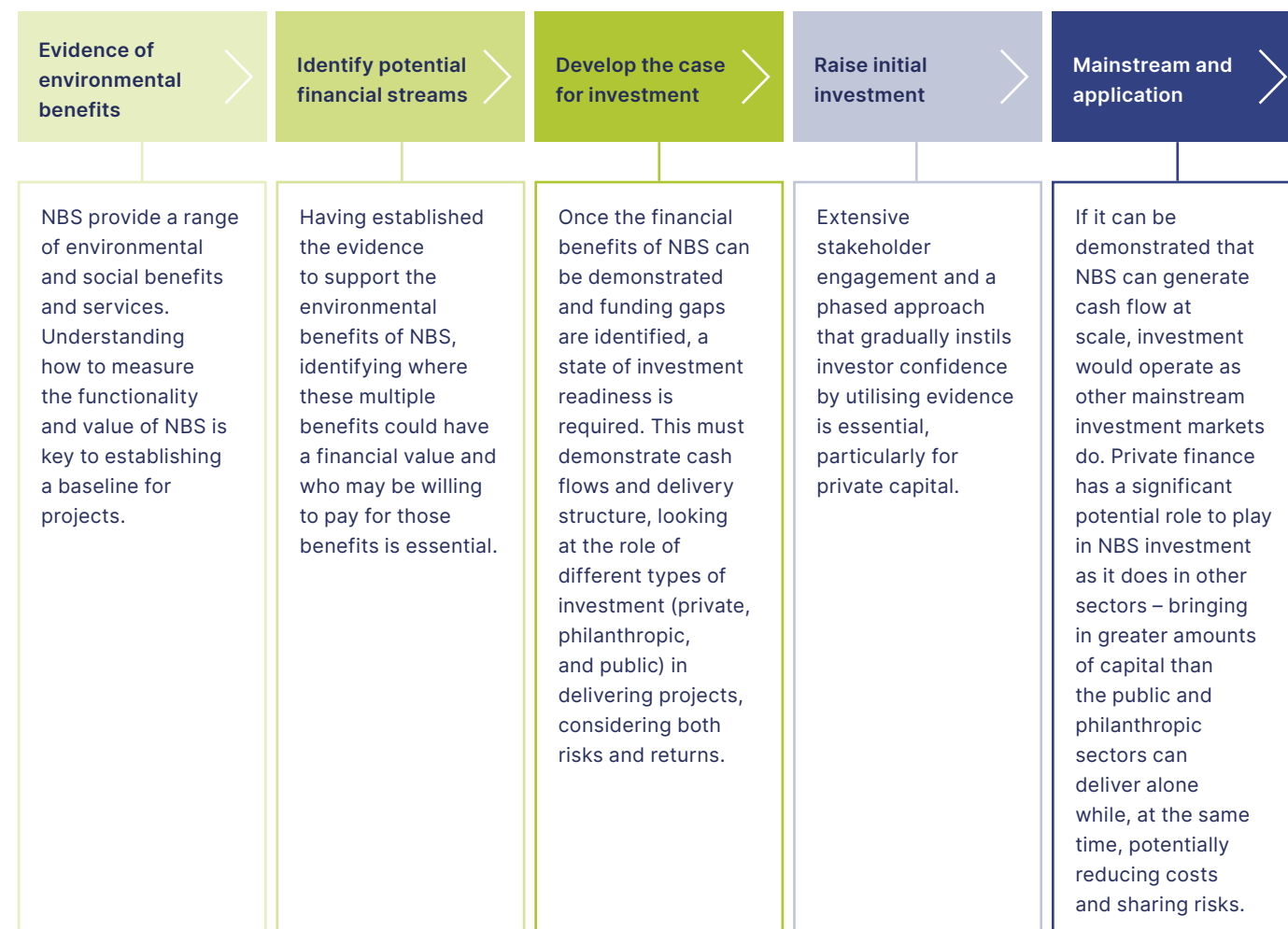
Source: Climate Change Committee (2021) \*Based on single, limited or indicative studies

Financing this adaptation gap is crucial, though will require scaled-up private and public investment. In the UK, achieving nature-positive outcomes is estimated to require an additional £44 - £97 billion above current public sector commitments across the next 10 years.<sup>6</sup> More broadly, the State of Finance for Nature report outlines how global financing of NBS must triple by 2030 and increase four-fold by 2050, if a \$4.1 trillion investment gap is to be closed.<sup>7</sup> Such estimates recognise the critical role that nature must play in effectively tackling the interwoven climate, biodiversity, and land degradation crises. However, developing and utilising innovative financial models and mechanisms that can support NBS interventions both at scale and in perpetuity remains challenging.

## The IGNITION project

The overarching ambition of the IGNITION project is to develop feasible and scalable finance models that can effectively translate the benefits of NBS into an attractive investment opportunity for a range of financial stakeholders. In doing so, the project aims to build confidence in nature-based private investment, which can then drive the delivery of projects to enhance climate resilience at scale. To deliver such a model and achieve a sizeable pipeline of NBS projects, IGNITION partners have developed the following five-step approach:

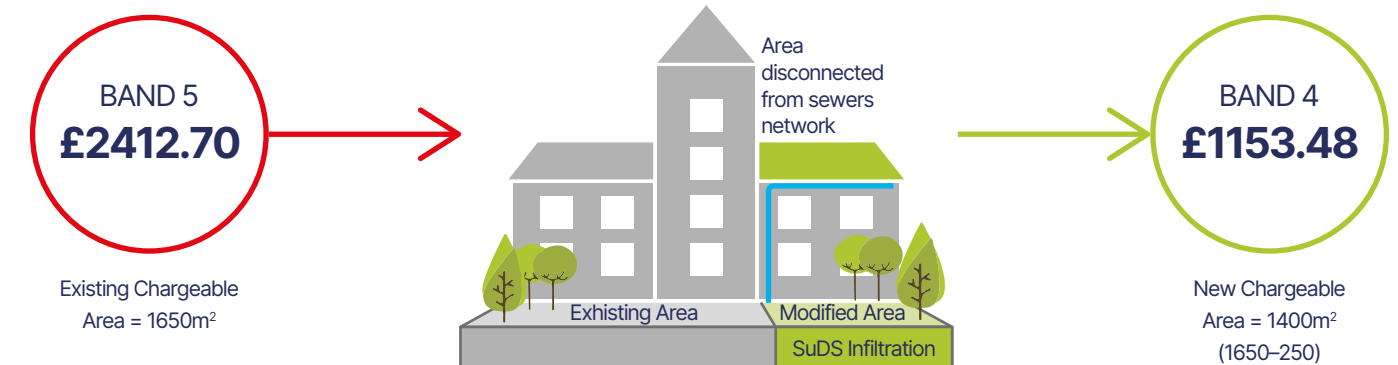
**Figure 3: IGNITION NBS project pipeline process**



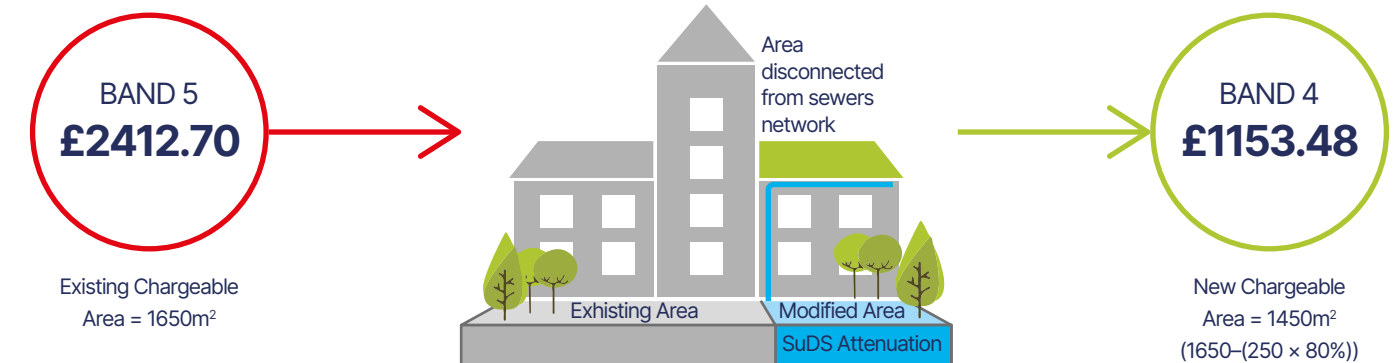
The event in July introduced IGNITION’s priority financial model, which centres around the implementation of NBS on non-domestic properties at scale. The model conceptualised incentivising the installation of Sustainable Drainage Systems (SuDS) via returns on investment accrued through financial discounts on wastewater charges, provided by the utilities provider. In theory, these savings could then be used to offset the initial capital expenditure (CapEx) and any ongoing operational expenditure (OpEx) of the SuDS.

**Figure 4: IGNITION priority finance model**

### Method A: SuDS Infiltration



### Method B: SuDS Attenuation





As this model has developed, there has been a need for methodological refinement to ensure it can sufficiently incentivise SuDS investment. The project has needed to look at a wider range of potential contributors and beneficiaries, adjusting the project pipeline accordingly to incorporate a broader range of desired investment outcomes. For example, in addition to the financial benefits of the discount in wastewater charges, the criteria for sites has been expanded to consider areas where SuDS would have the largest impact on reducing local flood risk. As such, a more sophisticated financial and contracting model, which stacks multiple beneficiaries and income sources simultaneously, is emerging.

The IGNITION project has demonstrated the complexity associated with establishing an investable and scalable financial model for NBS. The project and its progress were used to frame the following discussions facilitated in our workshop. We aimed to define the opportunities and barriers facing nature-based finance more explicitly and propose tangible ways of overcoming them.





# Discussion Points

The event facilitated a number of discussions, which centred around the following key issues:

1. **The imperative and complexity of quantifying the benefits and value(s) of NBS**
2. **The need to utilise increasingly innovative financial models and approaches**
3. **The difficulty in ensuring investor confidence (both short and long-term)**
4. **Ambiguities associated with the NBS supply chain**
5. **The role of regulations and regulators in enabling industry innovation**

These points have been mapped on to IGNITION's project process (Figure 5) to demonstrate at which stage in the development of NBS finance models these challenges arise.

More detail on each of these stages and the lessons learned by the IGNITION project can be found in their Interim Report.

**Figure 5: Mapping the key issues**



## Stage 1: Establish evidence of environmental benefits

Whilst the technical evidence base supporting NBS continues to grow, a lack of physical and financial 'proof' at scale was recognised amongst stakeholders. Understanding and communicating the benefits of NBS in a wide range of circumstances and to a wider audience remains a critical issue to address. Demonstrators, such as [IGNITION's NBS Living Lab](#) (located at the University of Salford), can help to facilitate crucial 'seeing-is-believing' experiences.

Principally, beneficiaries must be confident that benefits will flow. Confidence in the outputs of NBS is integral to justifying nature-based investments, with financial lenders being traditionally risk averse. NBS must therefore increasingly deliver measurable benefits if the case for investment is to be enhanced. Attendees noted the difficulty in quantifying the wider benefits of NBS, particularly when attempting to incorporate them within their operations whilst also guaranteeing a return on investment. It was acknowledged that industry standard metrics for benefits such as flood-risk reduction were lacking, and that this subsequently has negative implications for investor confidence in NBS, such as Sustainable Drainage Systems (SuDS).

Whilst the development of Biodiversity Net Gain (BNG) was hailed as a step in the right direction, it was stated that NBS (and the services they deliver) stand to benefit more acutely from the formal establishment of Environmental Net Gain (ENG) metrics, which could be used to measure NBS performance. It is possible to measure NBS against BNG metrics, but this would only tell one part of the story: biodiversity. Certain urban NBS

Incorporating key issue 1: Quantification of benefits and value



interventions will have a relatively limited capacity to deliver BNG. However, if the wider co-benefits (or 'ecosystem services') of NBS are considered (such as health and wellbeing benefits, air quality improvements, economic uplift, and heat-stress alleviation), then ENG metrics, if utilised more widely, could start to considerably improve the calculations on payback and value flowing out of urban NBS.







## Stage 2: Identify potential finance streams

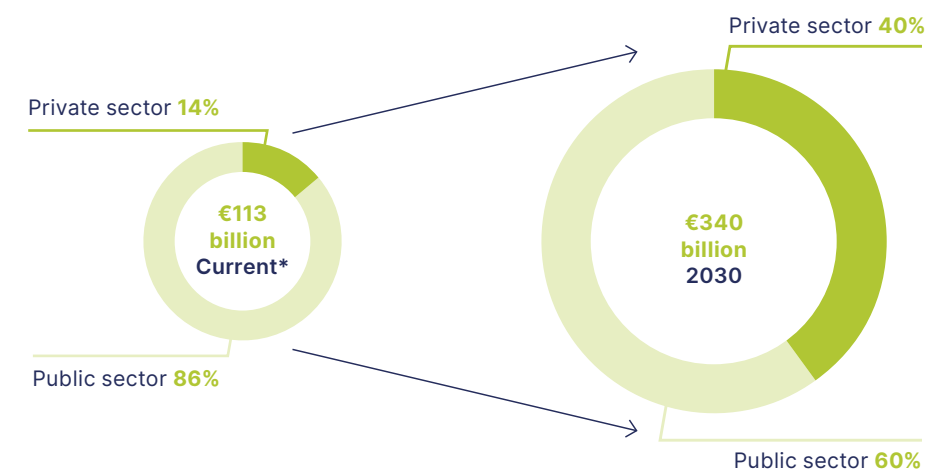
Discussions highlighted a wide range of innovative financial models and mechanisms being progressed by attendees and wider industry stakeholders. Examples included:

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Incorporating key issue 2:  
Utilising innovative finance  
models and approaches

### Advocating for blended finance schemes

There was consensus regarding the supportive role(s) that public and private sector finance can provide to one another. Such blended finance mechanisms can boost funding for NBS, with private sector venture capital catalysing initiatives and public sector funding offering longevity and long-term security. At present, there is an imbalance in public/private finance for NBS, with public contributions constituting an overwhelming majority. A re-alignment of these proportional investments is necessary if the adaptation gap is to be bridged swiftly and effectively. Such a rebalancing has also been recommended by the UN Environment Programme’s *State of Finance for Nature* report (Figure 6).

**Figure 6: Public and private sector finance for nature**



Source: UN State of Finance for Nature report, 2021

\*EU approx. €27m



## Framing nature-positive operations within KPI-linked loans

It was recognised how the use of sustainability-linked loans can deliver benefits for both nature and corporate bottom-lines. For example, establishing a revolving credit facility (RCF) linked to a KPI based upon BNG provision across an asset portfolio incentivises the delivery of net gain. Performance against this KPI is then linked to the margin paid on the RCF. Better annual performance equates to lower margins, which delivers financial benefits and can catalyse behavioural changes within an organisation.

### Case study: Great Portland Estates

Great Portland Estates (GPE) have established an innovative £450million revolving credit facility (RCF) with five banks (Santander, NatWest, Wells Fargo, Lloyds Bank plc and Bank of China) that is linked to three ESG KPIs. The RCF is set at a headline margin of 90 basis points over LIBOR (an inter-bank interest rate) and an annual decrease or increase of up to 2.5 basis points will be applied to this headline margin on the basis of GPE's performance against its ESG KPIs. The KPIs are related to the decarbonisation of GPE's building assets by 2030, and the increase of BNG across their whole asset portfolio. Principally, GPE have set price incentives to deliver net zero ambitions and make BNGs and will pay a lower margin on the RCF if annual KPI targets are met. The ambitious KPIs and subsequent RCF margin swing encourages behavioural change throughout the organisation.

## Tapping into grassroots behavioural shifts

The role of communities and grassroots initiatives was recognised as critical in supporting NBS investment and instigating positive behavioural shifts more broadly. The capacity to utilise communities as an asset in the financing of NBS was reported comprehensively in the ['Investing in a greener Greater Manchester: A Nature-based Solutions Investment Guide for Local Authorities'](#) report.

In particular, the role of Community Municipal Investments (CMIs) as a mechanism for generating nature-based finance was discussed. CMIs have been used to channel investment directly into councils, offering a low risk return that can help local authorities deliver on their climate and ecological emergency pledges. At present, [Abundance Investment](#) has helped to establish a range of CMIs that have financed renewable energy networks, green transport systems, affordable housing projects, localised food production networks, and more. There is scope to develop this mechanism further as a means of generating finance for NBS that can yield a return or cost saving, as demonstrated by IGNITION's priority business model.





## Stages 3 & 4: Develop the case for investment & raise initial investment

Discussions highlighted a range of approaches to make NBS more 'investable', recognising both short and long-term limitations. Some key points included:

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Incorporating key issue 3:  
Ensuring investor confidence

### Considering hybrid interventions

Combining green and grey infrastructures appeared to be one means of increasing both investor confidence and the security of returns on investment. The implementation of 'biosolar roofs' that combine Solar PV and green roof technologies was considered as a promising opportunity to reduce ambiguities surrounding the 'performance' of NBS, whilst also reducing the payback period and covering long-term operational costs. In addition, such interventions simultaneously deliver biodiversity uplifts whilst transitioning towards Net Zero; requirements that are becoming increasingly mandated.

Though some potential for such hybrid approaches was recognised, attendees also noted multiple limitations at present. Primarily, a lack of evidenced examples at scale was cited, with such ambiguity equating to risk, and this risk resulting in reluctant investors. In addition, the complexity of the structural considerations required by such approaches was noted as a potential barrier to investment.



## Using remuneration as incentivisation

Using gains or savings made via green finance mechanisms as a form of internal remuneration was cited as ‘concentrating minds quickly’ and driving both behavioural and organisational change. By framing, for example, the introduction of sustainability-linked KPIs to the possibility of financial gains for employees, a stronger business case for nature-positive decision-making and operating begins to develop.

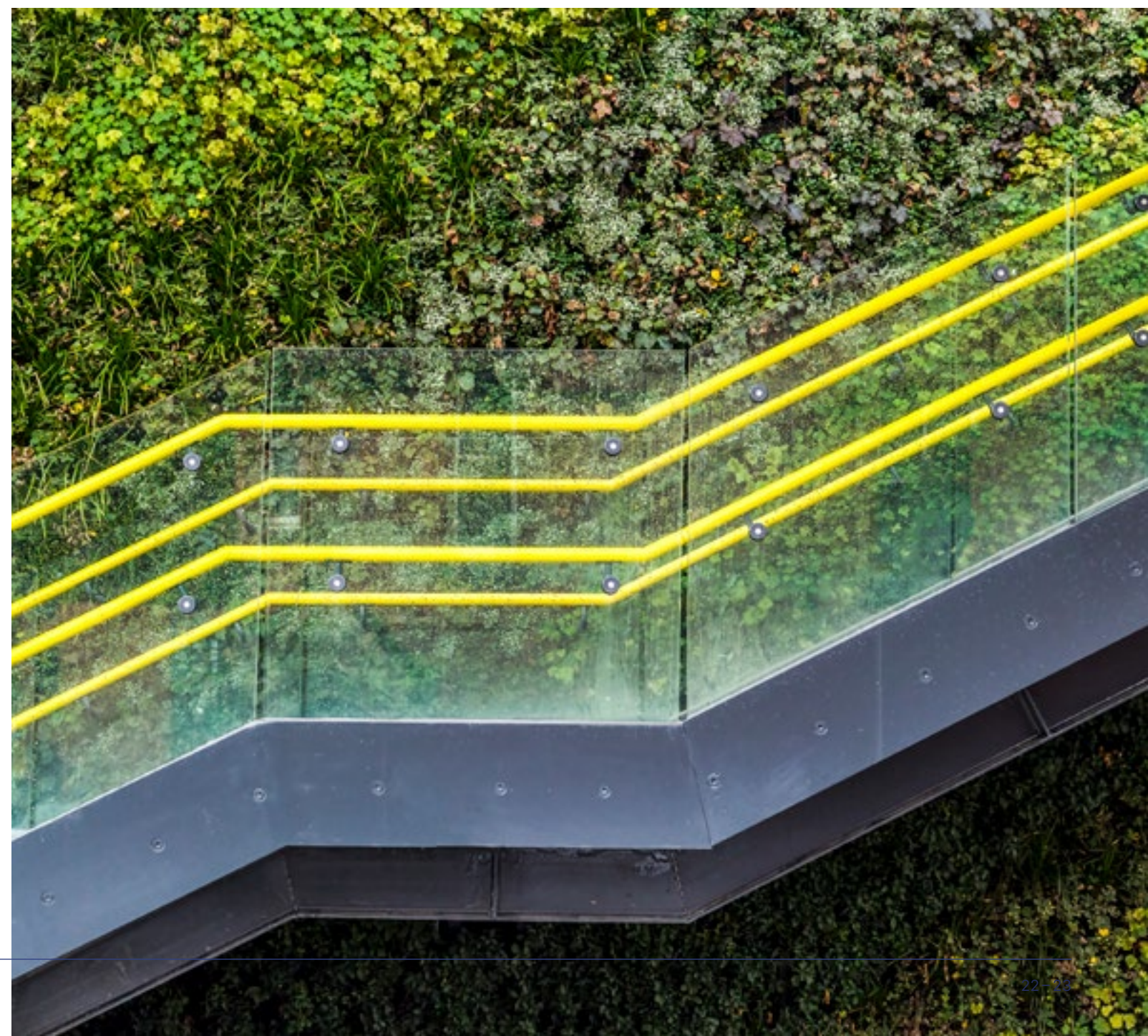
## Increasing understanding and confidence

Amongst attendees there was a high-level appreciation of the need to act against the climate and ecological crises, though a technical understanding of the exact ‘solutions’ required to do so, and how to implement these, was less clear.

When scaled-down, the context-specificity of delivering NBS increases the risk associated with its investment. The installation of NBS was viewed as presenting several challenges, that can vary geographically, infrastructurally, and circumstantially. To maximise their benefit, NBS must be tailored to their environment, but this can stifle their replicability and subsequently reduce investor confidence.

Attendees also noted that beyond the technical complexities of installation, retrofitting existing built assets (particularly homes) requires the consideration of disruption to occupiers or the risk of empty assets. Therefore, NBS that can be implemented simply and with minimal disturbance to infrastructure and stakeholders will bolster the case for investment. The use of novel low impact and maintenance approaches (such as [Wonderwall’s green walls](#)) can help to achieve this. In addition, the use of such approaches helps to negate the anxieties surrounding the long-term maintenance of NBS, which has been identified as a recurring and somewhat ‘wicked’ issue for NBS implementation.

The need for long-term considerations and commitments for NBS were widely considered as a barrier to investment. Whilst the ongoing operational costs of NBS should be incorporated from the outset of a project, determining responsibility for these costs remains difficult.<sup>8</sup> One potential solution discussed was the adoption of ‘rent-a-wall’ approaches for green walls, that would function much like the ‘rent-a-roof’ methods successfully utilised for Solar PV. Such approaches may have greater appeal to investors, with longer-term operational costs functioning as non-committal.







## Stage 5: Mainstream private investment & replication

### Supply chain

Central to mainstreaming NBS investment is the maturity of the supply chain. Discussions noted that confidence in the NBS supply chain was low when compared with other sustainable infrastructure such as Solar PV. A lack of confidence in the supply chain and a relatively immature market for NBS reduces its capacity for delivery. In addition, these issues regarding supply chain place greater pressures on project completion timescales and can result in compromised quality and function.

Given the maturity of the Solar PV market, it was acknowledged that biosolar roofs present an opportunity to establish a critical mass in demand for technologies that can help deliver Net-Zero, BNG, and ENG targets. Whilst such hybrid interventions have a large scope to stimulate economic growth and underpin the UK's 'green economy', it was recognised that such projects would likely require a blended finance approach, utilising public sector finances to support (and reassure) private sector impact investors and asset owners.

### Regulation

Beyond the immaturity of the supply chain, the mainstreaming of investment in, and delivery of, NBS is (in-part) constrained by the need for some degree of regulatory innovation. It was noted how building regulations relating to exterior cladding have in some instances thwarted attempts by developers to install extensive green walls.

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Incorporating key issues  
4 and 5: Supply chain and  
regulatory issues



Regulators can, however, support the creation of markets for environmental benefits. They can play a central role in providing private sector investors with the confidence and capacity to commit to financing innovative NBS schemes at scale. Any financial protections or guarantees that can be provided by, for example, market regulators such as OFWAT, could support industry innovation for investment in SuDS.

Drawing on the IGNITION SuDS finance model (Figure 4), the capacity of the utility provider to set a consistent rate for the banding charge remuneration to work in the long-term is affected by fluctuations in the market itself. As the market is not static, such flat rates bear greater risk in the long-term to the provider (investor). Any additional protections provided by the regulator could therefore help to incentivise initial investments, which may then stimulate wider industry action.

More broadly, the regulatory landscape is changing. Attendees noted how the [Task Force for Climate-related Financial Disclosures](#) (TCFD) and emerging [Task Force for Nature-related Financial Disclosures](#) (TNFD) were set to 'change the conversation' of nature-based investment and climate adaptation. The TCFD and TNFD are developing frameworks to measure, report, and act on the climate and ecological risks posed to organisations. The UK government has announced its intention to make disclosures aligned with TCFD mandatory across the economy by 2025, with a significant portion of mandatory requirements in place by 2023.<sup>9</sup>

Additionally, the changing landscape of 'green taxonomies' appeared to present both opportunities and potential barriers. The EU market is evolving, altering what can and cannot be classified as 'green'. Whilst these innovations are well intentioned, attendees expressed concern over whether these shifts could work to stifle current efforts, making alignment with green bonds or sustainability-linked lending more difficult. However, the newly established [Green Taxonomy Advisory Group](#) (GTAG) will offer additional guidance to investors and aims to set common standards for green investment in the UK.





## Next steps

Building on the discussions held and the findings of the IGNITION project to-date, the following points reflect some potential opportunities for NBS investment:

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There is a case to be made for upscaling the delivery of demonstration projects (such as [IGNITION's Living Lab](#)) to advance a collective understanding of both the performance and cost of NBS amongst key financial stakeholders. Once the benefits are widely understood, the conversations regarding initial investment and returns over time can more easily commence. Increasing the proportion of private-sector engagement in this process is essential and would further enhance its scope, impact, and value.

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There are opportunities to be seized through more explicitly evaluating and defining the contributions of urban NBS to the delivery of ENG. A pilot study trialling emerging ENG metrics against urban NBS interventions could further quantify their benefits in a way that is more easily interpretable and workable for key financial stakeholders. Engaging property owners in this process would be critical.

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Further consideration regarding the current limitations of NBS supply chains is necessary. The changes instigated by forthcoming BNG and ENG requirements will further develop a market for stakeholders within the NBS supply chain (such as engineers, contractors, surveyors, ecologists, landscape architects, and product manufacturers) to tap into. Ensuring that this growing market is sufficiently supported and resourced will be essential to guaranteeing the efficiency and cost-effectiveness of NBS delivery in the future.

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An examination of regulatory levers and their capacity to further support and drive nature-based investments is necessary. Within and beyond an IGNITION context, changes to existing regulations could work to facilitate private investment for NBS. However, the precise ways in which this is to be negotiated, or by whom, requires further consideration.



# Endnotes

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Great Portland Estates

Green Finance Institute

ISG Retail

Low Carbon Alliance

NatWest

Oxford Properties

Tritax Big Box REIT

UK Green Building Council

Wates Group

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UK Green Building Council (UKGBC), Business in the Community (BITC), Greater Manchester Combined Authority (GMCA), Salford City Council, Manchester City Council, City of Trees, Environment Agency, Groundwork, Royal Horticultural Society, United Utilities, University of Manchester, University of Salford

### Funders

Urban Innovative Actions

European Union - European Regional Development Fund

### Further Information

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Design and creative direction by Sabroso Studio

