

Improving emissions assessment of Scottish Government spending decisions and the Scottish Budget

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About this research

Status of the Fraser of Allander Institute research and the Joint Budget Review process

This report presents findings of a research project conducted by the Fraser of Allander Institute, part of the University of Strathclyde. The project was commissioned by ClimateXChange, on behalf of the Scottish Government. The research and its findings are intended to inform the ongoing 'Joint Budget Review (JBR) on matters relating to climate change'.

The JBR is conducted jointly by the Scottish Government and the Scottish Parliament. It was established as a result of a commitment during Stage 2 of the Climate Change (Emissions Reduction Targets) (Scotland) Bill to review current processes and outputs around budget information as it relates to climate change. The remit of the JBR is to present feasible and proportionate steps to deliver meaningful improvements to processes and transparency with respect to the consideration of climate change in the Scottish Budget.

The JBR process is scheduled to conclude at the end of Summer 2022 with the presentation of a final report – informed by the findings of this research – for due consideration by Scottish Ministers and the committees of the Scottish Parliament.

1 Executive Summary

Climate change is the greatest challenge of the 21st century. Facing up to this challenge requires widespread change. This includes changes such as the way we travel, eat, and heat our homes – all implemented at a demanding pace in policymaking terms. Recognising this, the Scottish Government declared a climate emergency in 2019 and committed to becoming a net-zero society by 2045.

But how can the Scottish Government deliver on its ambitious but necessary targets?

Key to this is recognising that climate change is a pervasive policy challenge and that every part of government has a major role to play in emissions reduction. Traditional, siloed approaches to policymaking can be ineffective at delivering system-wide change.

The solution lies, in part, in the development of robust processes.

Processes that support decision-makers and parliament with the financial, emissions, and wider societal data required to make and scrutinise decisions that deliver emissions reduction. Processes that support civil servants in creating, procuring, and delivering effective net-zero compatible initiatives. And processes that support a cross-governmental policy environment that continuously and rapidly iterates toward best practices.

This research project contributes to the Joint Budget Review on matters related to climate change between the Scottish Government and Scottish Parliament. The research aims to explore options which, if implemented, could:

- **Objective 1:** Improve the extent to which decision making within Scottish Government is supported by an understanding of the consequences of spending choices on emissions.
- **Objective 2:** Increase the transparency and value of the carbon assessment of the Budget to support scrutiny and informed discussion.

Fundamental to the recommendations is a focus on the processes, governance, and policymaking environment that will not just support short-term improvements, but also provide the necessary foundations to support government progress to the 2045 climate change targets and beyond.

This project has been commissioned by ClimateXChange, on behalf of the Scottish Government. The Scottish Government acknowledges that the current process of carbon assessment, while analytically sound, has more limited impact and value in either allowing meaningful scrutiny of the Budget or in supporting the alignment of spending choices with climate ambitions.

The Scottish Government has agreed to undertake a Joint Budget Review of the process with Scottish Parliament, and this research project contributes to the Review. Our research was extensive and engaged with over ninety people across the Scottish Government, the Scottish Parliament, agencies, governments across the UK and internationally, and those in the wider policy making and climate change community.

1.1 Objective 1: Supporting decision-making with an understanding of emissions impacts

The impact of spending choices on emissions is best understood by undertaking an individual-level carbon assessment¹. Carbon assessments review the expected outcomes of projects, programmes and other types of spending choices and quantify the likely outcome on carbon emissions.

Quantification of carbon emissions requires data on the impact of spending choices on inputs, outputs and outcomes since these are the ultimate generators of increases or decreases in emissions. When proportionate to do so, this data should already exist as part of economic appraisal processes, which sit within the development of Business Cases.

Similar to many of the Scottish Government's impact assessments, the intention of introducing widespread carbon assessments would aim to better align fiscal and policy choices with statutory climate change targets and commitments. For impact assessments to effectively impact on choices, these assessments must take place early enough in policy development so that they can identify any issues and allow for policy redesign where necessary. If the assessment occurs too late in the process, policies have often gained momentum, the likely path of the policy is mostly determined, the opportunity for policy redesign is reduced, and the intention of the impact assessment is not achieved.

Based on engagement during the research period there appears to be significant opportunities for improving the process of quantifying the impacts of spending decisions ahead of decisions being made. Central to this is the importance of developing robust Business Cases, impact assessments and appraisal more broadly. This wider context presents a challenge for introducing a new carbon assessment methodology as there is no consistent policymaking process to attach a process to and the required information and data to undertake a robust assessment does not always appear to exist.

Further, impact assessments appear to sometimes be taking place towards the end of the policymaking process, once the policy direction has been set, underlining the importance of timing for an assessment that can be used for enhancing decision making.

A key driver behind these observations seems to be a culture of policy development occurring over short timescales. This focus on speed prevents robust assessment and the development of clear and measurable outcomes due to a lack of capacity.

A cultural shift is required that ensures sufficient time and resources are available to align with best practice and ensure that all decisions are fully informed. Resolving this associated lack of capacity for undertaking such processes is vital. The cultural shift will also need to include an expectation that this evidence will be sought and scrutinised.

While these are general observations surfaced by the research, wider progress reforming issues of data, timing, and culture are fundamental to our recommendations to improve climate-informed decision-making.

The outcome of the Joint Budget Review on matters related to climate change is positioned to enhance climate change policymaking on a government-wide scale. It may take several years to achieve. However, progress on integrating an understanding of emissions into policymaking cannot wait if the Scottish Government is to achieve its statutory emissions targets. We therefore recommend the introduction of a carbon

¹ Not to be confused with the high-level carbon assessment, produced by the Scottish Government alongside the Budget.

assessment process with added safeguards, in the form of new governance arrangements and challenge functions, to increase the chance of the intended outcomes being met.

1.2 Objective 2: Supporting scrutiny of the Carbon Assessment of the Budget

Research was performed in 2008 to develop a methodology to estimate the total emissions impact of Scottish Government spending. This resulted in the development of the high-level Carbon Assessment of the Draft Budget. This was recognised as world-leading at the time and likely had a positive impact through a better understanding of which industries were the most significant contributors to Government emissions.

However, this methodology only aims to estimate the total emissions impact of spending on supply chains in a given year. It should not be used for comparing the emissions impacts of spending lines or policies, nor can it describe how spending choices today will impact on emissions in the future.

The high-level carbon assessment was never intended to be used for these questions, and it was recognised both in the research and in committees at the time that individual-level (e.g. policy-specific) carbon assessments, as discussed in Objective 1, would be required to answer these questions. Given that these are likely some of the most important questions for parliamentary scrutiny of emissions impacts, the high-level carbon assessment appears to be limited in value.

This is not an issue with the application of the existing methodology, which is analytically correct, but rather reflects that different methodologies are required to answer different questions, depending on the scale and scope of the scrutiny. For example, the interest from both the Scottish Government and Scottish parliament to undertake a value for money analysis at a policy-by-policy level.

Examples of questions and potential methodologies that can help answer them include:

- What is the impact of current Government spending on carbon emissions in supply chains? A high-level carbon assessment methodology.
- What is the impact of a specific existing or proposed policy on carbon emissions? An individual-level carbon assessment.
- What extent does an existing or proposed policy provide value for money? An individual-level carbon assessment.
- Does the current or proposed package of policies have the required impact to meet emissions reduction targets? A mixture of gap analysis, e.g. using the TIMES model, individual-level carbon assessment and expert assessment.

The Scottish Government also produces a taxonomy-based Carbon Assessment of the Capital Budget. This classifies spending lines as high, neutral or low carbon based on which broad category they best fit. These classifications are very broad. For example, all health spending is classified as neutral spending, regardless of the underlying activity.

This risks misclassifying high-emission activities as beneficial, or carbon-reduction activities as harmful. It is not known what emissions impact a spend classified as “high”, “low”, or “neutral” emissions actually has. Government investment in decarbonising spending classified as neutral or high carbon spend would reflect negatively on emissions progress, while more emissions-generating projects which are mistakenly

classified as low carbon could overestimate progress. More spending classified as “low” therefore does not necessarily result in an emissions reduction.

Both the high-level carbon assessment and taxonomy carbon assessment of the capital budget methodologies are, in our view, unable to provide an adequate level of scrutiny and transparency. This is a result of the choice of underlying data source – planned level four spending lines. Planned level four spending lines do not drive emissions, policy outcomes do. It is challenging enough to predict actual spending at a granular level with planned spending lines, let alone understand how the spending could translate into several possible new projects that, in turn, have several project options, each with their own potential set of emissions outcomes.

While it is tempting to use budgetary spending line data to undertake carbon scrutiny of the Budget, spending lines are fundamentally limited in the level of analysis they can provide. This data is unlikely to be able to provide parliament with the required level of scrutiny without a risk of spurious and misleading results.

We therefore recommend that the Scottish Government focuses its efforts on undertaking individual-level carbon assessments in advance of each Budget, noting that timing isn't the only challenge. Some spending lines cover general ‘pots’ of money for others to bid in for. Such bidding processes don't happen until the budget is agreed. In the budget preparation process the granular detail of spending outcomes is not available until in-year milestones. These pre-budget individual-level carbon assessments should be accompanied by a gap analysis to understand how these policies collectively contribute towards emission targets.

Compared to current practices, establishing a pre-budget, individual policy level carbon assessment will require systematic change, at scale, to implement in full. These assessments are therefore not possible to undertake in the very limited time currently assigned to carbon assessment of the Budget. We note that the Scottish Government is already exploring this methodology for its 2025-2026 Infrastructure Investment Plan, which will set out the Scottish Government's strategic approach to multi-year capital projects.

The quantitative results need to be presented with context and discussion of the impact of spending decisions. On its surface, this may appear less data driven and more limited than a spending-line methodology. However, the quality and granularity of the data will be significantly higher than existing practices.

1.3 Recommendations

Our first set of recommendations aim to address the wider observations from the research on the cultural change required to fully achieve the recommendations specific to enhancing carbon assessment and policy making. We recommend that the Scottish Government:

1. Improves the clarity and transparency of Government decisions that impact on climate change, acknowledging that trade-offs will always exist between different objectives.
2. Pursues a cultural shift to ensure sufficient time and resource for robust decision-making processes, allowing business cases, carbon assessments and impact assessments to be undertaken, challenged and scrutinised.

Our second set of recommendations focus on improving policymaking processes and appraisal to support the success of our recommendations specific to enhancing carbon assessments. We recommend that the Scottish Government:

3. Enhances cross-governmental policymaking governance. This would provide oversight and challenge function on the existence and quality of processes and appraisal throughout the entire policymaking process. The governance process would require the capacity for an enhanced approach to pre-budget carbon assessments.
4. Urgently expands their internal capacity and skills, including recognising that civil servants cannot expect to undertake processes as intended without enough time, resourcing, and a significant increase in practical policymaking and appraisal guidance.
5. Considers periodic external auditing of climate change policymaking governance, processes and carbon assessments.

Improving policymaking processes may take some time to implement but time is in short supply until the next set of emissions reduction targets. Rather than waiting for these recommendations to be fully implemented, our third set of recommendations, which speak directly to the need to enhance carbon assessment methodology can be developed in parallel to the wider recommendations above.

Our third set of recommendations focus on the introduction of carbon assessment and related processes in Government to increase the likelihood of successful outcomes, particularly while policymaking processes are being improved. We recommend that the Scottish Government:

6. Introduces a Net Zero Test. This will act as a filtering process to ensure that all spending with major emissions implications undergoes a quantitative carbon assessment.
7. Creates a second cross-governmental governance team (see recommendation 3), responsible for assessing climate impacts, providing oversight and a challenge function. The team would ensure the Net Zero Test and carbon assessments are being undertaken and are of a suitable quality. This would in addition support work across Government to embed consideration of carbon throughout policymaking process. To be effective the team will require the ability to influence Government-wide change.
8. Recognises the power of Scottish Government procurement in driving economy-wide carbon reductions. We recommend the Government considers a swift roll out of quantitative carbon management procedures, building on the success of the Cross Tay Link Road case study and carbon management procedures in the City Region & Growth Deals team.

Our final set of recommendations relate to Parliamentary scrutiny of the impact of spending on emissions. We recommend that the Scottish Government:

9. Considers retiring the taxonomy-based Carbon Assessment of the Capital Budget and the high-level Carbon Assessment of the Budget. This will have implications for the Climate Change Act.

10. Considers the challenging environment for data collection under current budgetary processes, and that a longer lead in time will be required for better data.
11. Moves towards the use of individual-level carbon assessments and gap analysis to provide suitable data for fiscal and policy scrutiny. In time, further mechanisms for scrutiny should also be explored, such as a carbon equivalent to financial memos for any announcements that require legislative changes, and publication of carbon assessment results after decisions have been made.

While these recommendations are made for central government, many of the principles are shared with agencies and local government. Supporting alignment with these principles across the whole of government will be critical to developing an understanding of how Government spending choices impact on emissions.

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2 Research Overview

2.1 Purpose of this research

To meet Scotland's net-zero targets, it is important that the Scottish Government understands how its policy and spending decisions impact greenhouse gas (GHG) emissions.

In 2008/09, a project was undertaken to develop a framework for assessing the emissions impact of total Government spend. This project achieved those ambitions, culminating in the High-Level Carbon Assessment produced annually alongside the Budget and providing the best available estimates of the emissions impact of total Government expenditure.

However, the High-Level Carbon Assessment was only intended to be one piece of the puzzle.

While it helps us understand the Government's current supply chain impact, it does not enable scrutiny between spending lines or policies. Nor does it help forecast how decisions made today will impact emissions in future years. And, ultimately, the High-Level Carbon Assessment takes place after policy decisions have already been made, limiting its usefulness in generating better specific policy outcomes for climate change.

This was recognised during the development of the High-Level Carbon Assessment. One commenter stated in the Transport, Infrastructure and Climate Change Committee in 2009:

"We can be certain that the high-level assessment is more or less right, but we could not make a decision on the basis of it."

While other commenters laid out the direction that assessment of policy must take:

"At the current level of resolution, it will not be particularly helpful until we see some of the individual-level assessments, which might be more helpful. The [high-level] carbon assessment gets things started but it does not necessarily go all the way."

The Scottish Government acknowledges that the current process of the high-level carbon assessment, while analytically sound, has more limited impact and value in either allowing meaningful scrutiny of the Budget or in supporting the alignment of spending choices with our climate ambitions. The Scottish Government has agreed to undertake a Joint Budget Review of the process with the Scottish Parliament.

This research project contributes to this Review.

The purpose of this research is to explore options for two objectives:

- **Objective 1:** Improve the extent to which decision making within Scottish Government is supported by an understanding of the consequences of spending choices on emissions.
- **Objective 2:** Increase the transparency and value of the carbon assessment of the Budget to support scrutiny and informed discussion.

2.2 Key considerations for recommendations

In developing our recommendations, we have considered factors including, but not limited to:

- Proportionality – both in meeting the required scale for Scottish Government targets, and in minimising negative impacts on the policymaking process.
- Unintended consequences, e.g. emissions reductions negatively impacting on biodiversity, businesses, poverty, and so on.
- Practicality – recommendations must be useful and practical for decision makers.
- Governance – understanding how policy is made and whether recommendations will have their intended outcome in practice (e.g. avoid introducing tick-box exercises).
- Timing & skills – the capacity of staff with specific skills will require timing to be considered. Our recommendations are presented as a series of phased, incremental changes.
- Outcomes – ensuring that recommendations have a clear path to the intended outcome. These recommendations should support a better understanding of how Government spending impacts on carbon emissions, and ultimately supporting informed decision-making.

The scale of the challenge of net zero targets requires embedding these considerations within the policymaking process.

As we stated when bidding for this work, this research project cannot simply focus on the methodology for undertaking individual-level carbon assessments. This would ignore the considerable challenge in developing effective policymaking processes across government and risks the delivery of the intended outcomes.

As set out in our original brief, we have sought to understand the full policymaking process across the Scottish Government so that we can identify the most effective point for intervention, reduce duplication between processes and maximise the chances of supporting emissions reductions. This includes considering other forms of assessment, such as impacts on Human Rights, Poverty and Equalities, to consider the lessons that can be learned.

3 Policymaking Processes & Carbon Assessment

Understanding existing policymaking systems within the Scottish Government – whether guidance or practice – is a key driver for our recommendations.

This is important for a number of reasons, including:

- (a) Understanding if and where individual-level carbon assessment is currently undertaken in policy development.
- (b) Identifying which stages of the policymaking process have enough data to undertake carbon assessment.
- (c) Prioritising earlier intervention, when possible, to provide early warnings that allow for policy redevelopment before a policy has gained a significant amount of momentum.
- (d) Reducing duplication between any existing carbon assessment and data collection processes.
- (e) Encouraging consistency between results from carbon assessment and from appraisal.

3.1 Appraisal is the most sensible intervention point for carbon assessment

Processes which include appraisal are of primary interest. Appraisal, using the standard cost-benefit analysis methodology, quantitatively assesses the major positive and negative impacts of different project options to identify which option provides the best value for money.

Where greenhouse gas emissions or reduction are a major project impact, these should be estimated as part of the appraisal. Appraisal is therefore the best possible point of intervention in the policymaking process for an individual-level carbon assessment as emissions estimates may already exist.

Appraisal typically lives within a process, such as a Business Case, that requires specifying the various project options. For example, project options to insulate houses should have data which estimates the number of houses that will be insulated, the amount of materials required, and so on. Ensuring you have the data to quantify policy ideas in terms of explicit outcomes is essential for undertaking carbon assessment.

However, appraisal in itself is not the solution to carbon assessment. Standard cost-benefit analysis combines all the major benefits and costs of a project option to society (e.g. including impacts on health, emissions, etc). It does so by monetising these using a common currency (pounds £) and combining these into a single indicator, the benefit-cost ratio.

This is the correct approach from the perspective of a project appraisal, but it does a poor job of managing limited resources, which, in effect, includes carbon emissions.

For example, the Government could choose to go ahead with individual projects where the benefits of the projects outweigh the cost of carbon emissions, indicating that proceeding with these projects is a net benefit to society. But, combining the aggregate outcome of all project emissions, the Government may find that total carbon emissions no longer align with emissions reduction targets. Cost-benefit analysis is relatively

permissive, and it is reportedly uncommon to see project options rejected solely on the basis of their emissions².

Appraisal, and the Business Case framework, provide the required data for undertaking carbon assessment. However, it is useful to step outside a cost-benefit analysis and review carbon emissions on their own to properly account for carbon emission limits.

Appraisal is therefore not the sole solution to individual-level carbon assessments. But the data underlying appraisal and its surrounding framework is a necessary pre-condition to these assessments.

3.2 Where does appraisal exist in Scottish Government processes?

We have identified³ a number of major Scottish Government policymaking processes⁴, including:

- Business Cases
- Pre-Expenditure Assessments (PEA)
- Informal Policy Development Papers, i.e. notes.
- Grant Proposal Checklist for new grants.
- Impact Assessments, e.g.:
 - Environmental Impact Assessment (EIA)
 - Strategic Environmental Assessment (SEA)
 - Habitats Regulations Appraisal (HRA)
 - Child Rights and Wellbeing
 - Equality Impact Assessment (EqIA)
 - Island Communities
 - Fairer Scotland Duty
 - Business and Regulatory Impact Assessment (BRIA)

² Cost-benefit analysis appears to be permissive in practice, but it can be adjusted to be less permissive if desired by setting a higher carbon value. However, cost-benefit analysis will always primarily be focused on appraising different project options, which does not fully consider the emissions impact of all policy as a whole.

³ Information on existing practices has been verified to the best of our knowledge. However, while some guidance exists in the Scottish Public Finance Manual, this is highly limited. As far as we are aware there does not appear to be significant amount of centralised guidance.

⁴ We have focused on processes that require decisions and/or include appraisal. Policy making can also include processes around consultation, delivery etc.

Projects and programmes are only subject to some of these processes⁵, depending on the type of project/programme, the funding threshold, the likely impacts and other criteria.

The two primary processes intended for appraisal are Business Cases and Pre-Expenditure Assessments. Expenditure and budgetary control processes, such as Accountable Officer (AO) Templates also exist.

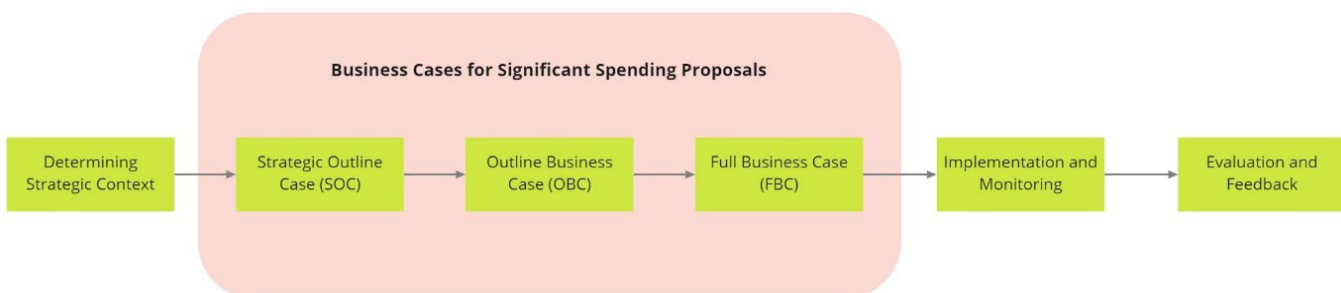
From our discussions, there is evidence that appraisal processes are currently inconsistently applied and therefore need to be enhanced to improve cross-governmental policymaking governance. This would provide oversight and challenge function on the existence and quality of processes and appraisal throughout the entire policymaking process. Having a consistent process is crucial to recommending an approach to individual-level carbon assessments that can be applied to all areas of the Scottish Government.

3.3 Business Cases provide a strong framework for policy development

The HMT Five Case Model is the recommended approach to preparing Business Cases in the Scottish Government, and refers to the consideration of the Strategic Case, the Economic Case, the Commercial Case, the Financial Case, and the Management Case. When relevant, emissions impacts (along with other societal impacts) should be considered in the Economic Case as part of an appraisal using cost-benefit analysis.

The Five Case Model is recognised internationally as good practice. It has been adopted by the G20 as an international standard for infrastructure projects and is used worldwide by countries such as New Zealand.

Figure 1: The Business Case Development Framework



For major projects⁶, Business Cases address these five cases across a three-stage process:

- The Strategic Outline Case (SOC) makes the initial case for change, along with a high-level overview of costs and the business need. The ‘preferred way forward’

⁵ There are also further review processes which some projects are subject to. For example, Gateway Review for major investment projects deemed “high risk”, and Key Stage Review for public-private partnerships.

⁶ In smaller projects, some or all of the three stages may be merged.

is identified from a long list of possible options and the direction of travel for the project is set.

- The Outline Business Case (OBC) returns to the options in the SOC, appraises each option to determine value for money, and identify the 'preferred option'. At this point, affordability should be confirmed and project management arrangements are put in place. The OBC is typically the largest of the three stages.
- Procurement follows on from the OBC. The Full Business Case (FBC) updates the values used in the OBC with the results of the procurement phase.

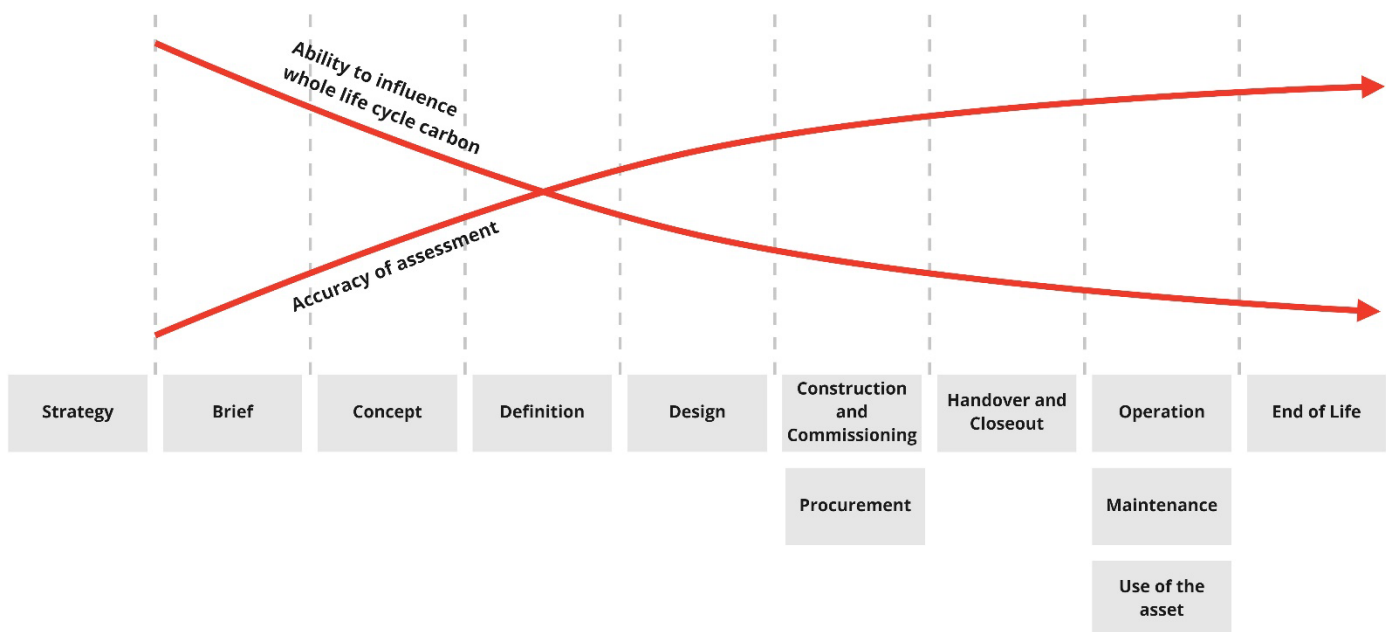
The availability and quality of data typically increases which each stage. This partly reflects more certainty around what the policy options will look like in practice. Other data differences also exist, for example after procurement takes place.

If carbon emissions/reduction is a cost/benefit, a carbon assessment of the project should take place and the results considered as part of the appraisal. However, as mentioned earlier, these results are typically presented in monetised terms rather than as tonnes of emissions, and cost-benefit analysis can be overly permissive for limited resources.

Individual-level carbon assessments can take place at any of the three stages. In the first stage (SOC), this carbon assessment will likely be more high-level than the later stages, which should have more detailed information to produce emissions estimates.

However, there is a trade-off between increased data availability in the later stages and reduced ability to affect decisions. The earlier that an intervention around emissions is made, the easier it is to select different policy options, redesign policy options or identify that the project is not compatible with emissions reduction targets. Figure 2 shows an illustrative diagram of these trade-offs for an infrastructure project.

Figure 2: Ability to influence carbon reduction across different work stages of infrastructure delivery



Source: PAS 2080:2016 – Carbon Management in Infrastructure

3.4 Significant opportunities for improving Business Cases and appraisal

Scottish Government projects that meet the 'Major Investment Project' criteria should have a Business Case and it should follow the Five Case Model and HM Treasury Green Book guidance.

The Major Investment Project criteria includes any project with an anticipated whole-life-cost of £5 million or higher, that is novel and/or contentious, and/or requires primary legislation.

From the evidence we have gathered, some parts of the Scottish Government have strong Business Case processes. As we will cover later, examples of good practice can be found in Transport Scotland and City Region & Growth Deals.

However, in practice, it appears that the application of Business Cases and appraisal processes are not consistent across all parts of the Scottish Government. This has an impact for how deliverable an individual-level carbon assessment process would be. For example, when Business Cases are not undertaken at all, projects are less likely to have an appraisal of societal costs and benefits, such as carbon emissions. Further, there appears to be significant opportunities for improving these existing processes, including oversight across the Government in setting or enforcing standards and ensuring these processes have taken place.

All governments have some examples of introducing policies without following expected processes even in governments that have more formal appraisal processes, such as the New Zealand Government and the UK Government.

The chance of successful implementation of any recommendations we make around carbon assessment would be greatly increased if these wider observations are also addressed.

3.5 Pre-Expenditure Assessment guidance may be confusing for smaller projects

Pre-expenditure assessments (PEAs) are required⁷ for any capital projects exceeding £5 million and any resource expenditure exceeding £1 million per annum.

We have heard that PEAs were first introduced in 2006 as a way to standardise practices and were at first treated as an explicit process that should be completed alongside other processes. However, our research has observed uptake of PEAs was variably applied across Government and the risk that having PEAs as an explicit process could lead to duplication.

PEAs are no longer undertaken as an explicit process and now represent a set of requirements. The SPFM states that PEAs are not intended to replace existing good practice in appraisal. Existing practices can continue, provided they include the core functions of a PEA.

It would appear that the principles of PEAs are thought to be represented by both Business Cases and what we have termed informal Policy Development Papers, but simply refer to informal notes on a policy during its development.

⁷ These are not a legal requirement but the bodies that fall under the remit of the Scottish Public Finance Manual are bound by its requirements.

As mentioned earlier, significant opportunities appear to exist from improvements in the application of Business Case criteria, but we will leave this discussion to the relevant section of the report.

PEA principles should therefore cover projects that fall between the minimum criteria for undertaking a PEA, and the minimum criteria for undertaking a Business Case, as well as any projects which should have a Business Case but do not. However, the Policy Development Papers reportedly can contain no appraisal or minimal appraisal. For example including financial costs only with no quantification of wider social/environmental impacts.

Quantitative appraisal of societal costs and benefits are less likely for policies relying on informal Policy Development Papers. These should apply for smaller projects only and are therefore less of an issue than inconsistently applied Business Case processes. However, some larger projects which meet the criteria for Business Cases appear to not be robustly undertaking these processes and are being approved on the basis of these informal notes.

It would appear that in some areas quantitative appraisals are not necessary for proceeding with projects. Ownership of PEAs rests with policy divisions or the relevant project or programme board with no sign off required as part of SPFM. It appears that a lack of centralised oversight may be contributing towards divergence in process consistency and application, as addressed in our recommendation number 3.

The informality of PEA processes enables areas of the Scottish Government to apply processes as they see fit. However, it appears that this informality may also be contributing to a lack of clarity over expectations.

This inconsistent application of social appraisal in some parts of the Government had a direct impact on our recommendations for an improved approach to carbon assessments, as the required data for undertaking carbon assessment may be limited or not exist in some areas.

Our research also suggests the Scottish Government can learn from other jurisdictions with regards to how projects are filtered into separate, proportionate processes based on cost and risk.

Other governments, for example, publish templates for different project cost ranges that communicate these expectations. For example, the Welsh Government publishes three Business Case templates:

- Low value and low risk (Procurement cost of £0 to £250k)
- Medium value and low-medium risk (Procurement cost of £250k to £2 million)
- High value or high risk (Procurement cost of over £2 million)

The first two of these must undertake a proportionate Single-stage Business Case, while the latter requires the full Three-stage Business Case. Our research also found that similar processes exist in other countries, such as the New Zealand Government, UK Government and Northern Ireland Executive, with thresholds differing between countries.

While the existence of these templates does not mean these are necessarily used, their existence does provide clarity around expectations and illustrates the more prescriptive requirements than found in the Scottish Government.

Our understanding is that Finance Business Partners in the Scottish Government are, however, undertaking work to improve the awareness across the Scottish Government

of the appraisal and evaluation requirements set out in the SPFM, including PEAs, with the aim of improving the consistency of the application of these requirements. As stated, progress in these wider reform efforts is crucial for the successful implementation of our recommendations specific to carbon assessment.

3.6 Existing impact assessment processes may not be functioning as intended

The Scottish Government has many types of impact assessments. These are undertaken for qualifying proposals and are used to identify how Scottish policies impact on a range of outcomes. For example, understanding the impact of policies on inequality, island communities, businesses, people with protected characteristics and so on.

However, we have found a number of issues with the execution of impact assessments, such as:

- They typically occur late in the policymaking process, after decisions have already been made and policies have gained significant amounts of momentum.
- They are often treated as a tick-box exercise.
- There is limited evidence of oversight being applied, which views the results of these assessments and challenges project choices. Impact assessments are generally being treated as a self-assessment.
- There are many types of impact assessment which may reduce the perceived significance of each assessment and potentially spreads existing resources more thinly.

These findings have been recognised by others, including the Scottish Government's Equality Budget Advisory Group, which stated⁸:

“What is clear is that current practice of equality and human rights impact assessment is at best variable. It is also clear that the starting point for policy formulation is not an analysis of the equality dimensions and a clear articulation of objective to advance equality and progress the realisation of rights.”

The Group has also raised issues around the culture of assessment within the Scottish Government⁹:

“Feedback on the process of producing the EFSBS suggests that insufficient staff time is allocated for assessing the equalities and human rights impacts of policy and budgeting decisions; that this work is not always seen as a priority; and that in some instances it is considered an added burden rather than an essential tool for improving policymaking and ensuring fair and effective use of public money.”

Recognising these issues, the Scottish Government is currently undertaking work to consolidate and improve impact assessments – we welcome this review.

⁸ <https://www.gov.scot/publications/equality-budget-advisory-group-recommendations-for-equality-and-human-rights-budgeting---2021-2026-parliamentary-session/pages/processes/>

⁹ <https://www.gov.scot/publications/equality-budget-advisory-group-recommendations-for-equality-and-human-rights-budgeting---2021-2026-parliamentary-session/pages/organisation-and-culture/>

The impact assessments most relevant to emissions are:

- Strategic Environmental Assessments (SEAs) – environmental assessments of plans, programmes, and strategies.
- Environmental Impact Assessments (EIAs) – environmental assessments of projects or development proposals that are likely to have a significant impact on the environment.

Our understanding is that EIAs can include estimated carbon emissions at a project level, but primarily focus on a broad range of environmental issues, rather than solely carbon emissions.

During our discussions, we have heard that EIAs can vary hugely in quality, often due to a lack of data being provided to the assessors (typically an external consultancy). The emphasis on emissions can also be lost among the wide range of other environmental impacts. There is also a lack of a feedback process between those undertaking EIAs and the policy team to establish if the environmental impacts are excessive and, from what we have seen, they do not appear to generally impact on policymaking processes and instead intend to inform planning and procurement decisions.

3.7 Lack of centralised oversight could be a result of Government structure

The UK Government and the New Zealand Government have a Treasury. This has the advantage of providing centralised approvals and cross-governmental oversight on policy development and appraisal processes.

The Scottish Government has no separate entity that acts as a Treasury-like function, providing a sense of cross-governmental oversight and control.

Instead, business areas are responsible for scrutinising the quality of Business Cases, with input from areas such as legal, subsidy control, finance, and so on.

Some challenge and scrutiny of processes does occur. In is our understanding that Finance Business Partners perform part of this role, but their remit is narrowly focused on the financial impacts rather than examining wider considerations such as social or environmental impacts. Their involvement is therefore towards the end of policy development when a policy has financial implications. By the time a policy gets to the point of spending money, the general policy pathway has already set.

The Programme & Project Management Centre of Expertise (PPM-CoE) provides support and guidance for Business Cases. It is our understanding that PPM-CoE's remit includes only supporting the capabilities of individuals and teams, and they operate on a principle led approach, rather than a directive led approach of mandating practices. The remit of PPM-CoE does not appear to include challenging Business Cases, accountability for Business Case development and appraisal instead sits with directorates.

Some of these oversight and support processes appear to be omitted or more limited in scope when Business Cases have not been developed for projects. The gaps in cross-government oversight therefore appear to be most apparent in the early and mid-stages of policy development that should be funnelling projects through a Business Case process, as well as gaps in oversight for quantitative social appraisal throughout the whole of policy development. This apparent lack of oversight is not an issue in areas which have strong Business Case and appraisal processes and have developed their own challenge functions.

Evidence showed that there is a wide spectrum of application of business cases and appraisal processes across Government. In some areas, there are no issues. In other areas, there is a lack of consistency of process, but some of the core best practices are still being undertaken in informal notes. And in some cases, key processes and quantitative social appraisal appear to not take place.

Different government structures each have their own set of advantages and disadvantages, and there is no “correct” structure. However, one of the key opportunities for improvement within the Scottish Government’s structure is establishing a distinct entity that acts as a challenge function for business cases and appraisal.

Without this challenge function, processes across Government inevitably become increasingly inconsistent.

This variety of current approaches is not necessarily bad. For example, policy processes can become more tailored to the objectives of the specific business area.

However, it also presents a risk to the quality of processes in some areas. And inconsistent processes between business areas presents a significant challenge for any issues which require cross-government comparisons of benefits and costs, such as climate change.

It appears that in some areas Business Cases and PEAs are not explicitly required before proceeding with projects. Substantial variability across the Government exists in practice.

Given the lack of requirement, there is a disincentive to undertake these processes or to perform them well. However, we have seen a strong desire across the civil service to improve Business Case and appraisal processes.

The first objective of this project is to improve the extent to which decision making within Scottish Government is supported by an understanding of emissions consequences.

And yet, when Business Cases and appraisal are not undertaken, the required data for carbon assessment may not exist.

And without consistently applied policymaking processes in general, it is difficult to identify a clear point of intervention that could apply across all parts of the Scottish Government.

Finally, without a clear point of intervention that will enable consistent estimation from all parts of government, it will not be possible to build up an adequate understanding of the impact of the Scottish Government’s collective decisions on emissions.

3.8 Culture in the Scottish Government

Best practices for policymaking dictate that Ministers are responsible for setting overall objectives, and that civil servants suggest options for achieving those objectives, clearly setting out the costs and benefits of options so that decision makers are fully informed.

This best practice is recognised internationally. For example, the New Zealand Government’s Better Business Cases guidance states¹⁰:

“Ministers may decide policy objectives and the direction of travel. The role of public servants is then to provide advice on the available options for successful

¹⁰ [Better Business Cases: Frequently Asked Questions](#) – “If the Minister has decided already what we are going to do, do we need to do a business case?”

delivery through the business case process in accordance with the guidance provided by Treasury.”

This process recognises the expertise of civil servants in devising project options and provides a platform for assessing and comparing these options. It greatly increases the chance of discovering potential challenges to option delivery and outcomes. And the process is also critical for ensuring that decisions can be made on the basis of achieving objectives using options that provide the best value for money.

While on rare occasions decisions need to be made rapidly and an expedited process may be required, the vast majority of policy should be allocated the time required to undertake these best practices.

Unfortunately, based on the evidence we have gathered, it is clear that the practice in the Scottish Government is at times falling short of best practice. We describe this in more detail within our recommendations.

3.9 Skills, Capacity and Guidance

The Scottish Government has a highly skilled and knowledgeable civil service. It is particularly skilled in the “middle” portion of policymaking, e.g. undertaking projects.

However, there is a lack of capacity allocated to the “start” and “end”. These include areas such as:

- Programme development and development of Business Cases
- Technical appraisal for undertaking as part of a Business Case
- Post-project evaluation and implementation of learnings from successes and failures

Skills for undertaking carbon assessment can have significant overlap with the skills required for technical appraisal. However, additional expertise can be required for complex projects.

Evaluations can range in difficulty and there may in some areas be a lack of capability for complex evaluations.

In many senses, this is not surprising. If Business Cases and appraisal are not always being undertaken regularly or consistently, then there is little incentive to improve these skills. A vicious cycle can develop where the lack of skills also leads to less willingness to undertake technical appraisal and other processes.

This is not helped by what appears to be very basic and high-level guidance provided in the Scottish Public Finance Manual, which provides little information on how to undertake these processes in practice. Links *are* provided to HM Treasury’s Green Book, which does provide much more detailed guidance for economic appraisal, however this is still quite abstract from the processes occurring in the Scottish Government.

Some may argue that the SPFM intends to lay out the core principles rather than detailed guidance, and that the SPFM may not be the best place to house this guidance.

We do not have a strong view on the location of guidance, but instead point out that a large organisation cannot be expected to operate as efficiently as possible based solely on a high-level set of principles.

In addition, there is an apparent absence of mechanisms to share best practice across government.

We have heard that in some cases appraisal is being undertaken primarily as a discussion piece where the financial costs to Government are quantified but the social costs and benefits are only qualitatively assessed. This appears to be driven by a lack of capacity and time set aside for civil servants to undertake a technical appraisal.

Until the importance of Business Case and appraisal processes are recognised by the Scottish Government and their evidence is sought, it seems unlikely that the right environment will exist for sufficient appraisal to take place.

Secondly, there appears to be no clear centre of expertise on appraisal in the Scottish Government. This can mean civil servants are left uncertain where to seek additional support, or how to share best practice. With no obvious formal mechanism for appraisal support, civil servants rely on their personal networks. In other governments, the centre of expertise can exist in a Treasury-like department, which also has a responsibility for Business Case approvals.

For example, we have heard that the high standards set for Business Cases in HM Treasury lead to a clear understanding of where expertise can be sought, and a sense that submissions by other departments must meet these standards when seeking Business Case approval. This appears to have instilled a culture that, in general, values well-developed business cases.

3.10 Examples of Good Practice in the Scottish Government

Some areas of the Scottish Government have developed robust appraisal processes and undertake regular individual-level carbon assessments. Two clear examples of good policy appraisal in the Scottish Government are found in the City Region & Growth Deals programme and Transport Scotland.

3.10.1 City Region & Growth Deals

The City Region and Growth Deals team are currently pushing the boundary of individual-level carbon assessment within the Scottish Government and across the UK. They have a clear ambition to understand the GHG emissions of their funded projects and have seconded a specialist whole life carbon consultant to develop their processes.

This team is an excellent microcosm of the processes and governance that SG should consider putting in place.

All bids for funding must now include a carbon assessment and the team provides support to bidders to achieve this. Specific guidance has been created for project owners to manage carbon emissions associated with Scottish City Region and Growth Deal projects and programmes. These aim to support the following three goals for all projects and programmes:

1. *Quantification* of whole life carbon using appropriate and authoritative sources;
2. *Minimisation* of whole life carbon using relevant best practice methodologies; and,
3. *Identification* of potential barriers to achieving net zero, e.g. skills, materials, technology.

This includes following a standardised carbon management procedure. PAS 2080 is a carbon management procedure made for infrastructure, but the team has shown its success across all types of capital projects.

A taxonomy process is used to categorise projects as one of: “whole life carbon decrease”, “whole life carbon net zero”, “capital carbon increase, then operational net zero”, “capital and operational carbon increase”, or “operational increase”. It is further categorised with an “influence” taxonomy, which captures whether the project will influence emissions in a less direct sense.

Projects classified as increasing carbon over the long term require investigation into whether the carbon impact can be feasibly improved, and ultimately is one of the factors feeding into the success of any funding application.

The team sums together the estimated carbon impacts to understand the overall impact of their funding by year and ensure that the funding as a whole is net zero compatible.

If a project is successful in their application for funding, the project managers then work with the specialist whole life carbon consultant to further reduce emissions, over and above the initial estimates. This involves considering changes to design¹¹, sourcing different materials, choosing different priorities in procurement and so on.

A number of defining characteristics underpin the success in the City Region & Growth Deals team that can be related to SG as a whole. These include:

- A consistent framework for appraising proposed policies.
- Required *quantification* of GHG emissions for all policies.
- Engagement in carbon reduction across the whole policymaking process – from inception to procurement to operation to end of life.
- The specialist consultant acts as the equivalent of what we will later be calling the “Climate Governance Team” in our recommendations. There is a clear challenge function within the team.
- Funding is not won without meeting the requirements around appraisal and carbon assessment.
- A multidisciplinary team which has an understanding of policy development, engineering, economics, carbon assessment, procurement and other key parts of the overall policymaking process.
- A simple taxonomy for carbon emissions to ensure those bidding for funding are thinking about carbon from the outset, followed by a full assessment.
- An aggregated view of project carbon emissions, which creates the necessary trade-offs between project objectives, i.e. “if I go ahead with this GHG emitting project, I will need projects with negative emissions to ensure the programme as a whole is net zero in the long term”.
- Training and support are provided to all project owners. Rather than many approaches developing across the private sector to support the public sector, this

¹¹ While it is commonplace to assume that these changes would lead to a more costly project, the reverse is often true. Fewer materials can mean both lower cost and lower carbon. A good summary is provided here: [Carbon Cost in Infrastructure: The Key to the Climate Crisis?](#)

expertise exists within the Scottish Government and ensures consistency and a clear direction.

This approach is receiving widespread attention beyond the City Region & Growth Deals team as a pragmatic approach to appraising projects in the public sector.

This has been further recognised by the Climate Emergency Response Group who recommended, as one of twelve immediate actions for the Scottish Government in September 2021¹², that the City Region & Growth Deals guidance is adopted for infrastructure spending decisions across the whole of Government.

We recommend engaging the City Region and Growth Deals team to provide advice on the carbon management of projects.

3.10.2 Transport Scotland

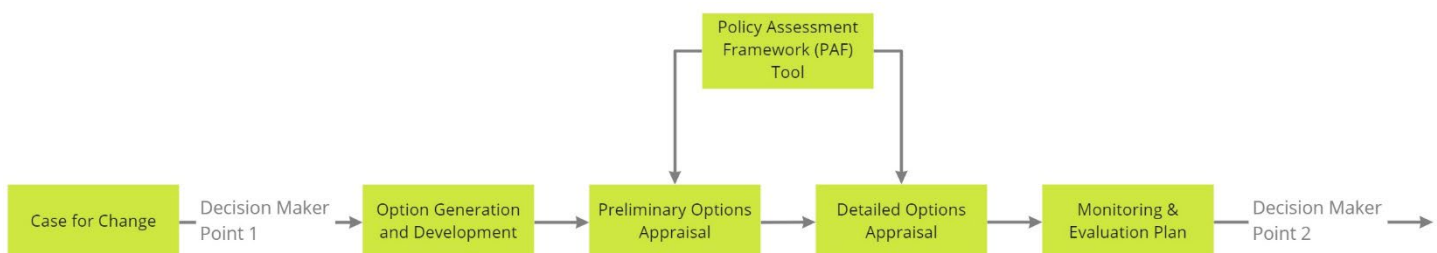
Transport Scotland provides guidance to transport practitioners with its Scottish Transport Analysis Guide (Scot-TAG). This includes:

- Land-Use and Transport Integration in Scotland (LATIS) – a service for providing appraisal and modelling support and engaging with external consultants.
- Scottish Transport Appraisal Guidance (STAG)
- Development Planning and Management Transport Appraisal Guidance (DPMTAG)

The STAG guidance in particular is highly detailed and leads the reader through each step of project development processes. While the City Region and Growth Deals team are applying more advanced processes, STAG is an interesting example given the scale that this guidance is being applied at. [Separate guidance](#) is also provided on the development of Business Cases.

The Preliminary Options Appraisal includes a qualitative carbon assessment. A quantitative assessment is undertaken in the Detailed Options Appraisal, calculated for each year over the 60-year appraisal period. Transport Scotland produce an Excel toolkit for practitioners to undertake carbon emission calculations for non-complex projects.

Figure 3: Scottish Transport Appraisal Guidance stages



STAG has [recently been refreshed](#). Climate change was previously part of the Environment criteria, where each criterion must be qualitatively assessed using a seven-point assessment scale. The update has emphasised the importance of Climate change and it now sits as a distinct criterion.

¹² Page 28, https://cerg.scot/wp-content/uploads/2021/09/CERG_Report_Final_Sept_2021.pdf

4 International Examples of Embedding Carbon into Policymaking

This section examines a selection of international government practices which aim to enhance decision making through better understanding the emissions impacts of spending choices.

The main focus of the chapter is the Climate Implications of Policy Assessment undertaken in the New Zealand Government. The policymaking processes of the New Zealand Government are similar to the Scottish Government and UK Government (e.g. through the Five Case Model and Gateway Review).

4.1 New Zealand Government: Climate Implications of Policy Assessment (CIPA)¹³

The purpose of the Climate Implications of Policy Assessment (CIPA) is to introduce a requirement that enables the New Zealand Government to measure, monitor and report on Government decisions that impact on greenhouse gas emissions. This framework is applied to all Cabinet decisions, but not all ministerial decisions.

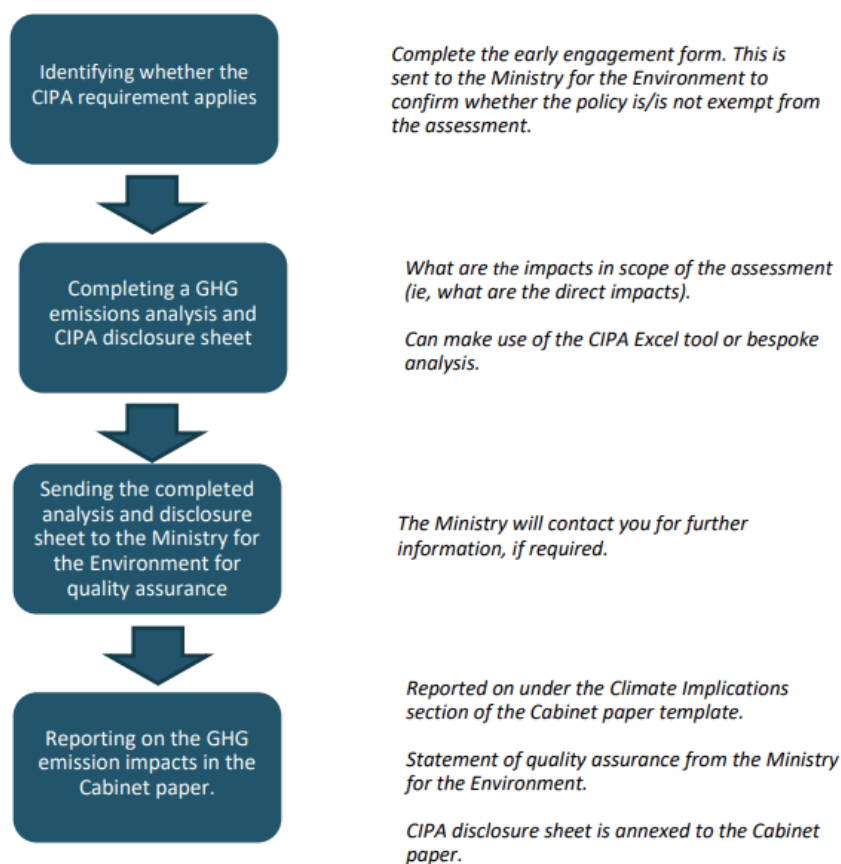
The key stages of the CIPA include:

- Completing the Early Engagement Form.
- Undertaking an individual-level carbon assessment, if required.
- Disclosing the results in a common format.

The figure below shows the flowchart provided by the New Zealand Government.

¹³ <https://environment.govt.nz/assets/Publications/Files/climate-implications-of-policy-assessment-guide-updated.pdf>

Figure 4: The CIPA process



Source: [New Zealand Government \(2019\)](#)

4.1.1 Step 1 – The Early Engagement Form

The [Early Engagement Form](#) is the first step of the CIPA process and applies to all central government agencies who are developing policy proposals that will go to Cabinet. The form acts as a filtering process and aims to identify whether a policy proposal should undertake a carbon assessment.

This form is relatively simple to fill out, requiring no quantified emissions estimates.

Figure 5: Key questions in the Climate Implications of Policy Assessment Early Engagement Form

Key questions

	Yes/no/unsure	Comment if needed
Is a reduction in greenhouse gas emissions an explicit objective of the proposal?		
Could any of the policy options considered have a significant impact on greenhouse gas emissions (increases or decreases) in the following sectors?:		
Electricity , for example, policies that have an impact on: <ul style="list-style-type: none"> renewable sources to replace fossil fuels in electricity generation a change in the amount of electricity demanded, for example the building of a factory the electrification of process heat¹ geothermal carbon capture and storage energy efficiency of buildings. 		
Transport , for example, policies that have an impact on: <ul style="list-style-type: none"> total vehicle kilometres travelled by internal combustion engine vehicles (including public transport) fuel switching from fossil fuels to lower emission alternatives, such as electricity (battery), hydrogen and biofuels transport mode change (passenger and freight) electric vehicle uptake. 		
Waste , for example: <ul style="list-style-type: none"> policies that will result in an increase or decrease in waste going to landfill. 		
Agriculture , for example, policies that have an impact on: <ul style="list-style-type: none"> amounts and types of livestock on farms use of nitrogen fertiliser. 		
Land use , for example, policies that have an impact on: <ul style="list-style-type: none"> amount of land converted to or from forest land regenerating native forest changes in forest type or species. 		
Industrial processes and product use , for example, policies that have an impact on <ul style="list-style-type: none"> use of greenhouse gas emitting process heat fuels and fuel switching to biomass energy efficiency in process heat the use of construction materials. 		

The form asks whether a reduction in GHG emissions is an explicit objective of the policy proposal, and whether the policy proposal is likely to have GHG emission impacts in one or more sectors that have been identified as being important for GHG emissions reductions (electricity, transport, land use, waste, agriculture, industrial processes and product use).

This form is submitted to the Ministry for the Environment, who will confirm whether the policy proposal is subject to carrying out and reporting on a GHG emissions analysis. Setting this threshold is an important choice as it attempts to balance enough coverage of policies without overwhelming the system. This response has a target response time of within five working days.

Critically, it is the Ministry for the Environment who makes the decision, rather than acting simply as a repository for the forms. This means they may come back to policy officials with questions, they may disagree with the answers in the form, they have the final say on the approval, and that any policy proposal that proceeds without their approval is highlighted in the CIPA disclosure section of Cabinet Papers.

The policy proposal is subject to mandatory further analysis if:

- GHG emissions reductions are an explicit objective of the proposal or,
- GHG emissions reductions are not an explicit objective, but the Ministry for the Environment has determined that GHG emissions have met a specified threshold.

Currently, this threshold is set as an increase or decrease in CO₂ equivalent emissions of:

- 0.5 million tonnes over the first ten years of the proposal period (representing an annual average of 50,000 tonnes),

- 3 million tonnes over 30 years for forestry-related proposals (representing an annual average of 100,000 tonnes).

When CIPAs were first introduced in 2019, this threshold was initially set quite high due to concerns about modelling capabilities and the introduction of bottlenecks in policymaking. However, these concerns did not materialise and the threshold has since been significantly lowered.

This threshold acts as a useful lever to balance the coverage of as many policy proposals as possible, while ensuring that capacity is not overwhelmed within Government. In effect, it allows the Ministry to take a phased approach to government wide carbon assessment.

CIPA covers *all* forms of policy proposals that require Cabinet approval, including regulatory proposals. However, for regulatory proposals CIPAs are merged into the Regulatory Impact Assessment (RIA) process to avoid multiple forms. The RIA form is provided to both the Ministry for the Environment and the Treasury, although the Ministry retains the sole authority over the CIPA quality assurance.

This merging of processes may be useful to consider for policy proposals in the Scottish Government that may fall outside the standard Business Case process (e.g. grants, regulation etc).

4.1.2 Step 2 – GHG Emissions Analysis

If confirmed by the Ministry for the Environment, the next step is for GHG emissions analysis to take place. Analysis of GHG emissions impacts should be carried out for the preferred policy options in the Business Case.

The Ministry for the Environment has produced a spreadsheet tool which can be used to undertake this analysis. Government agencies are expected to, at a minimum, use this tool. However, they are also encouraged to use a more comprehensive or bespoke model if they wish.

This tool includes the most common GHG emissions factors from key emissions contributors such as “Electricity”, “Transport – Residential”, “Transport – Freight”, “Waste”, “Agriculture”, “Industry” and “Land use change”.

This tool is easy to use, aiming to minimise the difficulty of completing the assessment. For example, in the figure below, we have estimated the greenhouse gas emissions impact of planting 1000 hectares of forest. Simply entering 1000 results in the automatic estimation of annual changes in GHG emissions.

Figure 6: Example of the CIPA tool for estimating changes in greenhouse gases

Planting of new forest - hectares		2020	2021	2022	2023	2024
Planted forest	ha	1000				
Natural forest	ha					
Planting of new forest - tonne CO2-e		2020	2021	2022	2023	2024
Planted forest	tonne CO2-e	- 1,903	- 1,063	- 3,373	- 5,280	- 2,000
Natural forest	tonne CO2-e	0.00	0.00	0.00	0.00	0.00

This is not dissimilar to spreadsheets produced by Transport Scotland (as part of the Scottish Transport Appraisal Guidance), but the CIPA tool covers all applications rather than just transport. More details on this tool have been included in the Appendices.

4.1.3 Step 3 – Emissions Reporting

Once completed, this analysis must be put in a useful and consistent format for decision makers. The CIPA disclosure sheet is used for this and is appended to the relevant Cabinet paper.

Emissions impacts must be reported for each of the New Zealand's five-year GHG emissions budgets. At a minimum, CIPA disclosure should report on GHG emissions impacts of policy proposals up to 2035, covering the 2020-25, 2026-30, and 2031-35 GHG budgets.

Before the CIPA disclosure sheet is submitted, quality assurance is undertaken by the Ministry for the Environment, who will include a statement on the quality of analysis of GHG emissions impacts in the submitted Cabinet paper.

This quality assurance covers:

- Whether relevant sources of GHG emissions have been reliably identified.
- How robust the estimates for the activity data are, and the basis for these estimates.
- Any key assumptions or projections that have been flagged through the assessment process.

While the CIPA disclosure form presents useful and readily digestible data, it's important to note that the CIPA disclosure is primarily a statement of data. It could be argued that stating megatonnes of CO₂ equivalent can be relatively meaningless to many people without contextualisation. There is presently no interpretation in the CIPA of how compatible a policy is with the required trajectory for net zero targets, which may present a challenge for the interpretation of decision makers.

There is also no exact point that civil servants are required to fill in a CIPA, unless they are undertaking a regulatory impact assessment. And while the engagement with the CIPA team can encourage consideration of climate impacts during policy development, the requirement for reporting the results of CIPAs comes late in the policy development process. CIPAs are reported within Cabinet Papers and this may be too late to impact on some decisions.

Figure 7: CIPA Disclosure Form

Section 2: Greenhouse gas emission impacts

Sector & source	Changes in greenhouse gas emissions in tonnes of carbon dioxide equivalent (CO ₂ e)						
	2020–25	2026–30	2031–35	2036–40	2041–45	2046–50	Cumulative impact
Electricity							
Transport							
Industry							
Waste							
Agriculture							
Land use, land use change and forestry							
Total							

Section 3: Additional information

Additional information

Include in this section additional information that may be relevant. For example, this could include more information on:

- Sensitivity analysis
- Where assumptions differ from those included in the CIPA Excel tool, and why
- The main driver(s) of emission volumes for each of the key sources of impact (eg, *the projections are based on 230,000 affected households, average electricity savings of 3000 kWh per household per annum from 2025, partially offset by some increased electricity demand in 30 per cent of households*).
- Carbon leakage
- Any important limitations or uncertainties underlying the analysis (eg, *the projections do not allow for any emissions arising from the xyz manufacturing process, due to a lack of information. The number of affected households could vary between 180,000 and 250,000, depending on implementation decisions yet to be taken*).
- Note: additional sections, tables and/or graphics may be added to this template disclosure sheet if appropriate (discuss this with the CIPA team)

Section 4: Quality assurance

Quality assurance

Include in this section the quality assurance statement from the Ministry for the Environment's Climate Implications of Policy Assessment (CIPA) team.

4.1.4 Outcomes of the CIPA process

We have heard that a major benefit of CIPA has been the introduction of a governance system. This has helped encourage consistency in carbon assessment across the Government and encouraged more general reflections on the climate impacts of policy.

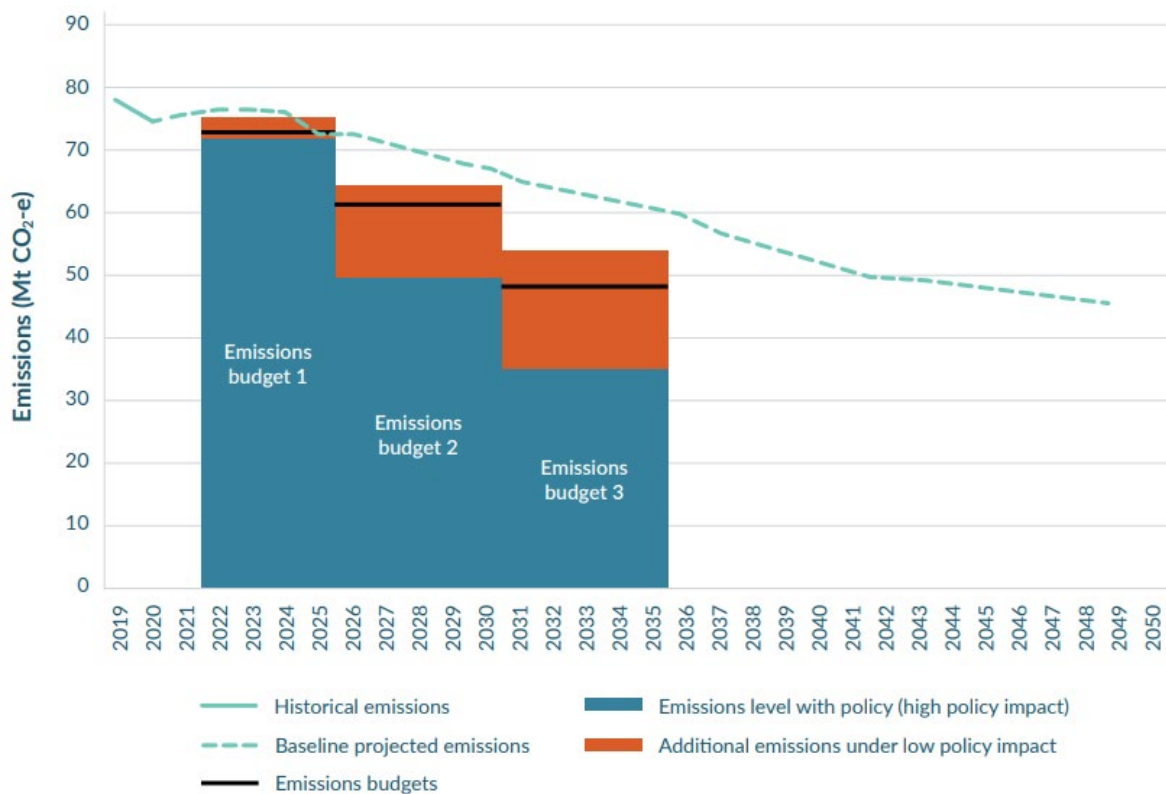
For example, through querying estimates, identifying specific areas for concern, and providing support. The requirement for this team to be involved in climate impacting projects and their role as a challenge function also enables the team to hold frank discussions with policy teams.

CIPA has helped to highlight climate issues to ministers through disclosure in Cabinet Papers. However, this comes quite late in the policymaking processes and may limit some of the benefits that can arise from early intervention.

The publication of Cabinet Papers has resulted in some examples of parliamentary and public scrutiny. This scrutiny comes after decisions have been made and the Cabinet Papers have been released.

CIPA processes have been integrated into the New Zealand Government's budgetary processes for the last two Budget rounds and has had a role throughout the development of policies for the recently published [Emissions Reduction Plan](#).

Figure 8: Expected impact of the New Zealand Government's first emissions reduction plan on emissions over the first three emissions budgets



Source: New Zealand Government Emissions Reduction Plan

A public release of the Budget 2020 information [can be found here](#)¹⁴ that includes quantitative results from the CIPA process. The Figure below shows some of this data.

It should be noted that CIPAs were required far earlier in the budget process than compared to standard Cabinet CIPA requirements. This increases the scope for CIPA to influence the design and scale of initiatives throughout the Budget process.

However, only a relatively small number of initiatives have been covered, and additional analysis to understand how much these initiatives quantitatively contribute to targets would provide useful additional context.

¹⁴ The Treasury, Budget 2021 Information Release, August 2021.

Figure 9: A quantitative summary of the estimated emissions impact for three of the five modelled initiatives¹⁵

Initiative	Changes in greenhouse gas emissions in kilotonnes of carbon dioxide equivalent (kt CO ₂ -e)						
	2021–25	2026–30	2031–35	2036–40	2041–45	2046–50	Cumulative impact
Biofuels mandate							
Central estimate	-1,300	-7,200	-12,100	NE ¹	NE ¹	NE ¹	-20,600
Cleaner cars							
Low	-144	-1,284	-1,420	-632	-162	-76	-3,718
High	-1,135	-5,128	-5,218	-2,412	-777	-385	-15,055
Decarbonisation of the public transport bus fleet (funded through NZGIF)							
Low	-40	-60	-60	-20	0	0	-180
Medium	-40	-60	-60	-40	-10	0	-210
High	-40	-60	-60	-60	-20	0	-240

4.2 Swedish Transport Administration

The Swedish Transport Administration, Trafikverket, introduced contractual carbon reduction targets for major infrastructure schemes exceeding €5 million in 2016.

Firms bidding for public contracts are required to use Trafikverket's carbon tool, Klimatkalkyl. This ensures that firms are applying a consistent methodology to their estimates of carbon emissions.

Trafikverket provide financial incentives for minimising emissions on publicly contracts¹⁶. This is in the form of bonuses offered to firms that outperform the carbon reduction targets.

This has a number of practical impacts when it comes to individual-level carbon assessment.

Firstly, it results in firms considering climate impacts for government-related spending. This data could also reduce some of the constraints on analytical capacity within the Scottish Government.

Second, from our discussions, we have heard that many firms in the construction industry are expecting a change of this nature. Introducing *quantitative*¹⁷ emissions requirements in public contracts provides a clear signal and incentive to the private sector.

¹⁵ NE: Not estimated. CIPA processes presently only require assessments up to the 2031-35 carbon budget.

¹⁶ <https://web.archive.org/web/20210127164904/https://www.trafikverket.se/for-dig-i-branschen/miljo--for-dig-i-branschen/energi-och-klimat/klimatkrav/>

¹⁷ A large amount of scepticism has been raised around the impact of qualitative climate requirements in public contracts.

However, views from the industry have reflected on the importance of a level playing field. Requirements to use Government produced tools, such as Klimatkalkyl in Sweden, help deliver a more level playing field through a consistent application of methodology.

There have also been concerns around the use of these requirements on contracts which only have one bidder. For this reason, the Scottish Government may want to consider a phased roll-out, focusing first on contracts that provide the most opportunity for carbon reduction.

The potential to disadvantage small and medium enterprises (SMEs) has also been raised. Providing a centrally produced tool and guidance will be essential for mitigating this. Without these central requirements, firms who are able to build in-house teams of environmental consultants are likely to gain an advantage.

This is a clear example of an area where Scottish Government priorities on climate change and SMEs clash, and progress on climate targets may be limited. The Government should seek to clarify on which priority takes precedence.

4.3 Other examples of public procurement requirements

The Danish Government manage a life cycle assessment tool for buildings called [LCAbyg](#). From 2023, requirements around the climate footprints of buildings will be phased into building regulations. This includes a requirement for all new buildings to include a life cycle assessment, as well as a phased reduction in an emissions limit (measured as CO₂ equivalent per meter squared per year).

Similar policy is being explored in Finland too, with plans for carbon limits for different building types before 2025, the creation of an assessment methodology and database, and the introduction of whole life carbon assessment of buildings by 2025¹⁸.

In October 2019¹⁹, the Nordic countries of Denmark, Finland, Iceland, Norway and Sweden agreed to collaborate on the harmonisation of their approaches, methods, data, tools and policies for carbon neutrality in the built environment.

¹⁸ Some details are available at: <https://journal-buildingscities.org/articles/10.5334/bc.30/>

¹⁹ <https://www.norden.org/en/declaration/nordic-declaration-low-carbon-construction-and-circular-principles-construction-sector>

5 The Carbon Assessment of the Budget

5.1 The Scottish Government's Carbon Assessment

The Scottish Government's High-Level Carbon Assessment (HLCA) fulfils the statutory requirement of the Climate Change (Scotland) Act 2009 to report on the emissions impact of expenditure proposals alongside Draft Budgets.

The Carbon Assessment has been best described as a tool for carbon *accountability*, not carbon *accountancy*. That is, a tool that tells us where we currently are as a result of past actions.

It uses the correct methodology to give us a best estimate of the aggregate supply chain emissions impact of current Scottish Government spending. This is a consumption-based estimate to help understand which industries drive supply-chain emissions. But it is not built for, and is not the correct framework for, accurately describing *individual* emissions impacts of policies.

A project running simultaneously to the HLCA project in 2008 explored Individual Level Carbon Assessments – these are the key missing links to truly understanding the carbon impacts of policies and are the focus of the earlier part of this report. This project was reportedly dropped, and no progress has been made on this critical step in the 14 years since.

5.1.1 What does and doesn't the High-Level Carbon Assessment tell us?

The HLCA uses planned spending data from the Scottish Government's Draft Budget, along with a model of the Scottish economy, to provide an estimate for the total emissions impact of the spending.

This is primarily a result of allocating planned level 4 spending lines in the Draft Budget to an industry or industries, and using industry averages to estimate their impact on carbon.

Major inaccuracies will therefore exist at an individual policy level. For example, a £100m project to build a bridge and a £100m project to install carbon efficient heating in buildings could both be classified to the construction industry and be estimated to have the same impact, despite clearly being very different activities.

However, the HLCA does not aim to provide accurate estimates for individual spending lines, instead it seeks to provide an estimate for current aggregate Scottish Government spending.

This inaccuracy at an individual project level is a result of the minimal data requirements, which also serves as an advantage of this methodology. Spending lines can be classified to industries easily enough, but spending lines are not projects. By their nature, spending lines do not contain enough information to understand the characteristics and outcomes of individual projects.

There are also a number of areas that are important for scrutiny but are not intended to be covered by the HLCA.

The HLCA focuses on the Draft Budget year only. It is not forward-looking and so will not capture future carbon reduction as a result of this spending.

For example, the "Energy" spending line the Net Zero, Energy and Transport Portfolio has estimated GHG *emissions* of 112,600 tonnes of CO₂-equivalent for the year 2022-

23. But the level 4 spending lines describe projects aiming to reduce emissions, such as spending on energy efficiency and renewable energy projects. The emissions *reduction* of these measures will only feed into the HLCA once they have occurred and are picked up in the data, this may be many years after projects have begun. Conversely, some spending lines may appear to have relatively few emissions but could result in emissions in the future.

In summary, the High-Level Carbon Assessment provides an estimate of the overall impact of Scottish Government spending on economy-wide supply chain emissions. It is the correct methodology for achieving this and does so with relatively little data collection required.

However, it is not intended for scrutinising the emissions impact of individual policies. Nor does it intend to provide an understanding of how decisions in the Draft Budget could affect emissions in future years. The HLCA is a tool for budget scrutiny, but its usefulness is limited²⁰.

This was first recognised in the Transport, Infrastructure and Climate Change Committee in 2009²¹:

“How useful will the [high-level] carbon assessment be in allowing subject committees to scrutinise the carbon impact of spending in individual subject portfolios?”

“At the current level of resolution, it will not be particularly helpful until we see some of the individual-level assessments, which might be more helpful. The [high-level] carbon assessment gets things started but it does not necessarily go all the way.”

Another commenter later stated:

“We can be certain that the high-level assessment is more or less right, but we could not make a decision on the basis of it.”

In November 2009, the phase 2 report on the development of the HLCA methodology stated that a project on individual-level assessments was being undertaken in parallel. Details on this parallel project are sparse, but reportedly it was abandoned.

Unfortunately, the wording of the Climate Change (Scotland) Act 2009 doesn't provide much room for flexibility. It states:

“The Scottish Ministers must, at the same time as laying before the Scottish Parliament any document setting out draft proposals for the use of resources in any financial year, lay before the Scottish Parliament a document describing the direct and indirect impact on greenhouse gas emissions of the activities to be funded by virtue of the proposals.”

This restricts the analysis to occur at the time of the draft budget, and the use of “direct and indirect impact”, depending on interpretation, could be seen as restricting the methodological choices of the Scottish Government.

5.2 Data dictates the extent of scrutiny

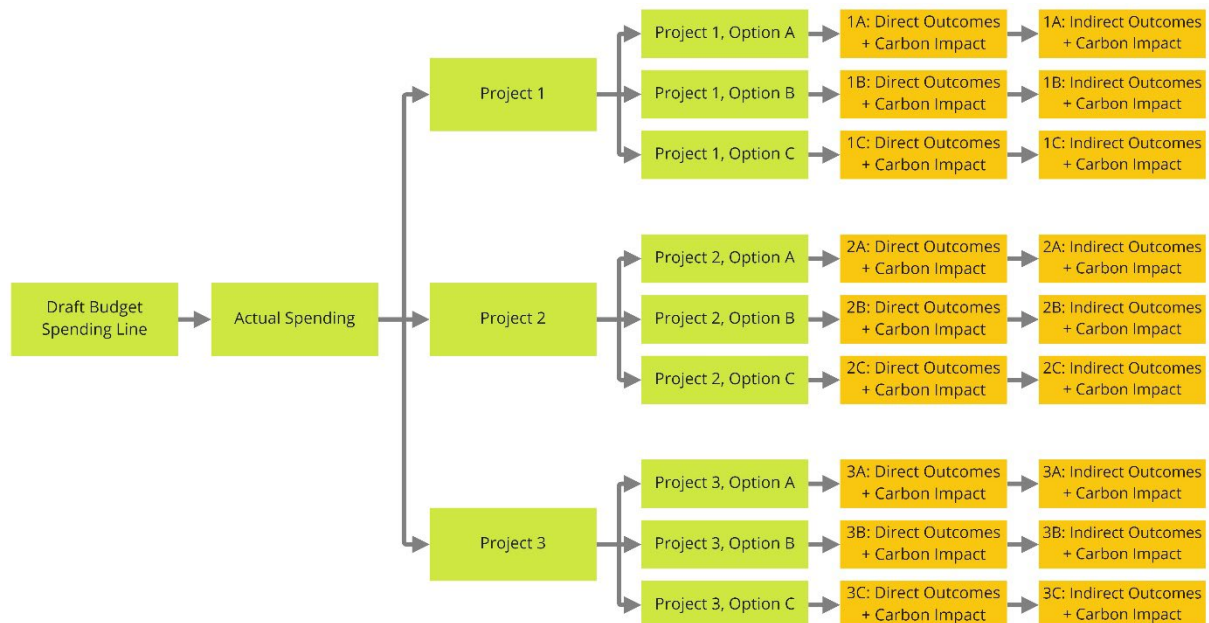
No matter the complexity of the model, there is only so much that can be gleaned from spending lines before the results become increasingly spurious. This represents a fundamental problem with using spending lines for emissions estimates. Planned

²⁰ However, the underlying environmental input-output model may still have utility in other applications. For example, understanding supply chain emissions impacts of a given spend.

²¹ <https://archive.scottish.parliament.uk/s3/committees/ticc/or-09/tr09-2102.htm#Col2138>

spending lines in the Draft Budget are too many steps removed from carbon outcomes to allow for accurate estimation at a granular level.

Figure 10: Simplified example of a spending line funding new project proposals



To illustrate this point, the figure above starts with a planned level 4 spending line in the Draft Budget. Accurate estimation of spending lines is difficult, and there may be some difference between the planned spending line and the actual spending that takes place.

In this hypothetical example, the spending is put towards a collection of new projects, rather than existing projects²². These projects are developed by civil servants, each project with its own selection of project options that represent different ways of achieving the overall objectives. Each of these project options will differ in their specification. If implemented, these project options could lead to a very different set of outcomes, including different levels of carbon emissions.

These different outcomes could generate a set of indirect outcomes and carbon emissions, e.g. through behavioural impacts.

Finally, the spending line reflects the Draft Budget year only, but the resulting projects could be active for many years. It is difficult to apportion the emissions impact to the “correct” financial year²³.

In this example, the attempt to estimate carbon emissions based on the Draft Budget spending line is incredibly challenging because of the large range of potential outcomes possible. It is also likely that many spending lines include funding for both net zero compatible policies, and non-compatible policies and the aggregated spending line can lose this detail.

²² More is known when funding is contributing towards existing projects, which makes it easier to connect spending to outcomes.

²³ This single year focus may also lead to the question of whether the Draft Budget is the most suitable place for carbon assessment, or whether multi-year Spending Reviews may better capture the pattern of a project’s emissions.

Understanding the carbon impacts of spending lines is difficult without knowing the specification of the underlying projects. This presents a challenge for scrutinising these impacts at the time of the Draft Budget.

As we will discuss in the next sections, scrutiny of individual projects can only take place when the spending line data has been enhanced with additional data or replaced completely.

5.3 Taxonomy approaches

The Scottish Government [commissioned a report in 2020](#) to look at approaches the Scottish Government could use to assess and report on the alignment between its Infrastructure Investment Plan and Scotland's emission reduction ambitions.

It recommended "In the short run (i.e. for the 2020 Infrastructure Investment Plan), the Scottish Government could continue to use a taxonomy approach to assess the impact of the Infrastructure Investment Plan... A more complete framework could be developed in 2021, in line with the recommendation from the Infrastructure Commission for Scotland."

We agree that a taxonomy approach provides benefits around swift implementation and coverage of spending. We note that the Scottish Government has a Carbon Assessment of the Capital Budget.

However, the Carbon Assessment of the Capital Budget demonstrates the limits of scrutiny available from a taxonomy process. For example, all NHS spending is classified as "Neutral" – but this does not reflect spending which aims to reduce NHS-related emissions. And interpretation can be difficult, for instance increased spending to reduce NHS-related emissions would result in higher "neutral" emissions spending and result in a lower proportion of Scottish Government spending being classified as "low" carbon, despite being an emissions reduction project.

Taxonomies also do not include quantification and give little sense of magnitude. That is, are the proposed changes enough to meet emissions reduction targets? Taxonomy approaches have a fundamental limit to their usefulness for scrutiny.

Tweaks to classifications could be made to better link taxonomies with outcomes. For example, later in this report we recommend a filtering process to prioritise individual-level carbon assessments for policies with larger expected impacts. This filtering process asks civil servants to consider the likely impact of the policy in terms of expected increases, decreases or no change in emissions.

The information from this filtering process alone would have complete coverage of all policy and could be used for scrutiny purposes without requiring additional resource. This coverage of all policy may be useful for scrutinising policies that are not expected to have large enough impacts to undergo a full carbon assessment. Further resource would, however, be required to classify new policy aspirations at a pre-Budget stage as these will not have yet gone through policy development.

This taxonomy could provide a wide coverage of all policy, but the level of information would be insufficient for scrutiny of policies with larger impacts. We do not recommend primarily relying on a taxonomy process as the results can conceal significant amounts of information – including progress being made and areas of concern.

We note that in the consultation for the 2025-2026 Infrastructure Investment Plan²⁴ feedback commonly reflected that the current taxonomy approach is “too simplistic”, “basic”, “out of date”, “fails to gather sufficient quantitative data”, and “is not fit for purpose”.

The Scottish Government has taken these reflections on board and is exploring a combination of individual-level carbon assessments and gap analysis for the Infrastructure Investment Plan, which will set out the Government’s strategic approach to multi-year capital projects.

5.4 Non-spending line approaches

Scrutinising carbon emissions using planned spending lines is challenging. The central issue is that spending lines do not generate emissions, instead the funded projects generate the emissions. Attempting to equate planned spending lines with actual projects is fraught with difficulty.

A possible solution is to avoid basing the assessment on planned spending line data. If emissions are generated by projects (or grants and other activities), then project level data is most suitable. Examples of project-level emissions data includes the individual-level carbon assessments discussed earlier in this report.

Project level data could produce quantified carbon estimates for each project which accomplishes what the HLCA and taxonomy approaches cannot. These quantified estimates allow for scrutiny between individual projects²⁵ and provide a better sense of the extent to which carbon emitting or carbon abating projects contribute to the net zero transition.

This would, however, mean that the carbon impact is not estimated nor provided at a spending line level. Instead, it would describe how spending lines are supporting the policies that have the largest positive or negative impacts on emissions.

There is therefore a choice to be made between policy approaches which provide good data but aren’t presented on a spending line basis, and spending line approaches which are presented on a spending line basis but in our view provide limited and potentially spurious results for scrutiny. Our recommendation is to prioritise the better-quality policy-level data that can be used to answer many types of questions. But it should be understood that this means it will not be possible to go line by line through the budget and expect a carbon estimate to be placed alongside the funding.

While this approach avoids trying to estimate project outcomes from the many-steps-removed planned spending lines, it is still too early in the process for precise carbon estimates of projects yet to be developed. These projects could have many potential emissions outcomes. However, starting from the position of a project rather than planned spending line is a much easier position for estimation.

In some cases, it may be very challenging to predict possible project outcomes. One example includes spending lines in the Budget that represent pots of money that other organisations bid for once the Budget has been agreed.

In these cases, expectations will have to be realistic for any description of likely carbon impacts. Drawing on similar or past spending lines may provide some information to

²⁴ <https://www.gov.scot/publications/analysis-responses-consultation-draft-infrastructure-investment-plan-2021-22-2025-26/pages/7/>

²⁵ Taking into account any underlying methodological differences in estimation.

contextualise the potential impacts. Where no information is known and the spending is not insignificant, it would be sensible to clearly state the spending line alongside other expected policy impacts, mark the spending line as having no estimate, and explain why an estimate has not been possible. Once these have gone through policy development or sufficient information is now available, the estimated impacts should be included in the next Budget period.

However, we do not believe that the challenges of undertaking these specific cases should hold back pre-Budget carbon assessments that do have expected outcomes. Rather, expectations on the quality and depth of assessment should consider the amount of data available to undertake these assessments.

The primary drawback of this project-led approach is the data requirement. Undertaking a large number of individual-level carbon assessments cannot be performed in the final week before a Draft Budget.

Data from individual-level carbon assessments will, on the most part, need to already exist and this will require embedding individual-level carbon assessments within the policymaking process.

One of the recommendations in this report is for the introduction of carbon assessment for all projects that are judged to be likely to exceed a specified threshold for an increase or decrease in emissions. If these recommendations are implemented, the results of these carbon assessments could be published and used for scrutiny.

However, some coverage gaps would still exist.

Without additional assessments, it would not be possible to scrutinise the carbon impact of projects below the emissions threshold. As the emissions threshold is lowered, this should become less of a concern.

Secondly, as part of the proposed new processes, only existing projects or projects currently under development would have carbon assessments, and any future projects would not yet be completed.

A possible solution to this is for a unit in the Scottish Government to perform these individual-level assessments at a basic level, and clearly indicate that these results may change when the full individual-level carbon assessment takes place when the projects go through development. While policies that have undergone development should have robust carbon assessments, expectations will need to be realistic for the quality basic carbon assessments of policies yet to go through development. Other governments, such as the New Zealand Government, currently use a similar approach in their budgetary processes.

The project-led solution is likely best presented by combining the quantitative results with context and discussion of the impact of spending decisions on emissions. For example, including estimates for existing projects, describing planned projects over the next financial year with potential basic assessments, stating how planned spending lines in the Budget supports individual existing and planned projects, undertaking a gap analysis to examine the impact of collective decisions relative to target trends, updating results for policies that have undergone development since the prior Budget, and reflecting on the delivery and estimates of the past year's report.

5.5 International review

The French Government released its first “Green Budget” alongside the 2021 Finance Bill²⁶. This follows a taxonomy approach and applies to all budgetary and tax expenditures.

It is an environmental taxonomy rather than solely climate taxonomy, with the following six major environmental goals:

- The fight against climate change.
- Adaptation to climate change.
- Sustainable water resource management.
- The transition towards a circular economy, waste and the prevention of technological risks.
- The prevention of pollution.
- Biodiversity and the protection of nature, forests and agricultural spaces.

Each budget line is graded on a three-point scale for each goal, “favourable”, “neutral” and “unfavourable”. These are presented with a traffic light system.

This taxonomy system provides more information than the current taxonomy within the Scottish Government. But ultimately there is limited useful information that can be gleaned from taxonomy methodologies.

Figure 11: An excerpt of the scoring system in the French Green Budget

Crédits budgétaires	PLF 21	Climat (atténuation)	Climat (adaptation)	Eau	Déchets	Pollution	Biodiversité	Classification
P174 Accompagnement transition énergétique	1 495,8 M€	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	Favorable
P174 Aides à l'acquisition de véhicules propres	507,0 M€	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	● ● ● ● ● ● ● ●	Favorable

5.5.1 Sweden’s Budget – Climate Impact Assessments of Policy & Gap Analysis

Under Sweden’s Climate Act²⁷, the Government must provide an annual report to Parliament that includes a description of emission trends, major climate change policy decisions that have been taken over the ending financial year and their estimated emissions impact, and an estimate of the gap between the impact of existing policies

²⁶ <https://www.economie.gouv.fr/budget-vert-france-1er-pays-monde-mesurer-impact-budget-etat-environnement>

²⁷ See [Regeringens proposition 2016/17:146, Ett klimatpolitiskt ramverk för Sverige](#)

and the level of emissions for milestone emissions reduction targets in 2020, 2030, 2040 and 2045.

Sweden's Budget²⁸ therefore includes carbon assessments of individual policies and presents the estimates for scrutiny. However, only policies with large impacts are included in this analysis. The analysis is primarily backward looking over the past financial year but does also estimate the effects of selected policy decisions in the Budget.

The Swedish Climate Policy Council provides an audit role, with their [annual report for 2021](#) making recommendations for improvement:

- Moving the climate report's impact assessment from a sub-annex to present it at the same level as the financial plan.
- Consistent presentation of the results to allow for easier interpretation of the impact of the Government's overall policy.
- Transparency around how carbon impacts have been estimated and what assumptions have been made.
- Where further action is required to achieve targets, a recommendation for a timetable on how it will achieve this action.
- Improved coverage of policies that will be undertaken in the Budget year.

²⁸ The carbon assessment can be found in the Annex of Expenditure Area 20 in [Sweden's Budget for 2022](#).

6 Potential Carbon Assessment Implementation

The sections above have identified a number of challenges and opportunities in implementing carbon assessment across the Scottish Government. In this section, we lay out some possible implementations.

Based on the objectives of this project and the existing policymaking processes identified earlier in this report, the proposed implementations aim to meet the following core criteria:

- Early intervention.
- Minimum impact on the policymaking process of policies that do not increase or reduce emissions.
- Considers the capacity of civil servants to undertake carbon assessments.
- *Quantitative* assessment of policies that do emit or reduce emissions.
- A consistent format for presenting meaningful results to decisionmakers.
- An understanding of how policy collectively aligns with emissions reduction targets.
- Produces data that can aid in parliamentary scrutiny.
- Governance structures to ensure that the criteria above are consistently applied across Government.

The implementation recommended in this report has a number of similarities to the New Zealand Government's Climate Implications of Policy Assessment. However, our recommended implementation has been modified to better fit with processes in the Scottish Government and meet the above criteria.

This potential implementation contains:

- A 'Net Zero Test' used as a screening processes.
- An individual level carbon assessment for any proposals flagged in the screening processes.
- A disclosure template to provide the results in a consistent format.
- Governance to ensure consistency of application.

6.1 Net Zero Test

The primary goal of the Net Zero Test is to act as a filtering process. That is, the test indicates whether a proposal should continue to the next stage which includes an individual-level carbon assessment.

The test is solely a filtering process. It does not judge whether the emissions associated with a policy are too high as trade-offs will always exist between objectives, and balancing these objectives is a choice for decision-makers.

This filtering process could be implemented in a number of ways. We suggest that a taxonomy approach could be used to provide enough information to indicate whether a proposal should continue on to an individual-level carbon assessment while requiring minimal effort to complete.

Two example taxonomies include the screening process of the City Region & Growth Deals Team, and the New Zealand Government's Climate Implications of Policy Assessment.

	City Region & Growth Deals Taxonomy	CIPA Taxonomy
Complexity	Low-Moderate	Low
Matches emissions sectors	No	Yes
Data source for Government	Yes	No
Data source for Parliament	Yes	No

The CIPA taxonomy is very straightforward. It first asks if emissions reduction is an explicit objective of the proposal with a simple "Yes/no/unsure" response.

This is followed by a question asking if any of the policy options may have a significant positive or negative impact on emissions in any of the following sectors: electricity, transport, waste, agriculture, land use, and industrial processes & product use. Similarly, these require a "yes/no/unsure" response.

The simplicity of the screening process is also a disadvantage. Very little additional information can be gleaned from "yes/no/unsure" and the phrase "significant impact" comes with a degree of ambiguity. The CIPA team checks all responses for accuracy to ensure the forms are consistently applied, however the screening form only works well for screening, and not as an additional data source.

The City Region & Growth Deals screening process requires a better understanding of carbon impacts. This may make it slightly more challenging to apply the taxonomy. However, arguably, this more in-depth understanding may be desirable for increasing consideration of carbon impacts across policymaking.

This screening process separates carbon impacts into two types – "control", and "influence".

Control relates to carbon emissions directly controlled by the Scottish Government.

Influence relates to how the project affects emissions by others. This can include wider behavioural impacts.

For example, if the Government was to build a new road, the emissions arising from the production of materials, transporting of materials, and construction methods would count under "control". Whereas any emissions increased by additional traffic, whether this is the general public driving cars or industry driving HGVs, would count as "influence".

As another example, a project which aims to increase active travel thought targeted online advertising may have no "control" emissions but is marked as an emissions reduction in the "influence" category.

The two figures below show these taxonomies. Policy teams are expected to grade a project on “carbon control” from a one to five rating, and on “carbon influence” from an A to C rating.

If implemented as part of the net zero test, these taxonomies would provide a rich data source of the emissions impact of all initiatives across the Scottish Government.

If the results were collected in a database, this would provide a key data source on which initiatives contribute to emissions reduction targets (control categories 1-3, influence categories A) and which initiatives will need to be counterbalanced (control categories 4-5, influence categories B-C).

While it is important to have quantitative estimates of initiatives that have significant carbon impacts, this will not be possible to achieve in the short term for all initiatives. This qualitative taxonomy process provides less data but can provide greater coverage. This data could also potentially be used for Parliamentary scrutiny.

We currently recommend using the City Region & Growth Deals taxonomy over the CIPA filter as part of the Net Zero test filtering process. This taxonomy generates a large amount of data that can contribute to a Scottish Government cross-governmental emissions database, as well as contributing towards Parliamentary scrutiny.

From our discussions, we have heard examples of some areas that already use taxonomies to classify the emissions impact of policies and so we do not believe they are too complex to be used at scale.

However, in some cases it may be difficult to ascertain the net impact of a proposal. We recommend the inclusion of an “unsure” category and that the team responsible for the Net Zero Test process provides support when required.

Figure 12: City Region & Growth Deals carbon control taxonomy

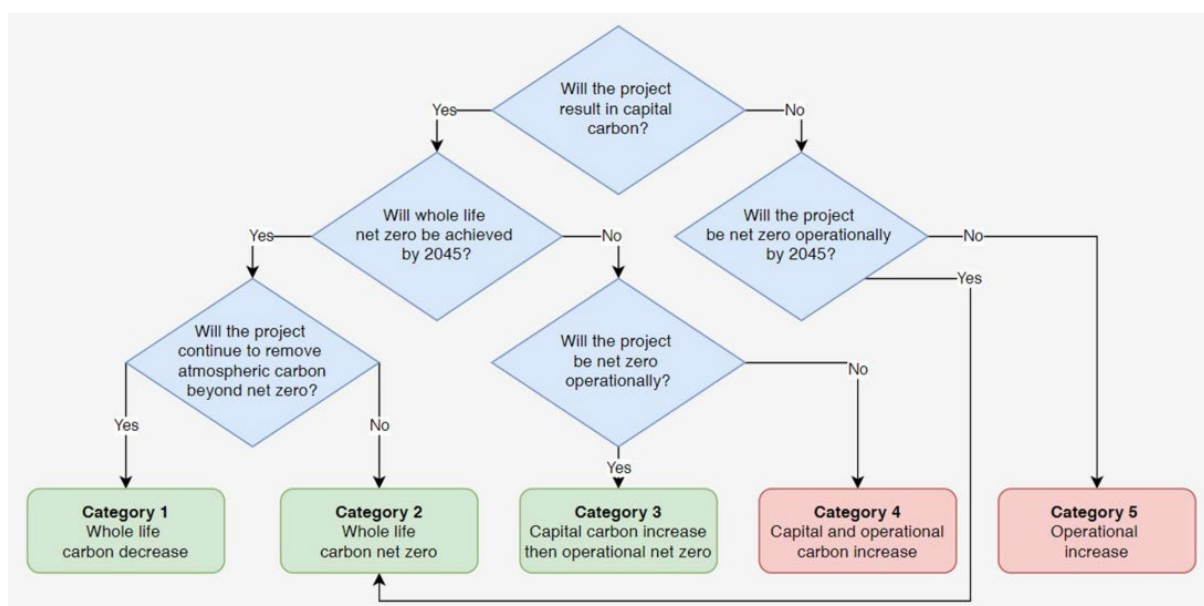
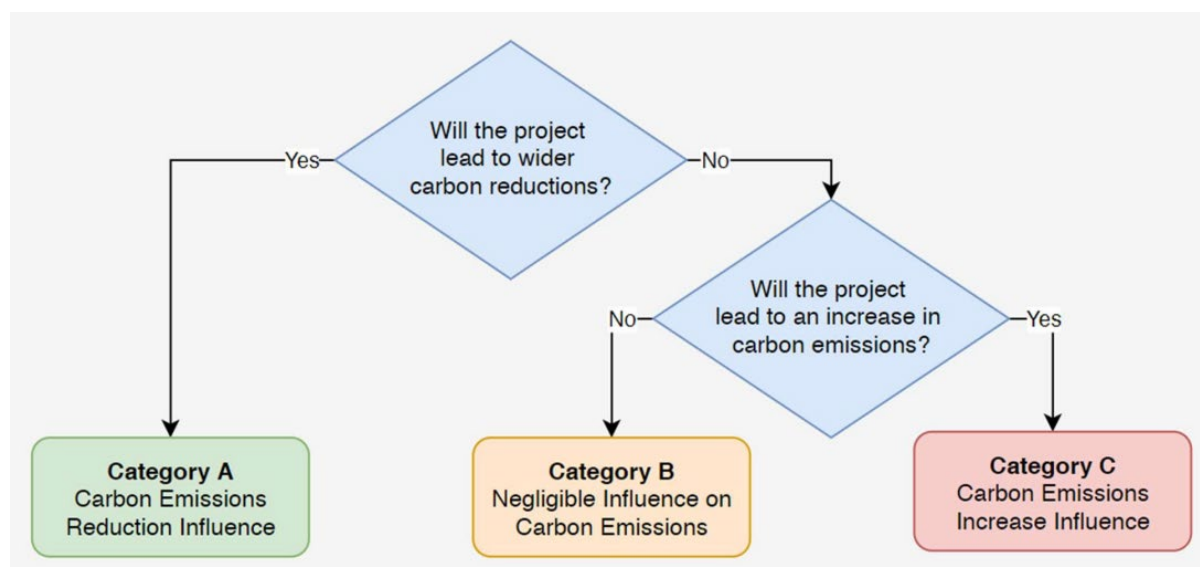


Figure 13: City Region & Growth Deals carbon influence taxonomy



6.1.1 The Filtering threshold

We recommend the filtering processes uses an estimated emissions threshold. In this situation, any proposal which is thought to exceed this threshold should continue to a carbon assessment. The team managing the Net Zero Test process would be best placed to determine whether a project has exceeded this threshold.

The Scottish Government may also want any policy that explicitly focuses on carbon reduction to undergo a carbon assessment, as this process will aid in understanding the value for money in achieving emissions reductions.

The choice of threshold is important. Too high a threshold means minimal carbon assessment and a failure to meet many of the core objectives of the process. Too low a threshold and the civil service may struggle with capacity.

The Government should also carefully consider the time period that the threshold applies to. If the threshold covers the total period of a project, projects which have large initial emissions, but low operational emissions may be missed. The opposing situation can occur if the threshold covers solely the initial emissions for a project with high average emissions in each year, but no specific initial period of very high emissions.

The New Zealand Government's CIPA current requires proposals with the following characteristics to undertake a carbon assessment:

- Any proposal where a reduction in emissions is an explicit objective.
- Any proposal that is estimated to increase or decrease emissions by more than:
 - 0.5 million CO₂-equivalent tonnes over the first ten years of the proposal period (representing an annual average of 50,000 tonnes).
 - 3 million tonnes for forestry related proposals over a thirty year period (representing an annual average of 100,000 tonnes).

It should be noted that the team managing the CIPA process is currently very small, sitting at around 1.5-2 FTE staff. Ambition to set the threshold low to provide a large coverage of proposals may therefore be less challenging for resources than many might predict.

Another challenge exists for spending that recurs on a regular basis. Treated individually, the emissions impact may be below the threshold. However, combined with spending in other years it could potentially exceed the intended threshold, without necessarily being detected using a basic threshold measure.

6.1.2 Should other impacts be included?

Some projects can ultimately support climate change without the project itself reducing emissions. For example, by unlocking other projects which can reduce emissions or by supporting adaptation. The climate impact of these projects can be very difficult to quantify.

The Government may wish to include an additional question to reflect these issues. Given the difficulty of modelling emissions impacts of these policies, challenging these projects may be more proportionate if it instead focuses on requiring clear, quantified policy outcomes and ensuring that the measurement of these outcomes is closely linked to policy objectives and is not overly broad.

However, we recommend that the Government carefully considers each question it adds to the Net Zero Test. Too many questions risks diluting the importance of the most critical questions and risks the Test becoming a tick-box exercise.

For example, issues of other environmental impacts (such as biodiversity) and ensuring a Just Transition are very important, but we have concerns that the Net Zero Test may not be the right place for their consideration and their inclusion in the Net Zero Test may place the overall success of the Test at risk.

Strong Business Case, appraisal and impact assessment processes (such as Equality Impact Assessments) may be more appropriate for considering these impacts.

6.2 Individual-level carbon assessment

Individual-level carbon assessment can follow a similar methodology to those used currently in the Scottish Government and in the CIPA process of the New Zealand Government.

The CIPA Excel tool provides a useful starting point for proposals in the New Zealand Government. This tool brings together a number of data sources on the emissions impact of different outcomes. For example, the use of concrete or an increase in diesel HGVs.

Transport Scotland's STAG tool also contains many values for transport related emissions.

The Scottish Government should consider how it could draw together a carbon assessment tool that provides a wide coverage of impacts in a single place. Tools like these can be a useful way to reduce the barrier to entry for carbon assessment across government, avoid duplication of work, and are a useful source for local government and agencies to draw on. The usefulness of these centralised resources has been highlighted in several of our conversations with different areas of the Scottish Government.

These tools provide a useful starting point, but more complex proposals will require moving beyond their limits. For example, if carbon values do not exist in the tool for a specific outcome. These cases may require identifying other data sources or undertaking bespoke modelling. However, this modelling may have already taken place during economic appraisal.

For example, a proposal to build a new motorway will require transport modelling to understand the net impact on traffic. This modelling can be highly complex. However, this information should be modelled for the proposal's economic appraisal. Once estimates of the net impact on traffic exist, undertaking a carbon assessment becomes relatively simple.

In other cases, accurate individual-level carbon assessments may be very challenging. For example, modelling the emissions impact of Government funding of a new technology.

In this example, it would be prudent to identify that any estimates produced are subject to significant uncertainty. Despite the uncertainty in this data, the process of working through an individual-level carbon assessment can still provide benefits during policy development.

6.3 Disclosure

Results from individual level carbon assessments would benefit from being presented consistently to time constrained decisionmakers. For example, CIPA data is presented in a consistent format in the New Zealand Government's Cabinet Papers.

However, a flaw of the New Zealand Government's implementation is the lateness of this data. Once a proposal has reached this point, it is difficult to make large modifications to its direction.

We therefore recommend that the Scottish Government prioritises as early a disclosure as possible.

Key decision maker points are sensible stages for this disclosure but, as covered earlier in this report, these can vary across parts of the Government. Without a clear process that occurs early in policymaking and is used consistently across Government, it is difficult to recommend a single point of disclosure.

The governance team in charge of the Net Zero Test should develop an understanding of key decision maker points in each area and clearly define which point the Test should first take place, and when the results should be updated. This should be as early in policymaking processes as possible, with continuous work in the medium term to move the Test earlier. Importantly, evidence must be regularly sought that the Test is both taking place and the results are disclosed at this intended point of intervention.

The Government should consider including the following within a template:

- A table showing the estimated emissions over a consistent grouping of time periods, e.g. per year, or per five-year period – 2020-25, 2026-30 etc²⁹.
- Consistency with Government emissions reduction targets. E.g. a statement of whether the project will be operationally net zero, its consistency with emissions

²⁹ Five yearly periods are less helpful for purposes of scrutiny. However, when reviewing single year impacts it is important to understand that carbon reduction progress is rarely made in a straight line.

reduction targets, and whether the project has any other target related impacts that cannot be quantified.

- Sensitivity analysis around delivery, e.g. an estimate of the impact to emissions of a one year delay in project delivery.
- A value for money metric for emission reduction initiatives. For example, by dividing the net cost to the Government by the emissions reduction to estimate the cost per tonne of emissions reduction³⁰.
- A concise discussion of other climate relevant impacts of the policy that may not be covered by the assessment, such as adaptation or if the project is being undertaken to unlock future carbon reduction projects.
- A statement by the role responsible for the process governance on the quality of the assessment, and a description of the confidence around (and risk to) the estimates.

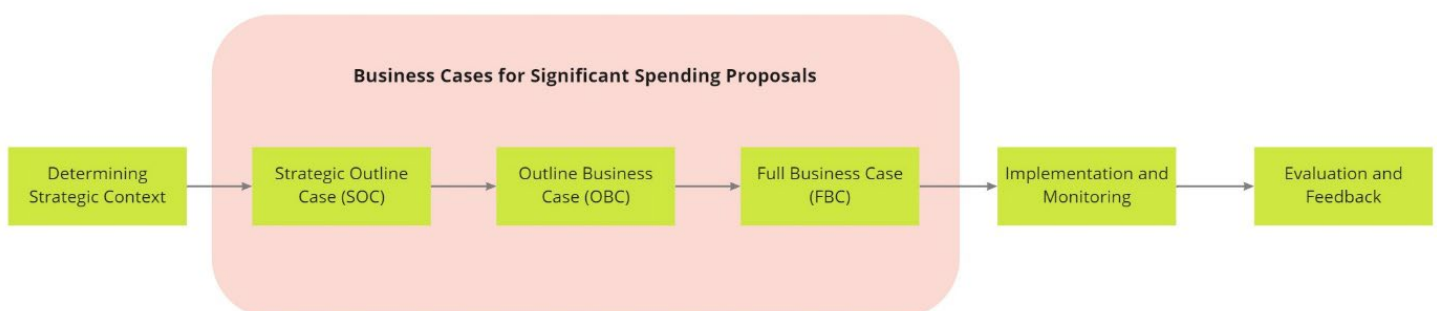
6.4 Possible points of intervention

A carbon assessment that takes place too late in the policymaking process is unlikely to be able to significantly affect decisions. Early assessment provides an ability to effectively redesign policy options where concerns about the results of the assessment have been raised.

However, a carbon assessment that takes place too early may have to be at a higher level due to a lack of data. Data that quantifies the inputs, outputs and outcomes of a policy is needed to undertake a carbon assessment, which requires an understanding of what the policy will look like in practice.

Economic appraisal requires this same information and can provide clues to a suitable point of intervention that balances early assessment alongside data requirements.

Figure 14: The Business Case framework



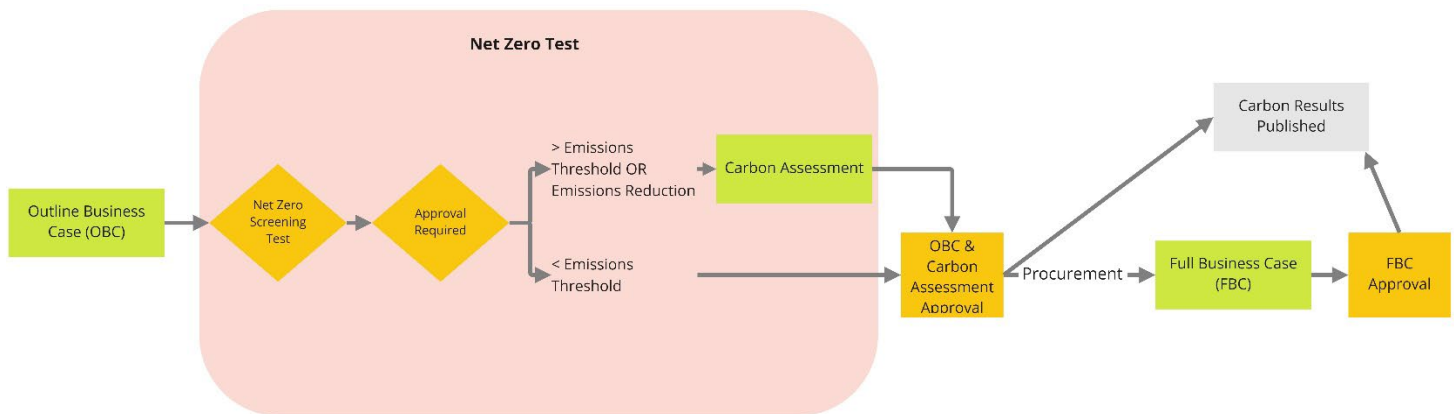
Quantitative economic appraisal, using a cost-benefit analysis methodology, is intended to be taken in the Outline Business Case, the second of the three Business Case

³⁰ As performed in Cost Effectiveness Analysis which is often used for comparing the value for money of health interventions at improving a health outcome. These may need to be presented as a range to indicate uncertainty in the estimates.

stages³¹. Procurement follows the Outline Business Case (OBC). The results of the economic appraisal are updated in the Full Business Case (FBC) to include the data gained from procurement. Estimates of carbon impacts may therefore already exist for some policies in the OBC and FBC stages.

We recommend that carbon assessment is first undertaken in the Outline Business Case at the latest, or comparative stages in other processes, and the results are updated in the Full Business Case. However, full coverage of the Net Zero Test will require that all parts of the Scottish Government are regularly undertaking Business Cases.

Figure 15: Proposed point of intervention



Undertaking carbon assessment earlier, such as in the Strategic Outline Case, can be achieved at a higher level³². For example, using rough estimates of carbon emissions per metre building constructed. Ambition for driving assessments earlier in the process provide an opportunity for better connecting policy development and carbon outcomes over the longer term.

The [Built Environment Carbon Database](#) is a collaborative effort by several organisations in the construction industry to provide values for undertaking carbon assessments for the built environment at each Business Case stage. The Scottish Government should consider what can be drawn from this approach to undertake more widespread carbon assessment at the Strategic Outline Case.

A risk of carbon assessments is that the modelled results do not reflect absolute emissions changes, but instead changes relative to a baseline. To avoid excessive use of resources, an assessment boundary is required which defines which impacts the assessor will and won't include in the analysis. For example, an assessment may not include emissions related to indirect behavioural changes due to the difficulty of their estimation.

If the impacts that typically lie outside the boundary represent an increase in emissions rather than a reduction, the assessment is likely to underestimate the total emissions

³¹ It is difficult to say what the correct intervention point is in smaller projects which combine multiple Business Case stages, as these may be combined in different ways. However, the overall practice of undertaking the Net Zero Test and assessment at the earliest possible moment will still be key.

³² Some similarities may emerge in how proposals are assessed at a high-level for Budget scrutiny and how proposals are assessed at a high-level at the Outline Business Case stage.

impact (and vice versa). If there is a consistent under or overestimate of emissions, then this affects the usefulness of the assessment for delivering Government objectives.

Emissions monitoring during the construction and operational phases of projects can be used to identify bias. If consistent estimation issues are identified, the Scottish Government may want to consider introducing an optimism bias adjustment, as is used in economic appraisal. However, post-project evaluation is currently inconsistently performed across the Scottish Government and likely symptomatic of the inconsistent application of Business Case processes.

Effective testing, developing and ensuring uptake of early carbon assessment, as well as encouraging post-project evaluation will likely require a part of the Scottish Government to have centralised ownership for their development.

6.5 Governance structures

One of the challenges for Governments responding to climate change is that every part of Government contributes to emissions. Every part of Government therefore also has a part to play in the journey to net zero.

A Government needs to be able to ask the following key questions:

1. Which option for a given project provides the greatest net benefits to society?
2. How do projects differentially impact emissions?
3. Does policy as a whole match emission reduction ambitions? And, if not, what could change to make this happen? Are there any concerns around the feasibility of planned timescales and outcomes?
4. Have policies been implemented when planned? Have implemented policies had the impact they intended?

The first of these questions is readily answered by cost-benefit analysis, as part of an economic appraisal. This can technically operate within siloes, but cross-governmental oversight can help ensure consistency and uptake while also providing support.

However, looking at individual policies across portfolios or assessing policy as a whole necessitates a cross-governmental approach.

The New Zealand Government's CIPA process involves a centralised team which is responsible for oversight. We agree with the need for a cross-governmental oversight role.

This oversight role would best support the success of the Net Zero Test through the following specific responsibilities for the process:

- Requiring early intervention in the policymaking process.
- Providing the decision on whether the emissions threshold in the Net Zero Test is met.
- Ensuring consistency and sufficient quality of the Net Zero Test form, individual-level carbon assessment and disclosure of the results.
- Providing support at each stage of the process.

- Drawing together tools and guidance to support teams in undertaking a carbon assessment.
- Ensuring results are disclosed suitably early in the policymaking process.
- Providing a statement along with the main results on the quality and certainty of the assessment. Including a statement on the consistency of the policy with emissions reduction targets.

The oversight role can also contribute to long-term progress through the following objectives:

- Producing detailed guidance for policy areas to build from.
- Encouraging and supporting policy areas to undertake assessments earlier than is necessarily required, e.g. at an Outline Business Case stage.
- Acting as a centre of expertise for carbon reduction, whether in sustainable procurement, project design, evaluation, etc.
- Supporting and/or undertaking evaluations to understand if any systematic bias exists in carbon assessments and if any adjustments should be made to guidance.

Several other areas have been laid out in the recommendations.

6.6 Assessing overall trends

Unfortunately, no single methodology can answer all of the key questions laid out above.

For example, individual-level carbon assessments are not always the best tool for picking up complex policy interactions. Nor is every single policy assessed, which results in an unknown baseline level of emissions associated with Government policy.

The impact is particularly evident for the question “Does policy as a whole match emission reduction ambitions?”.

Clearly, this question is hugely important as a feedback loop for policymaking. If policy does not match emission reduction ambitions, the direction of new (and perhaps existing) policy should adjust to make up for the shortfall. The more regularly this question is asked, the faster that policy can iterate towards the required direction.

This feedback loop currently exists in the Scottish Government’s Climate Change Plan, which uses the TIMES model to provide the sectoral emissions envelopes up to 2045. This model can take into account assumptions for changing technologies and energy use (whether expected change, or due to Government policy) and provide a pathway for emissions reduction.

However, the gap between the past two Climate Change Plans is relatively large for a quickly iterative feedback loop.

It may therefore be challenging for even a centre of expertise, like the proposed climate governance oversight role, to accurately reflect on whether current policy matches ambitions.

We believe that a more regular stocktake of existing and planned policy would help. This will require many data points – such as updating TIMES modelling³³, reviewing individual-level carbon assessments, undertaking sensitivity analysis around planned dates for implementation, and so on.

It should be noted that this will ultimately require an expert assessment based on a mixture of quantitative and qualitative data. TIMES modelling can be used to provide a gap analysis but is a different methodology to individual-level carbon assessments. Individual-level carbon assessments cannot be expected to “add up” to the TIMES model results. And neither necessarily take into account delays to the introduction of a policy.

Whether this assessment of the overall trend is undertaken in the Climate Change Plan team or in the proposed climate governance team, it is a hugely important factor in ensuring policy matches the pathways towards statutory emissions and identifying any misalignment at the earliest opportunity.

These teams will likely have to work together to ensure this feedback loop is regularly reporting back and is informed by the variety of data that is available. Inevitably, resource will be required to undertake this analysis.

As we have identified in this report, it is also important that this data is asked for and the results are scrutinised on a regular basis.

6.7 Retrospective analysis

While it is important to assess new policy proposals, a significant amount of spending and number of policies have been ongoing for many years. These policies will collectively have a large impact on emissions.

Rather than solely focusing on the flow of new proposals going through development, it is important that the existing stock of policies are also assessed.

This also corrects for potentially poor incentives, where a highly emitting policy continues to exist because passing through the proposed policy development processes could expose the emissions of the project in a carbon assessment.

This retrospective analysis would only have to occur once, but the scale of the policies and spending that will need covered cannot be understated. The analysis will likely have to build on previous work by the Scottish Government identifying spending that is associated with higher levels of emissions.

Care will have to be taken to identify which impacts are part of the existing emissions baseline (‘locked in’) and which are additional to the baseline. That is, policies that have already increased or reduced emissions in existing data should not be double counted for their impact on future emissions.

³³ Capacity is currently limited for TIMES modelling and more resource is likely needed to undertake significantly more modelling or extending capabilities.

7 Recommendations

Our recommendations cover a number of areas, with a large amount of focus on governance, processes, capacity and culture.

Our first set of recommendations aim to address the wider observations from the research on the cultural change required to fully achieve the recommendations specific to enhancing carbon assessment and policy making. We recommend that the Scottish Government:

1. Improves the clarity and transparency of Government decisions that impact on climate change, acknowledging that trade-offs will always exist between different objectives.
2. Pursues a cultural shift to ensure sufficient time and resource for robust decision-making processes, allowing business cases, carbon assessments and impact assessments to be undertaken, challenged and scrutinised.

Our second set of recommendations focus on improving policymaking processes and appraisal to support the success of our recommendations specific to enhancing carbon assessments. We recommend that the Scottish Government:

3. Enhances cross-governmental policymaking governance. This would provide oversight and challenge function on the existence and quality of processes and appraisal throughout the entire policymaking process. The governance process would require the capacity for an enhanced approach to pre-budget carbon assessments.
4. Urgently expands their internal capacity and skills, including recognising that civil servants cannot expect to undertake processes as intended without enough time, resourcing, and a significant increase in practical policymaking and appraisal guidance.
5. Considers periodic external auditing of climate change policymaking governance, processes and carbon assessments.

Improving policymaking processes may take some time to implement but time is in short supply until the next set of emissions reduction targets. Rather than waiting for these recommendations to be fully implemented, our third set of recommendations, which speak directly to the need to enhance carbon assessment methodology can be developed in parallel to the wider recommendations above.

Our third set of recommendations focus on the introduction of carbon assessment and related processes in Government to increase the likelihood of successful outcomes, particularly while policymaking processes are being improved. We recommend that the Scottish Government:

6. Introduces a Net Zero Test. This will act as a filtering process to ensure that all spending with major emissions implications undergoes a quantitative carbon assessment.
7. Creates a second cross-governmental governance team (see recommendation 3), responsible for assessing climate impacts, providing oversight and a challenge function. The team would ensure the Net Zero Test and carbon assessments are being undertaken and are of a suitable quality. This would in addition support work across Government to embed consideration of carbon

throughout policymaking process. To be effective the team will require the ability to influence Government-wide change.

8. Recognises the power of Scottish Government procurement in driving economy-wide carbon reductions. We recommend the Government considers a swift roll out of quantitative carbon management procedures, building on the success of the Cross Tay Link Road case study and carbon management procedures in the City Region & Growth Deals team.

Our final set of recommendations relate to Parliamentary scrutiny of the impact of spending on emissions. We recommend that the Scottish Government:

9. Considers retiring the taxonomy-based Carbon Assessment of the Capital Budget and the high-level Carbon Assessment of the Budget. This will have implications for the Climate Change Act.
10. Considers the challenging environment for data collection under current budgetary processes, and that a longer lead in time will be required for better data
11. Moves towards the use of individual-level carbon assessments and gap analysis to provide suitable data for fiscal and policy scrutiny. In time, further mechanisms for scrutiny should also be explored, such as a carbon equivalent to financial memos for any announcements that require legislative changes, and publication of carbon assessment results after decisions have been made.

While these recommendations are made for central government, many of the principles are shared with agencies and local government. Supporting alignment with these principles across the whole of government will be critical to developing an understanding of how Government spending choices impact on emissions.

7.1 A Cultural Shift

7.1.1 Improve the clarity and transparency of Government decisions that impact on climate change

Some policies that address climate change can also lead to economic, social, health or other benefits. However, for a large number of policies that are required to achieve Scotland's emissions reduction targets, trade-offs will exist.

Policy teams are having to consider many targets at once, including several statutory targets covering carbon emissions, child poverty, fuel poverty, and homelessness. While this is an expected part of the role, it is often unclear which targets should be prioritised when trade-offs exist and challenging to assess projects for their impacts on the many targets. When such trade-offs exist, it is not always transparent how these have been considered.

The Scottish Government should consider improving the clarity and transparency of Government decisions that impact on climate change, acknowledging that trade-offs will always exist between different objectives.

7.1.2 A cultural shift in the Scottish Government

A cultural change needs to occur across the Scottish Government.

There cannot be any doubt in the importance of strong processes, information and systems across an organisation of over 8,000 staff in core departments, and 21,000 staff across the whole devolved civil service.

Best practice in ensuring good outcomes and value for money dictates that decision makers set objectives and select project options, and that civil servants develop the project options to choose from, clearly setting out the costs and benefits of options so that decision makers are fully informed.

Unfortunately, based on the evidence we have gathered, it is clear that the practice in the Scottish Government is at times falling short of best practice.

In some cases, required processes are being retrospectively applied to tick a box. In addition, there does not appear to be a culture in all areas of the Scottish Government of producing business cases and appraising all aspects of policy proposals, including wider than financial implications.

There is little challenge, it would appear, to this lack of quantification of the costs and benefits of policy proposals.

In some areas, the measurement of policymaking success appears to often not reflect the achievement of the desired outcomes (if indeed these have been set out), and instead appears to be sometimes driven by a culture that policy development has occurred in short timescales.

This focus on speed can leave civil servants without enough time to develop Business Cases or consider Impact Assessments.

A cultural shift is required that ensures sufficient time and resources are available to align with best practice and that all decisions are fully informed. Central to this is understanding the importance of robust Business Cases, carbon assessments and impact assessment. This includes an expectation that this evidence will be sought and scrutinised.

Without this recognition across the Government, without the Government leading a continuous drive towards operational efficiency, and without the Government providing civil servants with the required time and resources to undertake evidence-based policymaking, the fundamental drivers of patchily applied policymaking process cannot be repaired.

A cultural change in the way policy is made in the Scottish Government can deliver huge benefits to Scotland in the long-term, extending far beyond climate change.

The Scottish Government may want to consider a process for civil servants to be able to raise concerns, perhaps anonymously, over whether appropriate processes have been followed. This may help contribute to some of the required culture shift.

7.2 Improving appraisal and standardising policymaking processes

Despite Business Cases not being the best route to consideration of carbon emissions in and of themselves, well-functioning Business Case development and appraisal is a pre-condition to effective carbon assessment. Business Cases can provide a quantitative understanding of the impact of spending choices on inputs, outputs and outcomes. This quantitative data is required for quantifying the resulting emissions of these policy choices.

The current overlap between thresholds for Business Cases and Pre-Expenditure Assessments can lead to confusion around which processes should be followed and it does not always appear to be clear when Business Case processes should begin.

We recommend the Scottish Government considers simplifying and clarifying these processes, with a particular focus on the filtering of projects into proportionate processes based on a clear set of criteria.

Many other governments focus solely on filtering projects into proportionate Business Case processes (e.g. with high, moderate or low requirements).

If the Scottish Government wishes to introduce a clearer filtering process such as this, we do not recommend mandating use of any produced templates. Some areas in the Scottish Government will have processes that are more advanced than the standardised templates and mandating their use could reduce the extent of their Business Case development. However, without mandatory templates, effective governance will have to be in place to ensure Business Cases are being applied as robustly as intended.

7.2.1 Cross-governmental Policymaking Governance and Challenge Function

From what we can see, policymaking processes such as Business Cases and appraisal are currently inconsistently applied across the Scottish Government. Where core processes are not being undertaken, or are undertaken too late in the policymaking process, this may impact the ability to undertake carbon assessment, challenge policies and ensure value for money is provided.

The Scottish Government appears to have no centralised challenge function for Business Cases. The result of this is a divergence of processes and standards across the Government.

We recommend the Scottish Government introduces centralised policymaking governance. The Government should consider proving this governance role with a remit to ensure that Business Cases are being undertaken when their criteria is met and that Business Cases and appraisal are of a sufficient quality.

A governance role with oversight of these processes could help encourage the setting of a clear standard that must be met by all parts of Government. The Scottish Government may wish this role to lead as a centre of expertise on appraisal, policymaking processes, sharing of best practice and development of Government-wide guidance. There may be benefits to locating the team responsible for guidance in the same area as an approvals role.

This governance role cannot be expected to always have the expertise needed to assess every proposal, particularly in cases of specific and complex modelling. In these cases, scrutiny may have to be more limited and instead focus on the overall approach to the development of the Business Case and appraisal.

The Scottish Government should consider how it can ensure this role has the required influence to incentivise better practices. For example, requiring the role to sign off on the existence and quality of Business Cases and appraisal in Accountable Officer Templates³⁴. Such a sign off would not have to be mandatory but would serve as a useful way to identify areas that may need support.

³⁴ AO Templates are the most consistently applied processes across the Scottish Government, which makes them a useful process for any oversight roles. However, this process comes too late to

A database of policies should be developed which includes businesses cases, appraisals, and whether sign off was provided. This database could provide a clear audit trail of policy decisions and provide valuable data in identifying areas that may need support.

7.2.2 Urgently expand internal capacity and skills, alongside a significant increase in practical policymaking guidance

If the Scottish Government introduces a centralised policymaking governance role and develops this role into a centre of expertise, providing training, guidance, and tools, this may aid in the availability of and incentives for using guidance and support.

However, challenges will still exist in areas where a lack of capacity is the key issue. In our discussions, capacity has often been highlighted as a greater challenge than skills development.

Substantial investment is required in developing skills and capacity for programme and Business Case development, undertaking technical appraisal and carbon assessment, and performing post-project evaluations.

Robust evaluations are very challenging to achieve without a strong Business Case that has set out the data to be collected for evaluation purposes. The Scottish Government has recognised the need for investment in evaluation in its National Strategy for Economic Transformation.

If the Scottish Government wishes to also develop carbon assessment outside of Central Government, these challenges with capacity are even greater for local authorities and public bodies.

The Scottish Government may want to consider how the development of a standardised set of tools, resources and training can contribute to skills and capacity development within Central Government, Local Government and public bodies.

Standardised toolkits and guidance may expand the potential pool of staff who could undertake carbon assessments from specialist carbon consultants to any staff with an analytical background. Our discussions have highlighted that standardisation could also reduce the burden on capacity that currently exists, by limiting the extent to which each area has to develop its own datasets and processes for carbon assessment. This is particularly the case for local government, standardisation encourages the use of a single process, rather than the development of 32 separate processes.

However, with or without these standardisations, many local authorities are concerned that they simply do not have enough staff to undertake training.

Looking towards the provision of guidance in the Scottish Government, a key challenge with this report has been to understand the policymaking processes.

Guidance is scarce and fragmented across the Scottish Government's website. Current policymaking processes seem to primarily rely on institutional memory, passed between civil servants, and this knowledge can be lost when staff leave. This degree of institutional memory is likely reinforcing the inconsistent application of processes across the Scottish Government.

When we have asked for further guidance, we have typically been referred to the Scottish Public Finance Manual. But from what has been shared with us, the coverage

efficiently alter decision making, so care should be taken that processes are not being retrospectively applied at this point.

of [guidance on appraisal and evaluation](#) appears to total only three pages. One of which focuses upon Pre-Expenditure Assessments, an assessment that, as an explicit form/process, appears to now be effectively defunct and is mostly just treated as a set of principles.

HM Treasury's Green Book is referenced and does provide detailed information on undertaking appraisal. However, the Scottish Government's website includes very little detail on the practical implementation of the various policymaking processes that exist and how they interact.

Compare this to the [guidance of the New Zealand Government](#), who have devoted a large part of their website to guidance around investment decisions, developing Business Cases, appraisal, evaluation, and so on. This section includes templates, forms, tools, training, pre-filled examples, frequently asked questions and more.

We recommend the Scottish Government improves its guidance on Business Case development and other policymaking processes in the Scottish Government. Existing guidance could be greatly improved by focusing on how civil servants can undertake these processes in practice, and not at a high level. This does not necessarily require being overly prescriptive but instead should seek to clarify, in a single place, what processes currently exist, how they are applied, where further support can be sought and how these differ across Government.

Our understanding is that work is currently underway to improve awareness and understanding of the SPFM requirements for appraisal and evaluation with the aim of improving the consistency of application.

7.2.3 External auditing of policymaking governance

External auditing makes an important contribution to a healthy policymaking system.

If the Scottish Government implements our recommendation for a Net Zero Test with carbon assessments, the Government should consider external auditing of these assessments.

The variety of approaches to policymaking processes across the Scottish Government makes auditing a challenging task. It is important to ensure that Audit Scotland has the resources and the data required to undertake large-scale audits of policymaking processes.

The introduction of a consistently applied data point could support auditing. An example could be the requirement for a sign-off point. This could occur in Accountable Officer Templates. These come too late in the process to affect policy development, but they are consistently undertaken across Government and therefore are a useful place for an audit trail. Audit Scotland would, of course, need regular access to these documents.

Sign-off could be provided to proposals that are deemed, by the proposed governance teams, to (a) have a Business Case when one should exist, (b) have a Business Case of sufficient quality, (c) have undertaken the Net Zero Test and, if required, a carbon assessment. Where sign-off is not provided, a short statement should be made on the basis of the rejection.

While Government may not wish to mandate sign-off, the lack of sign-off does provide a clear data point for auditors to start from.

7.3 A Net Zero Test with quantitative carbon assessment

The first objective of this report is to produce recommendations which, if implemented, could “Improve the extent to which decision making within Scottish Government is supported by an understanding of the consequences of spending choices on emissions.”

To achieve this objective, individual-level carbon assessments of projects must take place which *quantitatively* assess the emissions impact of these decisions.

However, it is difficult for us to recommend a widespread adoption of individual-level carbon assessments while civil servants in the Scottish Government have limited capacity to undertake these assessments. Clearly, any recommendation to undertake individual-level carbon assessments must include a lever which can balance the coverage of carbon assessment with the capacity for assessment.

We recommend the Scottish Government implements a filtering process for all decisions in the form of a Net Zero Test. Policies which provide large emissions reductions or large increases in emissions can then proceed to a full individual-level carbon assessment.

We also recommend the Scottish Government introduces a governance role for managing this process, supporting teams through the process and acting as a challenge function to ensure the process is performed and of sufficient quality. The Scottish Government should consider how this role will have the required influence to impact cross-governmental policymaking processes.

Particular attention should be placed on the presentation of carbon assessment results to time-constrained decision makers. A standardised disclosure template will encourage consistency.

We note the usefulness of the New Zealand Government’s Cabinet Paper templates. These ensure that the results of their Climate Implications of Policy Assessment are presented prominently within Cabinet Papers, rather than being relegated to an annex. These templates include the CIPA team providing a brief statement even when an assessment is not required, simply to indicate that the process took place. The prominent placement and required process from the CIPA team means that Ministers can clearly identify any policies that have not undertaken the CIPA processes. However, as identified earlier, the timing of this disclosure in the CIPA process does not optimally allow for a change in policy option direction when needed.

The Scottish Government should also consider how publication of the carbon assessment results after final decisions have been made, as done in the New Zealand Government, may support public and parliamentary scrutiny.

7.3.1 Existing implementations of impact assessments are not suitable for swift and widespread progress on carbon assessments

The intended purpose of impact assessments is that their respective issues are considered early in policy development, encourage target-compatible policy designs, and provide useful information to support decision makers. In their intended form, it would appear that a Net Zero Test could be another one of these impact assessments.

However, as identified earlier in the report, the execution of these impact assessments does not always match their intention. We therefore have significant concerns about the effectiveness of a Net Zero Test if it is included as another impact assessment in their current format. Without early intervention in policy development, carbon assessments are unlikely to be effective at impacting policy design and decision making. And without

a centralised governance structure that provides a challenge function, the coverage and quality of these processes risks being impacted.

There is an argument to wait for the existing system of impact assessments to be harmonised. It would be a sensible long-term goal for a Net Zero Test to become part of a cohesive system of impact assessments.

However, redeveloping impact assessments to better impact on policies and support decision making is not an easy task. Even if the implementation of the new design is successful, it may take several years to be implemented effectively across the Scottish Government.

The Scottish Government therefore has a key decision to make. One option is to introduce the Net Zero Test as part of the impact assessment redesign. This may result in a much lengthier implementation process – potentially years until it is effective – that entirely relies on the success of this redesign but could also provide a more coherent system in the longer term.

The second option is the introduction of a non-standard impact assessment design that attempts to directly address the main issues of current impact assessment execution. This provides the best possible chance of effectiveness in the short and medium term and may be preferred by Government given the short time left until emissions reduction targets for 2030. This option could be reviewed and integrated into the impact assessment system once impact assessments have been redesigned, if this redesign successfully deals with existing issues. Examples of non-standard impact assessment processes include the New Zealand Government's Climate Implications of Policy Assessment.

A Net Zero Test will likely need to be designed differently to existing impact assessments to be effective. While the Scottish Government is currently redesigning the system of impact assessments, there is a limited timeframe before the next set of emissions targets. Risks exist if an effective Net Zero Test requires the success of a complex policymaking redesign. In deciding between these options, we recommend the Scottish Government considers the precedence of its net zero targets. High prioritisation will likely be better suited to the more bespoke, non-standard option.

Earlier in the report we explained some key characteristics of the second option – introducing the Net Zero Test and carbon assessments as a new format of impact assessment which aims to address early intervention, cross-governmental oversight, and a challenge function.

7.3.2 Thresholds provide a useful tool for a phased approach

The capacity for undertaking carbon assessment is currently limited in the Scottish Government. To avoid overwhelming policy and analytical teams, we recommend a phased approach to carbon assessment.

The threshold in the Net Zero Test provides a useful lever for balancing capacity with the application of carbon assessment. In the short term, policies with an objective to reduce emissions or policies that are estimated to result in the largest increases or decreases in emissions will be targeted – these provide the most gains from improvement. As capacity develops across the Scottish Government, this threshold can be lowered, effectively tightening the net to include more policy.

Simple spreadsheet tools and practical guidance for undertaking carbon assessment will also aid with capacity. These open up the potential pool of staff who can undertake these carbon assessments to anyone with basic analytical skills and reduce the duplication across Government in creating new tools and processes.

7.3.3 Risks to effective implementation

While carbon assessment is an important component to help deliver on net zero ambitions, its introduction could also lead to unintended consequences that will require management.

A potential unintended consequence can arise if the estimated emissions from the carbon assessment are taken as a predetermined outcome once they are 'budgeted' for. Substantial emissions reductions can be made in procurement and delivery stages, and these areas for improvement should not be ignored. This highlights a need for cross-governmental oversight to ensure the process is achieving its intended effect.

A risk to effective implementation also exists in the coverage of the Net Zero Test. Government activity, and emissions, extends much further than projects. Areas such as regulation will be key contributors to the transition to net zero, and the Scottish Government should also aim to quantitatively understand their emissions impact.

We recommend that the coverage of the Net Zero Test covers all Government decisions, including projects, programmes, regulation, planning, tax changes, and grant funding.

Of course, carbon assessments can only support decision making when the carbon assessments are undertaken. We would encourage the Scottish Government to be ambitious when setting the threshold and endeavour to lower the threshold to include more initiatives as quickly as capacity allows.

Successful implementation will require a number of characteristics. The following questions can help assess the implementation of this process:

- Are the screening forms and carbon assessments being undertaken as early as desired in the policymaking process? Are the results updated as more information is known in later stages?
- Are the screening form and carbon assessment results communicated to decision makers as early as possible?
- Is there full coverage of all decisions being made?
- Is the process being applied consistently across all parts of Government?
- Are the carbon assessments undertaken robustly and proportionately?
- For any policies that have been judged too difficult to quantitatively assess and instead use a qualitative assessment, was this judgement the correct decision?
- Are policies undergoing carbon assessments evaluated to understand how the estimated impacts differ from actual outcomes?

In particular, we would emphasise the importance of early intervention. In a policymaking system with many different processes, it will be challenging to ensure assessments are consistently undertaken at an early point. However, regular late assessment is one of the greatest risks for this process becoming a tick-box exercise.

7.4 Cross-governmental climate governance, oversight and influence

Continuous progress on embedding emission reductions into policymaking and delivery needs to take place, take place at a fast enough rate, and apply to all policy across Government.

A major challenge to progress is that no part of the Scottish Government appears to have cross-governmental influence to review how policymaking governance affects carbon emissions. This is contrary to the management of finances, which has cross-governmental oversight provided by Exchequer.

This is an issue that many other countries are also grappling with. For example, the UK Government's Department for Energy & Climate Change became part of the Department for Business Energy & Industrial Strategy in 2016. Unfortunately, there are now concerns that there is no UK Government Department with a climate-focused voice, and that BEIS lacks the required authority to implement cross-governmental change. Treasury is currently developing a climate-focused team which may find it easier to apply oversight.

The introduction of the proposed Net Zero Test provides an opportunity to consistently challenge every policy across Government. This process will likely only be effective if it is managed by a central approvals team, sitting outside policy areas, with a remit to challenge the carbon assessments.

However, carbon assessment is not the sole solution to strengthening the link between spending choices and emissions outcomes. In this project we have identified a large number of areas for progress that require ownership and the ability to affect change across government.

Some of these areas for development include:

- Maintaining a database of all policy undertaking both the Net Zero Test screening form and carbon assessments. This will allow for data to be readily drawn on, without requiring large retrospective analyses.
- Reviewing carbon values currently used in appraisal³⁵. From what we have heard, BEIS carbon values are currently used – but these align with UK Government emissions reduction targets and not Scottish Government targets.
- Working with procurement and delivery teams to further reduce emissions impacts over and above the initial estimates. This will require staff with expertise in areas such as engineering and procurement.
- Building on the success of the City Region and Growth Deals team by supporting the roll out of carbon management frameworks, such as PAS2080, across all capital projects.
- Developing standardised tools and guidance for use across central government, local government, public bodies and industry. Examples include a carbon assessment toolkit and a standardised embedded carbon assessment tool to

³⁵ The TIMES model is currently used to understand the Scottish Government's pathway to emissions reduction. This model may, in theory, be able to produce carbon values that align with the Scottish Government's targets.

reduce the complexity of choosing between the plethora of private and public sector estimates and aiding in consistency³⁶.

- Regularly reviewing the availability of capacity and skills across central government, local government and public agencies and presenting these findings to ministers. These reviews can also provide valuable information for Ministers when considering a reduction in the Net Zero Test's threshold.
- Identifying areas of the Scottish Government that require support in carbon assessment and providing support and training.
- Driving ambitious standards for the quality and coverage of carbon assessment across Government.
- Encouraging, supporting and/or undertaking evaluations of individual-level carbon assessments, involvement in monitoring the real-world emissions impacts of projects, undertaking gap analyses to understand the collective impact of policy, and using the findings to adjust processes. This is similar to the constant updates to HM Treasury's Green Book for economic appraisal.
- Considering policy interactions and targets, and how these could affect the baseline used in assessment.
- Reviewing which policy impacts typically sit outside the boundary for proportionate carbon assessment, whether this may result in bias in specific cases, and considering how this bias is best addressed.

Earlier, we recommended the introduction of a policymaking governance team in the Scottish Government. This team would focus on the consistency of robust policymaking processes across Government.

To create a culture of continuous improvement in connecting spending choices to carbon outcomes, we recommend investment in developing a second team, focused on climate governance and cross-governmental oversight specifically. This team will require a broad remit and the ability to influence decisions. It may be synergistic for the Net Zero Test approvals team to sit within this unit.

To ensure the team can support the embedding of carbon ambitions into all parts of the policymaking process, it will require a cross-disciplinary team with policymaking, engineering, procurement, economics, carbon management, climate science, and analytical skills.

The success of the Scottish Government's City Region and Growth Deals team has demonstrated the effectiveness of this cross-disciplinary approach, and this philosophy should be scaled up.

7.5 Emissions Focussed Procurement

If the purpose of the Net Zero Test process is to drive and support changes in Government decisions, a significant opportunity also presents itself in procurement.

³⁶ We recommend reviewing the upcoming Built Environment Carbon Database which may provide a set of principles to work from.

Some of the international examples earlier in this report describe how governments are using the power of procurement to drive change. Examples from Sweden, Denmark and Finland have introduced requirements to undertake carbon assessments for companies bidding on government contracts and the potential for financial incentives if they outperform these estimates.

If the Scottish Government was to require carbon assessments in procurement, this represents a rich data source that could enhance Government carbon assessments and potentially alleviate capacity issues.

Case studies already exist of carbon management practices in the Scottish Government's public procurement, such as the Cross Tay Link Road project. These practices were developed with support from the City Region and Growth Deals team and have so far successfully demonstrated a reduction in carbon emissions through effective carbon management.

However, consistently modelled data would be needed if data from private sector assessments are to be used in Government assessments. And companies bidding for contracts would likely desire modelling consistency to ensure a level playing field and a minimised burden on business.

The Swedish Transport Administration achieve this by requiring that emissions are estimated using their own tool.

The Scottish Government should consider building on the success of Cross Tay Link Road carbon management practices and consider a phased roll-out of quantitative carbon assessment across public contracts. Tools and guidance will likely require development and leadership for full coverage across Government. Some Government areas may wish to develop tools and guidance on their own, while others may require support, for example by the proposed Climate Governance Team.

7.6 Recommendations for Parliamentary Scrutiny

The second objective of this report is to provide recommendations which, if implemented, can "Increase the transparency and value of the high-level carbon assessment of the Budget to support scrutiny and informed discussion."

While the high-level carbon assessment uses the correct methodology to undertake its intended aim, it has a limited capability to provide the additional scrutiny that the Scottish Parliament likely requires. It does not allow for effective carbon scrutiny between spending lines/policies, nor does it allow for an understanding of how spending lines/policies will impact future emissions.

These drawbacks are fundamental to the planned spending line data used in the model, and there are no modelling enhancements that can resolve these fundamental data issues.

More scrutiny requires more detailed data. However, more detailed data also introduces a trade-off with resourcing.

Two other methodologies for scrutiny include a taxonomy process and an individual-level carbon assessment (ILCA) process.

Table 1: An overview of benefits and drawbacks of taxonomy and individual-level carbon assessment led processes

Characteristics	Taxonomy	Individual Level Carbon Assessment
Based on	Spending lines or Policies	Policies
Resourcing requirements	Low	High
Implementation speed	Fast	Slow
Usefulness of data	Low	High – Very High
<i>Quantified data</i>	No	Yes
<i>Granularity of detail</i>	Low	Moderate – Very High
<i>Scrutiny between lines/policies</i>	Limited	Yes
<i>Forward looking</i>	Optional	Yes
<i>Gap analysis of progress</i>	Optional (limited data)	Optional (strong data)
<i>Likely coverage</i>	High	Low

7.7 Taxonomies and the High-Level Carbon Assessment provide a short-term approach but have limited usefulness

The High-Level Carbon Assessment of the Scottish Budget is not an appropriate methodology for undertaking the vast majority of the scrutiny required by Parliament and the results are easily misinterpreted. The taxonomy-based Carbon Assessment of the Capital Budget risks classifying many non-climate friendly activities as “neutral” or “low” carbon.

We recommend that the Scottish Government and Scottish Parliament considers how useful these methodologies are for scrutiny, and whether resources would be better used for alternative options.

We believe that these methodologies are likely to be of limited usefulness and include significant risks around spending misclassification or misinterpretation. If the Scottish Parliament finds these methodologies to have limited use, we recommend a planned retirement of these methodologies. This would require changes to the Climate Change Act.

In this case, a rapid development towards individual-level carbon assessments and gap analysis will be required. Results may not be possible in time for the next Draft Budget. With limited time to develop this new process, the Scottish Government and Parliament may want to initially consider retiring the current approaches only once an initial coverage of results for policy proposals with the most major emissions increases/reductions are developed.

A drawback of the individual-level carbon assessment approach is the lower coverage of policies, given our recommendation of a Net Zero screening form to balance coverage with capacity.

If a high level of coverage is desirable, a taxonomy process based on the Net Zero screening form may be useful. This would represent an improvement over the current taxonomy as it better captures the expected outcomes of the policy, rather than grouping by broad spending line group. Results could also be readily drawn from any policies that have completed a Net Zero screening form via policy development or as part of the Climate Change Plan³⁷. A drawback of this approach compared to the current capital taxonomy is that it would not be based on spending lines³⁸. The Scottish Government should consider how it can clarify the link between policies and spending lines.

The scrutiny available from any taxonomy process is fundamentally limited. We therefore can only recommend this improved taxonomy if it does not draw resources away from the results that matter the most – individual-level carbon assessments.

The Scottish Government will need to consider its major emissions-related projects well in advance of standard budgetary processes, mostly launched post-UK Budget.

7.8 Collecting the required data for carbon scrutiny is highly challenging under current budgetary processes

We have heard that a large amount of the work on detailed spending lines only begins after the Scottish Government's envelope is set in the UK Budget. Level four spending lines are often still being developed up to the week before the Scottish Budget.

Notwithstanding the difficulties of accurately estimating level four spending lines, or that planned spending lines are far removed from policy outcomes, it is unrealistic to expect that data rich analysis of carbon impacts can occur in just a few days.

Moving away from spending line methodologies will avoid relying on the challenging timetable of level 4 spending line creation. However, policy-driven methodologies will still require enough of an understanding of policy plans to undertake a carbon assessment.

We recommend that the Scottish Government reflects on how the timetable for current budgetary processes affects the availability of data for carbon analysis.

If carbon assessment is introduced through the Net Zero Test, its results can be drawn on for the Budget. However, this will only cover policies that have undergone or are undergoing development and will not yet cover policies planned for the next budgetary period nor policies that existed before its introduction.

Performing individual-level assessments on future policy development will require, at the minimum, a basic understanding of the inputs, outputs and outcomes of these policies and time set aside to undertake this analysis. Without having yet gone through policy development processes, there will need to be an understanding that these estimates will be approximations and are likely to be revised as more information emerges during development.

³⁷ As with the individual-level carbon assessments, for Budget scrutiny this would need to be extended to include planned policies that have not yet undergone development.

³⁸ It may seem unhelpful for the estimates to be provided by policy rather than spending line for the scrutiny of the Budget. Section 5.2 of this report details why spending lines cannot be used for scrutiny of carbon impacts. More clearly connecting spending lines to policies will, however, support scrutiny.

The Scottish Government should also consider assessment of policies that exist before the implementation of a Net Zero Test to identify 'locked in' emissions. Assessing the stock of existing policy will be challenging, and expectations around timescales should be realistic.

7.9 Individual-Level Carbon Assessment Approaches provide opportunities for enhanced data for scrutiny

While approaches that focus on proposed spending lines may initially appear to have advantages in fiscal and policy scrutiny as they are presented on at the same spending line level as financial data, these approaches also have their own set of drawbacks.

Firstly, a significant amount of relevant data can be concealed within a spending line and this lack of granularity can limit effective scrutiny.

Secondly, some spending lines cover general 'pots' of money for others to bid on. These bidding processes don't happen until the Budget is agreed. In the budget preparation process, the granular detail of spending outcomes is not available until in-year milestones.

Thirdly, proposed spending lines do not drive emissions, policy outcomes do. Attempting to connect proposed spending lines to the emissions associated with policy outcomes either requires using a qualitative rather than quantitative methodology (e.g. a taxonomy approach) or requiring extensive assumptions (e.g. the high-level carbon assessment). Either of these approaches limit the possible scrutiny, either through the difficulty in understanding the magnitude of carbon impacts and the compatibility with the required emissions pathway, or through potentially spurious quantitative comparisons.

For example, "NHS Territorial Boards" is a single level 4 spending line representing £11.5 billion of spending. It is clearly not possible to generate useful results for scrutiny by using this spending line which, in practice, represents a vast array of different policies and spending choices.

The next step towards improved carbon data for scrutiny requires a more bottom-up approach. We recommend the Scottish Government considers the use of Individual-Level Carbon Assessments as part of fiscal and policy scrutiny processes.

Among the most important drawbacks of a bottom-up approach is the large amount of resourcing required to undertake this task at the required scale.

However, an ILCA approach can also contribute to several other Government objectives. For example, our recommendations for the first objective of this report describe their potential usefulness in driving decision making that is informed by carbon estimates.

An ILCA approach can also enhance the transparency of the Climate Change Plan, as recommended by the Climate Change Committee. The Climate Change Committee's 2021 Progress Report to the Scottish Parliament³⁹ stated:

"We have not been able to establish whether and how policies and proposals in the CCPu add up to the required emissions reductions. We recommend that the Scottish Government publishes, as soon as possible, a detailed and transparent quantitative

³⁹ <https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/>

breakdown of how the announced plans will achieve the sectoral pathways to which it has committed.”

An Individual-Level Carbon Assessment approach can provide these detailed and transparent quantitative breakdowns. However, it should be noted that individual-level carbon assessments are unlikely to sum to the sectoral pathways, due to methodological differences⁴⁰.

We note that, in response to research investigating how to assess the emissions of infrastructure, the Scottish Government is currently exploring these methodologies (termed in the report “Baseline and Intervention” and “Gap Analysis” methodologies) for use in the 2025-2026 Infrastructure Investment Plan⁴¹, which will set out the Scottish Government’s strategic approach to multi-year capital projects.

7.9.1 Considerations around coverage and resourcing

While performing an ILCA is not necessarily highly time consuming, undertaking ILCAs for all Government policies would be a resource-intensive and challenging task.

As with our recommendations for the introduction of ILCAs in the policymaking process, the use of an emissions threshold can be a useful tool for balancing resourcing with coverage.

This threshold could be explicitly specified. For example, if the Scottish Government chooses to implement the Net Zero Test, the same threshold could be set for policies that are carbon assessed for the Budget. The threshold may also not be explicitly specified, such as in Sweden’s Budget which includes any “main decisions” taken during the year.

Limited coverage is a drawback of using a threshold. If the threshold is initially set relatively high while capacity and skills are developing in the Scottish Government, this will limit potential scrutiny. The Scottish Government will therefore need to consider whether it can deliver sufficient amounts of analysis in time for the next Budget. This will likely affect the planned timing of sunseting the taxonomy-approach, should the Government choose to do so.

The Scottish Government should consider undertaking additional individual-level carbon assessments for scrutiny of policies that will be undertaken in the upcoming Budget year but have not yet been developed. These policies will not have existing ILCAs but excluding undeveloped policies will reduce the ability for scrutiny. Without yet being developed, relatively little data will be known about these policies and so any assessments should be presented as illustrative and updated in successive years once a full ILCA has taken place.

⁴⁰ This shows the benefit of combining bottom-up methodologies, which provide useful project level detail, with top-down and hybrid methodologies which can estimate total impacts. Whether or not the Scottish Government chooses to use the results of ILCAs in the Climate Change Plan, the underlying data used to generate ILCAs will likely be useful.

⁴¹ <https://www.gov.scot/publications/analysis-responses-consultation-draft-infrastructure-investment-plan-2021-22-2025-26/pages/7/>

7.9.2 Pre-conditions to successful implementation

Significant synergies in resourcing exist between Scottish Government internal process and fiscal and policy scrutiny if the Scottish Government implements our recommendation for a Net Zero Test with individual-level carbon assessments.

With these recommendations implemented, ILCAs could mostly be undertaken within standard policy development processes. If the Scottish Government chooses not to build ILCAs into the policymaking process, undertaking ILCAs for fiscal and policy scrutiny would require allocating a large amount of resources.

Even with ILCAs embedded in policymaking practices, additional resourcing may be required where the embedded ILCA processes do not provide the desired coverage for fiscal and policy scrutiny. For example, if ILCAs are desired for policies that have not yet been developed and so do not have an existing ILCA, or if the embedded ILCA processes threshold is set higher than the threshold for scrutiny.

Additional initial resourcing would also be required to undertake a “catch up” on ILCAs for past policies that have been developed before the introduction of an ILCA process but are still being delivered.

With or without implementation of the Net Zero Test and ILCAs, our concerns raised earlier around capacity also apply to the introduction of ILCAs for use in Parliamentary scrutiny.

7.9.3 Presentation of results

As identified in the recommendations of the Swedish Climate Policy Council, the presentation of data can greatly affect the ability for scrutiny to take place.

We recommend that a discussion of the results is prominently placed within the main Budget document, along with a summary of the results presented within a single table. A description of the methodology and assumptions should also be included, but its prominence is less important.

It can sometimes be difficult to interpret the magnitude of some of these results. For example, how much does a project that is estimated to reduce emissions by 50,000 tonnes of CO₂-equivalent contribute to the Scottish Government’s targets?

This is best contextualised by bringing together the bottom-up individual-level carbon assessments with the more high-level gap analysis methodology. A gap analysis can be used to understand the difference between the forecast trend based on current policy and the required trend to meet targets. The Scottish Government currently undertakes a gap analysis using its TIMES model as part of the Climate Change Plan.

To contextualise the results of the individual-level carbon assessments, we recommend the Scottish Government undertakes a regular gap analysis to understand if planned policies meet required emissions reduction trends. However, care should be taken around interpretation as both are informed by separate methodologies and the sum of the individual-level carbon assessments should not be expected to equal the predictions of the gap analysis.

The team developing the TIMES model has low levels of resourcing – sitting at two FTE staff. More regular gap analysis will require additional investment in this team.

After the first year of implementation, the Scottish Government should also consider reflecting on the outcome of the past year’s carbon results. This could include reflection

on the success of planned policy delivery over the ending financial year and clarifying where and why estimates have been updated.

The Scottish Government should also consider whether it could introduce a carbon-equivalent of financial memos, which are needed for any announcements that require legislative changes.

This may be more challenging for some of these legislative changes where detail may be limited on the expected outcomes. A more illustrative assessment may be required in these cases.

There may be a role for parliamentary scrutiny of these carbon memos. For example, scrutiny provided by the Net Zero, Energy and Transport Committee.

7.10 Recommended Phasing

7.10.1 Very short term

With the essential requirement of buy in across Government in mind (**Recommendation 2**), our recommendations for a phased implementation are as follows.

We recommend that the Government considers how it can improve the clarity and transparency of decisions that impact on climate change (**Recommendation 1**). This can help to recognise that trade-offs always exist, particularly when civil servants are considering trade-offs between several statutory targets.

Secondly, we recommend establishing two teams:

- A Cross-Governmental Policymaking Governance Team (**Recommendation 3**)
- A Cross-Governmental Climate Governance Team (**Recommendation 7**)

These teams will need to be well resourced and, in the beginning, will require drawing on staff and expertise from across the Scottish Government.

Critically, these teams will require a broad remit and the clout to influence other parts of Government.

The Scottish Parliament and Scottish Government should consider the extent of the usefulness of the high-level Carbon Assessment of the Budget and the Carbon Assessment of the Capital Budget. If their usefulness is found to be limited, we recommend sunsetting these methodologies and moving towards a combined individual-level carbon assessment and gap analysis approach (**Recommendations 9 & 11**). Timescales until the next Budget will require realistic expectations for delivery. These timescales may require continued use of the current methodologies for the next Budget, and possibly a limited coverage of only the most major positively or negatively emissions impacting policies using the individual-level carbon assessment methodology.

7.10.2 Short term

We recommend that the first task for the governance teams should be developing a new, more detailed set of guidance (**Recommendation 3**). The teams should work on this collectively to ensure that the policymaking processes are consistent and complimentary.

The Policymaking Governance Team should review and consider simplifying current processes and thresholds for Business Cases, Pre-Expenditure Assessments and informal Policy Development papers. The size of this team will need to be expanded quickly to

undertake the medium-term step of assessing policymaking processes, and the support of senior civil servants will be required to undertake this scaling.

We recommend that Exchequer, or a similar area, communicates with directorates to build up a clear picture of which areas require support with skills and capacity (**Recommendation 4**), and whether this support is in programme and business development, technical appraisal, carbon assessment or post-project evaluation. This will provide senior leadership with the information required to target rapid upskilling and consider existing time allocation.

The Climate Governance Team should consider paying particular attention to developing guidance and tools for the Net Zero Test and carbon assessment. These processes should be trialled in several areas to understand where the guidance or tools can be further improved. We recommend trialling the processes on policies with expected large climate impacts, so that the results can also be used for the next Draft Budget and Climate Change Plan.

Clear signalling should be sent to directorates that Business Cases, impact assessments and appraisal are expected and will soon be challenged. The new governance teams should engage with directorates to understand where difficulties exist in undertaking current guidance.

The Scottish Government should consider additional funding and data for external auditors to undertake further periodic auditing of policymaking processes, climate governance and carbon assessments (**Recommendation 5**).

The Government should consider how existing budgetary processes and timescales may be limiting the availability of data for carbon scrutiny in the Budget (**Recommendation 10**).

7.10.3 Medium term

In the medium term, the Net Zero Test with carbon assessment should be introduced on a more widespread basis (**Recommendation 6**). While capacity may still be quite limited, the threshold on the Net Zero Test can be set to trade-off policy coverage with capacity to undertake assessments. The Climate Governance Team should now be fully operational in acting as a clear challenge function on these assessments (**Recommendation 7**).

Guidance on Business Case development, impact assessment and appraisal should be completed. The Scottish Government should consider the introduction of a sign-off by the Policymaking Governance Team. For example, in AO Templates on whether the project has a Business Case, and whether the Business Case is of a sufficient standard. This marks the introduction of centralised oversight and standardisation of policymaking processes (**Recommendation 3**).

The Policymaking Governance Team should take on board Exchequer's report on skills and capacity gaps and provide training and support to areas that need the most help (**Recommendation 4**).

We recommend that procurement rolls-out the use of carbon management processes (**Recommendation 8**).

Our recommendations for carbon assessment offer potential synergies between the data requirements for policymaking, the Climate Change Plan, and the Draft Budget.

We recommend the Scottish Government embeds carbon assessment within policymaking processes to make use of these synergies. These assessments created as part of policymaking development processes can be reused within the Draft Budget and Climate Change Plan, with additional assessment where required.

8 Concluding remarks from the authors

A key emissions reduction target looms in 2030. While eight years away, many of the decisions the Government makes today are deciding its level of emissions in 2030. Missing this target substantially raises the risk of missing Scotland's 2045 net zero target and results in challenging economic headwinds in the 2030s.

Our recommendations therefore cannot be left for years down the road, when the outcome of Scotland's progress, determined by decisions taken now, becomes inevitable.

It is critical that the Scottish Government creates an environment of continuous improvement in policymaking processes. This environment can develop the processes that will ultimately help deliver the required outcomes in the short, medium and long-term.

Therefore, we conclude this report with a clear message that the mistakes of the past cannot be repeated.

In 2008, a project to explore a methodology for a high-level carbon assessment was undertaken. This resulted in the Carbon Assessment published annually alongside the Scottish Government's Draft Budget.

It was widely recognised at the time that this was a limited tool, and that the critical next step in achieving carbon reductions was the development of individual-level carbon assessments, running in a parallel project.

It appears, from what we have seen, that this project was never taken forward. Fourteen years have now passed. This work cannot wait any longer to be seriously implemented.

Some of these recommendations will be challenging to implement – Government-wide change is never simple. But nor are these recommendations untested on an international stage.

The Scottish Government will need ambition, it will need the courage to embrace change, and it will need to treat a declared global climate emergency as just that – an emergency.

9 Appendix

9.1 Further details on the CIPA spreadsheet tool

Much like standard appraisal practices in a Business Case, emissions analysis measures the GHG emissions associated with a policy, relative to a counterfactual baseline. This baseline is described as a “do nothing new” baseline and considers what is likely to happen (and the resulting impact on carbon emissions) without the proposed policy.

The New Zealand Government provides the following examples of how policy proposals can be translated into values in their CIPA tool:

- A policy that encourages the update of electric vehicles can be modelled as (a) a reduction in internal combustion engines, and (b) an increase in electric vehicles, and thus electricity demand.
- A policy that encourages the adoption of energy efficiency measures (e.g. more energy efficient appliances) can be modelled as a reduction in electricity demand.

The CIPA tool provides a consistent and standardised approach for assessing GHG emissions impacts of policy proposals.

A difficult consideration for individual-level carbon assessment is what impacts to include within the scope of the assessment. The New Zealand Government classes impacts as “direct” – which must be quantified – and “indirect” – which are optional for quantification but must at least be considered. These definitions should not be confused with the “direct” and “indirect” definitions within the Scottish Government’s high-level Carbon Assessment. There is no internationally agreed definition of “indirect”.

The New Zealand Government defines direct emissions as “those impacts that flow reasonably automatically from the implementation of the proposed policy decision”. This includes embodied emissions, operational emissions and emissions associated with the rebound effect⁴².

“Indirect” impacts are defined to include emissions less attributable to the policy proposal but may occur as a result of the policy over a longer timeframe. For example, long-term behavioural changes and technological changes. It is not mandatory to assess indirect impacts due to the high amounts of uncertainty in their estimation.

Emissions occurring overseas from imports are also not included. However, agencies can choose to report on the likelihood of “carbon leakage” in the CIPA disclosure sheet.

⁴² Proposals that improve energy efficiency can reduce energy bills. This funding can then be spent on other goods and services, leading to an increase in emissions and partially offsetting the overall reduction. The New Zealand Government has limited the analysis of the rebound effect to cover only proposals related to changes in energy demand – electricity and transport fuels.

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