GREEN BUDGETING FOR GLASGOW CITY COUNCIL

Briefing Note

Friday, 9 December 2022

Final Version

Pengwern Associates

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this note is to introduce the concept and merits of green budgeting and explore, at a high level, the options for its adoption by Glasgow City Council. The note also considers the guidance provided by the Task Force for Climate Related Financial Disclosures (TCFD), the possibility that Glasgow might disclose TCFD-related information, and how the concept of green budgeting relates to the TCFD initiative.

The note is structured as follows:

- Section 2 describes the different versions of green budgeting and the options that could be most relevant for the Council.
- Section 3 provides information on the Task Force for Climate-related Financial Disclosures (TCFD), the recommendations on disclosures it made, and how cities have adapted these for their context. It discusses the pros and cons of the Council making TCFD disclosures.
- Section 4 describe the relationship between green budgeting and TCFD.
- Section 5 provide summarises and highlights some proposed next steps.

2. What is green budgeting?

2.1. Introduction

Green budgeting involves the use of the tools and systems of budgetary policymaking – and public financial management – to inform, assess and deliver green objectives. It might involve green (or climate) budget tagging, which is an approach for monitoring and tracking of green (or climate)-related expenditures in the budget system. It can also involve the explicit incorporation of climate and environment issues into the processes that support budgetary decision-making; as well as consideration, and potential reporting, of green or climate related issues, including due diligence and risks assessment. Finally, it can include the use of revenue raising and budgetary mechanisms to incentivise or deliver green (or climate) objectives. In other words, green budgeting consists of a wide range of different activities, with different jurisdictions employing different approaches. Nonetheless, in all case, the overall intention is to provide policymakers and other stakeholders with a better understanding of the climate and environmental implications of budget choices, and allow them to take more informed decisions to reflect overarching climate and environmental commitments.

Green budgeting offers a range of potential benefits. Most importantly, it helps identify how public authorities can alter their budgetary approaches to make it more likely that climate and environment goals can be met, as efficiently and effectively as possible. In addition, however, the application of green budgeting, and the subsequent publication of these results, can help increase public and political attention on climate action (in the specific case of Glasgow, the implementation of the Glasgow Green Deal) thereby catalysing further action by a wider array of stakeholders. Thirdly, green budgeting can generate valuable information that can be used for complementary purposes. For example, Ireland's green budgeting framework has supported the process for managing the proceeds from its green bond issuance (Cremins & Kevany, 2018).

A prerequisite for much green budgeting is the use of a performance-based budgeting framework. Performance budgeting involves developing and setting budgets on the basis of the expected results (or outcomes) of programmes, alongside monitoring frameworks to determine whether the results/outcomes have been delivered. Performance budgeting aims to create strong linkages between overarching strategies and specific programs and budgets. Much of green budgeting relies on the framework provided by performance budgeting to identify the outcomes that the budget delivers, although the depth and sophistication of performance budgeting can expand over time once green budgeting is introduced.

While green budgeting is most often adopted by national governments, there are a growing number of examples of sub-national governments and cities also using green budgeting. The OECD estimates that, among OECD countries for which data is available, 64% of climate-related public investment is by subnational governments while only 36% is undertaken by national governments (OECD, 2019).[1] This makes frameworks related to spending at the subnational level particularly important. In some cases, subnational green budgeting results from national

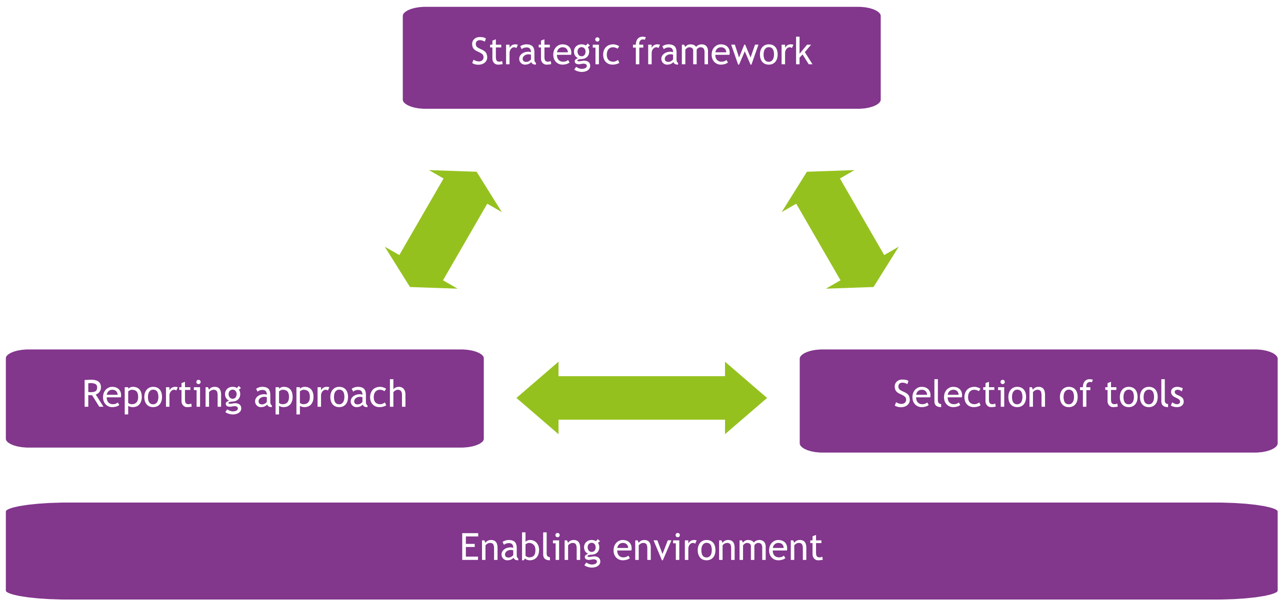
[1] The respective figures for the UK are, however, 34% subnational and 66% national.

requirements being cascaded to the subnational level – this is the case, for example, in Austria, Colombia and Portugal. In other cases, such as Andalucía, sub-national governments apply green budgeting even though the national government does not. European cities that use a form of green budgeting include Heidelberg, Dresden and Bologna (Bova, 2021) as well as Oslo (Gorelick et al., 2022).

2.2. A framework for exploring different green budgeting options

The OECD (OECD, 2021) provides a useful framework for considering both the requirements for effective green budgeting, and the different forms that it can take. This is shown in Figure 1 and described further in each of the subsections below.

Figure 1 OECD's Green Budgeting framework



Source: (OECD, 2021)

2.2.1. Strategic Framework for Green Budgeting

A robust strategic framework for green budgeting consists of three key elements:

- an overarching climate and environmental strategy which clarifies the climate and environment objectives that green budgeting aims to facilitate[2];

---

[2] The importance of developing a green budgeting approach that builds from, and is synergistic with, the broader climate and environmental strategy for the jurisdiction is further emphasised by (Gorelick et al., 2022).

- a clear legal and/or political commitment to green budgeting, to ensure that the resources needed to implement green budgeting are available and that the relevant bodies have the necessary legal/regulatory (and political) mandate;
- clarity as to the organisation(s) that will be responsible for the implementation of green budgeting;

Table 1 illustrates the position of Glasgow in relation to these three elements.

Table 1 **Glasgow has a robust underlying framework for supporting green budgeting**

Element of Strategic Framework	Glasgow position
Overarching climate and environment strategy	Glasgow Green Deal roadmap, with strong emphasis on social issues. Further supported by the Glasgow Climate Plan, Glasgow Adaptation Strategy, Glasgow Economic Strategy, Glasgow City Region Adaptation Strategy and Glasgow City Region Economic Strategy.
Clear commitment to green budgeting	Early interest in green budgeting, some commitments included in the Glasgow Green Deal (e.g. commitment to 'Paris-aligned' institutional spend and factoring in carbon prices into business cases in the Green Deal roadmap)
Organisational clarity	Support to implement Green Budgeting provided through Green Economy Unit proposals

2.2.2. Tools to implement green budgeting

There is no definitive list of tools that define green budgeting. In its recent survey (OECD, 2021), the OECD identifies no fewer than 14 tools that could be used as part of the a green budgeting approach. Different jurisdictions use different combinations of these tools, according to their political and institutional context.

Not all of these tools are likely to be relevant to Glasgow. Some green budgeting tools may already be mandated by existing Scottish or UK government practices and/or fall outside of the legal responsibility or mandate of Glasgow or the wider city region. Others may be unduly resource intensive for a City Council. Table 2 below provides an initial assessment of the applicability of the different green budgeting tools listed by the OECD to the Glasgow City Council context. It identifies those that are within and beyond the purview of the Council and, of those that are within its purview, an initial assessment of which may be high, medium or low priorities, given some of the key considerations associated with their use. This suggests that the green budgeting tools that are likely to be of greatest relevance to the Council are green (climate) budget tagging, adopting green perspectives in performance setting, shadow carbon pricing, and providing a GHG (carbon) assessment of the budget.

Table 2 **Some elements of green budgeting are more relevant for Glasgow Council than others**

Potential tool in green budgeting	What does it involve?	Key considerations concerning implementation
High priority options		
Green(climate) budget tagging	Explicit identification of budget expenditures (and sometimes tax revenues and expenditures) according to the extent to which they support climate/environmental objectives	Tool most commonly associated with green budgeting. Can generate useful information that can inform subsequent spending decisions as long as processes for using information are well-established. Risk of complicated and onerous calculations.
Green perspective in performance setting	Requirement that a certain proportion of performance metrics within the budget should be linked to climate/environmental goals	Relatively easy to implement assuming performance budgeting is in place. Risk that process leads to inappropriate targets that, in turn, distort activity.
Shadow carbon pricing	Valuing the GHGs (reductions) associated with projects and programmes as part of the appraisal process	Council has already committed to this, and is meant to be used for major expenditures as per the UK Green Book. Potentially powerful tool to shape projects/programmes but implications of use of the tool may create political pressures.
GHG (carbon) assessment of budget	Estimating the GHG emissions associated with a budget	It is understood that an initial assessment for the 2021 budget has already been undertaken. Could be possible to build on this tool using both Glasgow GHG inventories and existing Scottish government analysis. Requires processes for using the information to be well established if the assessment is to influence future behaviour.
Medium priority options		
Green perspective in spending review	During medium-term spending review process, considering impact of measures in terms of impact on climate and environment goals	Potentially powerful way to shape medium term priorities and could be included in revision of GCR Economic Strategy. The infrequency of the strategy revision means that the impact of this measure in the short term may be limited.

Inclusion of climate change in long term fiscal sustainability analysis[3]	Considering how climate risks (both physical and transition risk) might affect medium-long term fiscal position	There is an existing analysis of physical climate risks through Glasgow City Region Climate Risk and Opportunity Assessment, although this would need to be attributed to Glasgow itself. Gap for transition risks could be considered.
Environmental audit of budget	Independent assessment by third party as to whether the budget effectively promotes climate/environmental objectives	Council would need to decide which body would be the most appropriate to undertake an informed assessment. Potential for high profile disagreements could create political challenges
Green balance sheet (natural capital accounts)	Regular assessment of the value of the natural capital owned or managed by public authority	Useful tool for tracking valuations that may otherwise be downplayed in decision-making, but no automatic link to budget setting
Low priority options		
Review environmentally harmful tax expenditures and subsidies	Regular review of subsidies which categorises them according to whether (or the extent to which) they are environmentally harmful	Limited fiscal flexibility for Council. To the extent that it is important, can be captured in green budget tagging
Biodiversity/ecosystem pricing	Government interventions to influence prices so that they better reflect the externalities and/or scarcity value of activities that rely on biodiversity	Only limited scope for use by the Council e.g. permit charges. Otherwise beyond remit
Beyond purview of Council or already in place		
Ex ante environmental impact assessments and strategic environmental assessment/ environmental impact assessment	Assessment of budget measures in advance of their inclusion to ensure their environmental and climate implications are taken into account	Already required for any major project. SEA/EIA required for public projects in Scotland

[3] The importance of cities considering these risks and challenges, in addition to regional and national jurisdictions and corporates (where recognition of this need is now growing) has been emphasised in a recent academic paper (Gilmore et al., 2022).

Carbon pricing	Introduction of tax levied proportional to release of GHG emissions	Not within remit of Council, though could advocate for introduction.
Environmental tax reform	Deliberate effort to shift incidence of taxes from labour to activities that cause environmental damage	Not within remit of Council, though could advocate for reform / change.

Of the options identified above, green budget tagging is the tool most commonly associated with green budgeting. This involves identifying (or 'marking') those expenditures and/or revenues of a jurisdiction's climate and/or environmental objectives, and subsequently, to monitor or track these going forward. This allow assessment of whether these resource flows are in line with the agreed strategic objectives, and to track trends and progress towards objectives over time. A review of international practices suggests that there are a range of different approaches to undertaking green budget tagging, which hinge on the approach to a number of critical design questions (Bova, 2021):

- **Does the analysis focus only on climate change objectives or will it have a wider perspective?** Many jurisdictions focus only on climate change. However, even in this case, there tends to be separate tracking of mitigation and adaptation. In other cases, however, a wider approach is taken. For example, the exercise undertaken by the French government considers all six environmental objectives of the EC Sustainable Finance Taxonomy. An interesting recent development that may be of relevance to Glasgow is the concept of 'socio-climate budget tagging' which aim to highlight the joint climate and social effects of government budget measures (I4CE, n.d.).

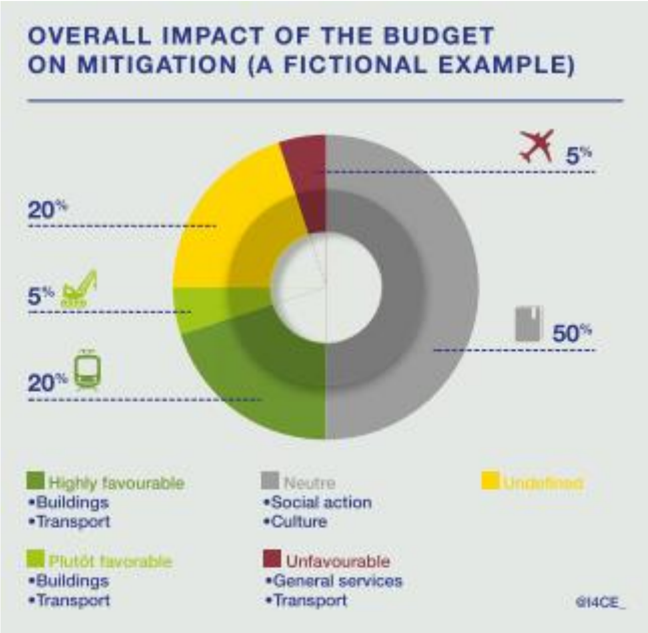
- **When considering whether financial flows align with the stated objectives, should the assessment be made on the intent of the financial flow or the effect of that flow?** For example, in many cases, spending on public transport may be motivated by a wide range of concerns that have little or nothing to do with climate change objectives. A focus on intent may lead to a stronger long-term efforts to explicitly linking spending to the Glasgow Green Deal objectives, but may lead to perverse (and low) numbers in the early years of implementation.

- **Should the analysis only focus on expenditures or should it also consider revenue raising (i.e. fees and charges, as well as taxes) as well as exemptions, deductions associated with this revenue raising?** At both the national and subnational level, most budget tagging exercises start with a focus on expenditures. This is likely to be particularly relevant for Glasgow given the greater flexibility it has in relation to these expenditures. However, a comprehensive assessment will also require an assessment of revenue items.

- **Should the focus be only on positive contributions to the stated objectives or should expenditures and revenues that hinder the delivery of objectives also be reported?** For understandable reasons, many analyses focus on the positive contributions that the budget makes to supporting green objectives. However, a comprehensive assessment, which genuinely intends to use budget tagging as a tool to promote the delivery of the Green Deal objectives, will also track negative contributions. Linked to this, some approaches also distinguish the intensity of the support to the stated objectives. A hypothetical example of this approach is shown in **Figure 2**

- **Should the approach tag budgetary figures and/or actual?** The most typical approach to budget tagging involves implementing tagging ex ante, at the point of budget development. At this point, the opportunities for materially influencing allocation decisions are greatest. However, some jurisdictions complement the ex ante budget analysis with an ex post assessment of the financial flows linked to environmental objectives. This allows for an assessment of whether there is a systematic bias in the execution performance of activities with a climate/environmental focus. However, this requires additional human resources.

Figure 2 Climate budget tagging approaches can take account of the intensity of the support that a budget item has on climate goals. as well as also track budget line items that have a negative impact



Source: (I4CE, 2020)

While there are a wide range of different approaches taken by different jurisdictions, reflecting their specific needs, the case of France is often seen as a good practice, although labour intensive, example. Box 1 provides more detail.

Box 1 France's budget tagging exercise

The green budget tagging exercise in France rated expenditures, including tax expenditures, on a five point scale:

- Very favourable (3) – expenditure incurred for its environmental benefit
- Favourable (2) – an expenditure which did not have a primary environmental objective but which has a demonstrated indirect benefit
- Favourable but controversial (1) – an expenditure with a favourable impact but which could have contradictory effects, such as the risk of technological lock-in
- Neutral (0) – insufficient data to determine the environmental impact
- Negative (-1) – expenditures which have a direct negative impact on the environment or which encourages behaviours that harms the environment.

This assessment was made against each of the six major environmental dimensions specified in the EU taxonomy: (i) climate change mitigation; (ii) adaptation to climate change and prevention of natural disasters; (iii) the management of water resources; (iv) the circular economy, waste and the prevention of technological risks; (v) reducing pollution; and (vi) biodiversity, and protection of agricultural, forestry and other green areas. This analysis was undertaken for 475 separate line items.

In the subsequent reporting, these scores were further aggregated with expenditures reported as 'green' in cases where they had a positive impact (score of 1-3) on one environmental dimension without a score of -1 on any other dimension; 'mixed' where the expenditure had a score of 1-3 on one or more environmental dimensions but a score of -1 on another dimension; and 'brown' where there was at least one adverse impact on one dimension with no offsetting impacts on other dimensions.

The implementation followed a four-stage process:

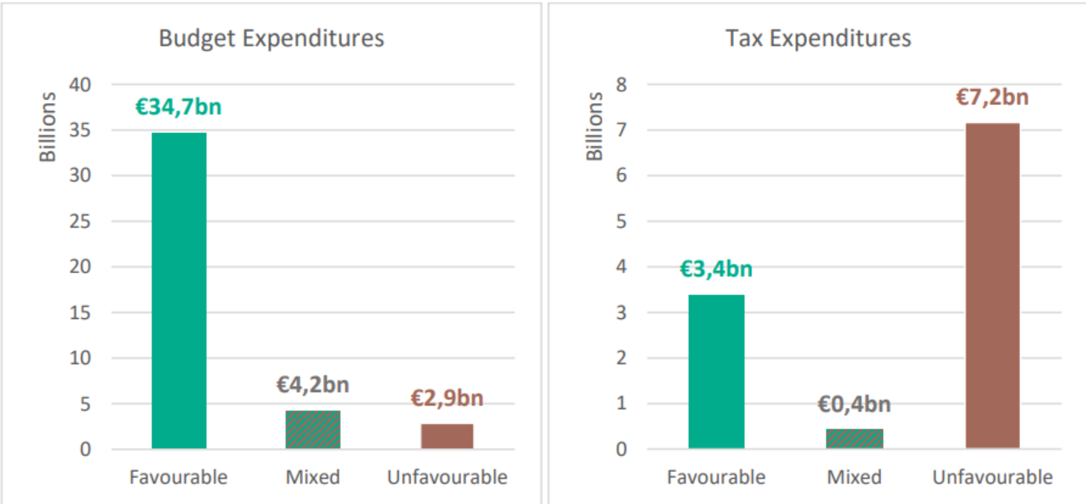
- First, the development of the methodology through a working group consisting of working group of representatives from the Ministry of Finance (Budget Directorate, Treasury and Economic Analysis Directorate, Tax Policy Directorate) and the Ministry of Ecological and Inclusive Transition.
- Second, integrating an annex on green budgeting into the performance budget circular for 2021, helping line ministries understand the methodology.
- Third, a series of meetings between the Ministry of Finance and each line ministries to discuss how this methodology should be applied.
- Fourth, the working group conducting a consistency check before all the material was consolidated into the "Green Budget" document.

The results for the 2020 budget found that out of a total of €574.2 billion in budgetary spending and tax expenditures, €52.8 billion had an impact on the environment:

- €38.1 billion was found to be green;
- €4.7 billion was found to be mixed. Much of this was spending on transport infrastructure, notably railways which was considered to have a positive impact on climate change mitigation but a negative impact on biodiversity.
- €10bn was found to be unfavourable, most of which related to tax expenditures that mitigated the impact of taxes on some energy consumers

An example of the output of the analysis is provided in Figure 3 below.

Figure 3 The French budget tagging exercise considered budget and tax expenditures and, for each, allocated them as favourable, mixed, unfavourable or neutral (neutral not shown)



One common concern with budget tagging activities is that it can place an undue burden on officials - this can be mitigated by adopting a simple approach and keeping implementation centralised within that part of the organisation with overall responsibility for budgeting i.e. in a Council context, the Finance Team. The more complicated the tagging approach – for example by accounting for multiple objectives in the tagging or by requiring very granular application – the more difficult it can be to sustain implementation. It is likely to be preferable to start with a relatively simple approach, in order to allow people to appreciate the benefits it can provide, and develop more nuance and sophistication over time. It is also easier to sustain the consistent implementation of budget tagging if responsibility for application is placed in one unit or department (World Bank, 2021).

Regardless, of the approach taken to implementation of budget tagging, and the resources it requires, a critical challenge is in ensuring that the information generated informs future decisions. A common finding – especially when budget tagging is introduced at the national level – is that the results are, at best, only used for publicity purposes (World Bank, 2021). Furthermore, when used for publicity purposes. it can be publicised in a way that assumes that more expenditure is unequivocally desirable, without consideration of the effectiveness or efficiency of the spend. As such, **a critical element in the design of budget tagging exercise is to identify, in advance, which decisions the results of budget tagging will inform, and how the information will be presented to ensure these decisions are indeed influenced.** This may even require the design of relevant (internal) reports and templates in advance.

2.2.3. Reporting approach

The third element of a green budgeting approach is the way in which the Council chooses

to publish the results of any green budgeting tools that it uses. There are a number of options that Glasgow might consider here, which could be combined:

- A Green Budget Statement. Accompanying the standard financial statements on the budget released each year, this might consist of a narrative report and a more detailed quantitative assessment derived from the application of whichever tools are adopted.
- The establishment of an open data portal where citizens could access the underlying granular applications of the chosen tools.
- Consultation events with stakeholders. These would be focused on ensuring the dissemination of the green budgeting reports through presentations and dialogue.

2.2.4. Enabling environment

The implementation of green budgeting often requires a change in processes and skills withing the budgetary authority. In order to effect the necessary changes as easily as possible, a number of activities can be undertaken to improve the enabling environment for green budgeting. The activities most commonly adopted by other jurisdictions include:

- the development of guidelines and instructions that set out the processes that need to be followed to support the implementation of green budgeting;
- training and skills development of whichever green budgeting tools are adopted;
- the development of a cross-agency coordination group covering the institutions or departments that share responsibility for the development of green budgeting; and
- the creation of an expert advisory group to support the implementation of green budgeting.

A recent review - focusing explicitly on how cities might integrate green budgeting approaches - places particularly strong emphasis on the value in ensuring cities have the right skills in place, and on establishing a cross-agency coordination group (Gorelick et al., 2022).

3. Task Force for Climate-related financial disclosures

3.1. What is the TFCD?

The Task Force for Climate Related Financial Disclosures (TCFD) released a report in 2017 (Task Force on Climate-related Financial Disclosures, 2017) calling for material climate related financial infirmation to be disclosed in the annual financial reports of large companies and financial institutions. It argued that both the physical and transition risks[4] associated with climate change could have major impacts on the valuation of companies and hence, ultimately, on financial stability. By providing climate-related financial information to investors and other stakeholders, the TCFD argued that investors would be able to improve their risk assessments, make more informed capital allocation decisions and undertake higher-quality strategic planning, all of which would reduce the likelihood that climate change (or its policy response) would have a rapid, dislocating impact on financial stability.

The TCFD developed a framework for disclosures centred around four pillars: governance, strategy, risk-management, and metrics and targets. These were associated with, in total, 10 recommended disclosures. Figure 4 provides more detail regarding these disclosures.

Figure 4 TCFD's disclosure framework

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Source: (Task Force on Climate-related Financial Disclosures, 2017)

[44] Physical risks are those risk resulting from both acute and longer-term climate change impacts. They may include direct damage to assets and indirect impacts from supply chain disruption, for example. Transition risks relate to the policy, legal, technological and market changes associated with the transition to low-carbon and climate resilient economies.

The TCFD's recommendations are gaining increasing traction and generating interest can be applied to other aspects of environmental sustainability. The TCFD reports that it has more than 2,600 supporters, with the combined market captalisation of the companies supporting TCFD equal to $25 trillion and the assets of financial companies that support the TCFD equal to $194 trillion. While TCFD was always designed as a voluntary reporting framework, there are now 8 jursidictions that are in the process of making TCFD-aligned reporting mandatory in certain cases. This includes the UK which has now mandated climate disclosures by large companies and financial institutions by 2022 (HM Government, 2021), and has published guidance on its implementation (BEIS, 2022). Building on the growing resonance of TCFD disclosures, a Taskforce on Nature-related Financial Disclosures (TNFD) has recently developed a beta-version of a framework for risk management and disclosure on nature-related risks, with the ultimate aim to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes (Task Force on Nature-related Financial Disclosures, 2022).

3.2. Application of TCFD by cities

While the TCFD recommendations focused on disclosures by private companies, a number of cities and other public sector institutions are choosing to make TCFD-aligned disclosures. In addition to Glasgow City Region (which became a TCFD supporter as part of passing the Glasgow City Region Adaptation Strategy and Action Plan), Toronto, Vancouver and Montreal are reported to be implementing TCFD recommendations while the TCFD website lists three Canadian cities as TCFD supporters: Vancouver (which became a supported in November 2017) Mississauga and Montreal (supporters since September 2021). Other supporting government institutions[5] include the Belgian Ministry of Finance, the Department of Finance Ireland, as well as a range of national governments (Task Force on Climate-related Financial Disclosures, n.d.).

A publication identifies how minor changes to the TCFD framework can make it relevant for cities, and provides an indication of how the related activities undertaken by the city and the related quality of city disclosures might vary by reporting maturty (Chartered Professional Accountants Canada, 2019). Table 3 and Table 4 provide summarised versions of these.

Table 3 The TCFD disclosure requirements can be easily adapted to be relevant to cities

TCFD Pillar	Reporting recommendations for cities
Governance	Describe council's oversight of climate-related risks and opportunities
	Describe management's role in assessing and managing climate related risks and opportunities
Strategy	Describe the climate-related risks and opportunities the city has identified over the short-, medium-, and long-term

[5] This lists excludes public sector supporters who are financial institutions or financial supervisors and regulators.

	Describe the impact of climate-related risks and opportunities on the strategy and financial planning of the city’s businesses
	Describe the resilience of the city’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario
Risk management	Describe the city’s processes for identifying and assessing climate-related risks
	Describe the city’s processes for managing climate-related risks
	Describe how processes for identifying, assessing and managing climate-related risks are integrated into the city’s overall risk management
Metrics and targets	Disclose the metrics used by the city to assess climate-related risks and opportunities in line with its strategy and risk-management process
	Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions and the related risks
	Describe the metrics used by the city to manage climate-related risks and opportunities as well as performance against targets

Cities that have decided to provide TCFD disclosures report a number of benefits. These include:

- the emphasis on data collection required for TCFD disclosures leads to higher quality data that improves decision-making in other areas;
- the requirement to disclose information improves the ability to manage climate risks;
- disclosures lead to the development of financial information related to climate change – such as infrastructure invesrment needs, economic growth potential – that engage a wider audience;
- disclosure helps to improve the understanding among city authorities of the sources of external funding for climate-related projects; and
- disclosures build public awareness and local support for action.

However, cities also report barriers to developing TCFD disclosures. These include difficulty in developing a common understanding of climate-related information within the authority, and the additional reporting burden it places on cities suffering from limited human and financial resources.

When considering whether or not to make TCFD disclosures, the City Council will need to trade-off two competing perspectives.

- On the one hand, the Council will not face direct pressure from the capital markets to make disclosures. As discussed above, a key rationale for the development of the TCFD guidelines was to improve information flows on climate risks for stakeholders in the capital markets. By contrast, according to the Council’s latest financial statements, all of its external capital comes either through loans from Public Works Loans Board or through market loans made by individual institutions. It has no direct exposure to the debt capital markets i.e. through the issuance of bonds. This is in contrast to the Canadian cities discussed above which issue their own bonds that are traded on public capital markets (City of Toronto, 2020).

On the other hand, it is very likely that the financing strategy for realising the Glasgow Green Deal will necessitate greater engagement with private finance providers. For example, the Council has plans to develop a blended finance vehicle for domestic energy efficiency/retrofits which would be partly capitalised by the private sector. In this context, it is possible that the Council providing disclosures will provide more confidence to potential partners. It is important to stress that, even in this case, there would not be a direct requirement for the Council to develop disclosures, rather that, by making disclosures, the Council would 'signal' to potential private sector partners that it was a credible partner who understood the growing importance of these issues, was committed to engaging with its partners, and learning from them, on this topic. The Council would also be in a position to provide valuable information to potential partners when *they* are seeking to manage and disclose climate-related risks. The extent of these benefits could be explored further in discussions with potential private partners. These benefits would be in addition to the internal benefits that it would bring for the Council as a result of the rigourous process it would need to go through in order to make the disclosure.

If the Council did decide to develop climate-related disclosures, it is likely to be valuable for it to focus on understanding and disclosing its physical risks. Much of the focus on TCFD has been on the implications of transition risk – the risks associated with a rapid transition to a low-carbon world. While this could be a challenge to some councils and other sub-national governments – for example in cases those that are heavily reliant on tax revenues from carbon intensive activities – this is less relevant to Glasgow Council (which through its Green New Deal is aiming to accelerate the transition to net zero). This reduces one of the key drivers that many other institutions face when deciding whether to make disclosures. However, the TCFD disclosure process could still help the Council better manage the physical risks it may face, as well as the opportunities that the transition provides. This is consistent with recent academic evidence exploring how the physical impacts of climate change could create fiscal stress for local governments (in the US) (Gilmore et al., 2022).

Table 4 **Expectations associated with TCFD pillars varies by maturity level (summary)**

TCFD Pillar	Getting started	Progressing	High Integration
Governance	Council is informed at least annually about climate risks and opportunities, how they may affect the city and initiatives to address these issues. Council informed of risks and opportunities as part of oversight of strategy, budgetary and capital planning, and when reviewing/deciding on these	As for getting started, but informed twice a year Council has formed subcommittee to oversee climate related issues Council begins to develop process for including climate in its decision making Council begins to monitor and consider progress on climate related goals City starts to publicly disclose climate-related information that council receives	Council is informed continuously on climate-related risks and opportunities Council considers climate related issues as part of decision making Climate sub committee receives regular updates from management and provides this information to rest of council as needed to inform decisions Council reviews progress towards climate targets alongside review of plans, budgets and expenditures City discloses climate related information and how this is integrated into decision-making
Strategy	City has determined short-, medium- and long -term climate risks and opportunities and has begun to identify their impacts Preliminary disclosure of risks and opportunities	City continues to identify risks and opportunities across time horizons and has identified their potential impact City has begun to undertake climate scenario analysis and this informs decision-making City disclosures include discussion of potential impacts from climate risks	City continues to re-evaluate risks, opportunities and potential impacts Risk and opportunities assessed based on financial materiality City uses quantitative climate scenario analysis and results are integrated into decision-making City continues to improves disclosure of risks, opportunities and potential impact
Risk management	City has started the process of identifying and assessing climate risks, including an initial prioritisation	Refined process for identifying and assessing risks and process for prioritisation established	City continues to refine process for identifying and assessing climate related risks

	Initial ways to mitigate and manage risks have been discussed City starts to disclose climate related risks	Ways to manage prioritised risks and have been identified and starting to be implemented Climate risks are considered in city's risk management framework City discloses climate related risks and begins to discuss how it is managing these risks	Climate risks incorporated into city's risk management framework Process for managing climate related risks has been established and risk mitigation efforts are being implemented City discloses its climate related risks and how it is managing these
Metrics and targets	Emissions are disclosed and city is starting to report on other metrics such as energy use Climate targets are being established	City discloses emissions and other climate metrics, as well as targets Progress on metrics over time are disclosed and progress relative to targets beginning to be incorporated into decisions Targets are starting to be aligned with strategy and risk management processes	City continues to disclose emissions and other climate related metrics including physical exposure of infrastructure to extreme weather Targets are enhanced and publicly disclosed Plans for meeting targets are disclosed and progress over time monitored and disclosed Progress on meeting targets informs decision-making Targets are aligned with city strategy and risk management processes Controls are in place to ensure appropriate selection and calculation methods are used for relevant metrics and targets Metrics and targets are subject to internal procedures and, where appropriate, independent assurance by an external auditor

4. Relationship between TCFD and green budgeting

There is an opportunity to develop a virtuous relationship between green budgeting and TCFD disclosures, as Figure 5 **shows.** On the one hand, the climate risks identified by TCFD disclosures are intended to motivate action that supports better risk management. In the context of Glasgow Council, one option to better manage climate risks is to implement green budgeting. In turn, the implementation of green budgeting has the potential to generate information that can improve the quality of the information provided in subsequent disclosures, making the City's disclosures more useful to stakeholders that rely on them.

Figure 5 There is a virtuous circle between TCFD disclousres and green budgeting

Three specific examples illustrate this relationship:

- Most notably, TCFD includes an expectation that those disclosing provide information concerning *'the impact of climate-related risks and opportunities on the strategy and financial planning'*. Budget tagging, as part of a green budgeting approach, can be seen as a way of ensuring that the opportunities associated with the low-carbon transition are integrated into the financial planning of the city, helping to ensure that sufficient financial resources are allocated to these opportunities, in line with Green Deal's strategic objectives. Once budget tagging is established, the Council would be able to provide quantitative information in its disclosure on how its financial planning aligns with the realisation of the city's climate related opportunities.

- Similarly, under the risk management pillar, those making disclosures are expected to provide information concerning ‘processes for managing climate-related risks’. In the context of the physical climate risks that the Council faces, budget tagging is a way of ensuring that sufficient financial resources are allocated towards adaptation activities that help to manage these climate related risks.[6] Over time, the City would then be able to disclose quantitative financial information regarding the extent to which it is allocating financial resources to the management of physical risks through spending on adaptation.
- Under the metrics and target pillar, disclosures are expected to provide information concerning the targets used to manage climate-related risks and opportunities as well as performance against targets. This requirement could motivate the introduction of a stronger emphasis on adopting a ‘green perspective in performance setting’ (one of the green budgeting tools discussed in Table 2). The Council would then be able to improve the quality of its disclosure over time by using peformance against these indicators within its disclosures.

[6] This relies on budget tagging separately identifying mitigation and adaptation spending.

5. Summary and next steps

This note has explored how green budgeting might be taken forward by Glasgow City Council, and the relationship between green budgeting and the possibility of making disclosures following the format recommened by the Taskforce for Climate-related Financial Disclosures (TCFD). The key conclusions and implications for the next steps that the Council might take are as follows:

- The robust implementation of green budgeting requires four key elements to be in place: (i) a strategic framework which combines an overarching set of climate/environmental goals and a strong political commitment to green budgeting alongside clarity on organisational responsibilites; (ii) the selection of the tools that constitute the Council's approach to green budgeting; iii) a reporting process; and (iv) a commitment to put in place an enabling framework – in terms of development of guidelines and skills training etc. – to implement green budgeting. **The Council should be in a position to articulate its approach to each of these four elements before commencing green budgeting.**

- The aspect of green budgeting that will receive the most attention is the selection of tools that make up the Council's approach. Different jurisdictions use different tools depending on political, institutional and socio-economic factors. An initial assessment suggests that the **four tools that have the greatest potential short-term applicability for the Council are: green (climate) budget tagging; adopting green perspectives in performance setting; shadow carbon pricing; and providing a GHG (carbon) assessment of the budget.** As an immediate next step, this list should be validated by key stakeholders within the Council, especially the senior decisionmakers in relation to finance and corporate policy and governance.

- Assuming it chooses to move forward with green (climate) budget tagging, a series of design features will need to be decided upon in the coming months. The most important are: (i) whether the tagging exercise should have an exclusive focus on climate issues or adopt a wider focus (taking into account both the Council's objectives and wider trends in relation to sustainable finance); ii) whether tagging should be focused on the intent or the effect of the financial flow; (iii) whether the tagging exercise should focus on expenditures alone or also consider revenue raising (and associated exemptions/reductions etc); iv) whether the focus should be on financial flows that make a positive contribution to the stated goal or whether negative impacts and/or intensity of impacts should also be considered; and v) whether the assessment should just focus on budgeted flows or also consider actual financial flows. **An institutional process, with consultancy support, should be set up to help answer these questions in the coming months.**

- Regardless of the decision taken on the above questions, a critical challenge is in ensuring that the information generated by green (climate) tagging informs future decisions. As such, **a critical element in the design of budget tagging exercise should be to identify, in advance, which decisions the results of budget tagging**

will inform, and how the information will be presented to ensure these decisions are indeed influenced.

- The Council also needs to decide on how much priority to attach to developing climate-risk financial disclosures. The benefits of developing disclosures include an increased internal understanding on climate risks (and opportunities) and the potential support it could provide in seeking to leverage private capital to meet the Glasgow Green Deal ambitions. This needs to be traded off against the costs associated with developing such disclosures when the Council does not have direct exposure to debt capital markets. **Structured conversations with potential private investors can help inform this decision.** Should it decide to take forward the development of climate risk disclosures, there is likely to be greater value in the Council focusing on the physical risks rather than transition risks.

- There are positive synergies between green budgeting and TCFD disclosures should the Council decide to take forward both initiatives.

References

BEIS. (2022). *Mandatory climate-related financial disclosures by publicly quoted companies, large private companies and LLPs* (Issue February). https://www.gov.uk/government/consultations/mandatory-climate-related-financial-disclosures-by-publicly-quoted-companies-large-private-companies-and-llps

Bova, E. (2021). Green Budgeting Practices in the EU: A First Review. In *European Economy Discussion Papers* (No. 140; European Economy Discussion Papers, Vol. 140). https://doi.org/10.2765/94030

Chartered Professional Accountants Canada. (2019). *Enhancing Climate-related Disclosure by Cities : A Guide to Adopting the Recommendations of the Task Force on Climate-related Financial Disclosures*. https://www.tcfdhub.org/resource/tcfd-guide-for-cities/

Cremins, A., & Kevany, L. (2018). *An Introduction to the Implementation of Green Budgeting in Ireland*. https://igees.gov.ie/wp-content/uploads/2019/01/The-Implementation-of-Green-Budgeting-in-Ireland.pdf

Gilmore, E. A., Kousky, C., & St.Clair, T. (2022). Climate change will increase local government fiscal stress in the United States. *Nature Climate Change*. https://doi.org/10.1038/s41558-022-01311-x

Gorelick, J., Steinbach, D., Walmsley, N., & Audrian, J. (2022). *Greening City Budgets: Practical Approaches* (Issue March). https://citiesclimatefinance.org/publications/greening-city-budgets-practical-approaches/

HM Government. (2021). *Greening Finance: A Roadmap to Sustainable Investing* (Issue October). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1031805/CCS0821102722-006_Green_Finance_Paper_2021_v6_Web_Accessible.pdf

I4CE. (2020). *Local Budgets Climate Assessment: Objectives and Approach*. https://www.i4ce.org/wp-core/wp-content/uploads/2021/02/I4CE-Budget-climate-assessment.pdf

OECD. (2019). Financing climate objectives in cities and regions to deliver sustainable and inclusive growth. In *OECD Environment Policy Paper* (No. 17; OECD Environment Policy Paper). http://oe.cd/climate-futures

OECD. (2021). Green Budgeting in OECD Countries. In *Green Budgeting in OECD Countries*. OECD Publishing. https://doi.org/10.1787/acf5d047-en

Task Force on Climate-related Financial Disclosures. (n.d.). *TCFD Supporters*. 2022. Retrieved February 2, 2021, from https://www.fsb-tcfd.org/supporters/

Task Force on Climate-related Financial Disclosures. (2017). *Recommendations of the Task Force on Climate-related Financial Disclosures* (Issue June). https://assets.bbhub.io/company/sites/60/2020/10/FINAL-TCFD-Annex-Amended-121517.pdf

Task Force on Nature-related Financial Disclosures. (2022). *The TNFD Nature-Related Risk & Opportunity Management and Discloyure Framework Beta v0.1*. https://tnfd.global/tnfd-framework/

World Bank. (2021). *Climate Change Budget Tagging: A Review of International Experience* (Issue February). https://openknowledge.worldbank.org/bitstream/handle/10986/35174/Main-Report.pdf?sequence=1&isAllowed=y

About Us

Pengwern Associates is a UK-based consultancy specialising in the economics of climate change, the environment, international development and the linkages between them. Across these areas, it provides advice to support strategy development, decision-making and implementation, drawing on both quantitative and qualitative analysis.

Pengwern Associates was founded in 2018, as a lean and flexible consultancy to collaborate with others across the world to address some of today's most intractable environmental and social problems

Pengwern Associates

john.ward@pengwernassociates.com

+44 (0)7790 613 951

www.pengwernassociates.com

john.ward2008