Green Budgeting in OECD Countries 2024



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Foreword

The challenges and costs from climate change are greater and occurring more rapidly than first estimated, according to the Six Assessment Report by the United Nation's Intergovernmental Panel on Climate Change. Green budgeting is designed to help governments address these challenges and costs by using budget policymaking tools to integrate climate and environmental perspectives into budget frameworks and practices to better inform budget decisions. Green budgeting is relevant to all stages in the budget cycle, specifically budget planning, formulation, approval, implementation and oversight.

In 2018, the OECD established the Paris Collaborative on Green Budgeting to bring together senior officials from OECD countries to share experiences on developments in green budgeting. By 2022, two-thirds of OECD countries had adopted green budgeting practices, as governments use fiscal and budget policy to help pursue climate and environmental objectives.

The majority of the work undertaken by the OECD Paris Collaborative on Green Budgeting focuses on climate change considerations. However, the scope of work is broadening to include biodiversity, nature and other environmental considerations. Similarly, the relevance of green budgeting across the budget cycle is also broadening to consider budget implementation, reporting and oversight.

This report expands the OECD's resources on green budgeting by providing an overview of green budgeting practices across OECD countries, derived from the 2022 OECD Survey on Green Budgeting, as well as drawing on information from a survey conducted in 2020 in collaboration with the European Commission.

This report was prepared by Anne Keller, Margaux Lelong and Andrew Blazey of the Public Management and Budgeting Division in the Directorate for Public Governance under the oversight of Elsa Pilichowski, Director for Public Governance, and Jón Blöndal, Head of the Public Management and Budgeting Division, Public Governance Directorate. The report was prepared for publication by Meral Gedik.

This report was reviewed by the OECD Paris Collaborative on Green Budgeting on 17 April 2023. It was approved by the Committee of Senior Budget Officials and prepared for publication by the Secretariat. The Secretariat is grateful to all of the parties who provided feedback on the report.

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Methodological note

The 2022 OECD Survey on Green Budgeting (referred to as "the 2022 Survey" hereinafter) is based on the four building blocks in the OECD Green Budgeting Framework: 1) institutional arrangements; 2) methods and tools; 3) accountability; and 4) the enabling environment in budgeting.

In 2020, the OECD conducted a survey on green budgeting practices in collaboration with the European Commission. The 2022 OECD Survey Methodology builds on the 2020 Survey but has been strengthened to include the latest green budgeting practices adopted by OECD countries.

Data, results and figures presented in this publication are from country responses to the 2022 OECD Survey on Green Budgeting, which was distributed to all 38 OECD countries. Respondents were predominantly senior budget officials from central budget authorities. Responses draw upon self-reporting by governments and represent the country's own assessment of current practices and procedures in central/federal government as of 30 June 2022. The publication does not include developments that have occurred since then.

Responses were received from 36 OECD countries.[1] The OECD Secretariat undertook a data cleaning process from September to December 2022. The process checked the internal and external consistency in the survey responses. During the review process, countries were invited to clarify and verify any substantial changes from the data submitted, including potential inconsistencies. Preliminary survey findings and the 2022 OECD Green Budgeting Index were presented and discussed at the meeting of the OECD Paris Collaborative on Green Budgeting in November 2022.

This report includes the 2022 OECD Green Budgeting Index and Survey Methodology. The methodology is designed to show the use of green budgeting practices in OECD countries. It does not assess the effectiveness of the practices or the amount of money that is allocated to green initiatives within budgets. The 2022 OECD Green Budgeting Index and Survey Methodology allows countries to examine the data and results to identify cross-country comparisons and areas for improvement within existing budget practices.

Executive summary

Changes to climate temperatures are increasing at a faster rate than first estimated by the United Nations Intergovernmental Panel on Climate Change and the impact on economies and societies is greater than first estimated, for instance the costs from the damage caused by extreme weather events. All OECD countries have made commitments under the 2015 Paris Agreement to reduce greenhouse gas emissions, and green budgeting is an approach that helps governments to better consider climate and environmental implications when making planning, preparing, executing and reporting on budgets.

Many OECD countries have introduced green budgeting into their public financial management frameworks, policies and practices to help pursue climate and environmental objectives. In 2022, two-thirds of the OECD countries surveyed (24 of 36 countries) had implemented green budgeting measures. This compares to 14 countries that had implemented green budgeting in 2020, according to a similar survey. The proportion of OECD countries that were using green budgeting in 2022 shows the strong interest that governments have in integrating climate and environmental objectives into budget processes.

In this report, the OECD compares the use of green budgeting initiatives across countries. It shows that countries have adopted multi-initiative approaches to green budgeting. The differences in the approaches among countries can relate to factors such as the number of years green budgeting has been in place, differences in climate and environmental policies, the resources directed to green budgeting, and the existing budget frameworks.

This report was developed through the OECD Paris Collaborative on Green Budgeting which provides resources to governments to support developments in green budgeting practices. The OECD Survey on Green Budgeting is based on the four building blocks in the OECD Green Budgeting Framework: 1) institutional arrangements, 2) methods and tools, 3) accountability and transparency, and 4) the enabling environment in budgeting.

In 2022, the OECD strengthened its survey methodology on green budgeting to include the latest green budgeting practices that had been adopted in OECD countries. Examples include the relevance of net-zero emission strategies in budgeting, the integration of climate objectives into medium-term budgeting tools, and the inclusion of climate and environmental consideration into the functions of oversight institutions, such as fiscal councils.

The 2022 Survey results highlight areas where green budgeting practices have become stronger. Improved practices include the following:

- OECD countries have strengthened the institutional arrangements that define and guide the application of green budgeting, as demonstrated by the use of national strategies on climate mitigation and adaptation to inform budget priorities, and guidance resources that explain how ministries are to bring climate and environmental considerations into budget processes.
- The methods and tools used in green budgeting have broadened to include environmental impact assessments, and environmental cost benefit analyses. OECD countries have started to review tax expenditure that is harmful to the environment and introduce green perspectives into macro-

fiscal projections. The use of these methods and tools in budgeting supports better informed decisions on the allocation of resources.

- Transparency and accountability arrangements continue to progress as governments make more information available through budget and financial reporting. Guidance on financial reporting disclosures received greater attention relative to previous surveys, and oversight institutions, such as independent fiscal institutions and supreme audit institutions are now reporting on green spending and investment initiatives.
- The enabling environment in budgeting, such as programme and performance budgeting and capacity development, has demonstrated that the integration of climate and environmental perspectives into budgeting can apply to many of the existing components of budget frameworks.

At the same time, the dialogue on the 2022 Survey results, revealed challenges when designing and implementing green budgeting. These challenges highlight areas for future work, specifically addressing the following gaps:

- Insufficient resources to develop green budgeting approaches across government ministries and agencies, including guidance materials and ways to measure the results and impacts of green budgeting.
- A lack of relevant knowledge or technical expertise on how to integrate climate and environmental considerations into the budget process.
- Limited data on the impact of climate change and environmental sustainability relative to the reporting requirements within budget processes.

1 2022 Survey findings

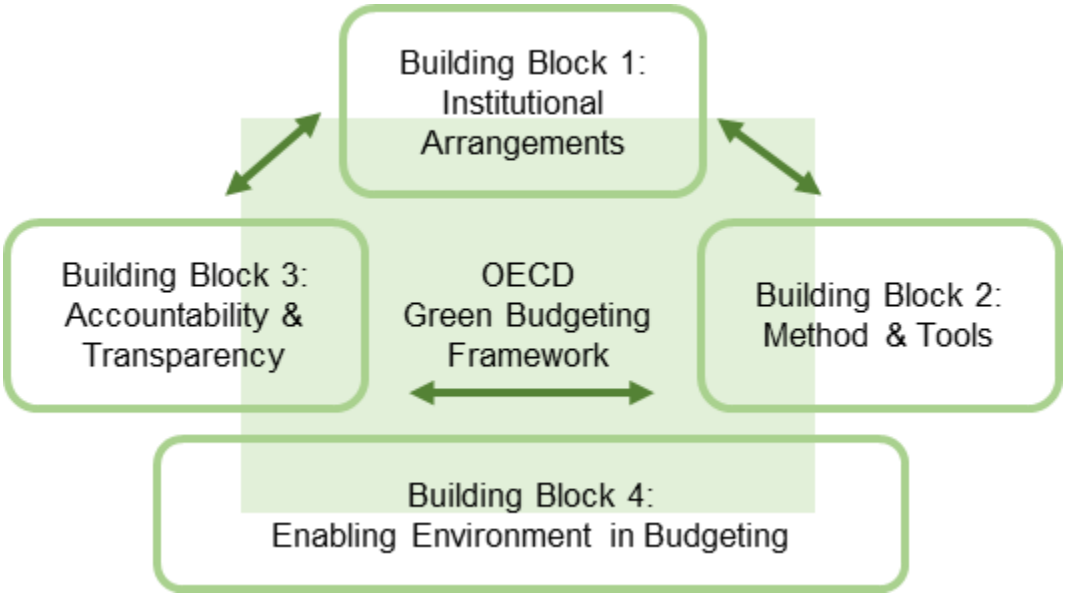
The 2022 OECD Survey on Green Budgeting shows that country practices in green budgeting have increased across each of the four building blocks of the OECD Green Budgeting Framework (OECD, 2020[1]) relative to the 2020 survey findings (OECD/European Commission, 2020[2]).

- OECD countries have increased the breadth of institutional arrangements that define and guide the application of green budgeting, specifically by articulating the requirements for green budgeting and by aligning the requirements with climate and environmental strategies.
- Numerous methods and tools have been developed and implemented, including carbon budgets, environmental impact assessments, tax expenditure tools, and green tagging.
- Transparency and accountability measures are increasing as the guidance on disclosures in financial reporting continues to develop.
- The enabling environment in budgeting, such as programme and performance budgeting, and capacity building, is also increasing in ministries of finance and line ministries.

These increases in the overall application of the building blocks illustrate the way in which governments are mainstreaming climate and environmental considerations into budget frameworks, policies and practices.

The OECD defines green budgeting as the use of budgetary policymaking tools to pursue climate and environmental objectives. Specifically, it refers to integrating climate and environmental considerations into the government's budgetary and fiscal frameworks, policies and practices. The OECD Green Budgeting Framework identifies the four building blocks that underpin the OECD's approach to green budgeting: (1) institutional arrangements; (2) methods and tools; (3) accountability and transparency; and (4) enabling environment in budgeting (Figure 1.1).

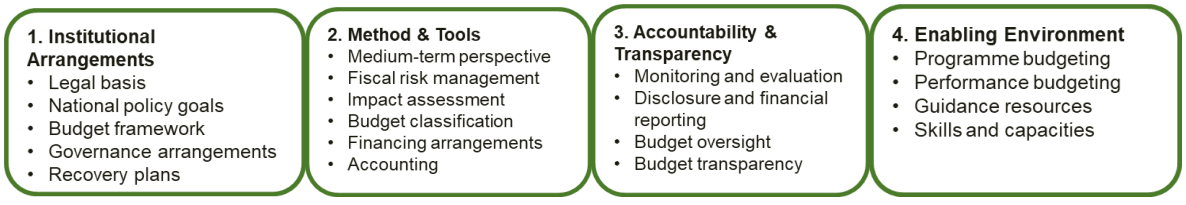
Figure 1.1. OECD Green budgeting framework



Source: (OECD, 2020[1])

The components of each building block in Figure 1.2 demonstrate the relevance of the framework to all stages of the budget cycle from a medium-term perspective to prioritisation, monitoring and evaluation, financial reporting, and oversight.

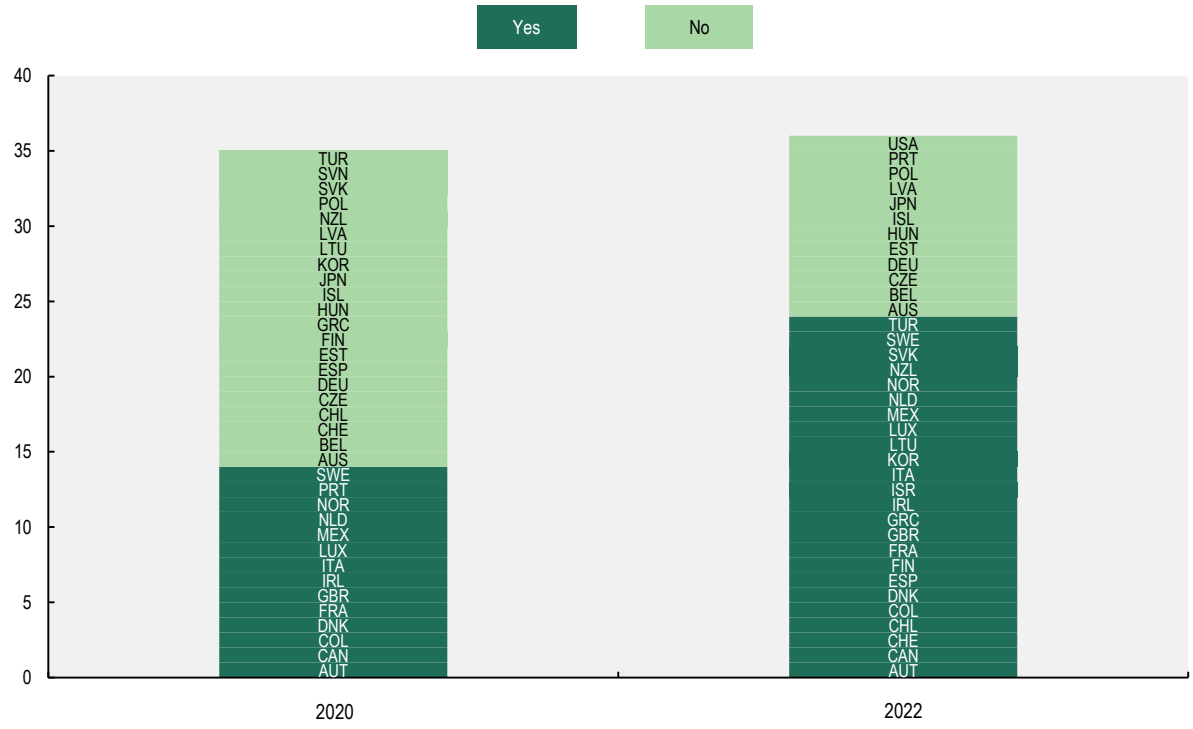
Figure 1.2. OECD building blocks on green budgeting



Source: (OECD, 2020[1])

In 2022, 24 countries responded to having implemented green budgeting compared to 14 in 2020 (OECD, 2021[3]) (Figure 1.3).

Figure 1.3. Green budgeting in OECD countries, in 2020 and 2022



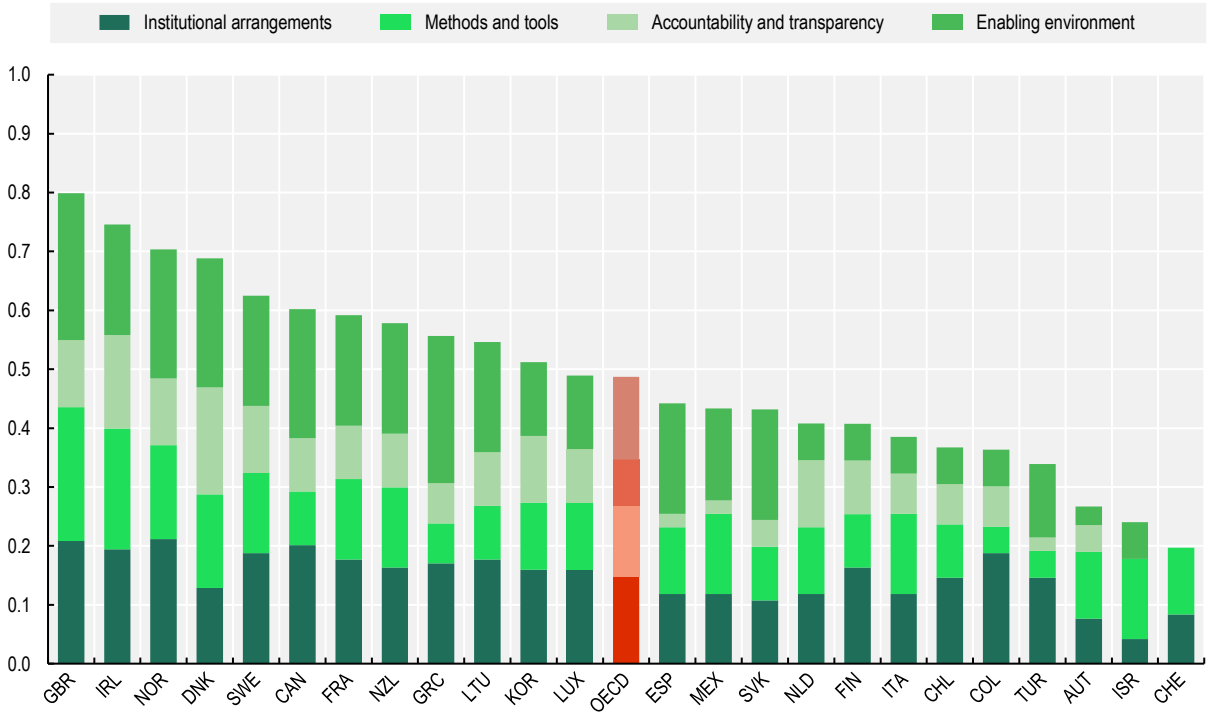
Note: For 2022, Hungary, Latvia and Portugal are not practicing green budgeting but have plans to introduce green budgeting in the future. For 2022, data for Costa Rica and Slovenia are not available. For 2020, data for Costa Rica, Israel and the United States are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q1; and OECD (2020), OECD and European Commission – Joint Survey on Emerging Green Practices.

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The significant increase in the number of countries that have adopted green budgeting relative to 2020 shows the interest in developing budget processes that align with the climate and environmental objectives that are set by countries. The integration of these objectives into budgetary frameworks is to enable governments to progress climate and environmental objectives through resource allocations, and to better understand the implications of climate change policies on budget sustainability, value for money analyses, and other related areas of budgeting.

The 2022 OECD Green Budgeting Index shows the varying degrees to which OECD countries have adopted green budgeting (Figure 1.4). It has four dimensions and is designed to reflect the adoption of green budgeting practices, based on the four building blocks of the OECD Green Budgeting Framework (Figure 1.1). Further details on the 2022 OECD Green Budgeting Index are available in Section 2 of this publication.

Figure 1.4. OECD Green Budgeting Index, 2022



Note: The index ranges from 0 (not implementing) to 1 (high level of green budgeting practices). Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting.

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Building block 1: Institutional arrangements

Within the OECD Green Budgeting Framework (OECD, 2020[1]), the building block on institutional arrangements considers the way governments set the basis for green budgeting. The institutional arrangements set the overarching framework for ministries of finance and line ministries to develop green budgeting.

The 2022 data shows that most OECD countries have adopted strategies on carbon emissions, climate, and the environment, and that there is greater alignment between budget processes and those strategies. Most of the OECD countries in the 2022 survey have opted to implement green budgeting through administrative practices (21 countries) compared to budget legislation (11 countries).

The governance of green budgeting is becoming more complex as countries establish specialised agencies and/or funds to allocate resources to climate and environmental projects. This diversification of actors has implications for the way budget processes are specified and co-ordinated. At the same time, the 2022 Survey results indicate a greater use of climate and environmental considerations in budgetary decision-making processes.

National strategies

In 2022, 20 out of 24 OECD countries that were implementing green budgeting had a national climate or environmental strategy to inform green budgeting. Sixteen of these strategies were aligned specifically to Nationally Determined Contributions as required under the Paris Agreement. In addition, 20 countries had a net-zero emissions strategy, but only a few countries had stated a date for the public sector to reach net-zero emissions, other than the commitment for the country as a whole.

Some OECD countries did not report themselves to be using green budgeting approaches, but had adopted climate and environmental strategies, such as in Australia, Germany, and Japan. These countries demonstrated that they were still taking climate action, as illustrated in Box 1.1.

Box 1.1. Examples of environmental frameworks

Australia: The Australian Government is proposing to reduce emissions by 43% below 2005 levels by 2030. As part of the Powering Australia plan, the Minister for Climate Change and Energy is to prepare an annual climate change statement. The annual statement is to provide an update on Australia's progress to achieving emission-reduction targets, summarise international developments, and comment on the effectiveness of Commonwealth Government's climate change policies in reducing greenhouse gas emissions.

Germany: The Federal Government produces an annual Climate Protection Report, which contains information on greenhouse gas emissions in various sectors, the state of implementation of climate protection measures relative to the Climate Protection Act as well as the estimated reduction in greenhouse gases. Starting from 2024, and then on a bi-annual basis, the report is to contain a section on the implementation status of a carbon pricing system within the European Union. The report is to be tabled in parliament by 30 June of the year following the year of review. As a separate initiative, the Federal Ministry of Finance is conducting a spending review to link the Sustainable Development Goals to the federal budget, jointly with the Federal Ministry for Economic Co-operation and Development and the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection.

Japan: Under the ambit of "Green Transformation (GX)" policies the government is drawing up a 10-year roadmap to identify the path to decarbonisation by using a range of mechanisms, including public-private partnerships. The roadmap is to give shape to the vision of "Pro-Growth Carbon Pricing" and make public investments by issuing the GX Economy Transition Bonds.

Legal basis

Based on the 2022 survey responses, the OECD noted that countries preferred to implement green budgeting through administrative practices, such as budget circulars, which provided more flexibility than legislation if changes were necessary from one year to the next (21 out of 24 countries, 88%) compared to other legislation (14 out of 24, 58%) and budget law (11 out of 24, 46%) (Table 1.1).

In 2022, six countries, namely Austria, Chile, Italy, Mexico, the Slovak Republic, and Sweden, implemented green budgeting through all three instruments, budget law, other legislation, and administrative practice. Constitutional requirement for green budgeting did not apply for any countries in 2022.

Table 1.1. Legal basis for green budgeting in OECD countries, 2022

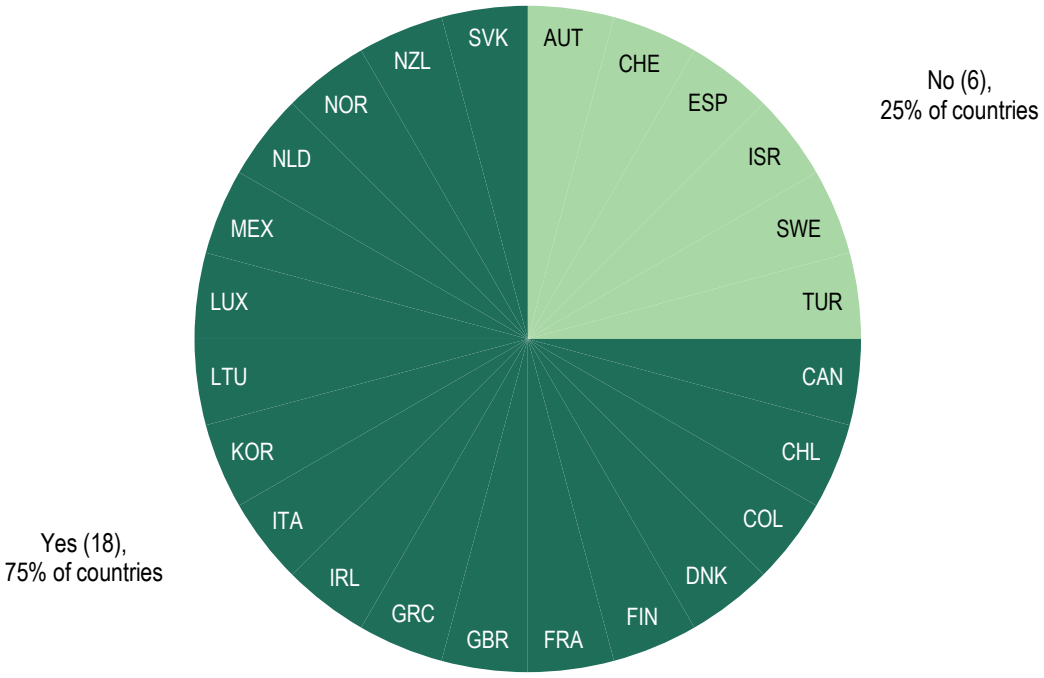
OECD Countries	Administrative practice	Other legislation	Budget law
Austria	●	●	●
Canada	●		
Chile	●	●	●
Colombia	●	●	
Denmark	●	●	
Finland	●		
France	●		●
Greece	●		
Ireland	●		
Israel	●		
Italy	●	●	●
Korea		●	●
Lithuania	●	●	
Luxembourg	●		●
Mexico	●	●	●
Netherlands			●
New Zealand	●		
Norway	●	●	
Slovak Republic	●	●	●
Spain		●	●
Sweden	●	●	●
Switzerland	●	●	
Türkiye	●	●	
United Kingdom	●		
Total	**21**	**14**	**11**

Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q7.

Governance arrangements

In the large majority of OECD countries, the governance arrangements for green budgeting are centralised to the ministry of finance. While most of OECD countries involve line ministries in the process, ministries of finance are responsible for the budget process. In addition, 18 of the countries implementing green budgeting had established agencies or specialised entities to bring a climate or environmental perspectives to governmental expenditure, such as green funds or green investment banks (Figure 1.5). These funds and agencies were used by counties to directly fund and finance climate or environmental projects and were in addition to the governance arrangements for sovereign green bond frameworks.

Figure 1.5. Specialised financing agencies or funds established with a green mandate, 2022



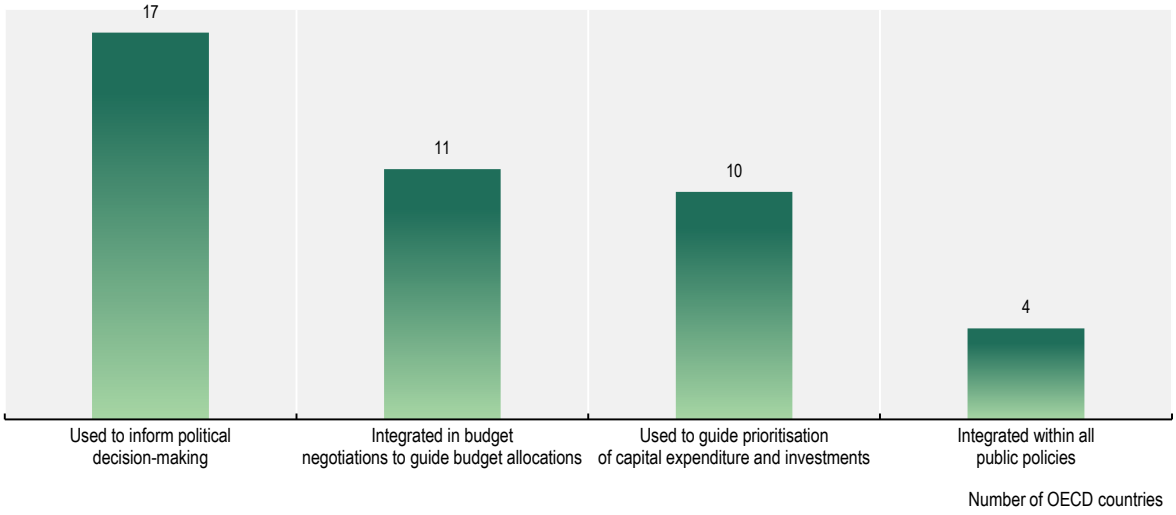
Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q11.

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Green budgeting integrated in the budgetary decision making

After developing a green budgeting framework within a national context, OECD countries have proceeded to use those frameworks to integrate green budgeting into budgetary processes. In 2022, green budgeting had been implemented to inform political decision making (17 countries), to guide budget allocations during the budget negotiations (11 countries), and to guide the prioritisation of capital expenditure (10 countries). Four countries advised that they had integrated green budgeting across all public policy requirements (Colombia, Denmark, Korea, and Mexico) (Figure 1.6).

Figure 1.6. Green budgeting and budgetary decision making in OECD countries, 2022



Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q9.

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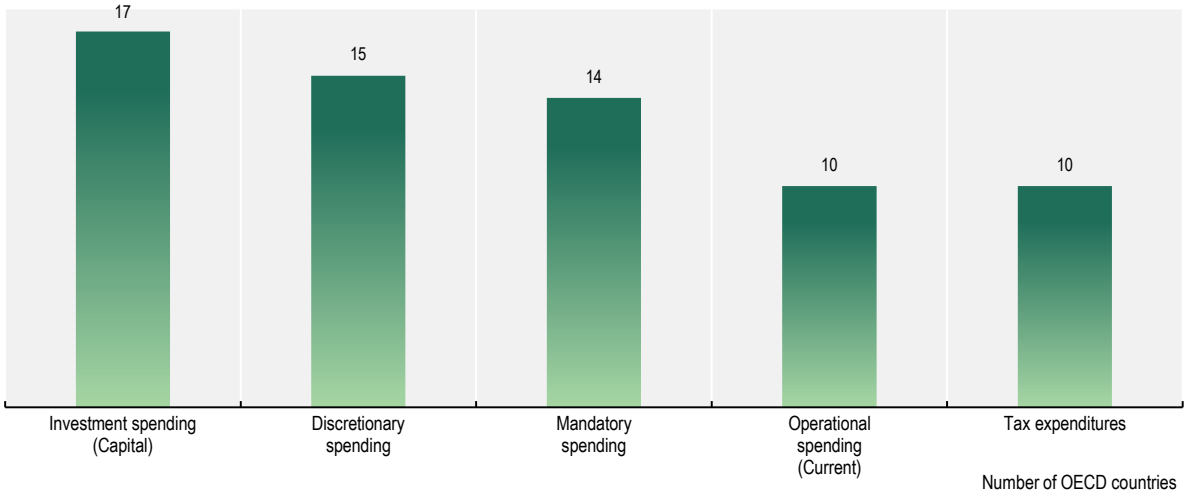
Scope of expenditure

The 2022 survey looked at the categories of expenditure that were included in green budgeting. The different categories of expenditure in the survey were:

- Mandatory spending: Public expenditure that is governed by formulas or criteria set in authorising legislation, rather than by periodic appropriations alone. It includes certain kinds of entitlement spending in many OECD countries.
- Discretionary spending (excluding operational spending): Public expenditure that is governed by annual or other periodic appropriations, rather than by formulas or criteria in authorising legislation.
- Operational spending: Operational spending incurs in carrying out an organisation's day-to day activities such as payroll, rent, and utilities.
- Investment spending (Capital): Investment spending includes gross capital formation and acquisitions, less disposals of non-produced nonfinancial assets. Gross fixed capital formation (also named as fixed investment) is the main component of investment for government.
- Tax expenditure: Tax expenditure reduces or postpones revenue for a comparatively narrow population of taxpayers relative to a benchmark tax. Tax expenditure may take a number of forms, such as allowances, exemptions, tax deferral and credits.

Most countries included public investment (17 countries) and discretionary spending (15 countries), 14 countries integrate mandatory spending, 10 operational spending, and 10 tax expenditure, such as Austria, Canada, Finland, Ireland, Italy, Lithuania, Netherlands, Norway, Sweden, and the United Kingdom (Figure 1.7).

Figure 1.7. Scope of green budgeting in OECD countries, 2022



Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q12.

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Climate and environmental objectives

OECD countries have incorporated several climate and environmental objectives into their budget frameworks. Twenty-three countries included climate mitigation, 19 countries climate adaptation, 16 countries biodiversity, 15 countries pollution, 15 countries water and sea management, 12 countries circular economy, five countries other objectives (such as just transition in Ireland), and three countries adopted the principle on do no significant harm (Table 1.2).

Table 1.2. Climate and environmental objectives integrated into the budget framework, 2022

OECD Countries	Climate mitigation	Climate adaptation	Biodiversity	Pollution	Water/ Sea	Circular economy	Other	Do no significant harm
Austria	●	●						
Canada	●	●	●		●			
Chile	●	●						
Colombia	●	●	●	●	●	●		
Denmark							●	
Finland	●		●	●	●	●		
France	●	●	●	●	●	●	●	
Greece	●	●	●	●	●	●		●
Ireland	●	●	●	●	●		●	
Israel	●	●	●	●	●	●		
Italy	●	●	●	●	●		●	
Korea	●	●						
Lithuania	●	●	●	●	●	●		●
Luxembourg	●	●	●	●	●	●		
Mexico	●	●						
Netherlands	●	●						
New Zealand	●							
Norway	●							

OECD Countries	Climate mitigation	Climate adaptation	Biodiversity	Pollution	Water/ Sea	Circular economy	Other	Do no significant harm
Slovak Republic	●	●	●	●	●	●		●
Spain	●	●	●	●	●	●		
Sweden	●		●	●	●	●	●	
Switzerland	●	●	●	●				
Türkiye	●	●	●	●	●	●		
United Kingdom	●	●	●	●	●	●		
Total	**23**	**19**	**16**	**15**	**15**	**12**	**5**	**3**

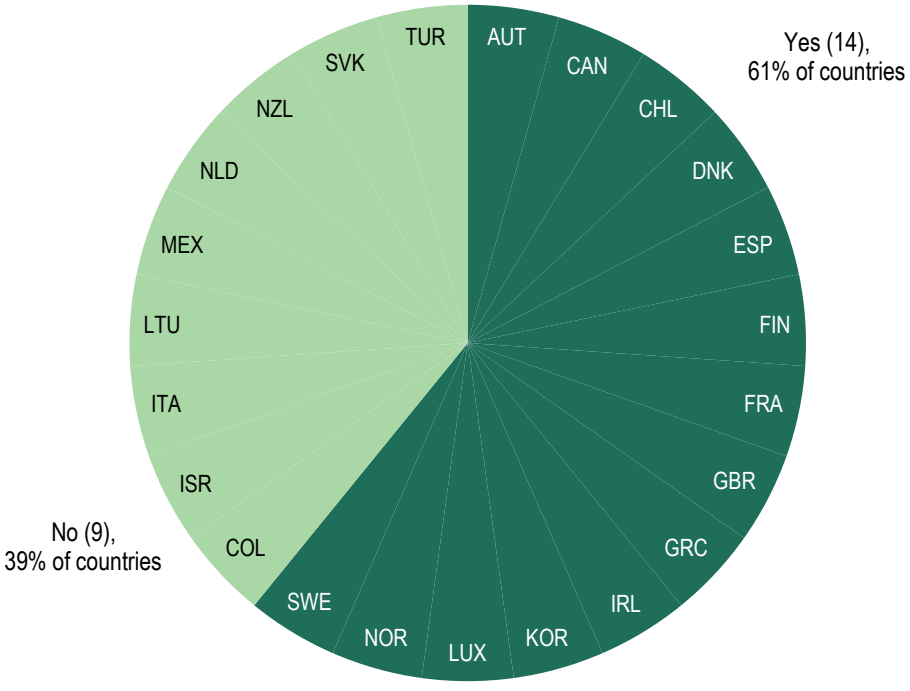
Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q8.

COVID-19 recovery plans

In 2022, co-ordinated policy action was needed to recover from the economic and social disruption caused by the COVID-19 pandemic. Governments in OECD countries included climate and environmental goals in their covid-19 recovery plans to help accelerate structural change towards low-carbon economies (OECD, 2020[4]).

In 2022, 14 OECD countries had included climate and environmental considerations in the preparation of COVID-19 recovery plans to help ensure that policy and spending initiatives could advance green outcomes (Figure 1.8). The inclusion of these considerations were in addition to green policy initiatives in the recovery plans.

Figure 1.8. Climate and environmental considerations in recovery plans, 2022



Note: Data for Costa Rica, Slovenia and Switzerland are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q13.

StatLink https://stat.link/xd39fr

Building block 2: Methods and tools

Based on the 2022 OECD Survey on Green Budgeting, OECD countries have undertaken significant work to develop methods and tools to support the implementation of green budgeting. The methods and tools analyse information on climate and environmental considerations that would not otherwise be available to decision makers in the budget process.

In 2018, when the OECD Paris Collaborative on Green Budgeting commenced, the number of tools developed by countries was limited. In 2022, the number of methods and tools that are used in this field across OECD countries has increased considerably, including:

- Broad-based tools, such as impact assessment and cost-benefit analysis that can be applied to expenditure and revenue initiatives.
- Targeted tools for in-depth applications relating to a specific policy, such as reviews of harmful tax expenditure.

The effective implementation of green budgeting includes the development of methods and tools to help identify how budgets are progressing climate and environmental objectives. Given that the adoption of green budgeting is a relatively new development across OECD countries, ministries of finance are gaining experience with a range of tools to understand what works best within the context of each country's budget framework and climate goals.

The 2022 survey showed that the implementation of some methods and tools had become widespread compared to 2020, such as environmental impact assessments (Box 1.2). However, other methods and tools were at an earlier stage of adoption such as carbon budgets (5 countries), green perspective integrated into risk analysis (3 countries), green considerations integrated in multi-annual budgets (8 countries), and green elements integrated in macro fiscal projections (4 countries).

Box 1.2. Adopting green budgeting methods and tools in OECD countries

- **Carbon pricing instruments**: In 2022, 22 countries implemented carbon pricing instruments including fuel and carbon taxation and emissions trading systems. The existence of these instruments contributed to the use of a shadow price of carbon in budgeting to evaluate public policies in 10 countries.
- **Green budget tagging:** In 2022, 13 countries implemented green budget tagging (OECD, 2021[5]).
- **Tax expenditure**: In 2022, 14 countries implemented an environmental tax reform and 12 a regular review of environmentally harmful tax expenditures and subsidies.
- **Environmental impact assessment:** In 2022, 18 countries had implemented environmental impact assessments.
- **Green spending reviews**: In 2022, six countries integrated a green perspective into spending reviews. The purpose of green perspective in spending reviews is to better understand the cost implications for ministries from including climate and environmental objectives in the delivery of public services.

The 2022 OECD Survey on Green Budgeting identified the detailed extent to which budgeting tools have been developed and applied across OECD countries to integrate climate and environmental perspectives into budgeting (Table 1.3).

Table 1.3. Green budgeting methods and tools in OECD countries, 2022

OECD Countries	Environmental impact assessments	Green budget tagging	Review of harmful tax expenditure	Environmental cost benefit analysis	Carbon assessment of budget measures	Shadow price of carbon	Green in multi-annual budgets	Green perspective in spending review	Metrics to be applied consistently across departments	Carbon budget	Green in macro fiscal projections	Green in risk analysis
Austria	●				●			●				
Canada	●		●		●	●						
Chile		●		●		●						
Colombia												
Denmark	●			●	●	●			●		●	
Finland	●	●	●		●							
France	●	●	●	●		●				●		
Greece		●						●				
Ireland	●	●	●	●	●	●	●	●	●	●		
Israel	●		●	●		●						●
Italy	●	●	●				●					
Korea	●	●			●	●		●				
Lithuania	●			●	●	●						
Luxembourg	●	●					●					
Mexico	●	●	●						●			
Netherlands	●		●	●								
New Zealand	●			●	●	●	●		●	●		
Norway	●	●	●	●	●	●		●		●	●	
Slovak Republic			●				●					●
Spain	●	●										
Sweden	●	●	●		●				●			
Switzerland							●				●	●
Türkiye				●			●					
United Kingdom	●	●	●	●	●		●	●	●	●	●	
Total	**18**	**13**	**12**	**11**	**11**	**10**	**8**	**6**	**6**	**5**	**4**	**3**

Note: Selection of green budgeting methods and tools. Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q17 to Q25.

OECD countries used a combination of methods and tools in green budgeting, examples include Ireland and the United Kingdom where 15 and 14 methods and tools are used respectively. Similar examples are found in Norway (11), France (10), Denmark (9), New Zealand (9) and Sweden (9).

While some methods and tools are used directly in budgeting, others provide new information to inform the appraisal and prioritisation of budget initiatives, such as the carbon budget in Ireland and the Climate Change Risk Assessment Report in the United Kingdom (Box 1.3).

Box 1.3. Emerging practices in the development of methods and tools

Ireland: Carbon budgets

In 2022, Ireland adopted a carbon budget programme that comprises three, five-year economy-wide carbon budgets. The carbon budgets were approved by both Houses of the Oireachtas in 2022. The total emissions allowed under each budget is set out below, as well as the average annual reduction for each five-year period:

- 2021-2025: 295 million tonnes CO_2 equivalent. This represents an average reduction in emissions of 4.8% per annum for the first budget period.
- 2026-2030: 200 million tonnes CO_2 equivalent. The represents an average reduction in emissions of 8.3% per annum for the second budget period.
- 2031-2035: 151 mission tonnes CO_2 equivalent. The represents an average reduction in emissions of 3.5% per annum for the third provisional budget.

In 2022, Ireland published the Climate Action Plan 2023. It is the second annual update to Ireland's Climate Action 2019. It implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap to reduce emissions by 2030 and reach net zero in 2050.

The United Kingdom: Green integrated in risk analysis

The Climate Change Act 2008 provides a framework to cut United Kingdom greenhouse gas emissions and adapt to a changing climate. The third Climate Change Risk Assessment published in 2022 fulfils the requirement of the Climate Change Act 2008 for the government to prepare a five-yearly assessment of the risks for the current and predicted impacts of climate change. This report outlines the key climate change risks and opportunities. The Valuation estimates that, for eight of the risks identified, economic damages by 2050 under 2°C could exceed GBP 1 billion. For 36 of the risks, damages could be at least GBP 10 million. The report helps inform the preparation of risk management and mitigation responses and the assessment of budget proposals.

Sources: (Government of the United Kingdom, 2022[6]), (Government of Ireland, 2022[7]) and (Government of Ireland, 2023[8])

Building block 3: Accountability and transparency

The 2022 Survey results show that the building block on accountability and transparency was more widely implemented in 2022 relative to 2020, particularly in the areas of monitoring, reporting and budget transparency. The integration of climate change considerations into oversight mechanisms in budgeting and public financial management, such as the role of fiscal councils, are still evolving in most instances, but are complemented by the roles of national audit offices and climate and environmental commissions.

Ministries of finance monitor the execution of budget allocations and performance data. As of 2022, 11 OECD countries had introduced climate and environmental variables to monitor the execution of some or all budget programmes.

Reporting on green budgeting strengthens the communication on how public resources are being used to progress climate and environmental objectives. Green budget reporting can include additions to budget reports as well as supporting materials such as performance indicators and dashboards. In 2022, 16 out of 24 countries were reporting on climate and environmental matters through the budget process.

In 2022, 12 countries reported that they included civil society in the budget process in relation to climate and environmental proposals.

Monitoring

Monitoring is used to inform the implementation of budget initiatives relative to the approvals and performance criteria approved by parliaments. The practice of budget monitoring in green budgeting is at an early stage of development in OECD countries. In 2022, 11 OECD countries monitored the implementation of green budgeting, specifically Canada, Denmark, Greece, Ireland, Korea, Lithuania, Luxembourg, New Zealand, Slovak Republic, Türkiye and the United Kingdom. The monitoring of green budgeting is mainly conducted by ministries of finance and ministries of environment but is broadening to involving all line ministries (Box 1.4).

Box 1.4. Examples of monitoring the implementation of green initiatives in budgets

Greece: Green performance indicators are monitored on a regular basis (by quarter and semester) and the information is integrated into the government's performance budgeting reform. Line ministries monitor and report to the Ministry of Finance on performance indicators. The ministries of environment and finance have a co-ordination role in the process.

Lithuania: The implementation of green budgeting is monitored through the performance of environmental indicators that are set when developing budget programmes. The government's National Progress Plan is to contain information on the progress and performance of environmental objectives and includes monitoring information.

New Zealand: As part of the 2022 Budget, the Treasury and line ministries developed a monitoring and reporting approach on the delivery of initiatives from the Climate Emergency Response Fund. The included financial and non-financial reporting of budget initiatives was implemented from the 2022/23 financial year onward. The Climate Change Chief Executives Board (established 2022) also has a monitoring role in relation to green budget initiatives.

Reporting and disclosure

Reporting and disclosure refers to general information that is relevant to the results achieved relative to climate and environment objectives and financial reporting in the financial statements of government. Both aspects are relevant to green budgeting as part of the accountability process of the budget.

In 2022, 16 out of 24 OECD countries reported on the implementation of green budgeting, such as Austria, Canada, Chile, Denmark, Finland, France, Greece, Ireland, Korea, Lithuania, Luxembourg, the Netherlands, New Zealand, Norway, Sweden, and the United Kingdom. Reporting on green budgeting can involve separate or additional budget reports, as was the case in Chile, France, Ireland, Korea, and Norway, where the ministries of finance prepared green budget statements.

In relation to financial reporting, accounting standards on disclosures in financial statements in the public sector are under development. In 2022, the International Public Sector Accounting Standards Board conducted a public consultation on the development of accounting standards and subsequently launched a project to develop accounting standards on climate change for the public sector.

Oversight mechanisms

Oversight institutions such as independent fiscal institutions are in a key position to monitor the implementation of green budgeting. The scrutiny performed by oversight institutions helps to ensure an informed parliament and public in relation to the fiscal outlook that is contained in budgets and forecasts (Cameron, Lelong and von Trapp, 2022[9]).

The budget oversight of green budgeting is an emerging practise within OECD countries. In 2022, 10 OECD countries had implemented budget oversight mechanisms relating to green objectives or reporting requirements. Seven OECD countries had budget oversight mechanisms to monitor the compliance with green reporting requirements, five countries had budget oversight mechanisms to monitor green investment and spending targets, in three countries oversight bodies had a role in costing the fiscal impact of green initiatives, and in four countries oversight bodies had a role in costing the impact of green initiatives on the economy, emissions, and energy markets (Table 1.4).

Table 1.4. Role of oversight institutions in OECD countries, 2022

OECD Countries	Monitoring compliance with green reporting requirements	Monitoring green investment and spending targets	Costing the fiscal impact of green initiatives	Costing impact of green initiatives on economy, emissions, and energy markets
Colombia		❍	❍	❍
Denmark	❒ ♦	❒ ♦ ❍	❒ ❍	❒ ♦ ❍
Ireland	❒	❒		● ❒
Italy		❍		
Korea	❒			
Netherlands	● ❍	●		
New Zealand	❍			
Norway	♦			
Sweden	❒ ♦			
United Kingdom			● ❍	● ❍
● Independent Fiscal Institution	1	1	1	2
❒ Climate Council	4	2	1	2
♦ Auditor general	3	1	0	1
❍ Other	2	3	3	3

Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q34 to Q37

Budget transparency and civil society

Budget transparency brings information to parliament, policymakers, recipients of public services, citizens and other stakeholders on how public money is spent by the government. A transparent green budgeting process is one where information on the integration of climate and environmental considerations is reported throughout the budget process, and consistently with existing budget publications. The publication of green budgeting information helps to promote transparency, accountability, and citizen participation (OECD, 2022[10]).

The participation of civil society in the green budgeting process has increased from 5 OECD countries in 2020 to 12 OECD countries in 2022. The integration of civil society in the green budgeting process is a practice that can strengthen the credibility and social acceptability of green budgeting. OECD countries can use various means to integrate civil society into budget processes, such as citizens commissions, public inquiries, and collaborative procedures, as illustrated in Box 1.5.

Box 1.5. Civil society engagement in green budgeting processes

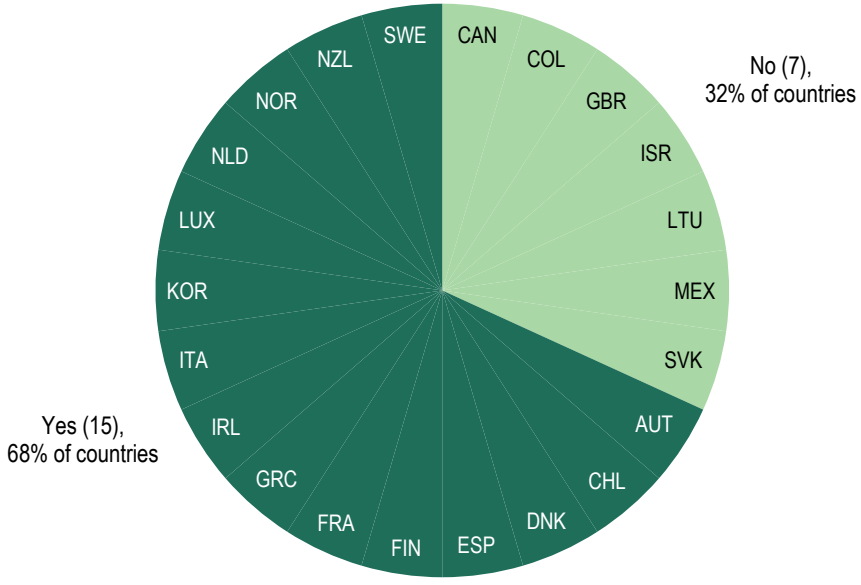
Denmark: The Danish "*borgerting*" was established within the Climate Act as a body that has 99 members who are to be representative of the Danish population. The "*borgerting*" debates and presents its opinions on the problems occurring on the path to reaching climate targets.

Lithuania: Decarbonisation groups formed by line ministries are responsible for making collaborative proposals on the prioritisation of the actions to reach the goal of carbon neutrality by 2050. These groups comprise social partners, non-governmental organisations, and experts who work in five sectors (energy, industry, transport, agriculture, and circular economy).

Sweden: All major decisions are preceded by public inquiries which are tasked with consulting those concerned central authorities, the business community and civil society. Before a decision is made, a public consultation is carried out. The scope of consultation includes climate and environmental impacts.

The public availability of information on green budgeting helps to demonstrate the actions the government is taking in relation to climate change and the environment through the allocation of public resources. In 2022, 15 OECD countries made information on green budgeting available and easily accessible to the public using press releases, social medias, and online publications (Figure 1.9).

Figure 1.9. Publicly available information on green budgeting in OECD countries, 2022



Note: Data for Costa Rica, Slovenia, Switzerland and Türkiye are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q39.

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Building block 4: Enabling environment in budgeting

The fourth building block on green budgeting supports the use of the existing features of a government's budget framework to apply green budgeting and to identify, where necessary, how the budgetary environment might be adapted to integrate climate and environmental considerations, based on the existing budgetary arrangements.

Several OECD countries have strengthened the enabling environment, such as by enhancing performance budgeting, programme budgeting, and co-ordination across government.

- A green perspective in the performance budgeting framework can help to inform budget decisions by identifying performance indicators on climate and the environment alongside other performance criteria.
- Programme budgeting developments help to introduce green budgeting by using the existing budget structure to apply green objectives. In 2022, nine OECD countries used programme budgeting linked to green budgeting.
- Co-ordination between ministries of finance and other ministries, such as the ministry of environment, is necessary to facilitate the implementation of green budgeting. In 2022, 14 OECD countries initiated inter-ministerial and inter-ministry bodies to support the co-ordinated implementation of public resources on climate and the environment.

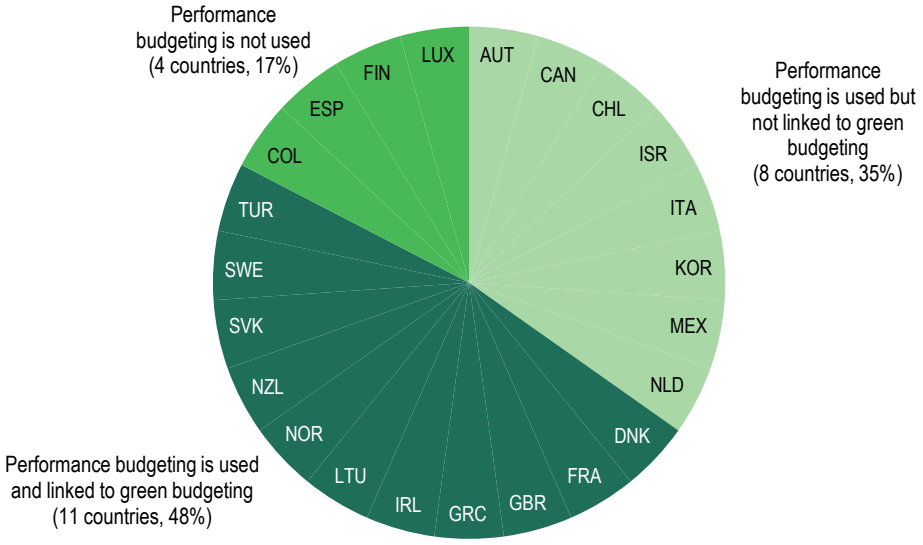
Performance budgeting

The OECD defines performance budgeting as (OECD, 2019[11]):

> *"The systematic use of performance information to inform budget decisions, either as a direct input to budget allocation decisions or as contextual information to inform budget planning, and to instil greater transparency and accountability throughout the budget process, by providing information to legislators and the public on the purposes of spending and the results achieve. Performance budgeting has been around since the 1960s but was adopted more widely by OECD countries from the 1990s. Over the past decade there has been a rapid increase in the adoption of performance budgeting by OECD countries"*

The alignment of green budgeting with a country's performance budgeting system allows for the inclusion of climate and environmental objectives, targets, indicators and measures in the management and incentive systems of public administrations. In 2022, 11 OECD countries used performance budgeting to support the implementation of green budgeting, and eight countries used performance budgeting but have yet to link it to green budgeting (Figure 1.10). In 2020 only two countries used a green perspective in performance setting or performance budgeting, which shows how OECD countries are adapting existing features in budget framework to implement green budgeting.

Figure 1.10. Performance budgeting and green budgeting in OECD countries, 2022



Note: Data for Costa Rica, Slovenia and Switzerland are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q41.

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Co-ordination

Inter-ministerial co-ordination refers to the collaboration between ministries and administrations. It may involve inter-ministerial bodies (committees, commissions, delegations), communities of practice, networks and other fora. The co-ordination of green budgeting practices helps to:

- promote the adoption of guidance,
- improve the information provided to citizens on the Government green policy,
- improve the co-ordination of inter-ministerial strategies and programmes,

- inform political decision making by offering unified expertise,
- optimise the cost and management of support functions.

In 2022, 14 OECD countries implemented co-ordination mechanisms to improve green budgeting practices. Eleven countries had organised inter-ministry or departmental co-ordination, seven countries had created an inter-ministerial group, and two countries had implemented a mechanism to co-ordinate with different levels of government, including subnational level (Table 1.5).

Table 1.5. Co-ordination mechanisms in OECD countries, 2022

OECD Countries	An inter-ministry/department co-ordination is organised	An inter-ministerial group is implemented to ensure co-ordination across government	A mechanism exists to co-ordinate with the different levels of government (e.g. sub national)
Canada	●		
Denmark	●		
Finland	●		
France	●	●	
Greece		●	●
Ireland	●		
Korea	●	●	
Luxembourg	●		
Mexico		●	
New Zealand	●		
Norway	●		
Spain		●	
Sweden	●	●	
United Kingdom	●	●	●
Total	**11**	**7**	**2**

Note: Data for Costa Rica, Slovenia and Switzerland are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q43.

Skills and capacity building

Training and capacity development on green budgeting helps to strengthen the understanding of the purpose of the approach and increase awareness of the resources that are available in the public sector to implement green budgeting. In 2022, 13 OECD countries implemented training and skills development. The most common components supporting the implementation of green budgeting were training and skills development within line ministries (10 countries). Moreover, eight countries had specific training programmes for finance ministries. Even if training capacities were not specified in a country's green budgeting framework, most central budget authorities had informal exchanges on green budgeting with line ministries during the budget cycle, such as in France.

Challenges and responses

Challenges

OECD countries are working to develop green budgeting in the context of the economic and budgetary environment of each country. However, the implementation of green budgeting is challenging as preparing a budget is a complex and time-pressured process. In 2022, the survey respondents identified four main

challenges from implementing green budgeting (Figure 1.11). At the same time, respondents noted that ministries of finance were finding ways to overcome or work with the challenges. Below are illustrations of the responses ministries of finance have initiated in response to the four main challenges.

- **Challenge 1 – A lack of resources**

  Responses: Ministries of finance have integrated green budgeting into the main budget process to avoid duplication in preparing and analysing information on budget priorities and spending proposals (e.g. Korea). Staff training and capacity-building included customised courses on aspects of green budgeting, such as environmental cost benefit analyses.

- **Challenge 2 – A lack of relevant knowledge or technical expertise**

  Responses: Ministries of finance are adding climate and environmental sections to the guidance and technical information that is available in the budget process. For example, Ireland and the United Kingdom have consulted experts to help update guidance materials on the assessment of budget proposals that have potential implications for the climate and environment.

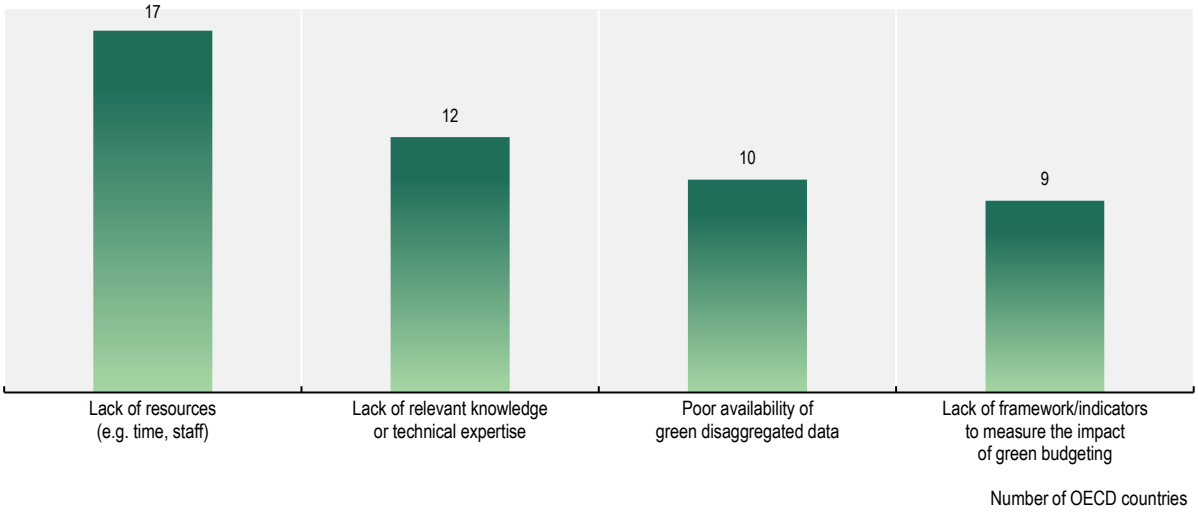
- **Challenge 3 – Poor availability of green disaggregated data**

  Responses: Finance ministries and line ministries are working with ministries across government, notably ministries of climate change and environment, to identify relevant, reliable and timely data to inform green budgeting. In some instances, the collaboration includes national statistical organisations (e.g. Italy) and universities (e.g. Denmark) to identify and collect data.

- **Challenge 4 – A lack of data and indicators to measure the results and impacts of green budgeting**

  Responses: Measuring the impact and results of green budgeting is a key issue for ministries of finance. They started to measure the impact of green budgeting through monitoring and reporting and the prioritisation of budget allocations based on green budgeting data. In addition, green performance data is to be developed (e.g. France) but needs to be considered over several years to measure the impact of green budgeting.

Figure 1.11. Challenges from implementing green budgeting in OECD countries, 2022



Note: Data for Costa Rica and Slovenia are not available.
Source: OECD (2022), OECD Survey on Green Budgeting, Q45.

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Evidence of green budgeting in action

Green budgeting shows that integrating new features into budget processes is a complex and multi-year undertaking. However, the experiences from across countries is providing an increasing body of evidence on how green budgeting is applied across the budget cycle from budget planning through to budget oversight. The evidence shows that countries were increasingly integrating green budgeting into the prioritisation of budget allocations and that green budgeting is now being used as a source of information during the execution of the budget. Specific examples include:

- **Greece:** In the context of green spending reviews, savings were identified relative to a baseline scenario by either reducing energy consumption or improving energy efficiency. They required an initial investment to reach the projected savings. Key to the assessments were incorporating data on energy saving measures in buildings and facilities as part of the analysis in the spending review.
- **Luxembourg**: The introduction of a carbon tax in 2021 includes a provision for half of the revenue collected to be directed to green projects and the other half to support the poorest households to adapt to the green transition.
- **New Zealand:** The establishment and first funding round of the Climate Emergency Response Fund in Budget 2022. The NZD 4.5 billion fund led to an increase in the funding allocated to climate objectives, compared to previous budgets.
- **Sweden:** The Swedish government offices and the public authorities conducted assessments of climate and environmental impacts when preparing proposals for the budget bill. The assessments were used in making decisions on policy proposals and resource allocations.
- **United Kingdom:** The Treasury requested information from ministries on the carbon impacts of spending proposals in the 2020 and 2021 Spending Reviews. The government used this information to inform budget allocations.

2 2022 OECD Green Budgeting Index methodology

The 2022 OECD Green Budgeting Index methodology section covers the following areas:

- Structure of the 2022 OECD Green Budgeting Index
- Coding the data
- Weighting and aggregation
- Statistical analysis
- Limitations of composite indexes

The methodology used to build the 2022 OECD Green Budgeting Index (Figure 1.4) draws on the recommendations and steps identified in the Handbook on Constructing Composite Indicators: Methodology and User Guide (OECD/EU/JRC, 2008[12]). The 2022 OECD Green Budgeting Index is based on the four building blocks in the Green Budgeting Framework: 1) institutional arrangements, 2) methods and tools, 3) accountability and transparency, and 4) the enabling environment in budgeting (OECD, 2020[1]), each with an equal weight (25%).

The index ranges from 0 (not implementing) to 1 (high level of green budgeting practices). Country green budgeting practice scores were determined by adding together the weighted scores of each dimension, varying from 0 to 1. The structure, indicators and weightings of the index were selected by the OECD based on the relevance to the building blocks and have been reviewed by country delegates to the OECD Paris Collaboration on Green Budgeting. The various statistical analyses that were applied to the methodology were to ensure validity and reliability of the composite index.

The 2022 OECD Green Budgeting Index was built from data collected in the 2022 OECD Survey on Green Budgeting, encompassing responses from 36 OECD countries[2] and referring only to central/federal governments. Respondents were predominantly senior budget officials within central budget authorities. Responses draw upon self-reporting representing the country's own assessment of current practices and procedures as of 30 June 2022. A data cleaning process took place from September to December 2022. The process checked for internal and external consistency in the survey responses. During the review process, countries were invited to clarify and verify any substantial changes from the earlier data, potential inconsistencies and outliers.

Although the 2022 OECD Green Budgeting Index was developed in co-operation with OECD countries and is based on best practices and/or theory, the Index structure, indicators and weights may be further refined over time to ensure they continue to capture the changing practices and elements that underpin a comprehensive green budgeting approach.

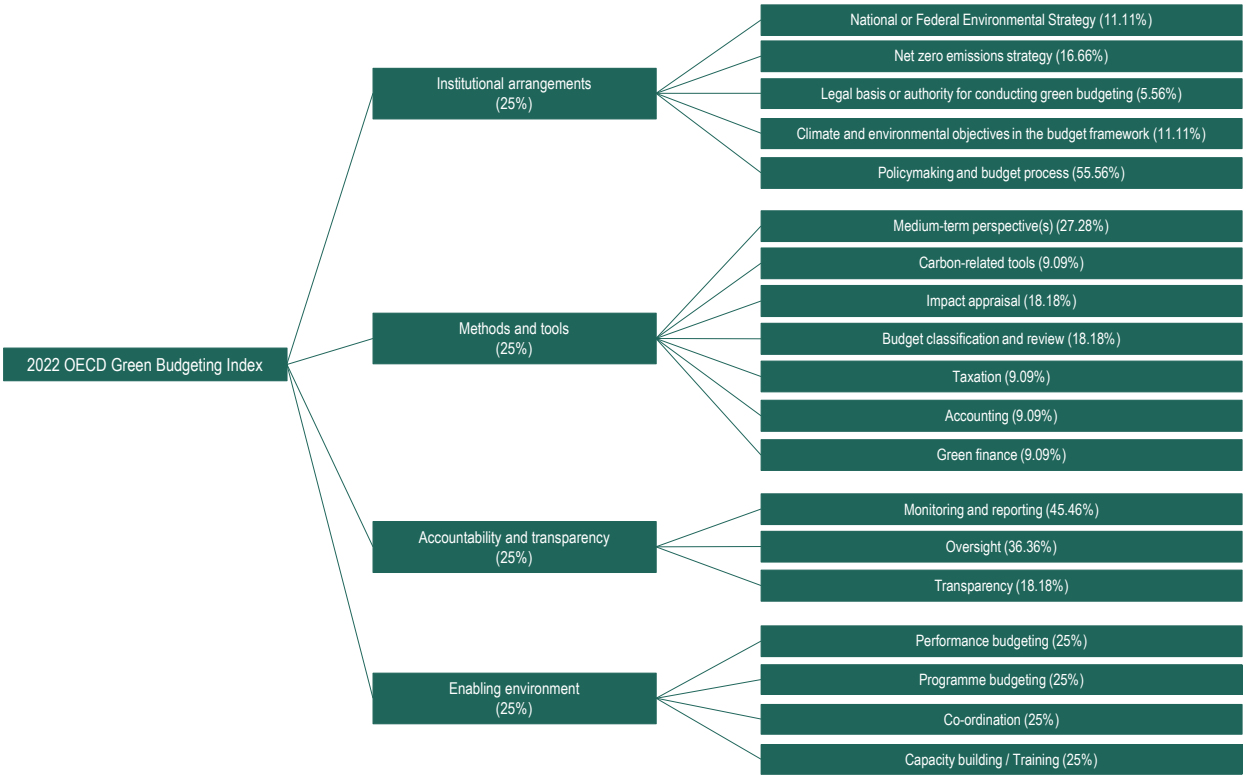
While the 2022 OECD Green Budgeting Index allows for cross-country comparison, it is neither context specific nor does it purport to measure the overall quality of green budgeting in each country or how well a country's selected approach to green budgeting operates. Rather, the index presented is descriptive in

nature and allows countries to examine the results at the building block level to identify areas for further improvement.

Structure of the 2022 OECD Green Budgeting Index

The Index is assessing the implementation of green budgeting across OECD countries by quantifying the measures that are in place across each of the four building blocks in the Green Budgeting Framework: 1) institutional arrangements, 2) methods and tools, 3) accountability and transparency, and 4) the enabling environment in budgeting (OECD, 2020[1]). Each of the Index's four building blocks carries an equal weight (25%) (Figure 2.1).

Figure 2.1. 2022 OECD Green Budgeting Index: Building blocks, variables and weights used



Source: OECD authors' elaboration.

Coding the data

Each of the answer options in the 2022 OECD Survey on Green Budgeting were translated into quantitative indicators, varying from 0 to 1, with the value of one representing the highest value of the indicator and the value of zero representing the lowest. Although all indicators respect the [0,1] range, the method for assigning values to responses for questions vary by the type and structure of the question. For binary-type questions (yes/no), the value of 1 represents the existence (yes) of the indicator and the value of 0 represents the nonexistence (no). For ordinal-type questions, multiple answer options are possible and values are assigned according to their significance or importance, e.g. [0, 0.5 or 1]. For some questions with multiple response options, several options were attributed the maximum value [1] as they are

considered equally important. Once the maximum value is obtained, additional responses are not taken into account.

The 2022 OECD Green Budgeting Index refers to measures under implementation as of 30 June 2022. If a measure was under consideration or being developed at the time, but not yet implemented, it was assigned a value of zero.

Weighting and aggregation

All building blocks were assigned an equal weight (25%). Variables within a building block were weighted depending on the i) the number of indicators making up each variable and ii) the different relevance of each variable. The sum of the weights assigned to variables in each building block is 1. Given the number of indicators per building block, each indicator has a final combined weight of 0.014 under the building block “Institutional arrangements”, 0.023 under the building block “Methods and tools”, 0.023 under the building block “Accountability and transparency” and 0.063 under the building block “Enabling environment”. A linear aggregation method was applied to first aggregate the indicators into variables, the variables into building blocks and then the building blocks into a composite indicator. To obtain a country score, the weighted scores for each indicator were totalled to obtain an overall index score for each country from 0 to 1. The weightings for the building blocks, variables and indicators were selected by OECD based on the relevance to the OECD Green Budgeting Framework and have been reviewed by county delegates of the OECD Paris Collaborative on Green Budgeting. The weights assigned to each building block and building block variables are displayed in Figure 2.1.

The tables below (Tables 2.1 to 2.4) present the structure and weight of each of the four building blocks composing the 2022 OECD Green Budgeting Index, including the variables and indicators and show how the 2022 OECD Survey on Green Budgeting questions were used across each building block.

Institutional arrangements

Institutional arrangements look at the way governments have set the basis for green budgeting. The 2022 OECD Green Budgeting Index contained ten questions relative to the legal basis for green budgeting, national environmental strategies, net-zero strategies, the objectives adopted by countries, and the policymaking and budgeting process (Table 2.1).

Table 2.1. Methodology for institutional arrangements

Building block (weight)	Variables (weight)	2022 OECD Survey on Green Budgeting Questions	Answer options / Indicators (score)	Maximum combined index score (per variable)[1]
Institutional arrangements **(25%)**	National or Federal Environmental Strategy **(11.11%)**	5. Does a national/federal environmental or climate strategy inform green budgeting? *Please select one.*	**Maximum score: 1** a. Yes (1) b. No (0)	**Index score: 0.028 for all** 0.014 for each indicator score (1)
		If yes in Q5: 5.1 Is the strategy aligned with the 'Nationally Determined Contribution'? *Please select one.*	**Maximum score: 1** a. Yes (1) b. No (0)	
	Net zero emissions strategy **(16.66%)**	6. Do you have a net-zero-emissions strategy? *Please select one.*	**Maximum score: 1** a. Yes (1) b. No (0)	**Index score: 0.042 for all** 0.014 for each indicator score (1)
		If yes in Q6: 6.1 Does the net-zero-emissions strategy include targets/milestones? *Please select one.*	**Maximum score: 1** a. No (0) b. Yes (1)	
		If yes in Q6: 6.2 Is there a date for the public sector to be net zero? *Please select one.*	**Maximum score: 1** a. No (0) b. Yes (1)	
	Legal basis or authority **(5.56%)**	7. What is the legal basis or authority for conducting "green budgeting" practices? *Please select all that apply.*	**Maximum score: 1** a. Constitutional requirement (1) b. Budget law (1) c. Other legislation (1) d. Administrative practice, guidance note, circulars (0.5)	**Index score: 0.014**
	Climate and environmental objectives in the budget framework **(11.11%)**	8. Which objectives are integrated in the budget framework? *Please select all that apply.*	**Maximum score: 2** a. Climate mitigation (0.25) b. Climate adaptation (0.25) c. Sustainable use and protection of water and marine resources (0.25) d. Transition to a circular economy (0.25) e. Pollution prevention and control (0.25) f. Protection and restoration of biodiversity and ecosystems (0.25) g. Do no significant harm principle (0.25) h. Other objectives, please specify (0.25)[2]	**Index score: 0.028 for all** 0.014 for each indicator score (1) 0.003 for each answer a. to h.
	Policymaking and budget process **(55.56%)**	9. How does green budgeting impact policymaking and budgetary governance? *Please select all that apply.*	**Maximum score: 4** a. Green budgeting is used to inform the political decision making (1) b. Green budgeting is integrated within all public policies (1) c. Green budgeting is integrated during the budget negotiations to guide the prioritisation of budget allocations (1) d. Green budgeting guides the prioritisation of capital expenditure and investments (1)	**Index score: 0.139 for all** 0.014 for each indicator score
		11. Do specialised agencies/entities have been established to bring a climate and/or environmental	**Maximum score: 1** a. No (0) b. Yes (1)	

		perspective to governmental expenditure (e.g. green investment fund, green investment bank)? *Please select one.*		
		12. What is the scope of green budgeting? *Please select all that apply.*	**Maximum score: 5** a. Mandatory spending (1) b. Discretionary spending (excluding operational spending) (1) c. Operational spending (Current) (1) d. Investment spending (Capital) (1) e. Tax expenditure (1)	

1. Including weights for variable and building block.
2. For non pre-defined answer categories, additional data validation was performed: to be validated for the index and to assure an equal treatment across answer categories and countries, the explanations provided had to match the expectations of the underlying survey question.

Methods and tools

The methods and tools refer to concrete instruments to implement green budgeting. The 2022 OECD Green Budgeting Index contained nine questions relative to the medium-term perspective, carbon related tools, impact appraisal, budget classification and review, accounting, and green finance (Table 2.2).

Table 2.2. Methodology for methods and tools

Building block (weight)	Variables (weight)	2022 OECD Survey on Green Budgeting Questions	Answer options / Indicators (score)	Maximum combined index score (per variable)[1]
Methods and tools **(25%)**	Medium-term perspective **(27.28%)**	17. Is green budgeting used to define multi-annual budgets? *Please select one.*	**Maximum score: 1** a. No (0) b. Yes (1)	**Index score: 0.068 for all** 0.023 for each indicator score (1)
		18. Is green budgeting used to define macro fiscal projects? *Please select one.*	**Maximum score: 1** a. No (0) b. Yes (1)	
		19. Is green budgeting integrated in risk analysis? *Please select one.*	**Maximum score: 1** a. No (0) b. Yes (1)	
	Carbon related tools **(9.09%)**	20. Which carbon tools are used by the Ministry of Finance and line ministries? *Please select all that apply.*	**Maximum score: 1** a. Carbon budget (1) b. Carbon assessment of budget measures (1) c. Carbon pricing instruments including fuel and carbon taxation, emissions trading systems (1) d. Shadow price of carbon used to evaluate public policies and investments (1)	**Index score: 0.023**
	Impact appraisal **(18.18%)**	21. Which expenditure evaluation tools are used by the Ministry of Finance and line ministries? *Please select all that apply.*	**Maximum score: 2** a. *Ex ante* or *ex post* environmental impact assessments of budget measures (spending and taxation) (1) b. Environmental cost benefit analysis of budget measures and investments (1)	**Index score: 0.046 for all** 0.023 for each indicator score (1)

Building block (weight)	Variables (weight)	2022 OECD Survey on Green Budgeting Questions	Answer options / Indicators (score)	Maximum combined index score (per variable)[1]
	Budget classification and review **(18.18%)**	22. Which expenditure classification are tools used by the Ministry of Finance and line ministries? *Please select all that apply.*	**Maximum score: 2** a. *Ex ante* or *ex post* green budget tagging (1) b. Green perspective in spending review (1)	**Index score: 0.046 for all** 0.023 for each indicator score (1)
	Taxation **(9.09%)**	23. Which environmental taxation tools are used by the Ministry of Finance and line ministries? *Please select all that apply.*	**Maximum score: 1** a. Environmental tax reform (1) b. Regular review of environmentally harmful tax expenditure (1) c. Regular review of environmentally harmful subsidies (1)	**Index score: 0.023**
	Accounting **(9.09%)**	24. Has the government developed appropriate metrics for the government function to be applied consistently across departments? *Please select all that apply.*	**Maximum score: 1** a. No (0) b. Yes (1)	**Index score: 0.023**
	Green finance **(9.09%)**	25. Does the country issue sovereign green bonds and/or sustainability loans? *Please select all that apply.*	**Maximum score: 1** a. Yes sovereign green bonds (1) b. Yes, sustainability loans (1) c. No (0)	**Index score: 0.023**

1. Including weights for variable and building block.

Accountability and transparency

The building block on the implementation of green budgeting refers to accountability and transparency. The 2022 OECD Green Budgeting Index contains eleven questions relative to Monitoring and reporting, oversight, and budget transparency (Table 2.3).

Table 2.3. Methodology for accountability and transparency

Building block (weight)	Variables (weight)	2022 OECD Survey on Green Budgeting Questions	Answer options / Indicators (score)	Maximum combined index score (per variable)[1]
Accountability and transparency **(25%)**	Monitoring and reporting **(45.46%)**	28. Does the government monitor the implementation of green budgeting? *Please select all that apply.*	**Maximum score: 1** a. No (0) b. Yes, a climate tracking indicator is used to monitor budget implementation / execution (1) c. Yes, please specify (1)[2]	**Index score: 0.114 for all** 0.023 for each indicator score (1)
		29. Does the government report on the implementation of green budgeting? *Please select all that apply.*	**Maximum score: 1** a. No (0) b. Yes, a green budget statement/report is submitted to the parliament (1) c. Yes, please specify (1)[2]	
		30. Does the Parliament use green budgeting information to prepare the budget law? *Please select all that apply.*	**Maximum score: 1** a. No (0) b. Yes, environmental effects are discussed in the country's general tax and expenditure report (1) c. Yes, please specify (e.g. internal debate within a commission, parliamentary budget office report) (1)[2]	

Building block (weight)	Variables (weight)	2022 OECD Survey on Green Budgeting Questions	Answer options / Indicators (score)	Maximum combined index score (per variable)[1]
		31. Do public-sector accounting standards incorporate climate and environmental objectives? *Please select all that apply.*	**Maximum score: 1** a. No (0) b. Yes, green accounting standards are used to prepare financial reports (1) c. Yes, a green dimension is integrated in the balance sheet alongside the general national account (1)	
		33. Is green budgeting integrated in financial reporting? *Please select one.*	**Maximum score: 1** a. Yes (1) b. No (0)	
	Oversight **(36.36%)**	34. Which oversight bodies have an official role in monitoring compliance with green reporting requirements? *Please select all that apply.*	**Maximum score: 1** a. No official role for oversight bodies (0) b. Independent Fiscal Institution (1) c. Climate council (1) d. Auditor general (1) e. Other, please specify (1)[2]	**Index score: 0.091 for all** 0.023 for each indicator score (1)
		35. Which oversight bodies have an official role in monitoring green investment and spending targets? *Please select all that apply.*	**Maximum score: 1** a. No official role for oversight bodies (0) b. Independent Fiscal Institution (1) c. Climate council (1) d. Auditor general (1) e. Other, please specify (1)[2]	
		36. Which oversight bodies have an official role in costing the fiscal impact of green initiatives? *Please select all that apply.*	**Maximum score: 1** a. No official role for oversight bodies (0) b. Independent Fiscal Institution (1) c. Climate council (1) d. Auditor general (1) e. Other, please specify (1)[2]	
		37. Which oversight bodies have an official role in costing the broader impact of green initiatives on economy, emissions, and energy markets? *Please select all that apply.*	**Maximum score: 1** a. No official role for oversight bodies (0) b. Independent Fiscal Institution (1) c. Climate council (1) d. Auditor general (1) e. Other, please specify (1)[2]	
	Transparency **(18.18%)**	38. Is the civil society involved in green budgeting initiatives? *Please select one.*	**Maximum score: 1** a, No (0) b. Yes, a structured dialogue exists between the government, the civil society bodies and other stakeholders on climate or environmental impact of budget decisions. (1)	**Index score: 0.045 for all** 0.023 for each indicator score (1)
		39. Is information on green budgeting communicated publicly? *Please select one.*	**Maximum score: 1** a. No (0) b. Yes, green budgeting initiatives are published on an open and accessible platform. (1)	

1. Including weights for variable and building block.
2. For non pre-defined answer categories, additional data validation was performed: to be validated for the index and to assure an equal treatment across answer categories and countries, the explanations provided had to match the expectations of the underlying survey question.

Enabling environment in budgeting

The fourth building block refers to the enabling environment in budgeting. The 2022 OECD Green Budgeting Index contained four questions on performance and programme budgeting, co-ordination mechanisms and capacity building (Table 2.4).

Table 2.4. Methodology for enabling environment in green budgeting

Building block (weight)	Variables (weight)	2022 OECD Survey on Green Budgeting Questions	Answer options / Indicators (score)	Maximum combined index score (per variable)[1]
Enabling environment in budgeting **(25%)**	Performance budgeting **(25%)**	41. Is performance budgeting developed in the country and used as a basis for green budgeting? *Please select one.*	**Maximum score: 1** a. Yes, performance budgeting is used but not linked to the budget (0.5) b. Yes, performance budgeting is used and linked to green budgeting (1) c. No (0)	**Index score: 0.0625**
	Programme budgeting **(25%)**	42. Is programme budgeting developed in the country and used as a basis for green budgeting? *Please select one.*	**Maximum score: 1** a. Yes, programme budgeting is used but not linked to green budgeting (0.5) b. Yes, programme budgeting is used and linked to green budgeting (1) c. No (0)	**Index score: 0.0625**
	Co-ordination **(25%)**	43. Are co-ordination mechanisms in place to implement green budgeting? *Please select all that apply.*	**Maximum score: 1** a. An inter-ministerial group is implemented to ensure co-ordination across government (1) b. An inter-ministry/department co-ordination is organised (1) c. A mechanism exists to co-ordinate with the different levels of government (e.g. sub national) (1) d. No (0)	**Index score: 0.0625**
	Capacity building **(25%)**	44. What are the green budgeting capacity building procedures developed across public administration? *Please select all that apply.*	**Maximum score: 1** a. Training and skills development are organised for the Ministry of Finance (1) b. Training and skills development are organised for the line ministries (1) c. No training organised within the government (0)	**Index score: 0.0625**

1. Including weights for variable and building block.

Statistical analysis

Sensitivity testing

The sensitivity analysis in this report is based on Monte Carlo simulations. The purpose of the simulations was to test the sensitivity of the weights selected for each of the four building blocks. The results of the simulation are to show which country would have been presented differently if the building blocks were based on a different combination of weights.

Monte Carlo simulations generate an interval of values which reflect the range of possible scores for indicators in each country, depending on five thousand different weighting scenarios. The results for the 2022 OECD Green Budgeting Index are presented in Figure 2.2. Vertical lines represent the 90% confidence intervals derived from the random weights analysis.

The size of the interval varies depending on a country's green budget data profile (mixed or rather even). Countries with an even answer profile, that is, a profile gave similar answers for the majority of questions, will fall into a narrow interval, while countries with an uneven profile will fall into a broader interval (Freudenberg, 2003[13]).

The results from the sensitivity analyses at pillar levels, the four building blocks, show that, for the largest part of the countries analysed, total scores are not very sensitive to the choice of values given to the categories. The total scores of Canada, Greece, and Spain appear to be more sensitive to the weightings applied. It is important to note that not all the combinations of weights used to create these intervals can be viewed as realistic outcomes (Arndt et al., 2015[14]).

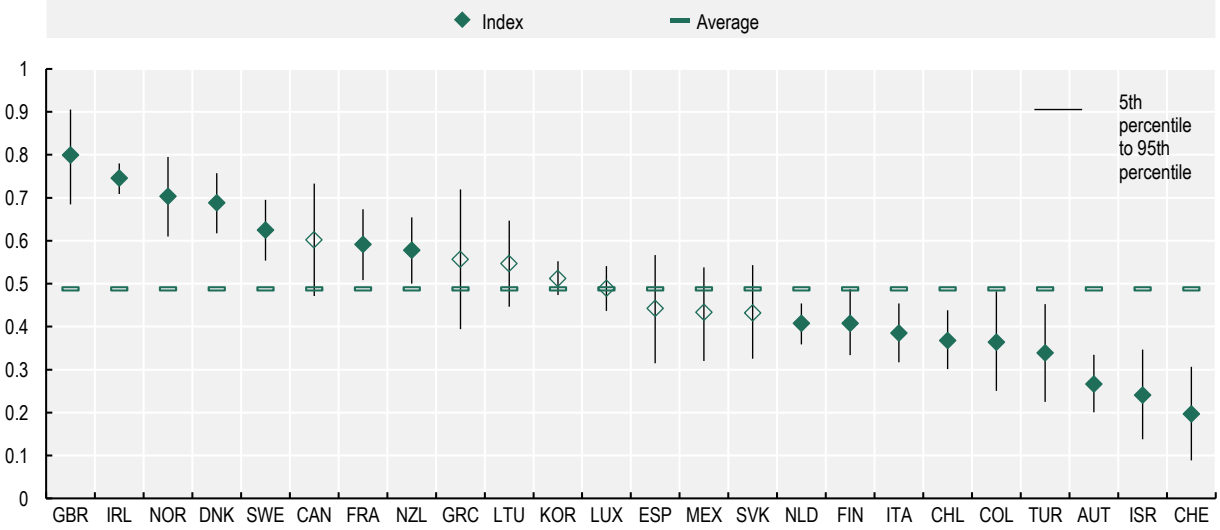
One possible practical application of the analysis of the upper and lower bounds of these intervals is to consider how countries can be grouped together with a strong degree of confidence (Arndt et al., 2015[14]).

The group of countries with black diamonds on the left-hand side of Figure 2.2 have a total score for their composite indicator that is above the average (expressed as a horizontal dotted average line), and have scores above the average for 90% of random combinations (this is the case for: Denmark, France, Ireland, New Zealand, Norway, Sweden, and the United Kingdom). Conversely, on the right-hand side of the graph countries that are marked with black diamonds score below the average for 90% of random combinations. These two groups of countries can therefore be said to have indicator values which are significantly different from each other independent of the weighting scheme.

Cronbach alpha testing (scale reliability coefficient)

Cronbach's Alpha is a coefficient of reliability based on the correlations between indicators. This statistic is generally used to investigate the degree of correlation among a set of variables and to check the internal reliability of items in a model or survey. A Cronbach's alpha coefficient equal to zero means that the variables are independent (e.g. the selection is not correlated and therefore is statistically not relevant), while a coefficient equal to one means that the variables are perfectly correlated. In general, a coefficient of above 0.7 is considered to be an acceptable indication that the variables are measuring the same underlying construct. The value recorded of the coefficient is of **0.75** which indicates that the variables are measuring the same underlying construct.

Figure 2.2. 2022 OECD Green Budgeting Index: Sensitivity analysis



Note: Figure presents the sensitivity of the index to various weighting assumptions (results from the Monte Carlo simulation where 5 000 different weights were assigned). Diamonds represent the indicator scores, and vertical lines represent the 90% confidence intervals derived from the random weights analysis. Index comprised between 0 (no use) and 1 (high use). Cronbach's alpha: 0.75 (computed with SPSS). A Cronbach's alpha close to or above 0.7 indicates a high degree of correlation among a set of variables.
Source: OECD author's analysis.

StatLink https://stat.link/i3pjo1

Limitations of composite indexes

Composite indexes are useful to summarise large amounts of discrete, qualitative information and "are much easier to interpret than trying to find a common trend in many separate indicators" (Nardo M, 2005[15]). However, these indexes are easily and often misinterpreted by users due to a lack of transparency as to how they are generated and the resulting difficulty to truly unpack what they are actually measuring. The 2022 OECD Green Budgeting Index, while providing cross-country comparison, is not context-specific, nor can fully capture the complex realities of the quality, use and impact of green budgeting approaches. This comparison should hence not be seen as a measurement of quality or a ranking. It shows that countries have adopted multi-initiative approaches to green budgeting by using each of the four building blocks. It should also be noted that countries with the same or similar index scores may have very different profiles (e.g. more balanced scores or an uneven score across building blocks). Examining the results at the building block level is therefore crucial to identify areas for further improvement.

Composite indexes should be seen as a means of initiating discussion and stimulating public interest (OECD/EU/JRC, 2008[12]). To help countries interpretate the findings and to provide a more detailed analysis of the strengths and weaknesses of their green budgeting approach, the results of the 2022 OECD Green Budgeting Index should be complemented with in-depth country assessments. These country assessments allow to provide a more detailed analysis of the quality of country practices in the context of diverse and country-specific governance structures, administrative cultures, institutional set-ups and priorities.

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Notes

[1] Data for Costa Rica and Slovenia are not available.

[2] Data for Costa Rica and Slovenia are not available.

Green Budgeting in OECD Countries 2024

This report provides an overview of green budgeting practices across OECD countries based on the 2022 OECD Green Budgeting Survey, as well as the index methodology for the Survey. It takes stock of OECD countries' progress in bringing climate and environmental considerations into budgeting frameworks and processes. Green budgeting involves a systematic approach across all stages of the budget process, including financial reporting and budget oversight. The growth in green budgeting in OECD countries, as shown in the report, demonstrates the key role of budget offices in ensuring that policy priorities relating to climate change and the environment are taken into account when allocating resources through the budget process.



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