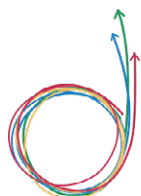




# Greening City Budgets: Practical Approaches

March 2022

CITIES CLIMATE  
FINANCE  
LEADERSHIP  
ALLIANCE



**FMDV**  
Supporting local authorities  
to access funding



## AUTHORS

Dr Jeremy Gorelick, Dave Steinbach, Neil Walmsley and Justine Audrain, Deputy Director of Programs of FMDV.

## ACKNOWLEDGMENTS

This brief was prepared by FMDV on behalf of the Cities Climate Finance Leadership Alliance. Review, editing, and design was provided by Priscilla Negreiros, Laura Jungman, Melina Dickson, and Elana Fortin.

## CONTACT

Secretariat@citiesclimatefinance.org

## ABOUT THE CITIES CLIMATE FINANCE LEADERSHIP ALLIANCE

The Cities Climate Finance Leadership Alliance (the Alliance) is a coalition of leaders committed to deploying finance for city level climate action at scale by 2030. It is the only multi-level and multi-stakeholder coalition aimed at closing the investment gap for urban subnational climate projects and infrastructure worldwide. Climate Policy Initiative (CPI) serves as Secretariat for the Alliance. Funding for the Alliance's activities is jointly made available through two German government ministries: The Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU).



# CONTENTS

1. Introduction: The challenge facing cities	1
2. What is green budgeting?	3
3. Why develop a green budget?	4
4. How to develop a green budget	6
5. Enabling conditions for green budgeting	11
6. Learn from other cities	12
7. Additional resources on other methodologies and case studies shedding lights on Greening City Budgets' methodologies and tools	14
References	16

# 1. INTRODUCTION: THE CHALLENGE FACING CITIES

Around the world, cities are growing at an unprecedented rate. According to the UN, 68% of people will live in cities by the year 2050 (Ritchie and Roser 2019). And yet, many cities lack the necessary financial resources to deliver basic services consistently and universally to their citizens, including housing, clean water, electricity, education, and transportation. On top of this, cities face an additional challenge: the current and future impacts of climate change that will disrupt the efforts of city officials to deliver a safe, prosperous, and equitable future for their populations.

Many cities around the world understand the impact of climate change in urban areas and are committed to deliver climate action. A growing number of cities have developed or are developing climate action plans and have set net zero targets. Networks of cities such as the Global Covenant of Mayors for Climate & Energy, the Resilient Cities Network, C40 Cities, and FMDV are showcasing the role of cities in the global fight against climate change. Despite this increasing focus on the role of cities, cities around the world face incredible challenges in turning their ambition to action. Some of the main challenges faced by cities are:

- **The urban finance gap:** The New Climate Economy estimates that USD 90 trillion will be required for cities to invest in sustainable urban infrastructure between 2015 and 2030 (NCE 2016). But currently only USD 384 billion is being channeled into sustainable infrastructure financing per year, compared to the approximate USD 5 trillion of investment required (Negreiros et al. 2021). City governments therefore face an urgent task to increase green investment at the municipal level to help address this gap and transition cities to greener places for their citizens.
- **Lack of knowledge and capacity on green budgeting:** Even though many cities have developed climate action plans, many are constrained by a lack of knowledge and capacity to turn plans into action. Cities often face a skills gap, as well as methodological and technical gaps, in their planning and finance departments to (i) integrate carbon accounting and climate analytics into budgeting (ii) identify measures and projects that meet with support mitigation and adaptation goals, and (iii) develop financing strategies, including using innovative financing instruments and policies to generate revenue and deliver priority investments.
- **Lack of pipeline of bankable projects:** One of the biggest challenges faced by cities is the lack of available green projects that are ready for investment. Project pipelines are groups of projects that are in early-stage development prior to project commissioning (OECD 2018). They showcase upcoming opportunities for investors, providing them with early information on the proposed investment opportunity to attract financing for the project. Cities face two common challenges with project pipelines for green investment: an overall lack of supply of green projects and a lack of visibility of projects that are bankable and ready for finance.

As cities look at different options to finance their climate action projects, they need to ensure that their budgets are aligned with their climate goals. This policy brief aims to provide guidance on how cities can use green budgeting to identify suitable green investments.

Section 2 introduces green budgeting and highlights an example from Oslo of how green budgeting has been used to prioritize and deliver concrete climate projects. Section 3 outlines the strategic rationale for green budgeting and explains why cities should introduce green budgeting practices. Section 4 provides a step-by-step overview of the green budgeting process to introduce city officials to how it can be undertaken in practice. Section 5 outlines cross cutting enabling conditions that cities can implement to support green budgeting. Section 6 concludes with some recommendations on next steps for cities.

## 2. WHAT IS GREEN BUDGETING?

Green budgeting is the use of the budgetary process to provide policymakers and planners with a clear and systematic understanding of the environmental and climate impacts of budgeting choices, which allows them to prioritize measures and investments that fulfill their environmental and climate goals (OECD 2021). In that sense, green budgeting can be differentiated from climate budgeting in that it goes beyond climate mitigation and adaptation to include other considerations such as biodiversity or circular economy. Green budgeting can be used to assess the CO<sub>2</sub> emissions or adaptation benefits of current measures and identify priority actions to deliver emissions reductions and resilience outcomes. These measures could include the introduction of new regulatory changes, public procurement measures, financial instruments (e.g., consumer incentives, taxes & fees, capital raising vehicles), and infrastructure investment.

Several examples show that cities have been successful in developing new methodologies to mainstream climate smart considerations into their budget processes (see Box 1). The OECD, with support from the European Commission, is currently doing a stocktake of green budgeting practices at regional and local levels within the OECD and beyond and is developing practical guidelines and a self-assessment tool to help regions and cities develop a green budgeting exercise (OECD and EU 2020).

### 3. WHY DEVELOP A GREEN BUDGET?

City budgets are a powerful tool for delivering climate action. Studies by the World Bank have shown that cities that integrate **adaptation and resilience** considerations into their budgets boost GDP by reducing the rate of depreciation of capital stocks, leading to a higher long-term growth trajectory and investments that are ‘future proofed’ (Forni et al. 2019). Similarly, **mitigation** actions tend to provide similar benefits through cost savings (such as through increased energy efficiency) and the stimulation of green economic services.

There are several strategic reasons for which green budgets are useful at delivering climate action at the municipal level. For instance, they can be used to:

- **Identify priority sectors & projects for municipal climate action:** integrating carbon accounting and resilience assessments into a city’s budget can help cities to identify which sectors and measures are the most effective priorities to achieve their climate goals. Carbon accounting can highlight the overall emissions of each sector and put a CO<sub>2</sub> reduction estimate alongside a price tag for each proposed measure. This process can help cities decide which individual measures to prioritize, as well as account for, whether their overall package of measures is sufficient to meet emissions reductions targets. Resilience assessments within city budgets can likewise be used to assess adaptation options - for example, whether specific measures ensure sufficient access to clean water or resilient housing – within the context of a city’s climate adaptation goals.

#### Box 1: Oslo’s Climate Budget

Oslo has developed a comprehensive climate budget to help the city achieve its climate goals to reduce CO<sub>2</sub> emissions by 95% in 2030 and achieve carbon neutrality by 2050 (European Commission 2018).

The climate budget process involves the following steps: (1) setting an overall target for CO<sub>2</sub> emissions reductions at the city level, (2) quantifying the total amount of CO<sub>2</sub> emissions that need to be reduced to meet the estimated target, (3) identifying measures with biggest CO<sub>2</sub> emissions reduction impact potential, (4) outlining how these measures will be financed and what agencies are responsible for their delivery, (5) implementing measures in both short and long time horizons and (6) quantifying the estimated CO<sub>2</sub> emissions for each measure on an annual basis, aggregating these measures and analyzing the total emissions reductions against the overall target.

Oslo launched its 5th climate budget in 2021 (Oslo City Government 2021). This budget identified 14 measures with quantifiable emissions reduction targets across key sectors (buildings, waste, and transport) that will lead to a total reduction of 406,000 tCO<sub>2</sub> compared to 2009. An additional 10 measures will be implemented but do not have specific reductions estimates. The climate budget is presented alongside the regular municipal budget so that climate measures are funded by the municipal budget on annual basis.

- **Develop long-term green investment plans:** The integration of climate targets into a city's multi-year capital investment plans & budgets sends strong signals to industry and project developers that enable them to plan for future infrastructure development. A long-term capital investment plan can therefore spur the development of project pipelines in sectors where new investment in sustainable infrastructure will be essential to meeting a city's climate goals – for instance in transport, building construction & retrofits, and renewable energy. Where suitable projects have already been identified by the municipality, these can be integrated and prioritized within the capital investment plans, ensuring their delivery and financing.
- **Implement green public procurement:** Budgeting and public procurement offer an important opportunity for cities to use their leverage to foster sustainability and innovation in different sectors of the economy. Cities procure a wide range of goods and services for the delivery of municipal budgets. They have the authority to develop green public procurement practices, which integrate environmental criteria into all stages of procurement for municipal goods and services (Energy Cities 2019). This can leverage significant change in the market, particularly in sectors where emissions are high, and cities have legislative or regulatory authority – for example in the transport and construction sectors. These regulatory changes can also push the ownership and cost of climate action onto other sectors, so that municipal budgets are available for direct investment, e.g., in sustainable infrastructure.
- **Develop green financial instruments:** Green budgeting allows cities to prioritize green measures and investments based on robust analytics. Once these decisions have been made, they need to be financed and implemented. The green budgeting process allows cities to assess their suite of measures and come up with an appropriate financing strategy. This strategy will likely involve the use of new green financial instruments and policies. For instance, a city government might introduce tax incentives or subsidies to consumers, such as for household renewable energy installation or building retrofits, to encourage green investment. Cities might also introduce taxes, fees, or regulatory changes to incentivize carbon-intensive industries to comply with climate targets. However, there is a limitation for cities with weaker taxing powers, which is the case especially in less decentralized countries. To meet their capital investment budgets, cities might also explore raising new finance through green municipal bonds or partnerships with private investors.



## 4. HOW TO DEVELOP A GREEN BUDGET

This section highlights the main process for cities leader to implement green budgeting. The process has been split into **three main building blocks**.

**Figure 1.** How to develop a green budget



### I. Develop a climate strategy with clear estimated costed targets and priorities

Climate action starts with a clear articulation of the priorities, long-term goals, and action plans established by the political leadership of a city, in particular urban plans. Climate action plans should be embedded in existing urban strategies and plans as cross-sectorial theme with clear targets<sup>1</sup>. A strong climate strategy, fully endorsed by the political leadership, can inform the approach taken in formulating the budget, including establishing green principles and targets to help guide investment decision-making as well as the identification and prioritization of strategic projects that will help achieve the climate strategy. Ultimately, all climate plans and strategies should be **fully costed** if they are to be integrated into broader municipal budgets.

Climate action plans often include sectoral carbon inventories, key areas to achieve mitigation and adaptation goals, and specific priority projects to deliver action. Cities all over the globe (including [Paris](#), [Vancouver](#), [Durban](#), [Mumbai](#), [Buenos Aires](#), [Lagos](#), [New York City](#), [Amsterdam](#), [Istanbul](#), [São Paulo](#), and [Auckland](#)) have developed climate action plans to implement the Paris Agreement and set their cities on track to a sustainable future.

When a city releases a new climate action plan, it is thus advisable that a green budgeting process is launched. This ensures that a new capital expenditure plan can be developed using green budgeting, aligning the climate action plan with infrastructure investment (see Box 2).

<sup>1</sup> See the [City Climate Action Framework](#) and the [Multilevel Action Playbook](#) developed by C40 for more information.

## II. Mainstream green considerations into the budgeting process

Once a city has established its climate strategy, backed by solid pricing based on strong data management systems and analysis, it can use the municipal budget process to deliver action through tangible incentives and investments on the ground. The integration of climate priorities into the budgeting process can help ‘lock in’ and prioritize projects and activities that will help deliver on the city’s climate strategy.

For this to be achieved in practice, it is important to match the targets that the city is trying to achieve in its climate action plan (such as GHG emissions reductions or adaptation outcomes), with the measures and investments that are required to achieve this.

There is not a “one-size-fits-all” approach to green budget processes, but important steps can be highlighted:

1. **Pricing the different measures** put forward in city budgets to meet its climate goals. The primary step to greening a municipal budget is to cost climate goals and targets. These goals and targets are often embedded in local climate action plans, which highlight the importance of setting up a clear strategy.
2. **Estimating the climate impact of each measure** (e.g., in GHG emission reductions or adaptation benefits) across the timeframes set out in the climate strategy. This step is of particular importance as it should help assess the “greenness” of budgetary items and require strong built-in data as well as monitoring, evaluation, and review processes (see paragraph c.). This should also help incentivize climate projects and measures and raise awareness on the “climate cost” of cities’ strategies.
3. **Assessing which group of measures to implement** based on both their cost and their ability to deliver climate impact **and prioritizing measures** according to their climate impact and budget feasibility. In this sense, the process of greening budget should help orient the decision-making process and assist political decision of cities leaders and their governing bodies. It contributes to strengthening city executives’ knowledge of climate challenges and actions and thus strengthen the political leadership along the way.
4. **Deciding on the appropriate policy, regulatory, or financial instrument** required to deliver each measure. In addition to assessing and prioritizing, it is crucial for cities to review available policies, regulations, and financial instruments available against their green budgets. This is a necessary step if real transformative action is to take place in cities.

Based on their decisions, cities will need to assess whether policy or regulatory changes are required, whether the city government needs to increase taxation or fees for relevant departments, or whether there is a need to raise additional capital (e.g., through bond issuance, loans at concessional rates, or the establishment of public-private partnerships).

**Box 2: Revenue and expenditure: two sides of the same “green budget coin”**

To fully grasp the potential of city budgets in the process of greening, it is important to highlight two distinct fields of interventions: revenues and expenditures.

On the revenue side, cities can tap into a great range of tools and programs that depend highly on their national context and decentralization framework. Most importantly, local taxes such as energy taxes, transport taxes, pollution taxes etc., and other fees and permits can play an important role in incentivizing or disincentivizing climate related actions and projects. This means that they can adjust taxation rates (e.g., property taxes), introduce subsidies for uptake of new technologies, or provide or deny permits for commercial operation based on compliance with green standards.

Common green initiatives delivered through municipal operating budgets include incentive programs for energy efficient building retrofits or higher fees and taxes for activities that are detrimental to the environment. A good example of the latter is London’s Congestion Zone that charges a daily fee to vehicles entering the city center, though low-emission vehicles (such as electric cars and bikes) are exempt, encouraging people to switch to these vehicles or use public transport. This not only generates revenue for the city but also helps reduce congestion and air pollution in the city center.

Considerations around the revenue side of a green budget highlight the importance of green taxonomies. This is especially relevant when we consider the complexity of evaluating and assessing the environmental impact of taxes, which is often not reflected in the taxation aggregate (e.g., taxes that contribute to waste reduction). This also highlights the need for strong political backing (see the above steps 3 and 4) when it comes to environmentally harmful taxes or subsidies. On the expenditures side, cities can use two channels: they can green their own assets through its operating budget turning them into green assets and services; and they can strategize and prioritize investments through their capital investment budget that contribute to reaching climate targets. It should be noted that both can use public procurement to embed green targets and standards and green public investments.

One of the advantages of using the operating budget to deliver a city’s climate action plan is that this approach can help incentivize widespread climate actions at relatively little cost for city budgets, the public, or the business community. In other words, the risk is spread across different public and private actors. This can help drive wider green economic growth, by stimulating demand for providers of services such as building retrofits, or installation of household renewable energy. Operational budgets, in combination with regulatory changes, can also leverage significant changes in the market through green public procurement that can mandate that the delivery of municipal goods and services – which are often contracted out to private suppliers - be aligned with the objectives of a city’s climate plan.

External investments come in addition to cities’ operating budgets, and these are particularly relevant for larger scale projects that often cannot be financed by the city’s own resources.

Integrating green budgeting practices into long-term capital budgets provides a strong channel for cities to deliver tangible investments in green infrastructure and services in line with a city’s climate action plan. Municipal infrastructure has long lifespans – often ranging from 20 to 50 years. Green budgeting for capital investment budgets can help cities identify options that decarbonize significant parts of a municipality’s infrastructure, such as through the electrification of public transport systems. It can also help cities identify investments with significant resilience benefits such as housing upgrades or stormwater management in coastal cities that are exposed to tropical storms. Overall, this can ‘lock in’ decarbonization or climate resilience over the lifespan of the infrastructure, providing significant progress in delivering a city’s climate action plan.

### III. Track impacts of decisions and investments to inform the policy framework for long-term change

Once a city has conducted its green budget process, city officials should consider the trade-offs and implications of their decisions and set forward a specific and deliberate plan for ensuring that the climate goals stipulated in the original decision-making process are tracked. In that sense, monitoring, evaluation, and review are the last steps for the effective implementation of green budgets. Different realms of recommendations can be highlighted:

- **Operation budget:** The City Council will approve the annual budget and release funds to the appropriate department for implementation of the indicated measures. A combination of management mechanisms from the municipal finance and environment offices should jointly track the financial and climate implications of decisions for regular (ideally quarterly) reporting to ensure sufficient time for course correction as needed during an annual budgeting cycle. In instances where the indicated measures are not providing the desired result, the city should immediately consider alternative actions for prompt implementation. As an example, Oslo, one of the leading cities for climate budgeting, conducted an analysis and saw that it was not on track to reach its goals for greenhouse gas emissions reduction by target dates, and introduced additional incentives within the city budget to try to keep in alignment with stated objectives (Wray 2021). Other cities have similarly designed their climate initiatives to allow for sufficient flexibility. London, for example, has introduced the Thames Barrier TE2100 program, a 100-year investment program in flood defenses (Gov UK 2021). Due to the scale of the challenge, the continuously changing conditions and the need for incremental projects and financing, the program is designed to have as much flexibility as possible. Within the broader program, projects to improve flood defenses are designed to be as 'modular' as possible to avoid locking in decision pathways for future projects and leave as much flexibility for retroactive changes, which are informed by continuous reviews of data.
- **Capital investment:** In contrast to the relatively short-term cycles for the operational budget, the city will, by necessity, take a longer-term view on its capital investments. For operational budgets, this process will occur in line with the capital investment budget cycle, which may occur every 5 – 10 years. Accordingly, monitoring and evaluation will be intense during projects implementation phases and delivery of capital investment projects, but is likely to be monitored for the reporting of results only on an annual basis. Any changes to long-term capital investments will happen far less frequently after implementation and will be subjected to more intense scrutiny than under operational budget considerations. This further highlights the importance of preparation phases of these investments and the necessity of mainstreaming climate considerations during these early stages.



### Box 3: Climate Smart Capital Investment Budgets

The potential effectiveness and scale of impact of integrating climate into capital investment plans for cities has long been recognized, though relatively few cities have attempted it until recently (Whittington 2015). The key features of climate smart capital investments are that they

- Include ‘climate smart’ criteria for all projects,
- Generate low-carbon and climate resilient alternatives to conventional projects
- Expand the time-horizon of capital projects to 15+ years to consider future climate risks,
- Forecast carbon emissions from proposed projects.

Cities that are currently pioneering different approaches include **Pristina** in Kosovo, **Addis Ababa** in Ethiopia, **Ahmedabad** in India, and **Ha Tinh** in Vietnam, with the support of the [City Climate Finance Gap Fund](#).

- **Data management and reporting:** Data collection and management is crucial for cities’ green budgets as they should assist in the process of costing climate actions. In this process, data is at the baseline of any monitoring and evaluation processes to take place after a budget is approved. Data should be regularly reviewed to confirm that interventions, upon delivery, meet the expectations initially identified during project design. The act of collecting data is an important first step, but if this data is not analyzed and considered as a part of a larger iterative process, it may ultimately have little value.
- **Policy framework:** Eventually, the monitoring and evaluation process should be performed by cities in such a way that it informs the policy framework as well. For any transformative action to take place, the green budget process should inform the broader policy framework. Examples of the ways that this commitment can impact the policy framework can be found in a consideration of the impact of green budgeting in the UK, which joined the OECD Paris Collaborative on green budgeting in June 2021 and has already incorporated critical elements of climate-friendly decision-making in its ongoing budget talks (HM Treasury 2021).

## 5. ENABLING CONDITIONS FOR GREEN BUDGETING

Green budgeting requires the development of new ways of working within city administrations. Cities may need to introduce new processes for collaboration that break down silos across departments. They will also need to invest in human resources to build capacity and skills for green budgeting.

- **Fostering collaboration between different municipal departments & agencies:** Green budgeting involves strong collaboration across multiple departments and technical agencies within a city. This requires strong political, as well as administrative commitment to the project. While green strategies tend to be developed by a dedicated team of specialists within a city administration, often an environmental department, they need to be implemented in a coordinated way across departments and not in a silo. The green budgeting process naturally involves coordination between multiple specialists, including finance experts, environmental experts, planners, and sectoral specialists. All these actors need to work in collaboration to generate carbon and resilience estimates alongside financial estimates for the various measures put forward in a city budget. Cities should consider formalizing this collaboration by establishing a cross-departmental working budgeting group, or a cross-departmental task force on climate change. Where possible, the collaborative budgeting role should be formalized so that there are clear roles and responsibilities for each actor, and so that the green budget process is embedded in long-term planning and budgeting.
- **Investing in skills and analytics:** Green budgeting requires specialized skills and capacity that are not available in many municipal governments. These include carbon accounting, analysis of green technology options, financial modelling, and costing of adaptation measures (including nature-based solutions). Cities should invest in the skills and analytics that can support green budgeting, including the hardware and software platforms required to undertake necessary green budgeting analytics. This will enable them to develop human resources and build in-house capacity over time, rather than relying on external expertise to conduct green budgetary analysis. These investments will also increase ownership of municipal climate action so that green champions are embedded within the city government.

Cities and development partners can prioritize capacity development, institutional support, and technology transfer & acquisition to help create the appropriate enabling environment for green budgeting.

## 6. LEARN FROM OTHER CITIES

Every city will have its own unique strategy for implementing climate action successfully. Yet many cities also face a range of similar challenges: how to access finance, how to incentivize green consumer behavior, how to work effectively with industry, how to best invest in transport, and which new green technologies to focus on. Important practical lessons for these topics (and many more) can be learned from the experiences of other cities. Municipal leaders should look for opportunities to participate in learning exchanges, peer knowledge sharing platforms, and other channels where they can interact with other cities to create partnerships and foster learning.

### **Box 4: Provinces of Central Java, Yogyakarta and Jambi, Indonesia**

Indonesia has implemented a Climate Public Expenditures Review (CPE) in 2014 and a Climate Budget Tagging (CBT) in the Provinces of Central Java, Yogyakarta, and Jambi. The implementation of this tool allowed to uniformize budget items within the city and between cities. It is aimed to enable the State to prioritize fiscal transfers (thanks to a better understanding of the provinces' climate-related needs), which would help the provinces to direct these flows to priority projects. Finally, it can be useful for the State to better implement climate policies and regulations in line with the needs of provinces; and can help in raising climate finance through better needs evaluation and enhanced credibility.

For example, the City of Cape Town is providing leadership and setting examples for its peers across Africa in the way that it has prioritized climate change considerations in its budgeting through peer-to-peer training on the motivations, key elements, methods of community engagement, sequencing, and costing of interventions specified under its Climate Change Action Plan, inspiring other cities to follow suit for similar strategic policies and goals. The World Economic Forum notes that Cape Town's leadership has recognized that congestion and poor transit connectivity is one of the leading drivers for climate issues and, accordingly, the city is placing an emphasis on green mobility, working in collaboration with private operators to ensure a mix of new practices and more climate-friendly adaptation of existing ones is permanently institutionalized (Manuel 2021).

**Box 5: Cape Town, South Africa**

Cape Town, South Africa, has embraced climate considerations through bold statements like its June 2020 Carbon Neutral 2050 Commitment, which in part hinges on more comprehensive green budgeting at the city level (City of Cape Town 2020). The city pledges to support key technological innovations such as (1) renewable electricity technologies, (2) battery storage, and (3) electric vehicles.

In making this commitment, municipal officials in Cape Town state that it will ‘attract funding and investment for resource-efficient infrastructure and carry out thorough cost-benefit, financial and economic analyses in the prioritization of projects,’ (City of Cape Town 2020 p.22), which are all critical steps to the proper functioning of a green city budget within a broader financial ecosystem. It is critical to recognize that Cape Town has broadly shared its approach to greening the city not only with the broader international community but also have made sure to use language and descriptions that are accessible to most of the city’s population. The city engaged in an awareness-raising campaign to ensure that residents were familiar with the stated goals and ambitions of the Carbon-Neutral 2050 Commitment. This largely included disseminating collateral material with clear and straightforward steps for citizens to embrace as well as a practical explanation for the rationale on the city’s selected capital investments in infrastructure that likewise will help to deliver the long-term goals and objectives.



## 7. ADDITIONAL RESOURCES ON OTHER METHODOLOGIES AND CASE STUDIES SHEDDING LIGHTS ON GREENING CITY BUDGETS' METHODOLOGIES AND TOOLS

- **The “Climate Assessment of Local Budget” by I4CE**

The “Climate Assessment of Local Budget” is a methodology created by The Institute for Climate Economics (I4CE), a French non-profit association with expertise in economics and finance, following the Paris Collaborative in 2017, where France and Mexico had embarked on a joint OECD Initiative on green budgeting (I4CE 2020a). The City of Lille, the City of Paris, the Eurometropolis of Strasbourg, the Eurometropolis of Lille, and the Lyon Metropolis took part in co-creating the methodology as part of their engagement for the environment and are currently implementing it.

- **“Climate Public Expenditures and Institutional Review and Climate Budget Tagging” by UNDP and World Bank – Case study of Indonesia**

The Climate Public Expenditures and Institutional Review (CPEIR) was created by UNDP Regional and the World Bank and implemented in more than 20 countries around the world. It consists of a review of all the spending in the local budget to identify those that are CC-related. The first countries to implement this tool were developing countries vulnerable to climate change (Ministry of Finance Republic of Indonesia 2014, 2016). Most CPEIR reports were national but included a regional dimension, even if it has never been used at a city scale for now. The Climate Budget Tagging (CBT), launched in 2012, is the methodology used to “tag” (i.e., qualify) expenses regarding their contribution to adapting to or mitigating climate change (UNDP 2019). These methodologies combined can help cities in carrying out the inventory of the climate expenditure of a territory and analysis of the regulations and climate policies in place. It analyzes the whole local context which influences the expenditure and allows to screen the green expenditure in the light of the commitments and actions undertaken by the region and the country.

- **Example of Vienna’s climate budget**

As part of its ambition to become a smart city, Vienna has focused its finances on climate action with the introduction of its climate budget and its Klima-Milliarde (“climate billion”) in its 2020 budget (City of Vienna 2020). According to their Smart City Wien Framework Strategy 2019-2050, the aim of the climate budget is to show the climate policy effect of each measure or cost position in the public budget (or parts thereof), usually in terms of the carbon emissions saved. This gives climate action strategies a solid funding base and enhances their transparency and credibility, since spending on combating climate

change can be set off against the costs saved by avoiding the damage associated with climate change. In addition to working on smart contracts and innovative funding sources to finance the transition towards carbon neutrality, Vienna is also currently developing a district on “participatory climate budget.” Collectively, these budgeting tools will help the city better prepare and prioritize its climate projects, and therefore be more consistent with its ambition and strategy.

# REFERENCES

- City Of Cape Town. 2022. The City of Cape Town’s Carbon Neutral 2050 Commitment. Capetown.gov.za Available from: [resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2c%20plans%20and%20frameworks/Carbon\\_Neutral\\_2050\\_Commitment.pdf](https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2c%20plans%20and%20frameworks/Carbon_Neutral_2050_Commitment.pdf)
- City of Vienna. 2002. Smart City Wien Framework Strategy 2019–2050: Vienna’s Strategy for Sustainable Development. Available from: [www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf](http://www.wien.gv.at/stadtentwicklung/studien/pdf/b008552.pdf)
- Energy Cities. 2019. Climate Mainstreaming Municipal Budgets. Energy-Cities.eu. Available from: [energy-cities.eu/wp-content/uploads/2019/01/climate-mainstreaming-budgets.pdf](https://energy-cities.eu/wp-content/uploads/2019/01/climate-mainstreaming-budgets.pdf)
- European Commission 2018. Oslo Climate Budget. ec.europa.eu. Available from: [ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2018/05/Oslo\\_Climate\\_Budget.pdf](https://ec.europa.eu/environment/europeangreencapital/wp-content/uploads/2018/05/Oslo_Climate_Budget.pdf)
- Forni et al., 2019. Increasing resilience: Fiscal policy for climate adaptation, in Fiscal Policies for Development and Climate Action, p.115–131. Available from: [www.oecd-ilibrary.org/governance/green-budgeting-in-oecd-countries\\_acf5d047-en](https://www.oecd-ilibrary.org/governance/green-budgeting-in-oecd-countries_acf5d047-en)
- Gov UK. 2021. Policy paper: Thames Estuary TE2100 Plan. Gov.uk Available from: [www.gov.uk/government/publications/thames-estuary-2100-te2100/thames-estuary-2100-te2100](https://www.gov.uk/government/publications/thames-estuary-2100-te2100/thames-estuary-2100-te2100)
- HM Treasury. 2021. Government commits to ‘nature-positive’ future in response to Dasgupta review. Available from: [www.gov.uk/government/news/government-commits-to-nature-positive-future-in-response-to-dasgupta-review](https://www.gov.uk/government/news/government-commits-to-nature-positive-future-in-response-to-dasgupta-review)
- I4CE. 2020a. Évaluation climat des budgets des collectivités territoriales: Guide méthodologique. Available from [www.i4ce.org/wp-core/wp-content/uploads/2020/11/I4CE-EvalClimatBudgetsLocaux-Guide-m%C3%A9thodologique-3.pdf](https://www.i4ce.org/wp-core/wp-content/uploads/2020/11/I4CE-EvalClimatBudgetsLocaux-Guide-m%C3%A9thodologique-3.pdf)
- I4CE. 2020b. Évaluation climat des budgets des collectivités territoriales: Volet atténuation. Available from [www.i4ce.org/wp-core/wp-content/uploads/2020/11/I4CE-Evaluation-climat-des-budgets-des-collectivit%C3%A9s-Annexe-Att%C3%A9nuation.pdf](https://www.i4ce.org/wp-core/wp-content/uploads/2020/11/I4CE-Evaluation-climat-des-budgets-des-collectivit%C3%A9s-Annexe-Att%C3%A9nuation.pdf)
- I4CE. 2020c. Environmental and health co-benefits of public action. Available from: [www.i4ce.org/download/environmental-and-health-co-benefits-of-public-action/](https://www.i4ce.org/download/environmental-and-health-co-benefits-of-public-action/)
- Manuel, M. 2021. Cape Town shows how other cities could limit climate change with new mobility solutions. WeForum.org. Available from: [www.weforum.org/agenda/2021/08/cape-town-climate-change-mobility-solutions/](https://www.weforum.org/agenda/2021/08/cape-town-climate-change-mobility-solutions/)
- Ministry of Finance Republic of Indonesia. 2014. Low Emission Budget Tagging and Scoring System (Less) for Climate Change Mitigation Expenditures in Indonesia. Available from: [www.climatefinance-developmenteffectiveness.org/sites/default/files/](https://www.climatefinance-developmenteffectiveness.org/sites/default/files/)

[documents/04\\_12\\_14/Session\\_5/Indonesia\\_Low\\_Emission\\_Budget\\_Tagging\\_and\\_Scoring\\_System\(LESS\)\\_RevIIIAlt1.pdf](#)

Ministry of Finance Republic of Indonesia. 2016. Climate Public Expenditure Review (CPER) in the Provinces of Jambi, Central Java, and the Special Region of Yogyakarta. Available from: [climatefinancenetwork.org/wp-content/uploads/2020/04/finalReport5.pdf](https://climatefinancenetwork.org/wp-content/uploads/2020/04/finalReport5.pdf)

NCE 2016. The Sustainable Infrastructure Imperative. Newclimateeconomy.net. Available from: [newclimateeconomy.report/2016/misc/downloads/](https://newclimateeconomy.report/2016/misc/downloads/)

Negreiros et al. 2021. The State of Cities Climate Finance. Climatepolicyinitiative.org Available from: [www.climatepolicyinitiative.org/publication/the-state-of-cities-climate-finance/](https://www.climatepolicyinitiative.org/publication/the-state-of-cities-climate-finance/)

OECD 2018. Developing Robust Project Pipelines for Low-Carbon Infrastructure, Green Finance and Investment, OECD-ilibrary.org. Available from: [doi.org/10.1787/9789264307827-en](https://doi.org/10.1787/9789264307827-en).

OECD 2020. Green budgeting and tax policy tools to support a green recovery. Available from: [www.oecd.org/coronavirus/policy-responses/green-budgeting-and-tax-policy-tools-to-support-a-green-recovery-bd02ea23/](https://www.oecd.org/coronavirus/policy-responses/green-budgeting-and-tax-policy-tools-to-support-a-green-recovery-bd02ea23/)

OECD 2021. Green Budgeting in OECD Countries. OECD-ilibrary.org. Available at: [doi.org/10.1787/acf5d047-en](https://doi.org/10.1787/acf5d047-en)

OECD and EU 2020. Financing Climate Action in Regions and Cities: Subnational Government Finance for Environment and Climate Action in OECD and EU Countries. Available at [www.oecd.org/regional/multi-level-governance/mlgclimate.htm](https://www.oecd.org/regional/multi-level-governance/mlgclimate.htm)

OECD. 2021. OECD Regional Outlook: Addressing COVID-19 and Moving to Net Zero Greenhouse Gas Emissions. Available from: [www.oecd-ilibrary.org/sites/17017efe-en/1/3/2/2/index.html?itemId=/content/publication/17017efe-en&csp=424c6858cbb97069aa48128a5c4f7c05&itemIGO=oecd&itemContentType=book#section-d1e13126](https://www.oecd-ilibrary.org/sites/17017efe-en/1/3/2/2/index.html?itemId=/content/publication/17017efe-en&csp=424c6858cbb97069aa48128a5c4f7c05&itemIGO=oecd&itemContentType=book#section-d1e13126)

Oslo City Government 2020. Climate City Budget. Klimaoslo.no Available from: [www.klimaoslo.no/wp-content/uploads/sites/88/2021/02/Climate-Budget-2021-Oslo.pdf](https://www.klimaoslo.no/wp-content/uploads/sites/88/2021/02/Climate-Budget-2021-Oslo.pdf)

Ritchie, H. Roser, M. 2019. "Urbanization". OurWorldInData.org. [cited 2022 Feb] Available from: [ourworldindata.org/urbanization](https://ourworldindata.org/urbanization)

UNDP 2019. Knowing What You Spend: A guidance note for governments to track climate change finance in their budgets Available from: [www.undp.org/publications/knowing-what-you-spend-guidance-note-governments-track-climate-change-finance-their](https://www.undp.org/publications/knowing-what-you-spend-guidance-note-governments-track-climate-change-finance-their)

Whittington, J. 2015. Climate Informed Decisions: The Capital Investment Plan as a mechanism for Lowering Carbon Emissions. Worldbank.org. Available from: [openknowledge.worldbank.org/bitstream/handle/10986/22467/Climate0inform0ing0carbon0emissions.pdf?sequence=1&isAllowed=y](https://openknowledge.worldbank.org/bitstream/handle/10986/22467/Climate0inform0ing0carbon0emissions.pdf?sequence=1&isAllowed=y)

Wray, S. 2021. 11 Cities Kick off Climate Budgeting Pilot. CitiesToday.com Available from: [cities-today.com/11-cities-kick-off-climate-budgeting-pilot/](https://cities-today.com/11-cities-kick-off-climate-budgeting-pilot/)



[citiesclimatefinance.org](https://citiesclimatefinance.org)