



Uchelgais Gogledd Cymru
Ambition North Wales



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Carbon and Biodiversity Considerations in Business Cases

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How to use this guidance

This document is designed to be a strategic guide and a practical tool for anyone with responsibility for designing, delivery, approving and scrutinising projects to ensure that carbon and biodiversity is considered as part of the development of any project.

It brings together key frameworks, planning logic, industry recognised methodologies and best practice with the aim of ensuring that carbon and biodiversity is considered consistently and as early as possible in the project development lifecycle.

This document is not intended to be read cover-to-cover in a single sitting. Instead, each section can be used as a standalone reference, depending on what stage your project is at or what decision or activity is underway.

The document can be used by any public sector organisation in Wales and is intended to supplement rather than replace other national and local guidance and decision-making frameworks.

The relevance of the different elements of the guidance depends on the stage at which your project is at and whether you are more focused on carbon or biodiversity (or indeed both)

The prompts below will help you navigate the guidance:

I am unsure where to start

Mapping tool ([Appendix 1](#))

This section will help you to work through a series of initial decisions to help you consider how you can use this methodology and apply it to your specific project or strategy and systems,

[\[Click here to access this Appendix in the guidance\]](#)

I understand the carbon and/or biodiversity objectives of my organisation, but I am not sure if my project will have a material impact on carbon and/or biodiversity

Step 1: Prepare

This step will prompt you to:

- Understand national, regional, and local carbon and biodiversity objectives
- Ascertain if the project has carbon or biodiversity metrics that it needs to deliver
- Undertake stakeholder mapping
- Share the guidance with colleagues

[Click [here](#) to access this step for Carbon and [here](#) to access this step for Biodiversity in the guidance]

I understand the carbon and/or biodiversity objectives of my organisation, but I am not sure if my project will have a material impact on carbon and/or biodiversity

Step 2 Materiality Test

This step will guide you through a series of questions that will help you assess how material the impact of your project will be on carbon and/or biodiversity.

Depending on the answers to these questions it will guide you to what next.

[Click [here](#) to access this step for Carbon and [here](#) to access this step for Biodiversity in the guidance]

I know my project could have a material impact on carbon and/or biodiversity, but I am not sure if the value of the project justifies the need for additional assessment work around carbon and/or biodiversity

Step 3 Proportionality Test

This step will guide you in the different considerations that inform whether the project is higher or lower value.

Depending on the answers to these questions it will guide you to what next.

[Click [here](#) to access this step for Carbon and [here](#) to access this step for Biodiversity in the guidance]

I have a project that could have a material impact on carbon and/or biodiversity but it is lower value and I want to assess the scale and nature of the potential impact as part of the decision making and approval processes

Step 4a Impact assessment Stage

This step will provide a series of prompts to support you in:

Developing a suitable long list of options

Shortlisting those options and identifying a preferred way forward

Presenting a finalised option that reflects appropriate consideration of carbon and/or biodiversity in the commercial, financial and economic impacts of the project

[Click [here](#) to access this step for Carbon and [here](#) to access this step for Biodiversity in the guidance]

I have a project that could have a material impact on carbon and/or biodiversity and it is a high value project so I want to assess the scale and nature of the potential impact as part of the decision making and approval processes

Step 4b Impact assessment Stage

This step will provide a series of prompts to support you in:

Developing a suitable long list of options

Shortlisting those options including a benchmark assessment and identifying a preferred way forward

Presenting a finalised option that reflects appropriate consideration and quantification of carbon and/or biodiversity in the commercial, financial and economic impacts of the project

[Click [here](#) to access this step for Carbon and [here](#) to access this step for Biodiversity in the guidance]

I am interested in the best practice for governance and decision making with respect to carbon and/or biodiversity considerations and how these can complement my existing governance structures

Best practice for decision making

This section provides a framework to consider carbon and/or biodiversity within existing business case governance systems

[Click [here](#) to access this step in the guidance]

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This methodology has been developed in conjunction with Welsh Local Government Association's advisor Grant Thornton UK LLP and their subcontractor Ove Arup & Partners Ltd. This publication has been developed for general information only. The application of its content to specific situations will depend on the particular circumstances, which should be investigated and identified by a suitably competent professional. The information in this publication is not, therefore, suitable for any purpose other than to provide the user with general information. Accordingly, while every care is taken in its presentation, no person should rely on the material contained herein. Users should obtain professional advice if they intend to take any action, or refrain from taking any action, concerning the matters discussed in this publication. To the fullest extent permitted by law, Grant Thornton does not accept or assume responsibility to anyone for the content of this publication.

1. Introduction

At the top of each page of this document, you will find a navigation toolbar designed to help you easily access different sections, allowing for efficient navigation and quick reference throughout the guidance.

Purpose of this guidance

This guidance has been produced by Welsh Local Government Association (WLGA) and Ambition North Wales (ANW).

This guidance is the first iteration, and it is our expectation that it will continue to evolve and develop to reflect the ever-changing nature of carbon and biodiversity considerations.

UK carbon emissions continue to rise – at odds with the carbon reduction pathways and commitments made by both UK and Welsh Governments. At the same time, the biodiversity that underpins our food chain and wider economic system is in rapid decline. Welsh wildlife has decreased on average by 20% since 1994 and nearly one in six Welsh species are threatened with extinction.¹

In response, and to continue the path to net zero by 2050 and to halt biodiversity decline.

19 of 22 local authorities across Wales have declared a climate and/or nature emergency.² Every decision to build or buy something has an impact on emissions and biodiversity, driving climate change and well-being impacts being experienced by our residents and businesses. Guided by the Well-being of Future Generations (Wales) 2015 ('WFGA')³ – all local authorities must complete Well-being Impact Assessments to consider those impacts.

Well-being Impact Assessments require scrutiny of all decisions against seven wellbeing goals for Wales, of which the two below relate to carbon and biodiversity. It also requires public bodies, including local authorities, government departments and sub-regional authorities, to think long-term and prevent damage:

- A prosperous Wales, which is an innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately.
- A resilient Wales, being a nation which maintains and enhances a bio-diverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change

As shown in Figure 1, analysing these impacts early and monitoring them through decision making cycles is best practice that will enable Wales to minimise carbon emissions and enhance biodiversity in a timely and cost-effective manner and ensure targets are met. The provenance and development of projects can be unclear, and this tool provides a means to test project ideas at the earliest opportunity to anticipate future challenges and risks so they can be mitigated and avoided.

The approach set out in this document has been developed based on experience working with Ambition North Wales using their 'Reducing Carbon Emissions and Improving Biodiversity in Growth Deal Projects' methodology (ANW & Arup 2022) and further testing with Denbighshire County Council in 2024/25. ANW and Arup released Reducing Carbon Emissions and Improving Biodiversity in Growth Deal Projects ("ANW methodology")⁴, which is a more detailed methodology modelled along the five-case model. While that methodology continues to be the recommended analysis for ANW Growth deal projects over £5 million and with anticipated high carbon or biodiversity impact, there was requirement for a more accessible guidance for other projects. This document aims to provide simple guidance more relevant to public bodies.

1. [State of Nature Partnership, 2023. State of Nature – Wales, online. Available from: State of Nature - Wales.](#)
2. [Support communities to fight climate emergency, says Future Generations Commissioner as he launches call for all councils in Wales to be net zero – The Future Generations Commissioner for Wales](#)
3. [There are additional tools available like the Carbon & Co-benefits decision support tool \(available from Carbon and Co-benefits Decision Support Tool - cast.ac.uk\) or the Denbighshire Well-being Impact Assessment Reports \(available from Well-being Impact Assessment Reports | Denbighshire County Council\)](#)
4. [Ambition North Wales, 2022. Assessing Carbon and Biodiversity Impact for the Growth Deal Portfolio, online. The method summary is available, with the ability for the full method to be requested, from: <https://ambitionnorth.wales/regional-working/carbon-emissions-and-biodiversity/>](#)

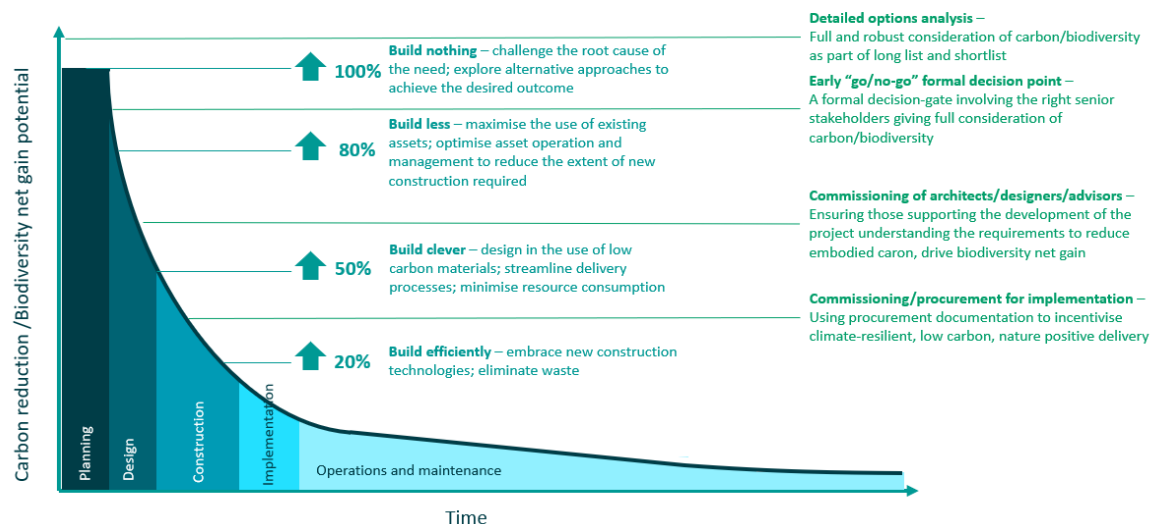


Figure 1 Carbon reduction potential at different project stages. Source: Adapted from the Green Construction Board – Carbon reduction curve

Project/Strategy profile

This guidance is designed for projects of various sizes or development of strategies, and for organisations with varying degrees of understanding for carbon and biodiversity. The main aim of this guidance is to enable project managers and decision-makers to consider carbon and biodiversity consistently and as early as possible in the project development lifecycle.

As Figure 1 describes above, making decisions early is critical for projects to have the biggest impact.

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Target audience for this guidance

This guidance is for the public sector organisations in Wales, specifically:

- Those responsible for designing, delivering and approving projects, including **Senior Responsible Owners (SROs), project directors, project managers and business case practitioners and reviewers.**
- Senior management, scrutiny committees, and boards** with responsibility for approving projects and business cases – for example, directors of finance, planning and procurement and others with responsibility for operational aspects.
- Consultants** undertaking business cases on behalf of the public bodies and for the corresponding officers to check, challenge and assess consultants’ output as an intelligent client .⁶

This guidance ultimately aims to reduce the workload of carbon and biodiversity professionals, mitigate planning issues, avoid expensive retrofit and eliminate optimism bias around environmental impacts. The guidance does so by providing a clear framework that those without technical expertise are empowered to follow. There may be sections or signposted tools which will require input from technical specialists. We recognise that some funders may also have their own requirements, and that different public bodies have different decision-making processes. This guidance therefore has flexibility at its core, and all business case stages can be adjusted across a variety of Welsh business case formats and requirements.

We have sought to make this guidance **simple, based on impact materiality and proportionate based on size of project.**

- To see examples of this in practice for building projects, please visit <https://ukgbc.org/resource-types/case-studies/> and for infrastructure projects, please visit https://www.ice.org.uk/media/vm0nwehp/2023-03-29-pas_2080_guidance_document_april_2023.pdf.
- As defined within functional guidance available from: <https://assets.publishing.service.gov.uk/media/636d0a69d3bf7f164765c22c/Intelligent-Client-roles-Functional-Guidance.pdf>

The guidance recognises that projects formally or informally progress through long listing and short listing stages, to confirm the final option for project delivery. The guidance promotes decision-making in relation to carbon and biodiversity through these critical stages, supporting teams and decision-makers to consider carbon and biodiversity alongside other cost and risk drivers. The guidance aims to support the ability to shape innovative solutions and provide a ‘best practice’ carbon/biodiversity option to test the other options against, driving the change required by national policy. This overall approach can be broadly mapped onto different project development processes using Figure 2. Additionally we note that the flexibility also means public bodies at their own organisational level can customise this guidance to their internal process. To aid this, in Appendix 1, we have provided a checklist for public bodies on how to tailor this approach to their own systems.

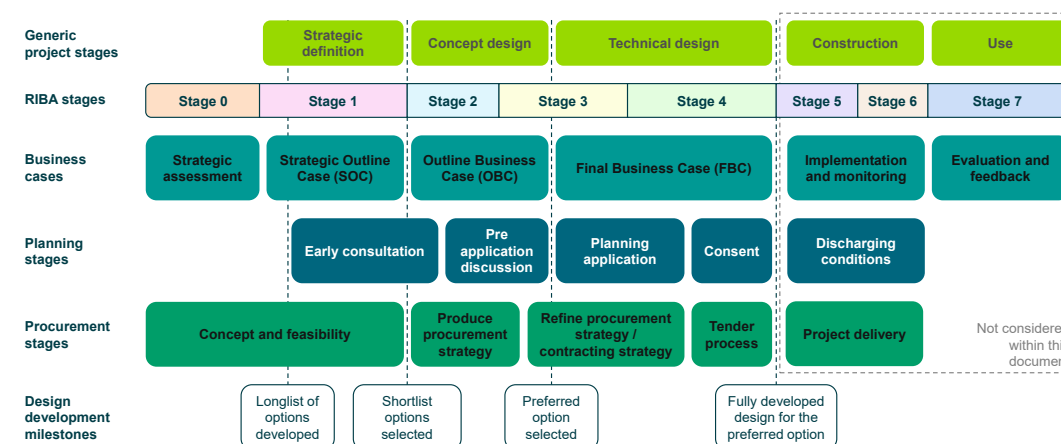


Figure 2: Diagram showing how the different stages of differing business case approaches align (source: Arup)

The **impact materiality**, i.e. the possibility for potential impacts on carbon emissions or biodiversity, is established early in the process. This helps public bodies to progress with the assessment of how projects might affect carbon emissions and/or biodiversity. At this stage, it should be determined in-depth the further assessment need to be based on project size .⁷ This **proportionality** of assessment will primarily be driven by cost thresholds agreed by the public body, and existing governance and approval. These processes should cover matters such as the level of seniority of officer required for final sign-off of the project, the type of documentation used (e.g. business justification versus full business case) and whether requirements, such as carbon emission and/or biodiversity targets, are being driven by an external funder.

In Appendix 2, we have provided links to additional training materials and videos. The appendices also provide guidance on how public bodies can tailor this approach to their own systems.

7. [Acknowledging that all planning applications are required to provide a net benefit for biodiversity regardless of size and scale. Chapter 6 of Planning Policy Wales \(PPW\) 12 states that all schemes applying for planning permission must achieve a Net Benefit for Biodiversity.](#)

2. Carbon

Step 1: Prepare

At the outset, and prior to commencing any assessment, it is important to:

- Gather all relevant information regarding national, regional, and local carbon and climate change strategies, policies, legislation and objectives. This may be done by contacting your organisation’s carbon lead or team.
- Ascertain if the project has any metrics for carbon that it needs to deliver or report. These might be set by the information above, or by funding bodies and their specific requirements.
- Undertake a stakeholder mapping exercise to identify Responsible, Accountable, Consulted and Informed
- (RACI) parties. Ensure you have communication pathways established with these parties early in the process including with the relevant officer covering carbon, for input into the assessment.
- Share the guidance (with specific emphasis on the governance section) in this document with the team or personnel carrying out project management function for inclusion in the ongoing process.

Step 2: Materiality assessment for impact

The first step in assessing the potential impact your project could have on carbon is to undertake a materiality assessment. The materiality of a project, in terms of carbon, is the extent to which the project has the potential to have a significant impact on emissions with the questions in Stage A seeking to help determine that. This may be more likely if your project involves the construction of a building or infrastructure.

If your project is deemed to have the potential to be significant through one or more questions in Stage A, you will be directed to undertake Stage B, which goes into further detail and looks to confirm that your project has the potential to have a significant impact on carbon. It is noted that some projects are mandated to be delivered with minimal or net zero carbon, such as all new Welsh schools⁸. This guidance should support project teams in delivering those outcomes effectively, and to stretch projects to think beyond those mandates (e.g. to embodied as well as operational carbon).

In order to ensure that carbon impacts and opportunities are considered as early as possible in the project, it is suggested that you involve the relevant carbon expert in the materiality assessment. The earlier they are involved, the more likely a positive carbon impact can be achieved for the project.

If your answer is ‘yes’ for any of the questions which direct you to complete the carbon guidance, you should continue to the next step (proportionality) of the guidance.

It is expected that certain projects are likely to have a lower impact on carbon. If you answer ‘no’ to question A.1 or A.2 in Table 1, you are directed to questions A.3 and A.4. These questions seek to understand what kind of project you are undertaking and whether it could still have an impact on carbon, though not one high enough to require this guidance. If you answer ‘yes’ to these questions and you are unsure about how you should reduce carbon, you should speak to the relevant person in the public body covering carbon and climate change (for example, Climate Change Officer⁹, but different public bodies may have different titles) about ways in which you should consider carbon¹⁰.

It is possible that the materiality assessment may indicate you need to undertake the detailed guidance for carbon but not for biodiversity, and vice versa.

8. [Welsh Government Press release: All new schools and colleges in Wales to be net zero carbon](https://www.gov.wales/all-new-schools-and-colleges-wales-be-net-zero-carbon#:~:text=The%20first%20generation%20of%20schools,line%20with%20the%20Welsh%20Government's) <https://www.gov.wales/all-new-schools-and-colleges-wales-be-net-zero-carbon#:~:text=The%20first%20generation%20of%20schools,line%20with%20the%20Welsh%20Government's>
9. [Some public bodies may not have Climate Change Officers or dedicated resource covering carbon or biodiversity. In that instance please review the resource where signposted.](#)
10. [The aim of this guidance is to achieve significant carbon reductions for each project and to get as close to zero carbon as possible. Carbon offsetting will only be considered once the project team have agreed through the correct governance that all avenues for carbon reduction have been exhausted.](#)

Table 1: Carbon materiality assessment

Stage A

A.1	Is your project a building or infrastructure project?	Yes – please complete Stage B sections B.1- B.2
		No – please complete Stage A question A.2
A.2	Will your project cause changes or activities that could significantly increase carbon emissions? E.g. An increase in travel or energy use?	Yes – please complete Stage B sections B.1- B.2
		No – please complete Stage A questions A.3 - A.4
A.3	Does your project involve the purchase of goods and/or the procurement of services?	Yes – You don't automatically need to undertake the in-depth guidance, but you should consider how the supply chain ¹¹ could impact on carbon. You should consider how you can build a requirement for carbon enhancement into procurement requirements during the tender process, and the wider procurement lifecycle.
		No
A.4	Does your project involve the creation of a strategy?	Yes – You don't automatically need to undertake the in-depth guidance, but you should consider how you can build opportunities for carbon reduction into the strategy.
		No

Stage B

B.1	Does your project involve a planning application?	Yes - Please proceed to step 3.
		No
B.2	Does your project include on-site fossil-fuel based generation?	Yes - Please proceed to step 3.
		No
B.3	Will the proposed project be occupied by people for employment or other purpose?	Yes - Please proceed to step 3.
		No
B.4	Will the project be designed to achieve any government mandated or industry-recognised net zero standard/certification?	Yes - Please proceed to step 3.
		No
B.5	Once operational, could the project be classified as "hard-to-decarbonise"?	Yes - Please proceed to step 3.
		No

If you answered 'No' to all of the Stage B questions, you do not need to undertake this guidance further, but we recommend engaging with the relevant carbon professionals in your organisation about ways in which you could still consider reducing carbon impact in your project. You should also confirm with your public body or funder that they agree with your decision to not undertake the guidance.

Step 3: Proportionality assessment

Public bodies should determine for themselves a threshold which defines the size of lower value and higher value projects based on their own existing governance and the considerations in this guidance. For business cases which have been determined as high impact, the next step is to determine whether these are either low or high value. This should be driven by the following:

- Cost of the project
- Governance and approval processes where they exist, considering the level of seniority of officer and/or elected representative required for sign-off
- Type of documentation that would be used in similar cases (e.g. business justification versus full business case)
- External funder requirements

For lower value business cases, we would expect a short business case template (for example, some public bodies would use a business justification template). For the higher value business cases, we would expect a fuller and more detailed format used by the public body. The choice of the format could also be driven by external parties if the business case relates to specific funding sources.

Project teams should also confirm with identified stakeholders in the RACI matrix (for example finance, carbon, procurement teams) and public body / funder that they agree with the determined categorisation of the project as lower / higher value.

With impact and proportionality assessed projects can then be mapped into the following four box grid (see Figure 4).

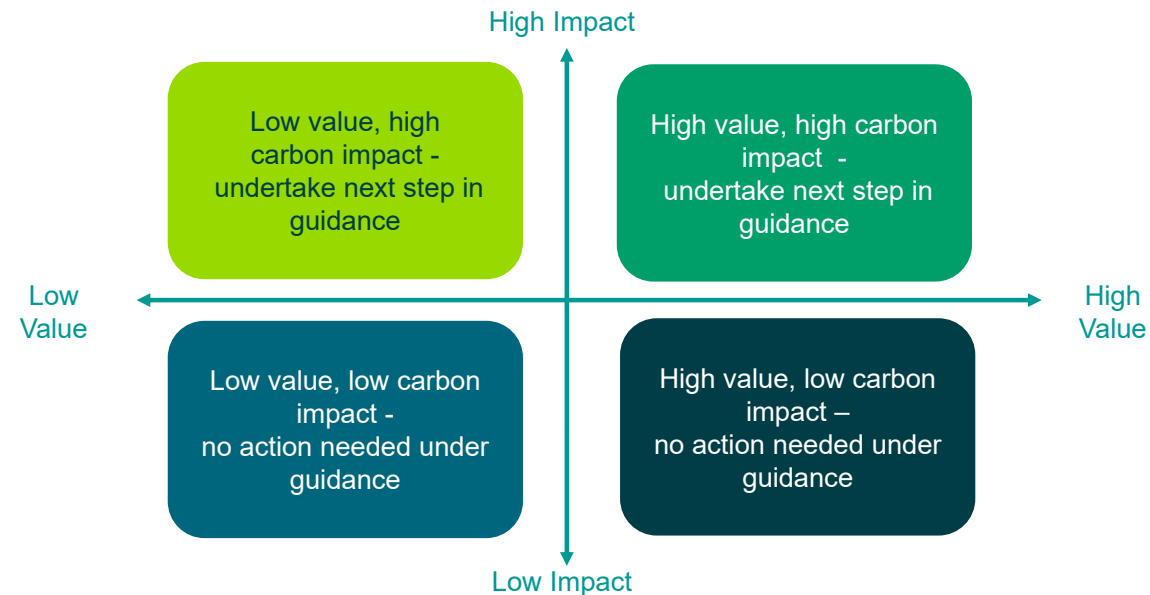


Figure 4 Follow on action from applying carbon materiality assessment and proportionality assessment

11. See [Welsh Procurement Policy Note WPPN 12/21: Decarbonisation through procurement - Addressing CO2e in supply chains](https://www.gov.wales/wppn-12-21-decarbonisation-through-procurement.html) <https://www.gov.wales/wppn-12-21-decarbonisation-through-procurement.html> for support, as well as the WIGA Sustainable Procurement Toolkit referenced in Appendix 3.

Step 4a: High carbon impact assessment for lower value business cases

This section deals with business cases that are under a certain value as ascertained by the relevant public body and have been identified as potentially high impact for carbon through the materiality assessment above.

When to consider: The prompts below should be considered from inception and reviewed for material changes as the project develops.

We appreciate that some smaller value projects will not undertake a full long listing to short listing exercise. In these instances, we recommend that aspects from the long listing and short-listing methodology are combined so that appropriate options are considered – and in particular that net costs and expected benefits/disbenefits are fully understood. We advise that you consult with carbon professionals to help with this if required for your organisation or project.

In considering options we recommend that you refer to the HM Treasury, Welsh Government Guide to developing the project business case¹² and in particular “Step 3 Exploring the preferred way forward” and Actions 6, 7 and 8. What follows is intended to compliment these steps to ensure that full consideration is given to carbon impacts.

Table 2: High carbon impact assessment for lower value business cases

Long list options - Considerations for lower value business case - High impact carbon

1.	Identify relevant national, regional, local and organisational carbon policies, legislation, strategies and/or guidance, including carbon reduction plans, and demonstrate how the project aligns with these. Alignment against these should be considered throughout the business case. Additionally identify the carbon related spending objectives of the project and best practice is for these to be Specific, Measurable, Achievable, Relevant, and Time constrained (SMART) .
2.	Using the boundary associated with the project, and the policy and context review that you have carried out to set a clear boundary for your carbon assessment. The assessment boundary placed around a carbon assessment will determine the scale of quantified emissions associated with the project and should be set to consider as much detail about the project as possible to capture the extent of carbon impact. In some instances, the project may have additional carbon influence beyond the business case boundary (e.g., the displaced grid emissions associated with renewable energy generation). This wider opportunity should be considered in the Strategic Case. Identify greenhouse gases (GHG) related to the project in relation to the boundary set. For example, this might include, during the construction of a project, such as the use of construction machinery fuelled by fossil fuels. Or it would be during the operation of a project, such as the release of GHGs by the operation of a waste to energy plant (i.e. operational scope 1 and 2). It can also be an indirect result, such as the materials and energy required to create materials for building a new school (i.e. embodied scope 3).

12. HM Treasury and Welsh Government, 2018. Guide to Developing The Project Business Cases – Better Business Cases: for better outcomes, online. Available from https://assets.publishing.service.gov.uk/media/66449468ae748c43d3793bb8/Project_Business_Case_2018.pdf

CONTINUED - Long list options - Considerations for lower value business case - High impact carbon	
3.	Carbon related benefits (for example, sequestration of carbon through the creation of new habitats, improved energy efficiency in buildings through retrofitting) and risks (including those which are reputational, financial, or legal) of the project should be identified, and recorded in a risk and opportunities register. The register is a tool to provide an oversight of risks and opportunities, their management and should be reviewed frequently and at every business case stage gateway.
4.	Low-carbon alternative(s) to meeting the needs of the project should be included as standard in the long list developed. For example, for a new building project should include an option that considers maximising, refurbishing or changing the use of existing assets. The potential to reduce the carbon for each option as far as possible should also be evaluated. Reduced embodied emissions in capital infrastructure and buildings can be achieved through (1) informed, earlier build/retrofit/no-build decisions and (2) the integration of lower carbon materials and improved construction processes. To see examples of this in practice, please visit the UK Green Building Council Case Studies website ¹³ for buildings examples and PAS 2080 Guidance Document ¹⁴ for infrastructure examples. Reduced operational emissions can also be achieved through earlier decisions around transport and energy for the lifetime of the project.
5.	Carbon related Critical Success Factors (CSFs) should be identified (including for the supply chain where their contribution is relevant). This is especially key in projects involving procurement where the supply chain will deliver the CSFs and will need to be evaluated against them.
Carbon Assessment – long list comparison Long listing is good practice, even for lower value projects. However, we recognise that for lower value projects it may not be done systematically. If you intend to complete long listing for a lower value project, please follow the long listing guidance on ‘Long list options - Considerations for higher value business case – high impact carbon’ contained within Table 3. Following the creation of your long list, create a qualitative RAG rating for carbon for each long list option. These should be considered as individual options, rather than comparing to one another. They should then be categorised: - Red – Potential negative carbon impact (generation of energy using fossil fuels) - Amber – Somewhat negative carbon impact - Green – No negative or positive carbon impact (the sequestration of carbon through the creation of habitats) Depending on the number of options, there may be multiples of each category. Direct and indirect emissions (i.e. scope 1, 2 and 3) should be considered as part of the scoring. Professional judgement with reasoning for each should be applied to the assessment alongside input from the relevant carbon / climate change team. If you do not intend to complete long listing for a lower-value project, it is still recommended that you consider your critical success factors (CSFs) and undertake the completion of a risk register.	

13. UK Green Building Council, 2024. Case Studies, online. Available from: <https://ukgbc.org/resource-types/case-studies/>

14. Institute of Civil Engineers, 2023. Guidance Document for PAS 2080, online. Available from: https://www.ice.org.uk/media/vm0nwehp/2023-03-29-pas_2080_guidance_document_april_2023.pdf

OUTPUT: Long list of options, risks and opportunities register, critical success factors against which long list will be evaluated, long list RAG rating comparison

Short list options - Considerations for lower value business case – High impact carbon

1.	Undertake a SWOT analysis of the long list options against the CSFs. Arrive at a short list of options detailing: business as usual (BAU), do minimum, preferred way forward and realistic but more ambitious. In addition, document the potential carbon impact across the long list. The below steps should be undertaken for the short list. We recommend one of the short list included a low-impact carbon option.
2.	- Consider economic aspects of the business case: - Identify the benefits and costs of the identified short list from a carbon perspective (are any within/outside the risk tolerance of the organisation?). This should follow the good practice of a baseline carbon assessment (see box below). Depending on the project type, it may be appropriate to use benchmark data on carbon performance at this stage (most likely for building projects). Where this is not possible, a qualitative assessment of the carbon impact, with the advice of carbon specialists, is an alternative. - Identify any business needs / services related to carbon including with SRO and key stakeholders. - Go through commercial, financial and management aspects of the project options with respect to carbon: Commercial – depending on the marketplace for delivery of projects, how do these options perform? Consider how the options for delivery through the supply can be set up so that supplier contracts require delivery against carbon considerations within the project design / specifications Financial – consider the capital and operational costs and benefits for achieving carbon outcomes including delivery of mitigation, its management and monitoring. Management – consider responsibility and resources for implementation of carbon mitigation and management.

OUTPUT: Short list options including preferred way forward, updated risks and opportunities register and economic/commercial/financial implication of carbon for all short listed options.

Preferred / finalised option - Considerations for lower value business case - High impact carbon

1.	Revisit the economic impact, commercial route, financial analysis and management plan from a carbon perspective of preferred route with finalised inputs for benefits and cost. The commercial case implications of carbon requirements should be fed into any procurement strategy with wording in Invitations to Tender (ITTs) and supplier contracts tested to ensure they are in line with project carbon reduction aims. The management plan should consider how any mitigations or enhancements are monitored and managed to deliver the benefits required.
2.	Good practice at this stage will entail quantifying the finalised option for carbon more firmly once the procurement routes and financial aspects are finalised. This will act a project specific baseline, from which progress can be measured. Including the monitoring requirements in your project to assess against this step is also recommended.
3.	Project governance and delivery arrangement including those for realising benefits, management risk and project evaluation arrangements for the preferred options should be set out. How has the project identified key risks and opportunities associated with carbon? How will risks be addressed and opportunities maximised through supply chain delivery? Risks and opportunities should be recorded and updated regularly in the project risk and opportunities register. It is important that these adequately reflect the carbon benefits and risks identified above.

CONTINUED - Preferred / finalised option - Considerations for lower value business case - High impact carbon

GOOD PRACTICE: Baseline carbon assessment of the preferred option

A carbon assessment of the preferred option should be a bottom-up carbon assessment based on the breakdown of material quantities from project specific design information and may need the support of a carbon professional. This information is used to provide an accurate indication of the project’s potential carbon impact. The assessment should cover the full assessment boundary which is aligned to the business case. The boundary of the project should be clearly defined before embarking on the assessment. The assessment boundary will determine the scale of quantified emissions associated with the project and should be set to consider as much detail about the project as possible to capture the extent of carbon impact. Certain projects may choose to split the assessment up based on projects phases and / or elements. It is acknowledged that certain gaps may exist where suitable data sources are not present. Best efforts should be made to fill the gaps and a clear record of any scoped out items or activities should be made.

Appendix 3 contains references for carbon assessment tools which are relevant to different types of projects and which you could undertake at this stage. The below summary table is an example of the data you can expect to be produced by these assessments.

Study period		Years	
The preferred option			Notable exclusions/assumptions
Upfront embodied carbon		tCO ₂ e	
Use stage embodied carbon		tCO ₂ e	
End of life embodied carbon		tCO ₂ e	
Operational carbon		tCO ₂ e	
Total impact		tCO ₂ e	tCO ₂ e/£ cost*
Total monetised carbon impact		£0.00	

OUTPUT: A finalised option with firmed up commercial, financial and economic impacts (including with respect to carbon).

Note: If benefit cost ratios are being constructed its recommended that carbon impacts are included as per the above quantifi cation. If a more qualitative assessment is being used, then we recommend considering them alongside socio-economic impacts.

Step 4b - High carbon impact assessment for higher value business cases

This section deals with business cases that are above a certain value for public bodies projects and have been identified as potentially high impact for carbon through the materiality assessment above.

When to consider: The prompts below should be asked with progressive degree of depth and quantification as the project moves from inception, long listing, short listing and to preferred option as mapped into your own business case process using Figure 3.

Table 3: High carbon impact assessment for higher value business cases

Long list options - Considerations for higher value business case - High impact carbon

1.	Identify relevant national, regional, local and organisational carbon policies, legislation, strategies and guidance, including carbon reduction plans, and demonstrate how the project aligns with these policies and strategies. Alignment against these should be considered throughout the business case. Additionally identify the carbon related spending objectives of the project and best practice is for these to be Specific, Measurable, Achievable, Relevant, and Time-constrained (SMART) .
2.	Using the boundary associated with the project, and the policy and context review that you have carried out to set a clear boundary for your carbon assessment. The assessment boundary placed around a carbon assessment will determine the scale of quantified emissions associated with the project and should be set to consider as much detail about the project as possible to capture the extent of carbon impact. In some instances, the project may have additional carbon influence beyond the business case boundary (e.g., the displaced grid emissions associated with renewable energy generation). This wider opportunity should be considered in the Strategic Case. Identify greenhouse gases (GHG) related to the project in relation to the boundary set. For example, this might include, during the construction of a project, such as the use of construction machinery fuelled by fossil fuels. Or it would be during the operation of a project, such as the release of GHGs by the operation of a waste to energy plant (i.e. operational scope 1 and 2). It can also be an indirect result, such as the materials and energy required to create materials for building a new school (i.e. embodied scope 3).
3.	Carbon related benefits (for example, sequestration of carbon through the creation of new habitats, improved energy efficiency in buildings through retrofitting) and risks (including those which are reputational, financial, or legal) of the project should be identified, and recorded in a risk and opportunities register. The register is a tool to provide an oversight of risks and opportunities, their management and should be reviewed frequently and at every business case stage gateway.

CONTINUED - Long list options - Considerations for higher value business case - High impact carbon	
4.	Low-carbon alternative(s) to meeting the needs of the project should be included as standard in the long list developed. For example, for a new building project should include an option that considers maximising, refurbishing or changing the use of existing assets. The potential to reduce the carbon for each option as far as possible should also be evaluated. Reduced embodied emissions in capital infrastructure and buildings can be achieved through (1) informed, earlier build/retrofit/no-build decisions and (2) the integration of lower carbon materials and improved construction processes. To see examples of this in practice, please visit the UK Green Building Council Case Studies website ¹⁵ for buildings examples and PAS 2080 Guidance Document ¹⁶ for infrastructure examples. Reduced operational emissions can also be achieved through earlier decisions around transport and energy for the lifetime of the project.
5.	Carbon related Critical Success Factors (CSFs) should be identified (including for the supply chain where their contribution is relevant). This is especially key in projects involving procurement where the supply chain will deliver the CSFs and will need to be evaluated against them.
6.	A high level qualitative (e.g., high, medium, low) analysis of the ability of the supply chain to deliver on identified carbon targets, or contribute to, the identified targets should be conducted. It is particularly important where projects are exclusively procurement based (e.g., only involve the purchase of equipment, without associated development) or which will involve options that rely on a supply chain partner to achieve the critical success factors (e.g., design and build solutions). Carbon reduction plans can also help with this analysis.
Carbon Assessment – long list comparison Following the creation of your long list you should complete an options appraisal considering the scope, solution, delivery, implementation and funding options (in consultation with a carbon specialist). This will enable you to identify your long list of options. As part of this you may want to create a qualitative rating for carbon for each long list option, this should follow the approach used in your organisation, with the example below following a RAG approach. These should be looked at as individual options when considering the carbon impact, rather than comparing them to one another. They should be categorised: - Red – Potential negative carbon impact (generation of energy using fossil fuels) - Amber – Somewhat negative carbon impact - Green – No negative or positive carbon impact (the sequestration of carbon through the creation of habitats) Depending on how many options you have there may be multiples of each colour. Consider direct and indirect emissions as part of your scoring. For example, an option with a red carbon impact might involve the generation of energy using fossil fuels whereas a green beneficial impact might be the sequestration of carbon through the creation of habitats. You should base your assessment on professional judgement with reasoning for each. Ask the relevant person in your carbon / climate change team for input if required. This assessment should be synchronised while considering the seven wellbeing goals (prosperous, resilient, healthier, more equal, cohesive communities, vibrant culture and thriving Welsh language and globally responsible) as defined under the Well-being of Future Generations Act (Wales) 2015. ¹⁷	

15. UK Green Building Council, 2024. Case Studies, online. Available from: <https://ukgbc.org/resource-types/case-studies/>

16. Institute of Civil Engineers, 2023. Guidance Document for PAS 2080, online. Available from: https://www.ice.org.uk/media/vm0nwehp/2023-03-29-pas_2080_guidance_document_april_2023.pdf

17. This assessment should be synchronised while considering the seven wellbeing goals (prosperous, resilient, healthier, more equal, cohesive communities, vibrant culture and thriving Welsh language and globally responsible) as defined under the Wellbeing of Future Generations Act (Wales) 2015.

CONTINUED - Long list options - Considerations for higher value business case - High impact carbon		
Long list options	Carbon impact RAG	Explanation and reasoning
Option A	RAG rating	
Option B	RAG rating	
Option C	RAG rating	
Etc.		
OUTPUT: Long list of options, risks and opportunities register, critical success factors against which long list will be evaluated, long list RAG rating comparison		
Short list options - Considerations for higher value business case - High impact carbon		
1.	Review: - The carbon related risks in the risks and opportunities register. - Revisit current alignment with your project aims and objectives, particularly in regard to carbon and any targets associated with carbon. - Ensure no material changes have occurred that can impact the analysis in previous steps. - Update the RAG assessment, if needed to re-evaluate options as red, green or amber.	
2.	Undertake a SWOT analysis of the long list options against the CSFs. Arrive at a short list of options detailing: business as usual (BAU), do minimum, preferred way forward and realistic but more ambitious. In addition, document the potential carbon impact across the long list. The below steps should be undertaken for the short list. We recommend one of the short list included a low-impact carbon option.	
3.	(Economic) Identify key risks and opportunities associated with carbon and also indicative benefits and cost ratios for the options. The aim should be to quantify as much as possible so that value for money can be fully considered. Note: If Benefit cost ratios are being constructed its recommended that carbon impacts are included as per the suggested quantification below. If a more qualitative assessment is being used, then we recommend considering them alongside socio-economic impacts and feeding this into the risk assessment. <i>Any quantification should consider carbon cost impacts related to offsetting or other requirements.</i>	

CONTINUED - Short list options - Considerations for higher value business case - High impact carbon

4.	(Commercial) Undertake market engagement on the market's ability to meet or contribute towards identified carbon targets. It should be noted that carbon impact is embedded through the value chain. As part of this, the supply chain has a role, and the means to, support improvement and the development of carbon-saving opportunities. A high level qualitative (e.g., high, medium, low) analysis of the ability of the supply chain to deliver, or contribute to, the identified targets should be conducted for all projects. It is particularly important where projects are exclusively procurement based (e.g., only involve the purchase of equipment, without associated development) or which will involve options that rely on a supply chain partner to achieve the critical success factors (e.g., design and build solutions). Ensure supplier contracts require delivery against carbon considerations within the project design / specifications. This exercise may also help inform consideration of the project costs, benefits and risks. If relevant, the identified targets need to be clearly communicated to all involved stakeholders to ensure all parties are committed to meeting them. Access to carbon reduction plans as a means to test and assess market's ability. Ensure supplier contracts require delivery against carbon considerations within the project design / specifications.
5.	(Financial) Identify the project's financial requirements for carbon – for example, an agreed sum for carbon offsetting dependent on policies around this. The ability to identify the cost associated with carbon allows for the comparison between projects and programmes, as well as enabling a monetary understanding of potential impact.
6.	(Management) Identify the project's management requirements or interventions for carbon in the delivery of the project. E.g. where a project will depend on the delivery partner for successful delivery of project. Ensure contracts include clauses that require delivery of carbon considerations within project.
7.	Identify risk mitigation and opportunity maximisation strategies. Update the risks and opportunities register and consider whether any options are outside the risk tolerance of the organisation . ¹⁸
8.	Is a benchmark assessment for carbon possible for the project? If you need advice on completing the assessment, or it is not possible to complete the assessment, speak to the relevant person in your carbon / climate change team. See below for carbon assessment summary table.

18. For examples of carbon impact reduction in built infrastructure see the Promoting Net Zero Carbon and Sustainability in Construction (UK GOV, 2022) and PAS 2080 Carbon management in buildings and infrastructure (BSI, 2023).

CONTINUED - Short list options - Considerations for higher value business case - High impact carbon

Carbon Assessment - benchmark assessment

A benchmark assessment aims to quantify the carbon impact of each short list option. The assessment should be focused on developing an indication of scale, as opposed to a highly accurate, granular assessment which would be challenging at this stage. The assessment will aim to cover all lifecycle stages of the project, where possible, with exclusions noted for any parts of the project that have a reduced scope.

The data inputs into the assessment should be derived from project data and based on actual estimates wherever possible. This assessment should look to use the following data sources:

- Industry benchmarks (publicly available building benchmarks and/or Civil Engineering Standard Method of Measurement, Fourth Edition (CESMM4).
- Previous project data scaled up or down accordingly to suit the proposed project.
- Carbon sensitivity metrics for procured goods or services.

It is acknowledged that certain gaps may exist where suitable data sources do not exist. However, best efforts should be made to fill the gaps and a clear record of any scoped out items or activities should be made to enable robust decision-making based on consistent assumptions.

Appendix 3 contains references for carbon assessment tools which are relevant to different types of projects and which you could undertake at this stage. The below summary table is an example of the data you can expect to be produced by these assessments.

Project lifespan			years	
Option [X]				Notable exclusions/assumptions
	Embodied impact		tCO ₂ e	
	Operational impact		tCO ₂ e	
	Total impact (embodied and operational)		tCO ₂ e	
	Total monetised carbon impact		£0.00	

CONTINUED - Short list options - Considerations for higher value business case - High impact carbon

9. Is a RAG rating assessment of the long list possible? See the template table example below.

Carbon Assessment - RAG rating assessment

The RAG rating assessment should be undertaken by members of the project team with some carbon experience or the relevant person in your carbon / climate change team.

It looks to apply a RAG rating to the embodied and operational carbon and the carbon impact beyond the boundary values identified from the benchmark assessment, thereby creating a visual summary comparison of each option against the others. Appendix 3 contains references for carbon assessment tools which are relevant to different types of projects and which you could undertake at this stage. The below summary table is an example of the data you can expect to be produced by these assessments.

Option	Type of RAG rating	RAG rating	Explanation
Option A	Embodied RAG rating	<i>Insert RAG rating</i>	
	Operational RAG rating	<i>Insert RAG rating</i>	
	Impact beyond the boundary RAG rating	<i>Insert RAG rating</i>	
Option B	Embodied RAG rating	<i>Insert RAG rating</i>	
	Operational RAG rating	<i>Insert RAG rating</i>	
	Impact beyond the boundary RAG rating	<i>Insert RAG rating</i>	
Option C	Embodied RAG rating	<i>Insert RAG rating</i>	
	Operational RAG rating	<i>Insert RAG rating</i>	
	Impact beyond the boundary RAG rating	<i>Insert RAG rating</i>	

OUTPUT: Short list option including preferred way forward, updated risks and opportunities register and economic / commercial / financial implication of carbon for all short listed options. Quantified carbon impacts to help decide the preferred option and be used in rationalising way forward.	
Preferred option - Considerations for higher value business cases - High impact carbon	
1.	Review: - The carbon related risks and opportunities register and revisit how risks are being addressed and opportunities maximised. - The current alignment with the project aims and objectives in regard to carbon. - Ensure no material changes have occurred that can impact the analysis in previous steps.
2.	Review the release of GHG by the project again, following your response to this question in the long listing section. Set out as much detail as possible around the preferred option with respect to GHG emissions.
3.	(Economic) Reconfirm economic appraisal of the carbon impacts / opportunities, costs and/or benefits and its inclusion in the business case for the preferred option.
4.	(Commercial) Revisit key risks and opportunities associated with carbon and supply chain delivery for preferred option. Add details around how the tender and the contract could help achieve carbon goals and any contractual and key commercial requirements in relation to carbon.
5.	(Financial) Reconfirm the project’s financial requirements for carbon ensuring that any cash releasing benefits arising from reduced energy costs are included alongside the project costs
6.	(Management) Reconfirm and detail additional information related to the management of carbon for the preferred option. This should including plans for how benefits will be realised, risks managed and the plans for monitoring and evaluation all of which should be tailored to reflect the carbon issues identified.
7.	Undertake a carbon assessment of the preferred option.

CONTINUED - Preferred option - Considerations for higher value business cases - High impact carbon

Carbon Assessment - carbon assessment of the preferred option

A carbon assessment of the preferred option should be a bottom-up carbon assessment and may need the support of a carbon professional.

It should be based on the breakdown of material quantities from project specific design information. This information is used to provide an accurate indication of the project’s potential carbon impact. The assessment should cover the full assessment boundary which is aligned to the business case. The boundary of the project should be clearly defined before embarking on the assessment. The assessment boundary will determine the scale of quantified emissions associated with the project and should be set to consider as much detail about the project as possible to capture the extent of carbon impact. Certain projects may choose to split the assessment up based on projects phases and / or elements. It is acknowledged that certain gaps may exist where suitable data sources do not exist. However, best efforts should be made to fill the gaps and a clear record of any scoped out items or activities should be made.

Appendix 3 contains references for carbon assessment tools which are relevant to different types of projects and which you could undertake at this stage. The below summary table is an example of the data you can expect to be produced by these assessments.

Study period		Years	
The preferred option			Notable exclusions/assumptions
Upfront embodied carbon		tCO ₂ e	
Use stage embodied carbon		tCO ₂ e	
End of life embodied carbon		tCO ₂ e	
Operational carbon		tCO ₂ e	
Total impact		tCO ₂ e	tCO ₂ e/£ cost*
Total monetised carbon impact		£0.00	

*Provide normalised impact

OUTPUT: A preferred option with associated detailed economic and financial implications as well as detailed assessment of commercial route and management options.

Finalisation of option stage for higher value business cases – High impact carbon

1.
- Review:

 - The carbon related risks and opportunities register and the current alignment with the project aims and objectives in regard to carbon.
 - Revisit the carbon assessment of the preferred option.
 - Check there are no material changes that could impact the analysis in previous steps.

CONTINUED - Finalisation of option stage for higher value business cases – High impact carbon

2.	Review the release of GHG by the project again, following your response to this question in the long listing section. During the finalisation of the option, can more detail now be set out around this?
3.	(Economic) Does the finalised option have the relevant information relating to carbon costs and benefits, confirmed by the potential suppliers and/or delivery partners and benefit owners, including that the project has the necessary funds and authority to proceed?
4.	(Commercial) - Outline how carbon has been included within proposed procurement requirements, tender specifications, evaluation criteria and proposed contract. - If there are any requirements for the supply chain partners to complete required carbon assessments, are these contractual requirements with appropriate monitoring and evaluation?
5.	(Financial) Have any capital and revenue implications been confirmed and/or included in the financial case in relation to carbon? This should include those identified through supply chain feedback, contractual arrangements and any long term financial management arrangements for carbon solutions.
6.	(Management) - Is the project planned to deliver against identified carbon targets? - Has the project's project plan accounted for the delivery time and resource (financial or otherwise) required for any carbon interventions, including those delivered by supply chain partners?
7.	How have key risks relating to carbon risk been/will be addressed and opportunities maximised in project delivery?

OUTPUT: A finalised option with finalised benefits and cost, commercial route, financial costs and management plan with respect to carbon that will be subject to a go / no go by decision makers.

3. Biodiversity



Step 1: Prepare

At the outset, and prior to commencing any assessment, it is important to:

- Gather all relevant information regarding national, regional, and local biodiversity strategies, policies, legislation and objectives. This may be done by contacting a biodiversity professional or ecologist.
- Ascertain if the project has any metrics for biodiversity that it needs to deliver or report (includes consideration of local metrics such as habitat compensation ratios defined in Local Development Plan Supplementary Planning Guidance as well as Planning Policy Wales's tree replacement ratio¹⁹). These might be set by the information above, or by funding bodies and their specific requirements.
- Undertake a stakeholder exercise to identify Responsible, Accountable, Consulted and Informed (RACI) parties. Ensure you have communication pathways established with these parties early in the process, including with the relevant officer covering biodiversity²⁰ for input into the assessment.
- Share the guidance (with specific emphasis on the governance section) in this document with the team or personnel carrying out project management function for inclusion in the ongoing process.

Step 2: Materiality assessment for impact

The first step in assessing the potential impact your project could have on biodiversity is to undertake the below:

materiality assessment²¹. The materiality of a project in terms of biodiversity means the extent to which the project has a negative or positive impact on biodiversity²² and the questions in Stage A of this step aim to determine that. If your project is deemed to have the potential to be significant through one or more questions in Stage A, you will be directed to undertake Stage B, which goes into further detail regarding specific aspects of biodiversity which could be impacted. It is unlikely at this stage that the detailed nature of effects, and or significance of effects on biodiversity from projects can be assessed, in the absence of detailed biodiversity baseline information and project description including construction methodologies. This guidance should support project teams in delivering those outcomes effectively, and to stretch projects to think beyond those mandates.

19. Welsh Government are in the process of considering further requirements of NBB under DECCA framework which may require further consideration of habitat compensation ratios

20. Some public bodies may not have dedicated resource covering biodiversity. In that instance, please review the resource where signposted.

21. Please note that this should be undertaken in parallel with planning requirements which may stipulate mandatory biodiversity requirements.

22. The assessment of materiality in terms of biodiversity is provided as an indicative guide to those projects are likely to have a significant impact on biodiversity. However, these are not exhaustive (especially where the presence of rare habitats / species is noted). Projects should be reviewed for their impacts to biodiversity by a suitably qualified ecologist.

In order to ensure that biodiversity impacts and opportunities for biodiversity enhancements are considered as early as possible in the project, it is suggested that you involve the relevant person in your public body, who is covering biodiversity, in the materiality assessment of the project. The earlier they are involved, the more likely a positive biodiversity impact can be achieved for the project.

If your answer is ‘yes’ for any of the questions in Stage A, you will be directed to complete the checklist within Stage B and also further biodiversity guidance, set out within steps 3 and 4 of this section.

If you answer ‘yes’ to any of the questions within Stage A and you are unsure about how you should improve biodiversity, you should speak to the relevant person in the public body covering biodiversity for further advice²³. Effects will need to be considered for offsite biodiversity as well as onsite biodiversity in some cases. Where there are negative impacts to biodiversity, measures should be taken to follow the stepwise approach (avoid, then minimise, then mitigate, and as a last resort compensate with enhancements being provided at each stage). It is important to note that all projects, including those without negative impacts to biodiversity, should aim to provide biodiversity enhancements and where projects require planning, the delivery of a **Net Benefit for Biodiversity** is a material consideration.

It is possible that the materiality assessment may indicate you need to undertake the impact guidance for biodiversity but not for carbon and vice versa.

Table 4: Biodiversity materiality assessment		
Stage A		
A.1	Does your project result in site work which would have a potential direct and or indirect impact to designated sites, notable/protected habitats and or species within the UK? Project works may result in harmful activities onsite and or offsite including habitat loss/ and or degradation (such as changes to air, water and soil quality) as well as disturbance or harm to species. Impacts to buildings/structures as well as semi-natural habitats²⁴ will need to be considered (both greenfield and brownfield sites).	Yes – please complete Stage B (sections B.1- B.25) and confirm if there is likely to be either no/negligible impact on biodiversity or that there is a negative biodiversity impact, which is yet to be quantified²⁵. The public body officer covering biodiversity will need to confirm this assessment i.e. whether there is likely to be an impact to biodiversity and advise on ways to avoid impacts for example through alternative siting etc. Where there are potential impacts, further biodiversity baseline surveys may be required to allow the impacts to be quantified. Biodiversity surveys can be seasonally constrained and so consultation with an ecologist will be required to determine potential impacts to project programmes²⁶.
		No – where negative impacts to biodiversity are unlikely, the officer covering biodiversity, should still be consulted to confirm this and to review opportunities for enhancements particularly where projects require planning consent. Planning applications will need to demonstrate the delivery of enhancements which are proportionate to the scale and nature of the development.
A.2	Does your project involve the purchase of goods and/or procurement of services which may impact biodiversity locally, nationally or globally?	Yes – You should consider how the supply chain may have positive or negative impacts on biodiversity and how can biodiversity protection and enhancement measures be built into the procurement process through contractual means. If of significant scale or impact to biodiversity, the officer covering biodiversity, should be consulted to review opportunities for biodiversity.
		No²⁷.

23. [Some public bodies may not have dedicated resource covering carbon or biodiversity. In that instance, please review the resource where signposted.](#)

24. [Semi-natural habitat could include grasslands, scrub, woodlands, wetland habitats and or open mosaic habitats etc and may be present within either greenfield or brownfield sites.](#)

25. [Further biodiversity baseline information as well as project description including construction methodology is likely required to quantify the nature of any impacts to biodiversity.](#)

26. [For further details of examples of activities that can generate ecological impacts refer to CIEEM Ecological Impact Assessment \(EclA\) guidance \(box 9\): EclA-Guidelines-v1.3-Sept-2024.pdf and or Supplementary Planning Guidance on Biodiversity, which should be available on the relevant Local Authority website.](#)

27. [Should TNFD become mandatory or is required through plans or projects further investigation may be required.](#)

CONTINUED - Stage A		
A.3	Does the creation of your strategy have a direct or indirect impact on biodiversity?	Yes – You should consider how you can build opportunities for biodiversity protection and enhancement into the strategy. If of significant scale or impact to biodiversity the officer covering biodiversity, should be consulted to review opportunities for biodiversity.
		No - consider opportunities for biodiversity enhancements to be integrated into the strategy which may provide multi-benefits .
If you answered ‘no’ to all the above questions in Stage A, it is unlikely your project will have an impact on biodiversity,and you do not need to undertake the biodiversity guidance (i.e. the proportionality assessment). Where there is likely to be an impact on biodiversity, Stage B questions should be considered before proceeding to Step 3.		
Stage B		
B.1	Does your project require a planning application?	Yes – it is possible that you may be required to fulfil certain biodiversity criteria set by the planning process. Please speak to a relevant biodiversity specialist.
		No – review remaining Stage B questions. Biodiversity still needs to be considered where there is the potential for a negative i mpact.
B.2	Has a red line boundary and potential study area (for project, plans and or strategy) been defined, to facilitate further biodiversity assessment ²⁸ ?	Yes
		No - this will be important to determine to inform further studies relating to biodiversity. The study area will vary for different ecological features such as designated sites, habitats and species. This will need to be advised by a biodiversity specialist.
B.3	Has a biodiversity specialist or similar been engaged to provide biodiversity advice, to inform development as well as advise on how biodiversity can be considered during procurement stages and or within strategies.	Yes
		No - it is important to engage a biodiversity specialist as early as possible in the project programme to provide advice.
B.4	Has biodiversity baseline data been collated to inform any assessment of biodiversity impacts – either through a desk study exercise and or ecological surveys ²⁹ required to inform appraisals/assessments such as Preliminary Ecological Appraisal (PEAs) and Ecological Impact Assessments (EclAs),	Yes
		No - the level of information collated and type of surveys and further assessment will depend on the nature of the project and likely impacts, and will be informed by a biodiversity specialist. The amount of detailed survey information required will relate to the stage of a project and the likely impacts on biodiversity. For example, initial high-level data obtained through an online desk study exercise, and reporting within a PEA is usually required at earlier stages of a project and more detailed species surveys and EclAs are required at later stages of a project. Note: Biodiversity surveys can be seasonally constraints and so consultation with an ecologist will be required to determine potential impacts to project programmes.
If answered and addressed, where relevant, all of Stage B questions, you can proceed to Step 3 and Step 4.		

28. Acknowledging this may need to be updated at later stages of the project

29. Noting seasonal constraints of ecological surveys which will vary for different species/habitat type.

Step 3: Proportionality assessment: biodiversity

Public bodies should determine for themselves a threshold which defines the size of lower value and higher value projects based on their own existing governance and the considerations in this guidance. For high impact business cases, whether the project is defined as lower value business case, or a higher value business case should be driven by the following:

- **Cost of the project**
- **Governance and approval processes** where they exist, considering the level of seniority of officer and/or elected representative required for sign-off
- **Type of documentation** that would be used in similar cases (e.g. business justification versus full business case)
- **External funder requirements**
- **Planning consent**

For lower value business cases, we would expect a short business case template (example, some public bodies would use a business justification template). For the higher value business cases we would expect a fuller, more detailed format used by the public body. The choice of the format could also be driven by external parties if the business case relates to specific funding sources.

High value business case projects will likely require planning consent and therefore there will be specific requirements for biodiversity to ensure alignment with planning policy and legislation, as set out in step 4b. Where planning consent isn't required i.e. for lower value business case projects biodiversity considerations are outlined in 4a, in line with legislation and best practice. However, there may be some exclusions from this generalisation where there is the potential for impacts to biodiversity through plans, projects and strategies that might be not be direct or obvious from the onset. Following the questions in Stage A and B in Step 2 should help guide thinking in this area, and the engagement of the relevant person in the public body covering biodiversity and or an ecological specialist.

Project teams should also confirm with identified stakeholders in the RACI (example finance, biodiversity, procurement teams) and public body / funder that they agree with the determined categorisation of the project as lower / higher value.

With impact and proportionality assessed projects can then be mapped into the following four box grid (see Figure 5).

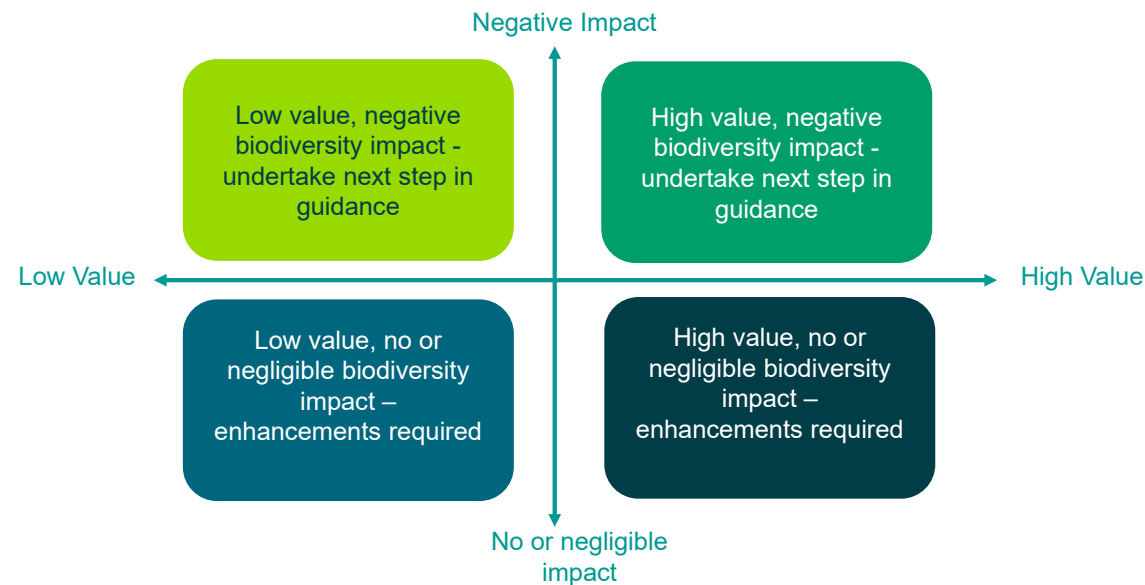


Figure 5 Follow on action from applying biodiversity materiality assessment and proportionality assessment

Case Study

Denbighshire Council identified that the earliest project decisions often derive from organisational strategies. As such they wanted to consider whether an assessment of carbon and biodiversity impact could support effective decision making as part of the development of a council strategy. In line with the rest of the methodology it was an assessment they conducted in house and without the need for external expertise

While still experimental they are happy to share their early learning from this work in case it would be of use and interest to other councils.



Step 4a: Biodiversity impact assessment for lower value business cases

This section deals with business cases that are under a certain value as ascertained by the relevant public body and have been identified as potentially negative impact on biodiversity through the materiality assessment above, and which do not require planning consent and could fall under permitted development and / or impacts on biodiversity are not obviously considered to be of higher potential.

When to consider: The prompts below should be considered from inception and reviewed for material changes as the project develops.

We appreciate that some smaller value projects will not undertake a full long listing to short listing exercise. In these instances, we recommend that aspects from the long and short listing methodologies are combined so that appropriate options are considered – and in particular that net costs and expected benefits/disbenefits are fully understood. We advise that you consult with carbon and biodiversity professionals to help with this if required for your organisation or project.

In considering options we recommend that you refer to the HM Treasury, Welsh Government Guide to developing the project business case¹⁷ and in particular “Step 3 Exploring the preferred way forward” and Actions 6, 7 and 8. What follows is intended to compliment these steps to ensure that full consideration is given to biodiversity impacts.

Table 5: Biodiversity impact assessment lower value business case	
Long list - Considerations for lower value business case - Impact on biodiversity	
1.	Identify relevant national, regional, local and organisational biodiversity policies, legislation, strategies and/or guidance and demonstrate how the project aligns with these. Alignment should be reviewed throughout the business case. This will include the Environment (Wales) Act and the Well-being of Future Generations Act, as well as PPW. Key policies and frameworks set out in PPW include the stepwise approach, and delivery of Net Benefit for Biodiversity as well as Local Biodiversity Action Plans or updated Local Nature Recovery Plans. Compensation ratios may need to be considered where they are applicable, for example where trees and woodland are present, loss will need to be compensated for at a replacement ratio of 3:1, and Local development plans and or supplementary planning guidance may require the compensation of habitats at a particular ratio. Consideration of planning policy will be mandatory, where planning consent is required, which is anticipated for high value business case projects. A review of new policies, legislation and or guidance should be undertaken at the time of this assessment, to determine if any updates have been published. For example, it is expected that further guidance on the delivery of Net Benefit for Biodiversity will be published sometime in 2025. Additionally identify the biodiversity related spending objectives of the project and where possible these should be Specific, Measurable, Achievable, Relevant, and Time constrained (SMART).

Long list - Considerations for lower value business case - Impact on biodiversity	
2.	It is most likely that detailed biodiversity information is not available at this stage and or is not relevant, depending on the type of site project. Step 2 and 3 should have provided the materiality and proportionality of the potential biodiversity impact. Where these steps have identified potential biodiversity impacts additional biodiversity information may be required to inform the long listing process and RAG rating process. Existing ecological data (desk study and or PEA) may be available and should be sought to inform the process. Impacts and the ability to deliver biodiversity enhancements will be dependent on the biodiversity present on site and potentially offsite, as well as the nature and location of the project. Potential biodiversity impacts and enhancements could be assessed, even if at a high level to inform the long listing process. Any impact assessments should be undertaken by an experienced and suitably qualified ecologist.
3.	Identify opportunities for the provision of enhancements to different ecological features, and provision of an overall positive biodiversity outcome. Confirm where there are no opportunities for biodiversity enhancements. Biodiversity related opportunities (for example, the creation of new habitats which provide multiple ecosystem services ³⁰) and risks (example, reputational, financial, or legal) of the project should be identified and recorded in a risk and opportunities register. The register is a tool to provide an oversight of risks and opportunities, their management and should be reviewed frequently and at every business case stage gateway. Identify any risks that are outside the organisation’s risk tolerance.
4.	Alternative approaches to meeting the needs of the project should be identified which avoid or minimise impacts to biodiversity (including through the consideration of circular economy principles). For example, maximising, refurbishing or changing the use of existing assets, re-siting development to areas with no or minimal biodiversity and or timing project works to avoid disturbance impacts to sensitive species. Biodiversity impacts as far as possible for each option should be evaluated.
5.	Biodiversity related Critical Success Factors (CSFs) should be identified (including for the supply chain where relevant). This is especially key in projects involving procurement where the supply chain will deliver the CSFs and will need to be evaluated against them.
Biodiversity Assessment – RAG rating Long listing is good practice, even for lower value projects. However, we recognise that for lower value projects it may not be done systematically. If you intend to complete long listing for a lower value project, please follow the long listing guidance on ‘Long list options - Considerations for higher value business case – impact on biodiversity’ contained within Table 6. Following the creation of your long list, create a qualitative RAG rating for biodiversity for each long list option. These should be considered as individual options, rather than comparing to one another. They should then be categorised: If you do not intend to complete long listing for a lower-value project, it is still recommended that you consider your critical success factors (CSFs), and undertake the completion of a risk register. Red – Potential negative biodiversity impacts and with no opportunities to deliver biodiversity enhancements Amber – Somewhat negative impacts and with limited opportunities to deliver biodiversity enhancements Green – No negative impacts and with potential to deliver biodiversity enhancements or known biodiversity enhancements. Depending on the number of options, there may be multiples of each category. Professional judgement with reasoning for each should be applied to the assessment alongside input from the relevant biodiversity team.	

30. For example, provision of public access to areas for biodiversity would be considered an additional ecosystem service. Any access would need to be assessed to ensure biodiversity is protected.

OUTPUT: Long list of options, risks and opportunities register, critical success factors against which long list will be evaluated, RAG rating

Short list - Considerations for lower value business case - Impact on biodiversity

1.	If through the RAG rating process gaps of ecological information are identified, consultation with the Local Authority officer covering biodiversity, to determine if additional desk study exercises and or surveys are needed to inform this stage. Surveys may be seasonally constrained, and will need to follow specific survey guidelines. Confirm the study area needed for ecology surveys – a larger area may be needed at this stage to cover multiple options.
2.	Update the RAG assessment, if needed to re-evaluate options as red, green or amber
3.	Undertake a SWOT analysis of the long list options against the CSFs. Arrive at a short list of options detailing: business as usual (BAU), do minimum, preferred way forward and realistic but more ambitious. In addition, document the potential biodiversity impact across the long list. The below steps should be undertaken for the short list. We recommend one of the short list included a low impact biodiversity option.
4.	- Consider economic aspects of the business case: - Identify the indicative benefits and costs of the identified short list from a biodiversity perspective (are there any within the risk tolerance of the organisation?). - Identify any business needs / services related to biodiversity including with SRO and key stakeholders. - Go through commercial, financial and management aspects of the project options with respect to biodiversity: Commercial – if depending on the marketplace for delivery of projects how do these options perform? It should be noted that biodiversity impact is embedded through the value chain, as demonstrated by the Taskforce on nature-related financial disclosures³¹. As part of this, the supply chain has a role, and the means to support improvement and the development of biodiversity opportunities. Ensure supplier contracts require delivery against biodiversity considerations within the project design / specifications Financial – consider the capital and operational costs for achieving biodiversity outcomes including delivery of mitigation and its long term management and monitoring. Management – consider responsibility and resources for maintenance requirements for implementation of biodiversity mitigation and long term maintenance/monitoring. Ensure contracts include clauses that require delivery of biodiversity considerations within project.

OUTPUT: Short list options including preferred way forward, updated risks and opportunities register and economic / commercial / financial implication of biodiversity for all short listed options

Preferred / finalised option – Considerations for lower value business case - Impact on biodiversity

1.	Confirm the project boundary, where relevant. This should include retained areas on site for biodiversity as well as potential offsite areas, which may be required to provide compensation measures.
2.	Where necessary, using the preferred option project boundary update the ecological assessment using the latest available biodiversity information and project description – where there is additional information collated since previous long and short listing stages. Where possible, detailed recommendations, should be made regarding impacts, and necessary mitigation/compensation and or enhancements (which may be required onsite and or offsite). This should be completed by an experienced and qualified ecologist. Habitat and or species management measures may be required.

31. Taskforce on nature-related financial disclosures, online. Available from: <https://tnfd.global/>

CONTINUED - Preferred / finalised option – Considerations for lower value business case - Impact on biodiversity	
3.	Revisit the economic impact, commercial route, financial analysis and management plan from a biodiversity perspective of preferred route with finalised inputs for benefits and cost. The commercial case implications for biodiversity requirements should be fed into any procurement strategy with the wording in ITTs and supplier contracts tested to ensure they are in line with project biodiversity aims. The management plan should consider how any mitigations or enhancements are monitored and managed to deliver the benefits required.
4.	Project governance and delivery arrangement including those for realising benefits, management risk and project evaluation arrangements for the preferred options should be set out. How has the project identified key risks and opportunities associated with biodiversity? How will risks be addressed and opportunities maximised through supply chain delivery? Risks and opportunities should be recorded and updated regularly in the project risk and opportunities register. It is important that these adequately reflect the biodiversity benefits and risks identified above.
OUTPUT: A finalised option with firmed up commercial, financial and economic impacts (including with respect to biodiversity).	
<i>Note: Quantification of natural capital more broadly is more complex than carbon and in line with NBB guidance, we recommend a more qualitative assessment and considering these impacts alongside socio-economic impacts.</i>	

Step 4b: High biodiversity impact assessment for higher value business cases

This section deals with business cases that are under a certain value as ascertained by the relevant public body and have been identified as potentially having an impact on biodiversity through the materiality assessment above.

When to consider: The prompts below should be asked with progressive degree of depth and quantification as the project moves from inception, long listing, short listing and to preferred option as mapped into your own business case process using Figure 3.

Table 6: Biodiversity impact assessment for higher value business case	
Long list - Considerations for higher value business case - Impact on biodiversity	
1.	Identify relevant national, regional, local and organisational biodiversity policies, legislation, strategies and/or guidance and demonstrate how the project aligns with these. Alignment should be reviewed throughout the business case. This will include the Environment (Wales) Act and the Well-being of Future Generations Act, as well as PPW. Key policies and frameworks set out in PPW include the stepwise approach, and delivery of Net Benefit for Biodiversity as well as Local Biodiversity Action Plans or updated Local Nature Recovery Plans. Compensation ratios may need to be considered where they are applicable, for example where trees and woodland and present, loss will need to be compensated for at a replacement ratio of 3:1, and Local development plans and or supplementary planning guidance may require the compensation of habitats at a particular ratio. Consideration of planning policy will be mandatory, where planning consent is required, which is anticipated for high value business case projects. A review of new policies, legislation and or guidance should be undertaken at the time of this assessment, to determine if any updates have been published. For example, it is expected that further guidance on the delivery of Net Benefit for Biodiversity will be published sometime in 2025. Additionally identify the biodiversity related spending objectives of the project and where possible these should be Specific, Measurable, Achievable, Relevant, and Time constrained (SMART).
2.	It is most likely that detailed biodiversity information is not available at this stage and or is not relevant, depending on the type of site project. Step 2 and 3 should have provided the materiality and proportionality of the potential biodiversity impact. Where these steps have identified potential biodiversity impacts additional biodiversity information may be required to inform the long listing process and RAG rating process. Existing ecological data (desk study and or PEA) may be available and should be sought to inform the process. Impacts and the ability to deliver biodiversity enhancements will be dependent on the biodiversity present on site and potentially offsite, as well as the nature and location of the project. Potential biodiversity impacts and enhancements could be assessed, even if at a high level to inform the long listing process. Any impact assessments should be undertaken by an experienced and suitably qualified ecologist. For high value business case projects further ecological surveys and or additional desk study exercises may be required for long listing, and an ecologist should be consulted regarding the requirement for additional data at this stage. The officer covering ecology will be able to advise on the timing and approach to ecology surveys, which are often seasonally constrained and will need to follow specific best practice guidelines.

CONTINUED - Long list - Considerations for higher value business case - Impact on biodiversity

3.	Alternative approaches to meeting the needs of the project should be identified which avoid or minimise impacts to biodiversity (including through the consideration of circular economy principles). For example, maximising, refurbishing or changing the use of existing assets, re-siting development to areas with no or minimal biodiversity and or timing project works to avoid disturbance impacts to sensitive species. Biodiversity impacts as far as possible for each option should be evaluated.
4.	Identify opportunities for the provision of enhancements to different ecological features, and provision of an overall positive biodiversity outcome. Confirm where there are no opportunities for biodiversity enhancements. Biodiversity related opportunities (for example, the creation of new habitats which provide multiple ecosystem services ³²) and risks (example, reputational, financial, or legal) of the project should be identified and recorded in a risk and opportunities register. The register is a tool to provide an oversight of risks and opportunities, their management and should be reviewed frequently and at every business case stage gateway. Identify any risks that are outside the organisation’s risk tolerance.
5.	Biodiversity related Critical Success Factors (CSFs) should be identified (including for the supply chain where relevant). Especially key in procurement based projects where the supply chain will deliver the CSFs and will need to be evaluated against them.

Biodiversity Assessment – long list comparison

Following the creation of your long list you should complete an options appraisal considering the scope, solution, delivery, implementation and funding options (in consultation with a biodiversity specialist). This will enable you to identify you long list of options.

As part of this you may want to create a qualitative rating for carbon for each long list option, this should follow the approach used in your organisation, with the example below following a RAG approach. These should be looked at as individual options when considering the biodiversity impact, rather than comparing them to one another. They should be categorised:

- **Red** – Potential negative biodiversity impacts and with no opportunities to deliver biodiversity enhancements
- **Amber** – Somewhat negative biodiversity impacts and with limited opportunities to deliver biodiversity enhancements
- **Green** - No negative impacts and with potential to deliver biodiversity enhancements or known biodiversity enhancements.

Depending on how many options you have there may be multiples of each colour. You should base your assessment on professional judgement with reasoning for each. Ask the relevant person in your biodiversity for input if required.

Long list options	Biodiversity impact RAG	Explanation and Reasoning
Option A	<i>RAG rating</i>	
Option B	<i>RAG rating</i>	
Option C	<i>RAG rating</i>	
Etc.		

32. For example, provision of public access to areas for biodiversity would be considered an additional ecosystem service. Any access would need to be assessed to ensure biodiversity is protected.

33. This assessment should be cognisant of the seven wellbeing goals (prosperous, resilient, healthier, more equal, cohesive communities, vibrant culture and thriving Welsh language and globally responsible) as defined under the Well-being of Future Generations Act (Wales) 2015.

OUTPUT: Long list of options, risks and opportunities register, critical success factors against which long list will be evaluated, RAG rating	
Short listing - Considerations for higher value business case – Impact on biodiversity	
1.	Review: - The biodiversity related risks in the risks and opportunities register. - Revisit current alignment with your project aims and objectives, particularly with regard to biodiversity and any targets associated with biodiversity. - Ensure no material changes have occurred that can impact the analysis in previous steps. - Update the RAG assessment, if needed to re-evaluate options as red, green or amber.
2.	If through the RAG rating process gaps of ecological information are identified, consult with the Local Authority officer covering biodiversity, to determine if surveys and or additional desk study exercises are needed to inform this stage. Where needed, surveys should be undertaken at the correct time of year and following the relevant best practice survey guidelines. It would be necessary to confirm the study area needed for ecology surveys – a larger area may be needed at this stage to cover multiple options. It may not be possible to undertake any detailed ecological assessment at this short listing stage, due to lack of detailed project information being available; however, where this is available an assessment should be undertaken at a level of detail relative to the project – where high level information is available it may be possible to complete a PEA. Surveys should be completed by an experienced and qualified ecologist. Consideration should be given to the implementation of the stepwise approach and in the first instance aiming to avoid and or minimise impacts within projects. Additionally, projects should allow for delivery of Net Benefit for Biodiversity which can be demonstrated using the DECCA framework. The officer within the Local Authority covering biodiversity will be able to advise further implementing the step-wise approach and delivery of Net Benefit for Biodiversity for the various options at short listing.
3.	Undertake a SWOT analysis of the long list options against the CSFs. Arrive at a short list of options detailing: business as usual (BAU), do minimum, preferred way forward and realistic but more ambitious. In addition, document the potential biodiversity impact across the long list. The below steps should be undertaken for the short list. We recommend one of the short list should be a low impact biodiversity option.
4.	(Economic) Identify key risks and opportunities for the project associated with biodiversity. This exercise may also help inform consideration of the project costs, benefits and risks
5.	(Commercial) Undertake market engagement on the market’s ability to meet and contribute towards identified biodiversity targets. It should be noted that biodiversity impact is embedded through the value chain, as demonstrated by the Taskforce on nature-related financial disclosures³⁷. As part of this, the supply chain has a role, and the means to, support improvement and the development of biodiversity opportunities.

CONTINUED - Short listing - Considerations for higher value business case – Impact on biodiversity

5.	A high level qualitative (e.g., high, medium, low) analysis of the ability of the supply chain to deliver, or contribute to, the identified targets should be conducted for all projects. It is particularly important where projects are exclusively procurement based (e.g., only involve the purchase of equipment, without associated development) or which will involve options that rely on a supply chain partner to achieve the critical success factors (e.g., design and build solutions). As part of the project's development, you need to ensure that the biodiversity actions to which you are committing, as part of meeting set targets, are achievable. For example, if you would like to install a Sustainable Drainage System (SuDS) and incorporate biodiversity enhancements, you need to ensure you have a contractor who can undertake the work and that the enhancements are developed and approved by a qualified ecologist and then have a maintenance contractor who can maintain them as required. Ensure supplier contracts require delivery against biodiversity considerations within the project design / specifications.
6.	(Financial) Identify the project's financial requirements for biodiversity. Financial requirements could include an agreed sum for offsite mitigation and ongoing monitoring and management, where onsite mitigation is not feasible, or a grant given to a wildlife organisation to put into habitat enhancement in the local area.
7.	(Management) Identify the project's management requirements for biodiversity. Managing arrangements could include maintenance of planted areas or maintenance of installed species enhancements like animal road tunnels and bat boxes. Ensure contracts include clauses that require delivery of biodiversity considerations within project. Long term monitoring may be required.
8.	Identify risk mitigation and opportunity maximisation strategies. Update risks and opportunities register and consider whether any risks are any within the risk tolerance of the organisation.

OUTPUT: Short list option including preferred way forward, updated risks and opportunities register and economic / commercial / financial implication of biodiversity for all short listed options. RAG rating on biodiversity impacts. Note: Quantification of natural capital is more complex than carbon and, we recommend using the above table to assess biodiversity impacts qualitatively.

Preferred option - Considerations for higher value business cases – Impact on biodiversity

1.	Review: • The biodiversity related risks and opportunities register and revisit how risks be addressed and opportunities maximised. • The current alignment with the project aims and objectives regarding biodiversity. • Ensure no material changes have occurred that can impact the analysis in previous steps
2.	If through the RAG rating process gaps of ecological information are identified, consult with the Local Authority officer covering biodiversity, to determine if surveys and or additional desk study exercises are needed to inform this stage. Where needed, surveys should be undertaken at the correct time of year and following the relevant best practice survey guidelines. It would be necessary to confirm the study area needed for ecology surveys – a larger area may be needed at this stage to cover multiple options. Surveys should be completed by an experienced and qualified ecologist. Consideration should be given to the implementation of the stepwise approach and in the first instance aiming to avoid and or minimise impacts within projects, and enhancements should be provided. As noted previously (under the long listing stage for high value projects), projects should allow for delivery of Net Benefit for Biodiversity which can be demonstrated using the DECCA framework. The officer within the Local Authority covering biodiversity will be able to advise further implementing the stepwise approach and delivery of enhancements/Net Benefit for Biodiversity for the various options at short listing.

CONTINUED - Preferred option - Considerations for higher value business cases – Impact on biodiversity	
3.	(Economic) Reconfirm the economic appraisal of the biodiversity impacts/opportunities, costs and/or benefits and its inclusion in the business case for the preferred option.
4.	(Commercial) Revisit key risks and opportunities associated with biodiversity and supply chain delivery for preferred option. Add details around how the tender and the contract could help achieve biodiversity goals and any contractual and key commercial requirements in relation to biodiversity.
5.	(Financial) Reconfirm project’s financial requirements for biodiversity ensuring that any cash releasing benefits arising are included alongside the project costs
6.	(Management) Reconfirm and detail additional information related to the management and monitoring of biodiversity for the preferred option. This should include plans for how benefits will be realised, risks managed and the plans for monitoring and evaluation all of which should be tailored to reflect the biodiversity issues identified.
OUTPUT: A preferred option with associated detailed economic and financial implications as well as detailed assessment of commercial route and management options.	
Finalisation of option stage for higher value business cases – Impact on biodiversity	
1.	Review: • The biodiversity related risk and opportunities register and the current alignment with your project aims and objectives with regards to biodiversity. • Check no material changes have occurred which could impact the analysis in previous steps
2.	Confirm the project boundary, where relevant. This should include retained areas on site for biodiversity as well as potential offsite areas, which may be required to provide compensation measures.
3.	Using the preferred option project boundary update the ecological assessment with detailed information on available on the project description and or biodiversity baseline. The project boundary should include any areas that are likely to be needed for mitigation and enhancement. This may include onsite and offsite areas. Updates may be needed to the impact assessment, as well as recommendations for avoidance, mitigation, compensation and enhancement measures (aligning with the stepwise approach); therefore, demonstrating delivery of Net Benefit for Biodiversity and ecosystem resilience. Short and long-term habitat and or species management and monitoring proposals should also be provided to ensure the delivery of Net Benefit for Biodiversity. This should be completed by an experienced and qualified ecologist. Where the project involves a planning application, the assessment may align with an EcIA (a standard ecological assessment required for planning applications), which will determine the significance of biodiversity impacts, and make detailed recommendations including enhancements. As part this assessment, ecosystem resilience and delivery of Net Benefit for Biodiversity using the DECCA framework, will need to be undertaken. An EcIA and ecosystem resilience assessment will be a material consideration of any planning application and will need to follow best practice which your public body office covering biodiversity will be able to advise on. Where planning consent is not required for projects of high value, alternative approaches to biodiversity assessment may need to be followed. Your Local Authority officer covering biodiversity will be able to advise on the methods/approach which demonstrate consideration of biodiversity impact and opportunities.

CONTINUED - Finalisation of option stage for higher value business cases – Impact on biodiversity	
4.	(Economic) Does the finalised option now have the relevant information relating to biodiversity costs and benefits, confirmed by the potential suppliers and/or delivery partners and benefit owners, including that the project has the necessary funds and authority to proceed?
4.	(Commercial) - Outline how biodiversity has been included within proposed procurement requirements, tender specifications, evaluation criteria and proposed contract. - Detail if required biodiversity performance metrics influenced any procurement decisions / routes - Outline if there are any requirements for the supply chain partners to complete required biodiversity assessments as these are a contractual requirement for appropriate monitoring and evaluation.
5.	(Financial) Have any capital and revenue implications been confirmed and/or included in the financial case related to biodiversity? This should include those identified through supply chain feedback, contractual arrangements and any long-term financial management arrangements for any biodiversity or nature-based biodiversity solutions.
6.	(Management) - Is the project planned to deliver against identified biodiversity targets? - Has the project plan accounted for the delivery time and resource (financial or otherwise) required for any biodiversity interventions, including those delivered by supply chain partners?
7.	How have key risks relating to biodiversity risks been/will be addressed and opportunities maximised in project delivery?
OUTPUT: A finalised option with finalised benefits and cost, commercial route, financial costs and management plan with respect to biodiversity that will be subject to a go / no go by decision makers.	

4. Best practice for decision making



This section provides a framework to consider carbon and biodiversity within existing business case governance systems. We have anchored this back to the long and short listing, preferred option and finalised option stages. Project teams should map their specific process to what is presented below using Figure 3 in the Introduction section.

We have segregated the responsibilities below to business case preparer/Senior Responsible Officer (SRO, reviewer) and the project board (executive, elected members, sign off) and in addition other relevant teams. There may be project specific stakeholders which we have not presented. The public body will need to map the gateway points to their own governance systems and corporate guidance on business cases (see Appendix 1. If all decisions points are not mandated, we suggest undertaking them informally for best practice.

We acknowledge and expect that processes will differ between public bodies. The tables below are not exhaustive but an illustrative example to assist in adapting the best practice suggested here to each public bodies processes and decision-making pathways. Example,

- Some public bodies may not have dedicated resource covering carbon or biodiversity and even when they do the amount of input into each project may vary. In that instance, please review the resource signposted and reach out to relevant Planning teams or other public bodies using this approach.
- Another example is linked to elected members and how they should be included. For projects that require oversight and sign-off at that level, best practice would be to include them in the RACI and involve them at an early stage to allow them to influence the outcome to meet the public bodies targets.

The figure below (Figure 6) gives an example RACI matrix for a project or programme following best practice according to our guidance. Note, the references to certain roles below may be covered under other guises – for example, the SRO could be the Head of Service, the Project Board could be the Strategy Management Team etc.

Stage	Preparer	Carbon / Biodiversity team	Finance	Procurement	Technical consultants	SRO
Prepare						
Materiality test						
Proportionality test						
Longlisting						
Shortlisting					If required	
Preferred option					If required	
Finalise option					If required	

Key

Responsible

Accountable

Consulted

Informed

Figure 6 Example RACI matrix

Table 8 below gives best practice for reviewers and decision makers, noting that the previous sections on Carbon and Biodiversity provide detailed guidance for business preparers.

Table 8: Governance best practice		
Stage	Best Practice	Expected output
Prepare	- Designate SRO for the project trained in emissions and biodiversity and ready to provide regular challenge. - Review relevant policies and legislation, with the SRO and key stakeholders to confirm any carbon/biodiversity related needs, opportunities, benefits, risks, and constraints.	- Project mandate and relevant policies and legislation - Agreed application of this guidance customised per council (Appendix 1)
Materiality and proportionality	- Undertake review of opportunities for further enhancement of impact even for low/negligible impact cases. Incorporation of enhancements is best practice, and for planning applications the provision of biodiversity enhancement is a material consideration ³⁴. - Based on public bodies guidance, identify the correct format to present business case analysis– example a business justification form or a more full-fledged format used by the public bodies project.	- Materiality assessment table completed with justification - Proportionality assessment completed with justification and evidence of discussions
Gateway 0		
Long listing / short listing	- Ensure that analysis on cost and benefits is done keeping in mind lifetime of asset. ³⁵ - Stress test inclusion of considerations listed in the relevant section (Carbon / Biodiversity) above. - Stress test inclusion of credible carbon / biodiversity enhanced options for alternatives. - Ensure CSFs include carbon and biodiversity metrics. - Challenge where quantification / scoring of options has not been undertaken from a carbon / biodiversity perspective. - Review and validate carbon / biodiversity risks identified	- Long list where relevant - Short list with explanation - A carbon / biodiversity positive option - Quantification and / or RAG ratings as relevant - Relevant written evidence for these stages as per public body requirements
Gateway 1		
Preferred option	- Evaluate the carbon / biodiversity impacts and opportunities of the preferred choice against public body’s carbon objectives and biodiversity targets/objectives including requirements of Section 6 of the Environment (Wales) Act 2016. - Challenge the assessments of the potential carbon / biodiversity impacts and opportunities, including the supply chain to ensure credibility of contributions to the identified targets	- Detailed and accurate quantification and / or RAG ratings as relevant of the preferred option. - Assessment of the supply chain. - Reasoning for option being preferred option.

34. Acknowledging that it needs to be proportionate to the scale of the impact.

35. The Green Book has guidance on the costs and benefits over the lifetime of an asset.

Gateway 2		
Finalised option	- Evaluate the carbon / biodiversity impact of the final choice and whether it meets the public body's carbon objectives and biodiversity targets/objectives including requirements of Section 6 of the Environment (Wales) Act 2016. - Challenge the assessments of the potential carbon / biodiversity impacts and opportunities, including the supply chain to ensure credibility of contributions to the identified targets.	- Final quantification and / or RAG ratings as relevant of the preferred option. - Reasoning for finalisation. - Plan for monitoring and evaluation.
Gateway 3		
Implementation & monitoring	The guidance does not cover implementation and monitoring phase. However, a key part of the carbon and biodiversity consideration will be to manage and monitor commitments at the business case stage for accountability and learning purposes.	

Table 9 details each of the suggested ‘Gateway decisions’, noting what decisions should be taken at what stage of the process. Please note that the Gateway decisions serve as a suggestion as what best practice may look like, however, processes differ between public bodies. Therefore, it may be that not all the Gateways, at the timings suggested, are relevant to each user of this guidance.

Table 9: Gateway decision point		
Gateway decision	Best Practice	Example scrutiny questions
Gateway 0 e.g. annual budget process	- The materiality assessment and the proportionality assessment should be submitted to the project management or the equivalent role and discussed with SRO prior to proceeding further. - At this stage, it should be decided as to whether a project or programme should continue to the long listing/short listing phase.	- Is the project essential to deliver local or regional policies or priorities? - Will the project have a material impact on carbon and/or biodiversity? - Will the project trigger lower value or higher value carbon and biodiversity considerations?
Gateway 1	- The risks and opportunities register should be reviewed. - The long list and short list with appropriate evidence to represent the questions in the relevant section should be presented to the decision-making body. - The decision-making body should have representation of people knowledgeable about the carbon / biodiversity and the project / public bodies projects objectives for these metrics to provide appropriate challenge to the project team.	- Are risks within the risk appetite of the public body, and proportionate to benefits expected? - Have project options that could deliver similar benefits with less impact been robustly considered? - Have emissions reductions and biodiversity improvements been included as critical success factors for the project? - What learnings from consideration of low impact option(s) could be integrated into the short listed options?

Gateway decision	Best Practice	Example scrutiny questions
Gateway 2	- The risks and opportunities register should be reviewed. - The preferred choice should be presented to the decision-making body with as much detail of the assessment questions/ prompts as provided in the relevant sections to ensure an evidence-based decision on the preferred option.	- Do risks remain within the risk appetite of the public body, and proportionate to benefits expected? - Have project options that could deliver similar benefits with less impact been robustly considered? - What learnings from consideration of low impact option(s) have been integrated into the preferred choice?
Gateway 3	- The risks and opportunities register should be reviewed. - The final choice should be presented to the decision-making body with as much detail of the assessment questions/ prompts as provided in the relevant sections to ensure an evidence-based decision on the preferred option	- Do risks remain within the risk appetite of the public body, and proportionate to benefits expected? - What are the emissions impacts of the final design? How will biodiversity be enhanced? - Have suppliers been identified with experience of delivering on design / specifications related to emissions and biodiversity?

Note – at each gateway, as much written and quantified information as possible regarding the options should be presented, linking back to the prompts and assessments. The guidance does not give a detailed format and that will be driven by each public body and their own processes.

Appendices

Appendix 1 - Checklist for public bodies on how to tailor this approach to their own systems

Case Study

Denbighshire Council applied the checklist included in the methodology to consider how its existing practices aligned with the approaches recommended in the methodology. Conducted as a cross-service group, this short (2-3 hour) mapping exercise identified some areas of strengths and areas for potential development and discussion.

#	Public Body to consider	Step 1: Agree current position	Step 2: Propose way forward
		Does the public body currently...	The methodology will be taken forward by... ³⁶
1	Require consideration of climate and nature / biodiversity policies and national targets in strategy and project development?		
2	Have robust governance procedures / gateway decision points to consider impact of decisions on carbon & biodiversity		
3	Apply an assessment of materiality in its project development process to identify projects likely to have greater/less impact ?		
4	Apply an assessment of proportionality in its project development process that prompts different levels of effort for more/less significant projects?		
5	Consider carbon impacts of capital, revenue and strategy projects?		
6	Consider biodiversity impacts of capital revenue and strategy projects		
7	Consider climate adaptation of capital, revenue and strategy projects? ³⁷		
8	Have definitive or guiding organisational targets for emissions reductions and a defined methodology for measurement?		
9	Have definitive or guiding targets for emissions reductions at a project level and a defined methodology for measurement?		
10	Have definitive or guiding organisational targets for biodiversity enhancement and a defined approach for presenting impact?		
11	Have definitive or guiding targets for biodiversity enhancement at a project level and a defined approach to presenting impact?		
12	Require projects to develop and test a long list of project options? Will this require quantified assessment?		
13	Require projects to develop and test a short list of project options? Will this require quantified assessment?		
14	Require projects to create a low impact solution at long listing stage?		
15	Require projects to create a low impact solution at short listing stage?		
16	Require the supplier selection process to consider experience in low carbon delivery?		
17	Require supplier selection process to consider experience in biodiversity enhancement?		
18	Require standard supplier contracts to include clauses related to delivery of carbon specifications?		
19	Have in place contract management systems to confirm delivery of works to agreed carbon and biodiversity standards?		

36. Consider if this response is different for smaller, less-complex projects vs larger, more-complex projects. Note that very small projects can have very significant biodiversity impacts.

37. While this question is outside the scope of this methodology, it is important to keep in mind through project development processes to avoid later retrofit costs.

Appendix 2 – Additional training materials

Please see the links for training:

To be updated

Appendix 3 – Carbon and biodiversity tool references

This section outlines a number of useful guides and reference factors that can be used to undertake the carbon and biodiversity assessments referenced throughout this document. A reference to and a description of each tool can be found below, along with a suggestion of the kind of project they could be used for.

Royal Institution of Chartered Surveyors (RICS) professional standards and guidance, UK Whole life carbon assessment for the built environment 1st edition, 2024 ³⁸ - Useful for buildings and infrastructure projects:

The RICS guide for whole lifecycle carbon assessments is a building focused guidance on assessing the whole life carbon impacts of a project. The guide was developed between a number of respected industry representatives and is seen as the baseline standard of carbon assessments across the construction industry. It includes a number of assumptions and factors cover all life cycle stages which can be used interchangeably on buildings and infrastructure projects.

Civil Engineering Standard Method of Measurement 4 (CESMM4) ³⁹ - Useful for buildings and infrastructure projects:

The CESMM4 guide provides an estimate on the cost and carbon emissions for a range of construction activities and processes. The carbon emissions for each activity account for the materials using a cradle-to-gate boundary i.e., all of the emissions associated with the production of the material to the factory door and a consideration to the plant emissions required in the construction processes (A1-A3 and A5).

Rail standards and safety board (RSSB) Rail Carbon Tool (RCT) ⁴⁰ - Useful for rail projects:

The RSSB RCT is an online carbon assessment tool primarily focused on carbon baselining work in the rail industry. The tool uses the ICE database (see below) as its main source of reference and includes a number of pre-modelled packages for commonly found infrastructure elements e.g., roads, bridges and drainage elements. For application within this guidance, the pre-modelled packages could be a good source of information in early-stage assessments if a project team has access to the tool.

Institute of Civil Engineers (ICE) Embodied Carbon Database V3 ⁴¹ - Useful for building and infrastructure projects:

The ICE database includes a wide range of conversion factors to estimate the emissions associated with a wide range of commonly used construction materials. The factors are based on EPD data collected from a wide range of suppliers of each material category.

Welsh public sector net zero reporting guide, Net-zero carbon reporting spreadsheet ⁴² - Useful for public sector projects:

A guide and calculation sheet that helps public sector organisations in Wales estimate their carbon footprint.

38. 2024. Whole life carbon assessment for the built environment. RICS.

39. 2012. Civil Engineering Standard Method of Measurement. 4th ed. the Institution of Civil Engineers.

40. Rail Safety and Standards Board. 2021. Rail Carbon Tool, online. Available at: <https://www.railindustrycarbon.com/Account/LogOn?ReturnUrl=%2f#:~:text=The%20Rail%20Carbon%20Tool%20is,rail%20industry%20in%20Great%20Britain>

41. Institute of Civil Engineers (ICE), 2019. Embodied Carbon Database, online. Available at <https://circularecology.com/embodied-carbon-footprint-database.html>

42. Welsh Government, 2024. Public sector net zero reporting guide, online. Available at: <https://www.gov.wales/public-sector-net-zero-reporting-guide>

Appendix 3 – Carbon and biodiversity tool references

Department for Business, Energy & Industrial Strategy (BEIS) Greenhouse gas reporting: conversion factors 2024⁴³ and **Department for Business, Energy & Industrial Strategy (BEIS) grid emission forecasts**⁴⁴ - Useful for all types of project:

BEIS publish emission conversion factors for the purposes of company reporting each year. These include (but are not limited to) factors for fuel usage, transport, and waste processing. These are seen as the industry standard for emission foot printing in the UK.

Chartered Institute of Building Services Engineers (CIBSE) TM54: Evaluating Operational Energy Performance of Buildings at the Design Stage⁴⁵ - Useful for buildings projects:

The CIBSE TM54 methodology is an industry recognised calculation methodology to assess the operational energy consumption in building which covers both regulated and unregulated consumption. The calculation method allows for project specific profiles and calculations making it a more accurate assessment than the building regulations part L assessment.

Welsh Local Government Association Local Authority Sustainable Procurement Toolkit⁴⁶ - Useful for projects involving procurement:

The Toolkit has been developed to support public bodies to embed decarbonisation and sustainability into all levels of procurement. Based on a range of international good practice, it provides guidance and sample specification criteria for use in tenders of all values. It is designed to be flexible and editable in response to developing guidance and legislation around sustainable procurement and procurement decarbonisation. It is a resource for all officers and procurement professionals involved in procurement exercises.

Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA Framework in the Terrestrial Planning System⁴⁷

This Briefing Paper has been prepared by CIEEM to inform on the approach to nature recovery being undertaken by the Welsh Government. This includes detail on demonstrating and maximising Net Benefits for Biodiversity through the ecosystem resilience approach (using DECCA – an assessment of the Diversity, Extent, Connectivity, Condition and Any other aspect of ecosystem resilience) and the key considerations in implementing Net Benefits. Further guidance on the process of delivering enhancement is expected to be published in addition to this document.

Garrett HM, and Ayling SC. 2021. Terrestrial and freshwater Resilient Ecological Networks: a guide for practitioners in Wales⁴⁸

A practical guide for organisations in Wales working in sectors that implement environmental policies and activities related to the enhancement and maintenance of ecosystem resilience. It covers the concept of Resilient Ecological Networks and explains its use as part of integrated sustainable management of natural resources. Nature-based solutions are encouraged as a way to help support nature recovery and achieve objectives.

43. UK Government, 2024. Government conversion factors for company reporting of greenhouse gas emissions, online. Available at: [conversion factors](#).

44. UK Government, 2023. Energy and emissions projections, online. Available at: [projections](#)

45. n.d. Evaluating Operational Energy Use at the Design Stage - CIBSE TM54: 2022. [Place of publication not identified]: CIBSE.

46. Welsh Local Government Association, 2023. Local Authority Sustainable Procurement Toolkit, online. Available at: [Procurement Tool](#)

47. CIEEM, 2022. Welsh Government's Approach to Net Benefits for Biodiversity and the DECCA Framework in the Terrestrial Planning System, online. Available at: <https://cieem.net/wp-content/uploads/2022/08/Net-Benefits-briefing.pdf>

48. Garrett HM, and Ayling SC., 2021. Terrestrial and freshwater Resilient Ecological Networks: a guide for practitioners in Wales, online. Available at: [Terrestrial and freshwater Resilient Ecological Networks: a guide for practitioners in Wales](#)

Appendix 4 – Statutory foundations for this work

- The Senedd declared a nature emergency in 2021 calling for statutory targets to reduce biodiversity loss and the establishment of an independent environmental governance body for Wales.
- The Welsh Government’s Biodiversity Deep Dive (focusing on protecting at least 30% of the land and 30% of the sea by 2030) has highlighted recommendations including unlocking public and private finance to deliver for nature and embedding nature recovery in policy and strategy in public bodies in Wales.
- In 2017, the then Minister for Energy, Environment and Rural Affairs, Lesley Griffiths, introduced Wales’ ambition for a net zero public sector Wales by 2030, which was subsequently published in ‘Net zero carbon status by 2030: public sector route map’ and included in The Welsh Procurement Policy Statement 2021.
- Key national legislation relating to carbon and biodiversity in Wales includes:
 - The Environment (Wales) Act, which makes a commitment to five-yearly carbon budgets. The Act also made setting limits to emissions mandatory and culminated in making biodiversity a consideration in policy and decision making;
 - Section 6 of The Environment (Wales) Act requires public authorities in Wales to maintain and enhance ecosystem resilience (biodiversity) in the exercise of their functions. This duty must be considered in decision-making and actions, ensuring that biodiversity is considered at all levels. Section 7 of the Act further details those habitats and species considered to be of principle importance for the purpose of maintaining and enhancing biodiversity in Wales.

In addition to this key legislation, Planning Policy Wales (PPW) ⁴⁹ states that ‘Development plan strategies, policies and development proposals must consider the need to:

- support the maintenance and enhancement of biodiversity and the resilience of ecosystems;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats, including the most recent targets set out in the 2022 UN Global Biodiversity Framework;
- ensure statutorily and non statutorily designated sites and habitats are properly protected and managed and their role at the heart of resilient ecological networks is safeguarded;
- safeguard protected species and species of principal importance and existing biodiversity assets from direct, indirect or cumulative adverse impacts that affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water, air and soil, including peat.
- secure the maintenance and enhancement of ecosystem resilience and resilient ecological networks by improving diversity, extent, condition, and connectivity.
- Chapter 6 of Planning Policy Wales (PPW) 12 states that all schemes applying for planning permission must achieve a Net Benefit for Biodiversity ⁵⁰. This applies to all planning applications regardless of size and scale, although they should be proportionate to the scale and nature of the development. Planning authorities must follow a step wise approach to maintain and enhance biodiversity, build resilient ecological networks and deliver Net Benefits for Biodiversity by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for. Net benefits should be delivered through using the DECCA framework (Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience) ⁵¹.

49. Welsh Government, 2024. Planning Policy Wales Edition 12, online. Available from: <https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf>

50. A net benefit for biodiversity is the concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before, through securing immediate and long term, measurable and demonstrable benefit, primarily on or immediately adjacent to the site

51. Natural Resources Wales (NRW) has developed a framework for evaluating ecosystem resilience based on five attributes and properties specified in the Environment (Wales) Act. This is referred to as DECCA: Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience. The attributes provide a framework for considering the state of ecosystem resilience in Wales and can be applied across different habitats and land uses and for a range of different scales. Welsh Government’s approach to DECCA is available here: Net-Benefits-briefing.pdf

Glossary

#	Term	Definition
1	Assessment boundary	The scope and parameters of the project for the purposes of an assessment. Project assessments should also acknowledge impacts outside of the assessment boundary, such as related impacts to supply chains or impacts, both positive and negative, to connected ecosystems.
2	BAU	Business As Usual
3	Biodiversity	The Green Book defines biodiversity as a core component of natural capital that supports the provision of environmental goods and services to people. It is defined by the Convention on Biological Diversity as ‘the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and ecosystems’.
4	Carbon	Shorthand for all greenhouse gases emissions as defined by The Green Book, as emissions that occur as a result of many decisions to create assets or provide public services, particularly where direct energy consumption is required. They may also result from the energy required to produce basic input materials used in construction. They are measured in kg or tonnes of carbon dioxide equivalent (CO ₂ e).
5	Carbon offsetting	Reduction or removal of green house gases from the atmosphere to compensate for emissions elsewhere.
6	Critical success factors	Attributes that any successful proposal must have, if it is to achieve successful delivery of its objectives.
7	DECCA	DECCA stands for Diversity, Extent, Condition, Connectivity and Aspects of ecosystem resilience. These aspects provide a framework which considers the state of ecosystem resilience in Wales. This can be applied across different habitats and land uses and for a range of different scales.
8	Embodied carbon	All carbon emitted during the production of something including through extraction of the raw materials, transportation and manufacturing.
9	Green Book	The Green Book is the government’s guidance on options appraisal and evaluation. It supports proper consideration of the costs, benefits, and trade-offs of alternative options for delivering policy objectives. The Green Book uses the five-case model as outlined in the business case guidance for projects and programmes. This is the government’s recommended framework for developing business cases.
10	Greenhouse gases (GHGs)	Greenhouse gases are gases that are present in the Earth’s atmosphere that trap heat, contributing to global warming and climate change impacts including sea level rise and average temperature increases.
11	Net Benefits for Biodiversity	The concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before, through securing immediate and long-term, measurable and demonstrable benefit, primarily on or immediately adjacent to the site.
12	Net zero	The total greenhouse gas emissions would be equal to the emissions removed from the atmosphere, with the aim of limiting global warming and resultant climate change.
13	RACI	Responsibility, Accountability, Informed, Consulted matrix that assigns roles and responsibilities along the time of the project.
14	SWOT	An analysis of the Strengths, Weaknesses, Opportunities and Threats of different options.
15	tCO ₂ e	Tonnes of carbon dioxide equivalent



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