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Green Budgeting Practices in the EU: A First Review

Elva Bova

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Elva Bova

Abstract

As many Member States are moving towards a greening of their economy, this work investigates whether their budgetary practices are shaped in a way that supports the green transition. Based on a review of budgetary documents across the EU countries, this study presents green budgeting experiences in selected Member States. After discussing concepts related to green budgeting, expenditure and revenue, this paper reviews and compares the coverage, the methodology and the governance of the selected green budgeting practices. It also provides information on the transparency and accountability arrangements of these practices. Overall, the study shows an incipient development of green budgeting and large heterogeneity of practices across countries. It shows that this heterogeneity is partly explained by different underlying concepts and definitions regarding the environmental objectives and budgets' contribution towards them.

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Contact: Elva Bova, European Commission, Directorate-General for Economic and Financial Affairs, elva.bova@ec.europa.eu.

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1. INTRODUCTION

‘Greening’ the national budgets is an important part of the ecological transition. As expressed in the European Commission’s Green Deal Communication, “*a greater use of green budgeting tools will help to redirect public investment, consumption and taxation to green priorities and away from harmful subsidies*”¹ (European Commission, 2019; 17). As budgets are one of the main expressions of how a government wants to implement its political ambition, aligning budgets with environmental objectives is a crucial tool for the ecological transition². In the EU, while all Member States have introduced policies to address environmental challenges, including budgetary policies, coherence and coordination of these policies could be improved. At times, some policies coexist with approaches that have unfavourable environmental impacts.

Assessing the overall greenness of a budget is a necessary step to promote consistency vis-à-vis environmental objectives. Green budgeting is defined here ‘*as a budgetary process whereby the environmental contributions of budgetary items are identified and assessed with respect to specific performance indicators, with the objective of better aligning budgetary policies with environmental goals*. With a view to answering the fundamental question of ‘*how green is your budget?*’, this discussion paper reviews existing green budgeting practices across the EU Member States.

Overall, the review identifies a limited number of practices and these display a large heterogeneity. To date, only very few countries have some form of green budgeting in place, with some novel and interesting examples emerging. The paper also points to a wide variety of associated features, particularly as regards:

- i) the definition of *green* budgetary items;
- ii) the coverage of environmental objectives, budgetary items, and government entities;
- iii) deliverables and presentational approaches; and
- iv) governance and accountability.

This paper is structured as follows: section 2 provides a review of concepts and definitions of green budgeting. Section 3 presents country experiences and section 4 concludes. Annex A contains specific country-fiches while Annex B provides a review of statistical issues.

¹ The European Commission Green Deal Communication, available here: https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF

² The ecological transition is defined here as the transition to transform the EU into a clean, resource-efficient and circular economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.

2. CONCEPTS AND DEFINITIONS

Green budgeting is a form of priority budgeting. As new priorities are emerging for policy-making, governments are deploying novel budgeting approaches that aim to help attain these priorities, such as gender budgeting, green budgeting and wellbeing budgeting. The OECD defines these practices as forms of ‘priority budgeting’, aimed at aligning resources and incentives towards a government’s specific priorities (Box 1).

Box 1: PRIORITY BUDGETING

Priority budgeting involves re-focusing resources towards a specific goal (OECD 2019).* The main aim of this budgetary approach is to ‘align resources and incentives towards specific priorities, signal the political importance of these priorities, and mobilise a *comprehensive* response’ (OECD 2019, page 5). Differently from traditional budgeting approaches, priority budgeting places more emphasis on specific outcomes.

Such an approach can be seen as a very specific form of performance budgeting, where the quality of performance regarding a specific goal is assessed and promoted. More generally, performance based budgeting frameworks focus on the objectives, outputs and outcomes achieved in the delivery of the public services, financed through the budget (IMF 2018).** This type of budgeting would then allow connecting outputs, i.e. products or services produced, to outcomes, i.e. the economic and social changes attained by the policy measure (IMF 2018), and through this, it contributes to reinforcing the government’s performance and accountability by facilitating systemic oversight by the legislature and civil society (OECD 2019).***

* OECD 2019, Budgeting for outcomes, <http://www.oecd.org/gov/budgeting/performance-results-meeting-2019.htm>

** IMF 2018, Fiscal Transparency Handbook, see: <https://www.elibrary.imf.org/view/IMF069/24788-9781484331859/24788-9781484331859/24788-9781484331859.xml?code=fth>

*** OECD 2019, Good practices for performance budgeting, see: <http://www.oecd.org/gov/oecd-good-practices-for-performance-budgeting-c90b0305-en.htm>

In its comprehensive definition, green budgeting captures all efforts to align the budgetary process with environmental goals. As part of the work done within the Paris Collaborative on Green Budgeting (Box 2), the OECD (2018)³, defines green budgeting as “*using the tools of budgetary policy-making to help achieve environmental goals. This includes evaluating environmental impact of budgetary or fiscal policies and assessing their coherence towards the delivery of national and international commitments. Green budgeting can also contribute to informed, evidence based debate and discussion on sustainable growth*”. Other definitions have been considered. For example, in Ireland which is working to operationalise green budgeting, the authorities provide a similar definition: green budgeting as “*the use of the budgetary system to promote the achievement of improved climate and environmental outcomes. It is an explicit recognition that the budgetary process is not a neutral process, but is a process that embodies – and potentially informs and influences – long standing societal choices about how resources are deployed*” (Department of Public Expenditure and Reform, 2020).⁴

³ <https://www.oecd.org/environment/green-budgeting/>

⁴ Department of Public Expenditure and Reform (2020), “An Introduction to the Implementation of Green Budgeting in Ireland”, Staff Paper 2018, December 2018.

Box 2: INTERNATIONAL INITIATIVES ON GREEN BUDGETING

At the One Planet Summit in December 2017, France, Mexico and the OECD launched the **Paris Collaborative on Green Budgeting**. The Collaborative is a cross-country initiative to support governments in their efforts to “green” their fiscal policies and embed environmental commitments within budget and policy frameworks.* The initiative encourages the exchange of best practice on how to use the budgetary process to support environmental goals and develop sustainable societies. Within this, the OECD has put forward eight principles: 1) *comprehensive* assessment of the budgetary impact on environmental commitments; 2) gathering and collecting *evidence*; 3) *coherence* of approaches and policies; 4) *credibility* of commitments; 5) *transparency*; 6) *fully integrating* the environmental perspective into existing budget processes; 7) ensuring *fiscal sustainability*, and; 8) a *whole-of-government* (or *comprehensive*) *approach*. Furthermore, based on the exchange of experiences, the OECD (2020) has developed a framework on how to implement green budgeting, based on four building blocks: (i) strategic and fiscal planning; (ii) budgeting tools for evidence generation and policy coherence; (iii) accountability and transparency; (iv) enabling budgeting environment.**

The Coalition of Finance Ministers for Climate Action was launched in December 2018, under the leadership of Finland and Chile and with support of the World Banks’ Climate Action Peer Exchange (CAPE).*** Principle 4 of its founding principles (the Helsinki Principles) requires to ‘take climate change into account in macroeconomic policy, fiscal planning, budgeting, public investment management, and procurement practices’. Within this, a work stream on green budgeting has been launched.

The Secretariat for the **Public Expenditure and Financial Accountability** (PEFA) has recently produced a module for the assessment of climate-related public financial management. This is intended to provide a diagnostic tool to those countries and administrations willing to make their public finances more climate responsive. Such an assessment is currently being finalised through the use of pilots.****

- * <https://www.oecd.org/gov/budgeting/paris-collaborative-on-green-budgeting-hlfp-side-event-july-2018.htm>
- ** <https://www.slideshare.net/OECD-GOV/session-1-scherie-nicol-and-juliane-jansen-oecd>
- *** <http://pubdocs.worldbank.org/en/646831555088732759/FM-Coalition-Brochure-final-v3.pdf>
- **** <https://www.pefa.org/resources/climate-responsive-public-financial-management-framework-pefa-climate-piloting-phase>

This study considers a definition of green budgeting that is more specifically tied to the budget process. Green budgeting is defined as *a budgetary process whereby the environmental contributions of budgetary items are identified and assessed with respect to specific performance indicators, with the objective of better aligning budgetary policies with environmental goals*. This definition seeks to provide a closer link with the budgetary process compared to other existing definitions. It hence excludes from green budgeting some tools such as green balance sheets or green spending reviews, which are not necessarily part of the budgetary cycle. Based on this definition, the paper focuses primarily on identifying approaches whereby the environmental implications of budgetary policies are assessed and presented in budgetary documents. For this study, the work does not encompass impact assessment analyses, but rather examines forms of budgetary tagging or specific identifications of green policies in budgetary documents.

Assessing the greenness of budgetary items is a challenging task. Being able to identify the green content of budgets is a prerequisite for aligning budgetary policy with environmental policies. In some cases, such identification is defined as ‘tagging’ or ‘tracking’ of the environmental content. At present,

no common methodology for tagging or tracking exists.⁵ This is largely due to different facets of the ‘greenness’ concept, which is alternatively considered in terms of *impact*, *contribution* or (*main purpose*). Some due distinctions need to be drawn:

- The impact of a budgetary item on the environment is assessed through an estimation (*ex-ante*) or analysis (*ex-post*) with specific quantitative indicators examined over a specific period of time. For example, this could capture the CO² emissions over a ten-year period of an investment in a new building complex.
- The contribution of a budgetary item to the environment results from a prediction of how the specific item could impact an environmental objective. Differently from the impact, such prediction would not rely on the estimation of specific quantitative indicators, but rather on an *ex-ante* assessment of what could be green or brown. For example, the positive expected contribution of a fuel tax on climate change or pollution. An assessment of a contribution faces challenges related to specific nature of the environmental goals, as discussed in section 2.2.
- The purpose of a budgetary item, instead, identifies the reason and overriding objective underpinning that item. For example, a fuel tax has an environmental purpose, as well as an environmental contribution and an expected impact. However, a tax on cigarettes has health as the main purpose but contributes to the environment with a specific impact, as it reduces pollution from smoke and cigarette-related waste.

Tagging should capture the contribution of budgetary items to green objectives. In the green budgeting context, to grasp the coherence of the budget towards environmental goals, budgetary items are tagged or tracked based on their *contribution* to the environmental goals, rather than their main purpose. Ideally, however, when feasible such tagging should be complemented with more detailed impact assessment analyses. This, however requires more time- and resource- consuming processes, which may be difficult to conduct in the context of annual budget processes.

A few tagging approaches are available. Drawing on the work done in the context of development assistance aid, the EU Commission bases its system on the Rio markers system⁶. This consists of assigning three possible values (or scores), indicating whether climate or environmental objectives are (0) not targeted, (1) a significant objective or (2) a principal objective of the action or expenditure in question. Depending on the value attributed, the following percentages are used 0%, 40% and 100%, respectively. In other contexts, more specific percentages can be applied corresponding to the content of the item that is defined green. In some cases, a binary approach to tagging is foreseen, where the entire cost of the expenditure item is considered green or not green.

2.1. GREEN REVENUE

On the revenue side, the existing definition for environmental revenues is a good starting point. Eurostat defines an environmental tax as a tax on a base with a negative impact on the environment. It typically includes four tax categories: energy taxes, transport taxes, pollution taxes and resource taxes.⁷ Government revenues from the auctioning of emissions permits are also classified as

⁵[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/SBO\(2020\)11&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/SBO(2020)11&docLanguage=En)

⁶ <https://europa.eu/capacity4dev/public-environment-climate/wiki/short-guide-use-rio-markers>

⁷ Under national accounts they are mostly classified under category D.2 (taxes on production and imports). A few environmental taxes are also classified under category D.59 (other current taxes) and category D.91 (capital taxes).

environmental tax revenue.⁸ Non-tax revenue items related to the environment mainly include licence fees, tolls and administrative charges.

Such definition, however, does not always present the contribution to environmental objectives. The definition of environmental taxation does not provide an accurate grasp of the green contribution of government revenues. This is because of the following reasons:

- As some environmental taxes are introduced for non-environmental reasons, for example to generate revenue, a granular examination is warranted to assess their environmental contribution. According to the Energy Taxation Directive (2003/96/EC), for example, the taxation of energy products such as motor fuel, heating fuel or electricity is not based on the carbon dioxide emissions and energy content of the different fuels covered. As such, an electricity tax would not differentiate, for example, between renewable and carbon-intensive sources of electricity.
- A tax introduced for revenue-generating or other purposes could in turn have an environmental impact, not captured in the environmental taxation aggregate. For instance, a cigarette tax or reduced VAT rates on minor repair services (e.g. bicycles, shoes) which contribute to waste reduction objectives.
- Environmental taxation does not account for those tax expenditures with a positive contribution to the environment, for example tax reductions for energy efficient renovations.

All tax categories, whether environmental taxes or other taxes, can include environmentally-harmful tax subsidies. While there is no universally agreed definition of ‘environmentally-harmful subsidy’, academics and policy makers tend to agree that the term covers both direct (e.g. grants) and indirect subsidies (e.g. tax exemptions). Environmentally-harmful subsidies are introduced for various reasons, for example competitiveness and distributional concerns. However, they do affect the resource allocation by favouring more polluting activities at the expense of overall economic efficiency. As a result, they risk counteracting the incentives provided by other environmental policies. In the EU, despite international commitments made in the context of G20 and G7 to phase out fossil fuel subsidies, these subsidies are still substantial and have been estimated to amount to some EUR 50 billion in 2018, almost 20% of revenues from taxes on energy consumption.⁹

2.2 GREEN EXPENDITURE

The nature of the environmental goals is the largest hurdle to identify green expenditure. Challenges to properly pinning-down environmental expenditure and their environmental contribution depend on a number of factors:

- Hidden environmental impacts of several expenditure items that are not explicitly targeting environmental protection, but do have a contribution on the environment. For this, the assessment is more challenging and would need to consider both direct and indirect effects of a specific measure.
- Multi-dimension of the environmental objective, which encompasses a variety of goals, including climate change mitigation, climate change adaptation, pollution abatement and

⁸ According to ESTAT (2013) "Environmental taxes - A statistical guide", the payments for emission permits, issued by governments under cap and trade schemes, should be recorded in the national accounts at the time the emissions occur as "Other taxes on production" (D.29), on an accrual basis. Hence, these payments are considered environmental taxes.

⁹ https://ec.europa.eu/energy/studies_main/final_studies/study-energy-costs-taxes-and-impact-government-interventions-investments_en

biodiversity. A specific spending measure while targeting one specific objective, could also impact other ones. For example, subsidies for organic farming may enhance biodiversity and at the same time contribute to pollution abatement. In some cases, the impact may, however, be favourable for one objective but unfavourable for others. For example, wind farms while very favourable for climate change mitigation can negatively impact biodiversity.

- Various degrees of green, the extent to which a measure is likely contribute to the environment. An expenditure measure could exert environmental pressure to different degrees. Some can be *fully* green (i.e. a largely green contribution), usually when their primary purpose is the environment. But some can be *slightly* green. For example, the payment for the renovation of a public building which would conform to new energy standards would not be fully green, as some elements of the renovation would arguably not be spent on energy efficiency. Such identification of degrees of green would require a more profound understanding of impacts.
- Moving targets of environmental pressures and additions of new environmental objectives. In many cases, environmental objectives feature moving targets, which change over time. This implies that a measure considered green before 2030, may no longer be green after that. For example, the use of some specific bio-fuels that have to be combined with fossil fuels to be viable. While at present their use could still entail a sizeable reduction of green-house gas emissions¹⁰, they will not contribute to a zero net-emission target. This applies to many activities and expenditure that could be used on a *transitional* basis until zero-emission options can be deployed more widely. These are activities unfavourable to the environment but have a ‘greening’ impact as they would still pollute less than other available activities (e.g. natural gas as opposed to coal; or public transport based on fossil fuel which is a ‘greener’ options than private transport). An additional problem associated with transitional activities is a possible lock-in effect, which would apply whenever a technology cannot be easily dismantled.

3. MEMBER STATES' EXPERIENCES

This section reviews existing green budgeting practices in the EU. Information was gathered through a broad screening of budgetary documents published over the last few years and structured interviews with national counterparts. In a few cases, the information was complemented with results from the joint OECD-EU survey on green budgeting.¹¹ The screening aimed to identify whether and how the green contribution and impact of expenditure items is highlighted in budgetary documents (e.g. dedicated section, tables, annexes). Overall, information was gathered for a handful of Member States (Finland, France, Ireland, Italy and Sweden). Approaches to green budgeting in the EU budget are also reported. For Denmark and the Netherlands, this section highlights some important information on the role of their climate and environmental independent institutions.

Overall, the evidence gathered points to a wide variety of practices across countries. From the review, it emerges that, with the exception of Italy, most of these practices are very recent, and have started only in the last five years or later. Practices diverge quite substantially with respect to the items covered, the underpinning methodologies used and the governance structure in place. In most cases, ex-post assessment or validations are missing and public attention remains limited.

¹⁰ If their production does not crowd out other valuable ecological systems.

¹¹ OECD 2021 (forthcoming) and European Commission (2021), Report on Public Finances in the EMU 2020, https://ec.europa.eu/info/publications/report-public-finances-emu-2020_en

3.1 COVERAGE

Coverage of green budgeting encompasses the coverage of environmental objectives, budgetary items and the public sector:

As regards environmental objectives, Ireland examines climate-related expenditure while Italy, Finland, France, Sweden and the EU budget consider also other environmental dimensions. In particular, Italy tags expenditure based on the UN Classification of Environmental Protection Activities (CEPA) and on the UN Classification on Resource Management Activities (CReMA). Meanwhile, France considers the following six dimensions for environmental objectives, aligned with the objectives of the EU Taxonomy for Sustainable Activities: climate change mitigation, climate change adaptation, water resource management, circular economy and waste management, pollution abatement, biodiversity and landscape protection.¹² In Finland, the budget presents appropriations for the use of renewable energy, emission reductions and biodiversity and environmental protection.¹³ Similarly, in Sweden the budget presents allocations for environmental protection, nature conservation and climate action. The EU budget tagging exercise covers climate change (with distinction between adaptation and mitigation where possible), biodiversity objectives and clean air.

As regards budgetary items, France looks systematically at planned expenditure, earmarked-revenue and some tax expenditures in its budgetary tagging exercise; and looks at both favourable and unfavourable items. This is done in one of the annexes to the Budget Law, the ‘Yellow Book on the Environmental Impact of the State’¹⁴. The Yellow Book also contains a chapter focused on the taxation system, where the environmental impacts of specific revenues go well beyond those traditionally captured by the statistical accounts on environmental taxation. Italy tracks green expenditure in its budgetary plans and in the execution reports. Information on tax expenditure is produced by the Ministry of Environment (hence not attached to budgetary documents) in their annual catalogue of environmental subsidies, both favourable and unfavourable to the environment.¹⁵ Ireland presents allocated expenditure favourable to the environment in its Revised Estimates for Public Services. Covering the revenue side is being developed. In Sweden and Finland, presentation of green items is done in the planned budget documents with an outline of specific allocations for the environment. In Sweden, the Budget Act requires the government to present an account of the results achieved with respect to the targets adopted in the budget.

As regards the public sector, in all countries reviewed the coverage is limited to the central budgetary authority, with spending of sub-national governments or other general government entities not accounted for. In some countries, selected municipalities are however applying a sort of green budgeting (and mainstreaming) approach (e.g. Heidelberg, Dresden, Bologna).¹⁶

3.2 METHODOLOGY

Several approaches are used to identify green budgetary items across different Member States. Such diverse approaches reflect indeed different definitions of what is green. As mentioned, these relate to the concept of impact, contribution or main purpose in different ways. In some cases, environmental contributions are captured through a fully-fledged budgetary tagging exercise (France, Ireland, Italy and the EU budget), which implies the screening of the entirety or a large part of the budget to detect possible environmental contributions, including for those budgetary items that have

¹² https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en#regulation

¹³ <https://valtioneuvosto.fi/en/marin/government-programme/carbon-neutral-finland-that-protects-biodiversity>

¹⁴ https://reporterre.net/IMG/pdf/2021_budget_vert.pdf

¹⁵ <https://www.minambiente.it/pagina/catalogo-dei-sussidi-ambientalmente-dannosi-e-dei-sussidi-ambientalmente-favorevoli>

¹⁶ <https://webcentre.ecobudget.org/about-ecobudget/history/>

no green or brown purpose (e.g. a tobacco tax). In other countries, instead, only specific environmental budgetary allocations are presented, in a sort of light tagging exercise (Finland and Sweden). Furthermore, the level of granularity at which items are identified tends to be at levels of subcategory of programmes, which makes comparison across countries quite difficult as presentational approaches differ. This implies that comparability across countries is hindered by differences in scope.

- **France** tags as ‘favourable’, ‘neutral’ or ‘unfavourable’ each budgetary mission (or budgetary line) for each environmental objective. A *mission* can be considered as a sub-category of a programme. For example, a mission could be ‘railways’ under the programme ‘ecology and sustainable development and mobility’. The same programme also includes earmarked tax revenues, e.g. ‘air pollution tax’ and some specific tax expenditure, e.g. ‘reduced rate for electricity consumed by public rail and road transport’. A distinction of the contribution by environmental objective implies that a mission could be at the same time favourable for an objective and unfavourable for another one. For example, the EUR 4.7 billion spent on railways are assessed to be favourable for climate mitigation and pollution abatement but are assessed as unfavourable for water and waste management and for biodiversity. Hence, the item is classified as mixed.
- **Italy** presents its green budgeting reports by activity of environmental protection (CEPA) and of resource management (CReMA). The CEPA classification includes activities whose main purpose is prevention, reduction and elimination of pollution, while the CREMA classification includes activities whose main purpose is preserving and maintaining the scope of natural resources and their safeguarding against depletion.¹⁷ The two classifications complement each other and allow for a comprehensive and detailed treatment of the environmental goals. To account for different contributions to an objective, the Italian authorities assign a weight (a percentage), first, to each action of a programme in order to express the extent to which it contributes to the environment at large and, then, to each specific objective. For example, only 39% of the investment for specific forestry activities to protect against wild fires are considered as contributing to the environmental objective. Within these 39%, about 40% contribute to forest management (CReMa 2), about 20% contributes to protection of soil (CEPA 4) and another 20% to protection of biodiversity and landscapes (CEPA 6). High granularity in the way the budget appropriations are presented and reported helps to accurately pin-down the green content of the budget (see Box 3).

¹⁷ More precisely, CEPA includes the following categories: protection of air and climate, wastewater management, waste management, protection of soil, groundwater and surface water, noise and vibration abatement, protection of biodiversity and landscapes, protection against radiation, research and development, other environmental protection activities. CReMA instead includes management of waters, management of forest resources, management of wild flora and fauna, management of energy resources, management of minerals, Research and Development activities for resource management and other non-classified activities.

Box 3: SCREENING OF GREEN EXPENDITURE IN ITALY

This box provides an example of a green budgeting process with a granular screening methodology and broad-based governance structure. As required by the Italian law 196/2009, a specific document published in 2011 provides a detailed methodology to guide the public administration in the assessment of the greenness of items, providing definitions, classifications and instructions on how to apply them to specific actions. It also highlights challenges in case of uncertainties and suggestions on how to treat them.

Budget structure: In Italy, the budget is divided in 34 missions which capture the main functions and strategic objectives of public spending, i.e., ‘firms’ competitiveness and development’, ‘justice’ or ‘public infrastructure and logistics’. Each mission is composed by programmes, which for the Budget 2020 amounted to 103, with 1 to 13 programmes per mission. For example, the mission “firms’ competitiveness and development” includes “incentives to the national production system” and “fight against counterfeiting and protection of industrial properties”. Each programme, and corresponding funds, are assigned to a unique “**accountability centre**” (“*centro di responsabilità*”), with the exception of two programmes which are shared among several centres due to their strategic importance. Accountability centres correspond to the first level of internal organisation of each ministry, defined as “Department” or “Directorate General” depending on the ministry (“*dipartimento*” and “*direzione generale*”, respectively). Each programme is also assigned to a second level of functional classification in order to facilitate data transmission and international comparison. Funds allocated to each programme are divided into actions, which further specify the expenditure typology, with the purpose of further clarifying the corresponding activities, policies and services.

Screening methodology: The screening of expenditure items for the *eco-report* entails the following steps:

1. Identifying actions that (i) exclude environmental expenditure with certainty; (ii) include environmental expenditure with certainty, distinguished in exclusively environmental expenditures and expenditures that pursue environmental and other purposes (e.g. research and study activities); (iii) include environmental and non-environmental expenditures; (iv) include expenditures whose final purpose is not certain.
2. Analysis of the operating costs for those expenditures whose final purpose is not certain, to dissect what can be reclassified into environmental expenditure. When the responsibility centre has no clear evidence of how the funds have been spent, for example in case of transfers to subnational governments, no environmental expenditure is assumed.
3. Re-classification of the actions that include environmental expenditures in accordance to the CEPA-CReMA classification. Flagging of multi-scope items, i.e., actions that can include environmental expenditures under more than one category of the CEPA-CReMA classification.
4. Assigning two kinds of percentages: the share of resources dedicated to environmental expenditure and the percentage of environmental expenditure attributed to the CEPA-CReMA categories and sub-categories.

The *eco-budget* is produced by the Ministry of Finance alone, with no participation from the accountability centres. Based on the funds allocated to each spending programme and action by the budget law, and considering the corresponding share of environmental spending as determined in previous exercises and eventually reviewed based on the latest *eco-report*, the Ministry of Finance estimates environmental expenditure in the following year.

Governance structure: The production of the “eco-budget” and “eco-report” are coordinated by a small team in the Ministry of Finance. Before the production of the first “eco-report” in 2000, the Ministry of Finance promoted an information campaign for all ministries over several months in order to raise awareness and ownership of the exercise, and to ensure a good knowledge of the methodology and the classification criteria to be used. At the beginning of the exercise the Ministry of Finance reviewed the definition of all “actions” and tentatively assigned to each of them a share of environmental expenditure, also distinguishing whether such expenditure pursues exclusively environmental goals or also other

purposes. This tentative classification was shared with the “accountability centres”, which amended the classification based on their direct knowledge of how the allocated funds were actually spent. The attribution of the share of environmental expenditure for each action ultimately depended on the accountability centres. The same approach is followed for any amendment to the structure and scope of budgetary programmes and actions, with the Ministry of Finance proposing a tentative classification to the accountability centres.

Calendar: The preparation of the *eco-report* starts in April, when all administrations (i.e., the accountability centres) are requested to report the actual share of environmental expenditure for each action based on funds spent the previous year. Throughout April and May, the Ministry of Finance examines these reports and then the *eco-report* is released in June. The *eco-budget* is produced over the autumn by the Ministry of Finance and then published in December with the budget. Both the *eco-report* and the *eco-budget* are presented to the parliament as part of the annual budgetary cycle.

- **Ireland** tracks climate-mitigation appropriations and a specific climate–adaptation appropriation (spending on flood defensive and coastal floods). The identification of the degree of greenness is done through a detailed examination of content. As the green budgeting approach is still under development, the first exercises focused exclusively on those items that were unambiguously climate-related.¹⁸ This implied the exclusion of significant areas of government expenditure that are likely to be climate-related, but where the climate-related aspects could not be separated from wider programme expenditure (for example, expenditure on research and development or capital improvements to schools). While not currently done, the Irish green budgeting approach aims however at capturing different degrees of green. To achieve this, more granularity in the departments’ budgetary submission would be needed.
- **Finland** reports all the appropriations that explicitly promote a broad variety of environmental objectives: the use of renewable energy, biodiversity and the wellbeing of the environment and nature, emissions reduction, bio-economy solutions and developing Finland into a low-carbon society.
- In **Sweden**, assessments of climate and other environmental impacts are required when preparing proposals for the budget. The Climate Act from January 2018 integrates climate objectives into budgetary decision making on top of reporting requirements on how the budget and policy execution contribute to environmental goals set by parliament (as stipulated in both the Budget Act and the Climate Act). The budget itself presents allocations of selected climate and environmental related expenditure. As part of the four-yearly climate action plan, required by the same Climate Act of 2018, further climate mainstreaming of the budget has been proposed in December 2019, calling for greater efforts to integrate climate policy into all relevant policy areas. This would involve reviewing all relevant legislation to ensure that the climate policy framework has an impact and in connection with the review of each societal objective, it would involve reformulating the objectives to ensure they are in line with the climate objectives.
- **The EU budget** mainstreams climate expenditures in its 2014-2020 long term budget (multiannual financial framework), with a 20% target of its expenditures to be dedicated to climate objectives, with no distinction between mitigation and adaptation. To track climate expenditures, the Commission has developed the “EU Climate markers”, based on the

¹⁸ In these exercises, government expenditure are considered to be climate-related only “where it is evident that all, or at least the majority of investment in the programme in question, will support improved climate and environmental outcomes.”

internationally recognised “Rio-markers”. By using this methodology, a full (100%) or a partial (40%) or a null (0%) contribution to the climate and biodiversity objectives is assigned at the lowest possible level of expenditure, depending on the management mode (e.g. per each item in direct management, where the Commission has all the relevant information, per category of intervention in cohesion policy items where the implementation is done at Member State level).¹⁹ The same methodology has been developed to track biodiversity and – since 2020 – clean air expenditures.

Only few methodologies include the treatment of unfavourable (‘brown’) spending. Information on the publication of unfavourable spending deserves a separate treatment. Existing environmental accounts or functional classifications do not cover unfavourable spending, and harmful subsidies are not reported by Eurostat (see Annex B). However, work is in progress at the EU and international levels for some standards on how to measure and report them. As mentioned, France conducts a brown tagging of its budgetary items, even for those whose environmental impacts are usually considered green. Since 2017, the Italian Ministry of Environment publishes an annual publication of all environmentally-related subsidies, including harmful and favourable ones²⁰. In 2017, the Irish Central Statistical Office published a report on fossil fuel subsidies for the period 2012-16²¹. Finally, Finland includes in its chapter on climate change and sustainable development a qualitative assessment of environmentally harmful subsidies and an overall estimate of their amount. The subsidies include appropriations, taxes and tax expenditures.

Only in few cases is the screening of budgetary items complemented by more overarching impact assessment analyses. In France, the Yellow Book on the Environmental Impacts of the State Budget contains, in addition to the expenditure tagging results, an assessment of the adequacy of planned investments (both private and public) vis-à-vis identified spending needs for the ecological transition. Furthermore, it features information on the tax system, its impacts on environmental objectives and on economic agents. Italy presents in the context of its Stability Programme, a Climate Annex which provides assessments of how policies are meeting targets in emission reduction and an annex on well-being and sustainable development with climate-related indicators and land protection indicators.

3.3 GOVERNANCE

Green budgeting approaches are established in budget laws, ordinary laws, climate acts or government decrees.

- In **France**, Budget law 2018-1317²² of 28 December 2018, requires the presentation to the Parliament of the annex to the draft budget titled ‘financing the ecological transition: the economic, fiscal and budgetary instruments for the environment and the climate’. It provides additional details on the content of the report and requires presenting the report to the National Council of the Ecological Transition and to the Economic, Social and Environmental Council. It also mandates the government to develop a ‘green budgeting’ methodology for the comprehensive treatment of favourable and unfavourable items in the budget.

¹⁹ This discussion does not cover the climate tracking for 2021-2027 period, which includes what is required under the Recovery and Resilience Fund.

²⁰ <https://www.minambiente.it/comunicati/online-il-catalogo-dei-sussidi-ambientalmente-dannosi-e-favorevoli-2017>

²¹

https://www.cso.ie/en/media/csoie/releasespublications/documents/rp/fossilfuelandsimilarsubsidies/Fossil_Fuel_and_Similar_Subsidies.pdf

²² <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000037882341&categorieLien=id>

- In **Ireland**, green budgeting was introduced with the announcement of the Minister of Public Expenditure at the time of the 2019 Budget, that Ireland would track climate-related expenditure starting with the Revised Estimates for Public Services Volume 2019.
- In **Italy**, law 196/2009 requires the publication of the eco-report as an annex to the budget execution statement. No legal provision is behind the publication of the eco-budget. The law also establishes that line ministries and agencies submit the information to the Ministry of Finance according to accounting and reporting rules specified by the Ministry of Finance in a memorandum²³.
- In **Finland**, the Ministry of Finance decree on the preparation of the 2017 budget required to publish alongside the budget a chapter on climate change and sustainable development.
- In **Sweden**, the 2018 Climate Act requires the government to present a climate report in its Budget Bill²⁴.
- In the **Netherlands**, the 2017 Climate Act requires the government to report on progress towards the goals as enshrined in the climate law on an annual basis, including through the provision of the budgetary impact of climate- and energy-related policies²⁵.
- In the **European Union**, the 2020 “Interinstitutional agreement”²⁶ establishes a 30% target for climate expenditures and an increased ambition for biodiversity expenditures, in line with the European Green Deal policy framework and the “do no significant harm” principle. The agreement also calls for a transparent and effective methodology, improved reporting and a “climate adjustment mechanism” to ensure that the targets will be met.

In most cases, the Ministry of Finance takes the lead and cooperates with line ministries.

- In **France**, the development of the green budgeting methodology was conducted by a mission composed by the General Inspectorate of Finances (IGF) and the General Council for the Environment and Sustainable Development (CGEDD). The Yellow Book is developed by the IGF based on an interministerial discussion with ministries and agencies.
- In **Ireland**, the climate action unit at the Department of Public Expenditure and Reform (DPER) is tasked with, among others, the climate tracking of expenditure. DPER gives very clear indications to line ministries and works closely with those involved in the process. Discussions on climate-related spending between DPER and line ministries take place from October (after the publication of the draft budget) to December (when the budget is discussed and adopted in Parliament).
- In **Italy**, a 2011 Memorandum provides a detailed methodology to guide line ministries in the assessment of the greenness of items. It explains definitions, classifications and how to apply them to specific actions. Every year the Ministry of Finance issues a budget circular in March with requirements and deadlines for reporting by mission, programme, action and chapters on

²³ <http://www.rgs.mef.gov.it/Documenti/VERSIONE-I/Attivit--i/Rendiconto/Ecorendiconto/Ecorendiconto2011.pdf>

²⁴ <http://www.swedishepa.se/Environmental-objectives-and-cooperation/Swedish-environmental-work/Work-areas/Climate/Climate-Act-and-Climate-policy-framework/>

²⁵ https://ec.europa.eu/energy/sites/ener/files/documents/nl_final_necp_main_nl.pdf

²⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.LI.2020.433.01.0028.01.ENG>

all expenditures with an environmental content. All administrations have to report the actual share of environmental expenditure for each action, which is then reviewed by the General Accounting Office of the Ministry of Finance. The eco-report is prepared in April and May, with the publication usually taking place in June.

- In **Finland**, each year at the onset of the budget preparation, the Ministry of Finance issues an instruction letter to ministries on how to include an analysis of their appropriations and connections with sustainable development in their proposal. The chapter on sustainable development is then drafted by the Ministry of Finance.
- In **Sweden**, the report of results in the Budget Bill of “green” taxes and expenditures as well as the assessment of potential impacts of reforms represent a collaborative work among ministries based on documentation from governmental agencies, including the Climate Policy Council.
- For the **EU budget**, the Climate and the Budget Directorate Generals (DG) lead the work on the methodology and reporting, while the Budget DG steers the discussion on the green expenditures. The markers are assigned by the lead DG at the most appropriate level of programme depending on specific design and management modes of programmes. For funds under shared management with Member States special instructions apply to defining markers and data collection.

3.4 DELIVERABLES AND TRANSPARENCY

Presentational practices in budgetary documents are quite different in scope and content. Most reports on green budgeting are published as annexes to budgetary plans.

- The **French** Yellow Book is a document annexed to the draft budget, published in September. The Yellow Book on the environmental impact presents i) the budgetary tagging for expenditure, revenue and tax expenditures, with a description of the methodology used; ii) public and private financing of the ecological transition and an assessment of their impacts; and iii) an evaluation of tax policy and its impact on households and companies.
- The **Irish** Appendix VII of the Revised Estimates Volume for 2021 on climate related expenditure consists in a table detailing by departments and for specific sub-headings of scheme or programme the appropriations for 2020 and 2021 for climate action (mostly mitigation). Similarly, the same Appendix details categories for environmental protection spending. A 2021 green budgeting report is in the pipeline.
- In **Italy**, two reports are published annually, the eco-budget report as part of the draft budget and the eco-execution report as part of the budget execution documentation. As mentioned, both documents report information by environmental protection (CEPA) and resource management (CReMA) classifications. Expenditure is also reported by ministry. In addition, the eco-execution provides a detailed disaggregation of expenditure items into current, capital and other major spending categories (e.g. taxes on production, transfers to families and enterprises), while the eco-budget features more aggregated categories (capital transfers, capital investment, current transfers, current investment). For the eco-budget there is a medium-term horizon of t+2. The eco-execution report provides information on the flow of financing in its different phases for each environmental category, starting from the unspent allocations (from previous budgets) to the new allocation (and possible in-year variation), going to commitments, and then payments.

- The **Finnish** draft budget includes a chapter on climate change and sustainable development that outlines the appropriations promoting the following green targets: i) the use of renewable energy, ii) biodiversity and protection of the environment and nature, iii) emissions reduction, iv) bio-economy solutions and v) developing Finland into a low-carbon society. The chapter also covers taxes that are significant in terms of the goal of a carbon-neutral Finland, such as energy or vehicle taxes. Furthermore, it includes a qualitative assessment of environmentally harmful subsidies on the basis of earlier studies and an estimate of their amount.
- The **Swedish** climate report in the budget bill presents: a report of the development of greenhouse gas emissions, a report of the policies which will have the largest impact on emissions throughout the year, as well as an assessment of whether government's policies will be enough to meet the national climate targets. Regarding the environmental goals in a broader sense, the Budget Act requires the government to present an account of the results that have been achieved with respect to targets adopted by the Riksdag in the Budget Bill.
- For the **EU budget**, a consolidated section on climate and biodiversity mainstreaming is presented in the Draft Budget statement of estimates.²⁷ Within this section, the methodology is explained and tables are provided with amounts of commitment appropriations since 2014 for both climate and biodiversity, by programme for each of the seven headings of the European Budget. In the Programme Statement of Operational expenditures, each budget programme reports information on expenditures, performance and achievements for both priorities for all the EU long term budget. In the Annual Management and Performance Report, the Commission reports how much of the previous year voted budget has been spent on climate and biodiversity.²⁸

In most cases, ex-post validations and/or evaluations are missing. In most countries reviewed, there does not seem to be a validation process of the green items by auditors or third parties. In **Italy**, the general execution document is indeed sent to the court of auditors for validation and within this is also the *eco-report*. As regards evaluations of specific policies, the **Irish** government undertakes regular, in-depth assessments of specific spending programmes, including climate related expenditure programmes. For example, in 2019 the Department of Public Expenditure and Reform undertook and published a review of all the government incentives available to support the take-up of electric vehicles. Some ex-post assessment of programmes funded by the carbon tax increase are also being considered. For the **EU budget**, there is not a systematic validation. Nevertheless, the European Court of Auditors has issued some regular assessments for climate tracking and will soon issue one for biodiversity, both at EU budget level and for specific programmes.²⁹

In most cases, public attention to these reports could gain more grounds. In **Italy**, there is an obligation to present the eco-report and the eco-budget to the national parliament as part of the annual budgetary cycle. In **Ireland**, the programmes related to green budgeting are discussed and voted in the parliament and then published in the Revised Estimates. In **France**, the parliament seems to be quite attentive to the issue as it mandated the report which is discussed within the budgetary discussions.

²⁷ https://ec.europa.eu/info/publications/statement-estimates-2020_en

²⁸ https://ec.europa.eu/info/sites/info/files/file_import/annual-management-and-performance-report-2018_en_1.pdf

²⁹ Special report No 31/2016: Spending at least one euro in every five from the EU budget on climate action: ambitious work underway, but at serious risk of falling short, <https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=39853>

3.5 THE ROLE OF INDEPENDENT EXPERTS

As part of their climate frameworks, some Member States have established independent bodies in charge of issuing advice to governments, monitoring their climate policies and assessing coherence of these policies with the government's overall strategy.

The **Irish** 2019 Climate Action Plan has led to the establishment of a Climate Action Delivery Board (CADB), a climate watchdog in charge of scrutinising the implementation of more than 180 actions set out in the Plan. The CADB is responsible for driving the implementation of the Plan and meets regularly with each governmental department and public body to clearly outline their responsibilities in the Plan. The CADB presents a delivery report to the cabinet on a quarterly basis and discusses and publishes a progress report to be presented to the cabinet each year. It is chaired jointly by a Secretary General to the Government and a Secretary General of the Department of Communications, Climate Action and Environment.³⁰

In November 2018, **France** established its High Council for Climate (HCC),³¹ an independent body attached to the office of the prime minister. The HCC provides independent advice on climate, especially on coherence of different public policies with respect to the Paris agreement. It is particularly engaged in three policy sectors: the reduction of GHG emissions, development of carbon sinks, and reduction of carbon footprint. It publishes annual reports on GHG emissions in France and on compliance with the GHG emission reduction targets. These reports assess current and planned policies and provide recommendations. Every five years, the Council publishes a report on the carbon strategy of the country. The HCC is composed of 12 members with expertise in climate, economics, agronomics and energy transition.

In the **Netherlands**, the 2019 national climate agreement comprised a set of measures to reduce GHG emissions by 49% by 2030.³² The governance framework for the achievement of these targets is described in the national climate act. The act also mandates the drafting of a national climate plan every 5 years and tasks the Environmental Assessment Agency with the role of climate watchdog, i.e., to assess whether the government remains on track to reach its reduction targets. Within this, the Netherlands Bureau for Economic Policy Analysis (CPB) has the task to assess the fiscal impact and possible macroeconomic impacts through the income channel of any climate policy measure (see Box 4). According to their assessment, the measures related to the climate agreement will increase public expenditure on climate and energy policy by EUR 3.9 billion (around 0.5% of current GDP) annually by 2030, whereas the tax burden will increase by around EUR 4.6 billion (also around 0.5% of GDP).³³

As part of its 2017 climate policy framework, **Sweden** established a Climate Policy Council (CPC), tasked with providing an independent assessment of how the overall policy presented by the government is compatible with the climate goals of the Climate Act.³⁴ As an independent scientific council, the CPC is responsible for (i) evaluating whether government policy in different areas contributes or counteracts climate goals, (ii) reviewing the effects of both existing and planned policies from a broad societal perspective and, (iii) identifying areas where additional measures need to be taken. The CPC counts eight members, selected by the government, of which one chair and one vice chairperson. These members are supported by an office with three full-time employees.

³⁰ <https://assets.gov.ie/10206/d042e174c1654c6ca14f39242fb07d22.pdf>

³¹ <https://www.hautconseilclimat.fr>

³² Ministry of Economic Affairs and Climate (2019), *Integraal Nationaal Energie- en Klimaatplan 2021-2030 Nederland*

³³ CPB Netherlands Bureau for Economic Policy Analysis (2019), *Doorrekening Klimaatakkoord*, CPB Netherlands Bureau for Economic Policy Analysis, The Hague.

³⁴ <https://www.government.se/495f60/contentassets/883ae8e123bc4e42aa8d59296ebe0478/the-swedish-climate-policy-framework.pdf>

Denmark established its Council on Climate Change (CCC) in 2014. The CCC provides advice on cost-effective climate policies, trying to ensure that efforts for lower GHG emissions are fairly balanced with welfare and development goals. To this end, the CCC provides recommendations based on independent analysis with a short, medium and long-term strategy horizon; it evaluates implementation to meet national and international climate goals, and contributes to the public debate. The CCC is composed of six members and a chair appointed for a four-year term by the Minister of Climate and Energy.³⁵

In **Finland**, the Climate Change Panel (CCP) was established in 2012 as an independent and interdisciplinary think-tank. It is tasked with assessing the coherence of climate policy and the sufficiency of the implemented measures to answer the challenges of climate change. It provides its opinion on climate policy plans and serves as an advisor to the Finnish ministerial working group on energy and climate policy. The CCP has 14 experts and a chair.³⁶

³⁵ <https://klimaraadet.dk/en/about-danish-council-climate-change>

³⁶ <https://www.ilmastopaneeli.fi/en/>

Box 4: CLIMATE AND FISCAL WATCHDOGS AT PLAY: THE CASE OF THE NETHERLANDS

The Netherlands adopted a national climate agreement in June 2019. The agreement is composed of a cohesive set of policy measures aiming at reducing GHG emissions by 49% by 2030 compared to 1990 and by 95% by 2050, in a cost-effective manner.* Short-term measures include: (i) a shift in energy taxes for households to more sustainable sources of energy; (ii) a shift in taxes from households to businesses for the financing investment in sustainable energy; (iii) a carbon tax and subsidy scheme for the industry by 2021; and (iv) various changes in taxes and subsidies in the automotive sector. Longer-term measures include the shutdown of all coal-fired power plants by 2030 at the latest; making 1.5 million buildings run on sustainable energy sources by 2030; and requirements for new cars to be ‘zero emission’ by 2030.

The national climate act adopted in July 2019 provides a governance framework for the achievement of the climate agreement targets as well as a commitment to 100% CO₂-neutral electricity generation by 2050. The climate act also mandates that a national climate plan is to be drafted every 5 years, with the 2019 national climate agreement forming the basis for this first national climate plan. The climate agreement also formed the basis for the Netherlands’ National Energy and Climate Plan for the period 2021–2030.

The climate act tasks the Environmental Assessment Agency with the role of climate watchdog, i.e. providing annual domestic GHG emission forecasts to assess whether the government remains on track to reach its reduction targets as enshrined in law. The first of these assessments was published in November 2019, with the Agency concluding that while the current policy mix is ambitious, it falls slightly short of the 49% target with an estimated reduction of 43-48% by 2030, mandating additional measures to meet the 2030 target.** In parallel, the Agency also published an overview of fiscal measures in the 2020 Draft Budgetary Plan related to the national climate agreement, thereby listing budgetary items that explicitly contribute to the greening of the economy.*** The government has also committed itself to report on progress towards the goals as enshrined in the climate law on an annual basis, including through the provision of the budgetary impact of climate- and energy related policies.

The direct fiscal implications of the ambitious GHG reduction targets under the climate agreement appear overall modest. In this regard, the Netherlands Bureau for Economic Policy Analysis (CPB) has the task to assess the fiscal impact and possible macroeconomic impacts through the income channel of any climate policy measure. According to their assessment, the measures related to the climate agreement will increase public expenditure on climate and energy policy by EUR 3.9 bn (around 0.5% of current GDP) annually by 2030, whereas the tax burden will increase by around EUR 4.6 bn (also around 0.5% of GDP).**** Around 60% of this added tax burden will be borne by businesses, with the remaining 40% to be borne by households. The cumulative drag from the climate agreement on household disposable income is projected to remain limited, amounting to a total of 1% of disposable income by 2030.

* Ministry of Economic Affairs and Climate (2019), *Integraal Nationaal Energie- en Klimaatplan 2021-2030 Nederland*

** <https://www.pbl.nl/publicaties/het-klimaataakkoord-effecten-en-aandachtspunten>

*** https://www.pbl.nl/sites/default/files/downloads/pbl-2019-bijdrage-instrumenten-belastingplan-2020-aan-co2-effecten-klimaataakkoord_3842.pdf

**** CPB Netherlands Bureau for Economic Policy Analysis (2019), *Doorrekening Klimaataakkoord*

4. CONCLUSION

While the climate debate has taken centre stage in the policy debate, green budgeting practices in the EU are limited and display different methodological approaches. From a review of budgetary documents of EU Member States, only few Member States appear to currently implement some form of green budgeting. These are Finland, France, Ireland, Italy and Sweden and to a certain extent also Denmark and the Netherlands. In addition, a green budgeting exercise for climate and biodiversity objectives is conducted for the EU budget. The degree at which the environmental impacts of the budget are identified differs substantially across countries. France, Italy and the EU budget apply a form of *green tagging* covering the entirety or a large set of budgetary allocations and screening them with respect to specific objectives. The same exercise is being developed and applied in Ireland. For Finland and Sweden, the budget explicitly outlines budgetary allocations with environmental objectives, in a sort of *light tagging* exercise.

The practices also diverge with respect to the coverage, governance and transparency and accountability settings. Only in France and Italy, the entirety of the environmental objectives is covered, while only some selected objectives, particularly climate-related, are covered in the other budgetary practices examined. In most cases, only planned expenditure figures are reported, particularly those with green impacts, whereas presentations of brown impacts or on the revenue side, including tax expenditure, are quite limited. Furthermore, the exercise encompasses the central budgetary authorities with no information on spending or revenue raising activities from local governments or state-owned enterprises. The governance of the process can be more centralised (France) or decentralised, hence in this case considering more involvement of line ministries (Italy and Ireland). Little use is made of independent experts and reports are not subject to systematic and independent assessments or reviews.

The evidence reported highlights some key elements and institutional features that tend to frame green budgeting practices. In reviewing specific cases, four key elements emerge as distinguishing features necessary to define and implement green budgeting: (i) the coverage of environmental objectives, budgetary items and general government; (ii) the methodology for identifying the contributions to green objectives; (iii) the governance (*who does what?*); and (iv) transparency and accountability tools.

By presenting evidence on green budgeting practices, this paper contributes to building an informed view in order to promote best practice. The paper refines and clarifies concepts, while highlighting benefits and limitations of each approach reviewed. In doing so, some grey areas remain. Firstly, a broader and more refined understanding would be warranted of what is a green budgetary item. Secondly, while much emphasis has been placed here on inputs to the budget, a more structured approach to the assessment of outcomes of budgetary policies should follow. This may mean a deeper reflection on impact assessment analyses, which have not been examined in the study. Finally, budgetary policies are only one tool for reaching environmental goals, and for a more complete assessment of environmental policies and their impacts, other tools should be examined, such as regulations and procedures not underpinned by budgetary allocations.

ANNEX A: COUNTRY FICHES

France

France has taken some important steps in relation to green budgeting over the past few years. In December 2017, France launched the Paris Collaborative on Green Budgeting jointly with Mexico and the OECD. In November 2018, a High Council for Climate was established to provide independent advice to the government on climate issues. Furthermore, in 2019, the government took two important initiatives to mainstream environmental goals in the budgetary process. Firstly, as mandated in the 2018 Budget Law (Law 2018-1317), it published a *Yellow Book* as an annex to the 2020 draft budget, titled ‘*Financing the Ecological Transition: the economic, fiscal and budgetary instruments in support of the environment and climate*’.³⁷ Secondly, the General Council for the Environment and Sustainable Development (CGEDD) and the General Inspectorate of Finance (IGF) developed a new methodology for the identification of green expenditure items within the budget. The work of these two initiatives fed then into the September 2020 *Yellow Book*, annexed to the 2021 Budget Law, titled ‘*The Environmental Impact of the State Budget*’.³⁸

The yellow book covers both budgetary information and policy strategies, featuring also an impact assessment on households and businesses. The *Yellow Book* is a first attempt to ensure overall consistency and transparency across the budget as regards ecological/environmental impacts. As established by law (Law 2018-1317), it presents i) the budgetary tagging for expenditure and tax expenditure, with a description of the methodology used; ii) public and private financing of the ecological transition and an assessment of their impacts; iii) an evaluation of tax policy and its impact on households’ purchasing power and on enterprises’ costs of production and margins.

Budgetary tagging captures favourable and unfavourable contributions for six environmental objectives. The following six objectives are considered for the ecological transition, which largely match those of the EU Taxonomy for Sustainable Activities: climate mitigation, climate adaptation, water management, waste management, pollution abatement and biodiversity and protection of landscape. Each budgetary mission, revenue and tax expenditure, under a specific programme, is then assessed as ‘favourable’, ‘unfavourable’ or ‘neutral’ with respect to each of these objectives. When an item has then favourable and unfavourable contributions then the item is defined as having a ‘mixed’ impact.

Overall, green expenditure amounts to EUR 38.1 bn in 2021, 6.6% of total expenditure. Out of a total expenditure planned for 2021 of EUR 574.2 bn, EUR 52.8 bn are identified as having an environmental impact, corresponding to 9% of the total. Within this, 6.6% have a favourable impact on the environment, 0.8% a mixed impact and 1.7% an unfavourable impact (Table A1). The favourable impacts are mostly associated with budgetary expenditure, while unfavourable impacts are mostly associated with tax expenditure. EUR 488.4 bn are budgetary expenditure and EUR 85.8 bn are tax expenditure. About 8.5% of budgetary expenditure have an environmental impact (EUR 41.8 bn) and about 12% of tax expenditure have an environmental impact (EUR 11 bn). Environmental expenditure is mostly favourable for budgetary expenditure but mostly unfavourable for tax

³⁷ https://www.performance-publique.budget.gouv.fr/sites/performance_publique/files/farandole/ressources/2020/pap/pdf/jaunes/Jaune2020_transition_ecologique.pdf. Several documents are published jointly with the French draft budget. These include *blue books* (*bleu budgetaires*), *yellow books* (*jaune budgetaires*) and transversal or cross-cutting policy documents. The blue books provide objectives and indicators by mission and programme, and are subject to a Parliament vote. The yellow books are of informative nature and provide a description of a specific policy, not necessarily by mission. The cross-cutting policy documents outline the objectives of a specific policy that touches different ministries, they indicate the specific programmes that are part of the policy, report on key indicators, including the total effort for the year, and the preceding year.

³⁸ <https://www.budget.gouv.fr/documentation/file-download/6868>

expenditure. For tax expenditure, however, some items based on tax exemptions are not included ('niches fiscales déclassées').

Table A1: Environmental expenditure in the French 2021 budget

| | Total | Neutral | Environmental | Favourable | Mixed | Unfavourable |
|---------------------|-------|---------|---------------|------------|-------|--------------|
| Expenditure | 488.4 | 446.6 | 41.8 | 34.7 | 4.2 | 2.9 |
| % total expenditure | 85.1 | 77.8 | 7.3 | 6.0 | 0.7 | 0.5 |
| Tax expenditure | 85.8 | 74.8 | 11 | 3.4 | 0.4 | 7.2 |
| % total expenditure | 14.9 | 13.0 | 1.9 | 0.6 | 0.1 | 1.3 |
| Total | 574.2 | 521.4 | 52.8 | 38.1 | 4.7 | 10 |
| % total expenditure | | 90.8 | 9.2 | 6.6 | 0.8 | 1.7 |

Source: Yellow Book 2021, Environmental Impact of the State Budget.

Most environmental expenditure has an impact on climate mitigation. More than 97% of total favourable expenditure has a positive impact on climate change mitigation, followed by 79% and 74.3% of total favourable expenditure with positive impact on pollution and climate change adaptation, respectively. As regards, unfavourable expenditure, 96.4% has a negative impact on climate, followed by 74.9% and 51.9% having negative impact on pollution and waste, respectively. Most notable examples of items with mixed impact are (1) railways (EUR 4.7bn) with positive impacts on climate change mitigation and pollution but negative impacts on water, waste management and biodiversity; (2) support to nuclear activities (EUR 450.9 million) with positive impacts for climate mitigation and adaptation and negative impact on waste.

Table A2: Expenditure by environmental objectives, 2021 budget

| | Climate mitigation | Climate adaptation | Water | Waste | Pollution | Biodiversity |
|----------------------------|--------------------|--------------------|-------|-------|-----------|--------------|
| Favourable | 37.0 | 28.3 | 17.9 | 15.5 | 30.2 | 11.0 |
| % favourable expenditure | 97.2 | 74.3 | 47.1 | 40.8 | 79.1 | 29.0 |
| Unfavourable | 9.6 | 2.3 | 3.4 | 5.2 | 7.5 | 5.0 |
| % unfavourable expenditure | 96.4 | 22.8 | 34.4 | 51.9 | 74.9 | 49.7 |

Source: Yellow Book 2021, Environmental Impact of the State Budget.

Additional assessments on the alignment of budgetary policies with environmental goals are provided in Chapters II and III. Chapter II of the Yellow book assesses the financing from both the private and the public sectors for climate and more generally for the ecological transition with the view to identify possible financing needs vis-à-vis envisaged objectives. The analysis is meant to complement the analysis in Chapter I as it examines public spending in a larger context, where spending needs could be also tapped by the private sector. Chapter III instead assesses the environmental impacts of the existing taxation system, where these impacts are captured for measures whose primary purpose is not necessarily the environment, for example taxes on tobacco or on taxes on specific construction processes. Then the chapter features an assessment of the impact of the taxation system on economic agents, precisely households and companies.

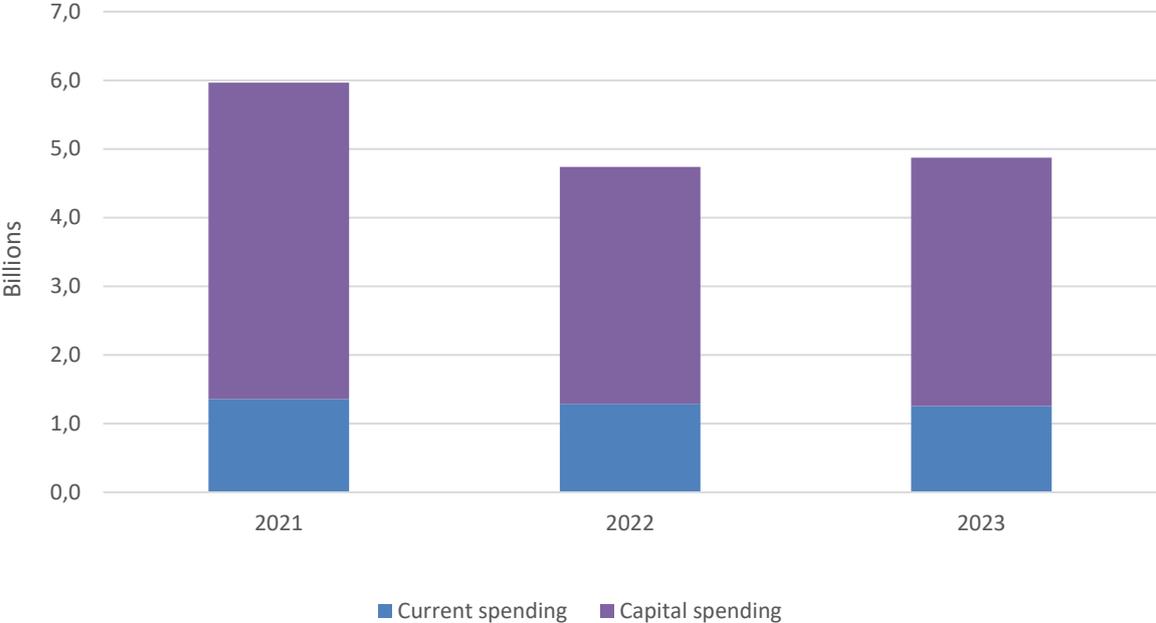
Italy

The presentation of 'green' items represents a long-standing practice in the Italian budgetary documents. Since 2000, Italy publishes an 'eco-budget' (*ecobilancio*), i.e. an annex to its budgetary plans with details regarding expenditure on environmental protection and on resource management. Also since 2010, pursuant to Law 196/2009, a similar document reporting the budgetary execution of

the same expenditure items is presented (*ecorendiconto*). In both documents, the information is provided by environmental protection (CEPA) and resource management activity (CReMA) and by Ministry. For budget execution, the document provides a disaggregation into current spending, capital spending and other major spending categories (e.g. taxes on production, transfers to families and enterprises).

The annex to the 2021 draft budget provides a medium-term planning for the 2018-23 period.³⁹ For 2021, it planned about EUR 6 bn in environmental spending, compared to EUR 4.5 bn planned for 2020. The amount would decline however to EUR 4.7 bn and 4.9 bn in 2022 and 2023, respectively. Out of the EUR 6 bn, EUR 4.6 bn are capital spending, largely capital transfers, and EUR 1.4 bn are current spending (Graph A1). The composition by environmental objectives shows that more than 30% of the 2021 environmental spending is allocated for soil and water protection/management, followed by research and development (19%) and air and climate protection, with 11.6% (Graph A2). By ministries, about 32.5% of the spending is assigned to the Ministry of Economy and Finance, followed by the Environmental Ministry, with 25.6%.

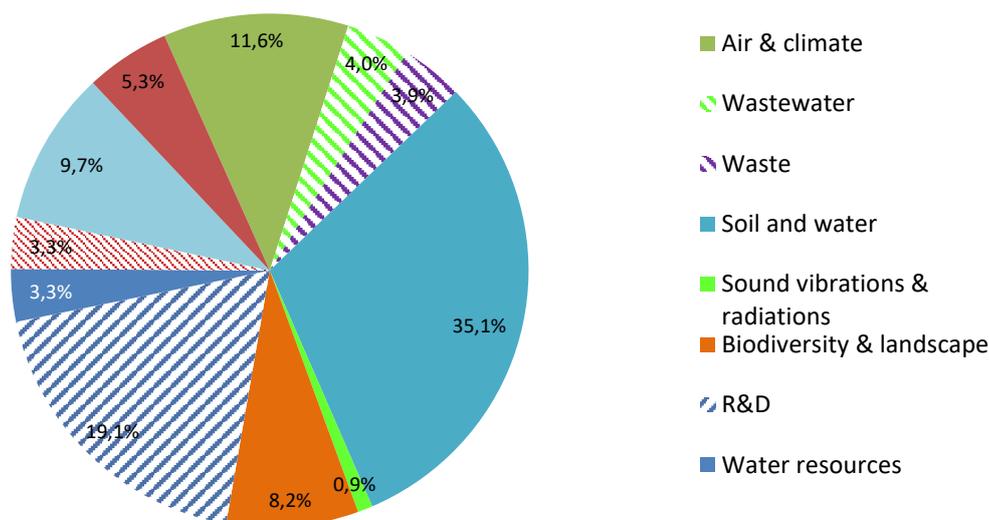
Graph A1. Italy's eco-budget for 2021-2023



Source: Ecobudget, Ragioneria Generale dello Stato.

³⁹ http://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/bilancio_di_previsione/ecobilancio/

Graph A2. Composition of Italy's eco-budget 2021 by environmental objectives



Source: Ecobudget, Ragioneria Generale dello Stato.

Execution of environmental spending is reported with information by activity and by spending phase.⁴⁰ The *ecorendiconto* document illustrates the rate of execution by each type of environmental protection and resource management spending. It shows figures per Ministry and for category of spending according to government finance statistics (e.g. current transfers, capital spending). The document also reports the flow of financing in its different phases for each environmental category, starting from the unspent allocations (from previous budgets) to the new allocation (and possible in-year variation), going to commitments, and then payments. Such structure helps identifying the phase of a large variation between allocation and execution, hence pointing to possible execution bottlenecks. With respect to the 2019 budget, the amount spent on environmental objectives was of EUR 3.3 bn, against EUR 3.2 bn of initial allocation and EUR 1.9 bn of unspent allocations from previous budgets. A large portion of executed spending was channelled to soil, water and groundwater protection (41.8%), followed by biodiversity and landscape (10.3%).

The production of the *ecobilancio* and *ecorendiconto* in Italy goes along with other interesting practices of programme budgeting related to the environment. These include:

- Annex 3 on Climate of the Stability Programme (*Documento di Economia e Finanza*) reports on progress in the implementation of commitments for the reduction of GHG emissions.⁴¹ It is grounded in the Law 39/2011 and is prepared by the Ministry of Environment. The 2020 annex provides information on the achievements of the annual targets from 2013 to 2020, and provides a reduction path for emissions until 2030, using a baseline scenario and a scenario more in line with the National Energy and Climate Plan (NECP). The effects of some NECP measures for the 2030 targets are also indicated.
- Since 2017, Italy publishes an annex to the Stability Programme which presents progress in achieving 12 indicators on fair and sustainable welfare (*benessere equo e sostenibile*, i.e. the

⁴⁰ http://www.rgs.mef.gov.it/VERSIONE-I/attivita_istituzionali/formazione_e_gestione_del_bilancio/rendiconto/ecorendiconto/

⁴¹ http://www.dt.mef.gov.it/modules/documenti_it/analisi_programmazione/documenti_programmatici/def_2020/DEF_2020_Allegato_MATTM.pdf

BES annex).⁴² Besides indicators on poverty, inequality and gender balance, the BES annex provides information on the level of CO₂ emissions and other gases, plus, as a proxy for soil erosion, an indication of unauthorised building developments. For each indicator, the annex illustrates recent trends and, when feasible, expected performance within a three-year horizon.

- As established by Law 28/2015, every year the Ministry of Environment publishes a ‘*Catalogue of harmful and favourable subsidies to the environment*’, examining direct subsidies (spending laws) and indirect subsidies (tax expenditures).⁴³ For 2018, as latest estimate, favourable subsidies amounted to about EUR 15.3 bn and unfavourable ones to EUR 19.7 bn (of which EUR 17.7 bn are fossil fuel subsidies).

Ireland

Initiatives have recently been launched to better sustain Ireland in meeting its carbon emissions targets. The 2017 National Mitigation Plan called on the Department of Public Expenditure and Reform to develop proposals for the monitoring and reporting of climate related expenditure. In this vein, Ireland introduced a *green budgeting* exercise for the 2019 budget, which implied identifying and ‘tagging’ all climate-related expenditure. Moreover, the 2019 Climate Action Plan laid out 180 actions that would enable Ireland to meet its emission targets.⁴⁴ These included the creation of the Climate Action Delivery Board. In October 2020, the government issued a Climate Law, which includes, among others, successive five-year carbon budgets, including at the local level, and enhances the governance with respect to the achievements of climate goals⁴⁵.

The definition of climate-related expenditure covers a broad range of activities. To identify climate-related items, the authorities draw on the definition developed for the Irish Sovereign Green Bond: ‘any expenditure which promotes, in whole or in part and whether directly or indirectly, Ireland’s transition to a low carbon, climate-resilient and environmentally sustainable economy.’ Accordingly, policies for which climate action is not the overriding priority would also in principle be included. However, for the first years of the exercise, the authorities adopted a conservative approach and included only those expenditures which directly contributed to emissions reduction.⁴⁶

In the 2021 Revised Estimates Report, climate expenditure is planned to be about EUR 2.9 bn. Appendix 8 of the Revised Estimates Report for the Budget 2021 features tables on climate expenditures grouped by departments and detailed by programme.⁴⁷ Climate-related expenditure is planned to be EUR 2.9 bn, corresponding to a 44% increase compared to 2020; and EUR 3.1 bn including capital carryovers. Of the total allocated for 2021, about 60% is allocated to the Department of Transport, largely for its sustainable mobility programme (34% of total climate expenditure). About 18% is allocated to the Department of Agriculture, and mainly for their agro-environmental schemes.

⁴²http://www.dt.mef.gov.it/modules/documenti_it/analisi_progammazione/documenti_programmatici/def_2020/DEF_2020_Allegato_BES.pdf

⁴³ <https://www.minambiente.it/pagina/catalogo-dei-sussidi-ambientalmente-dannosi-e-dei-sussidi-ambientalmente-favorevoli>

⁴⁴ <https://www.dcae.gov.ie/en-ie/climate-action/publications/Pages/Climate-Action-Plan.aspx>

⁴⁵ <https://www.gov.ie/en/press-release/aecb3-government-publishes-new-climate-law-which-commits-ireland-to-net-zero-carbon-emissions-by-2050/>

⁴⁶ Cremins and Kevany (2018), <https://igees.gov.ie/wp-content/uploads/2019/01/The-Implementation-of-Green-Budgeting-in-Ireland.pdf>

⁴⁷ <https://www.gov.ie/en/collection/e20037-revised-estimates/#2021>

Table 3. Climate-related expenditure in the Irish 2019 Draft Budget

| Climate expenditure in 2021 Budget for Ireland | |
|---|---------------|
| | Million |
| Department of Environment, Climate and Communications | 392.8 |
| Sustainable Energy Programmes | 255.3 |
| Other programmes | 137.5 |
| Department of Transport | 1739.5 |
| Sustainable Mobility Investment Programme | 1001.9 |
| Public Service Provision Payments | 673.6 |
| Other | 64.1 |
| Department of Agriculture, Food and Marine | 545.7 |
| Agri-environmental schemes | 290.1 |
| Forestry and Bio-energy | 103.2 |
| Beef Sustainability Schemes | 85.4 |
| Other | 67.0 |
| Department of Housing, Local Government and Heritage | 150.6 |
| Office of Public Works (Flood Risk Management) | 85.9 |
| Total | 2914.5 |

Source: Revised Estimates Report 2019.

For 2021, the Revised Estimates also include an appendix detailing the allocation of revenue from the carbon tax increase, as a follow up to what was already presented in the Revised Estimates 2020. The increase by EUR 7.5 per tonne in carbon tax (Reaching the price of EUR 33.5 per tonne of carbon dioxide (CO₂) planned for 2021, would contribute to a total carbon tax receipts of EUR 238 mn, a large increase to the expected revenue of about EUR 90 mn planned for 2020. Of these funds, EUR 100 mn would be spent on investment for residential efficiency, and EUR 70 mn for the continuation of the carbon tax investment programme⁴⁸.

The Irish statistical office (CSO) publishes reports on environmental subsidies on an annual basis. Every year, the CSO published a report with estimates on environmental subsidies, distinguishing by environmental protection and resource activity domain, NACE sectors and capital and current transfers. A historical series is also provided.⁴⁹ In 2017, the CSO also produced a report on fossil fuel subsidies, distinguishing between direct support and tax expenditure. Estimates point to about EUR 4 bn in potentially environmentally damaging subsidies in 2016, down from EUR 4.2 bn in 2015. Within this, the bulk comes from fossil fuel support (EUR 2.5 bn) and food and agricultural support (EUR 1.5 bn). A report explaining the underpinning methodology is also published.⁵⁰

⁴⁸ <http://budget.gov.ie/Budgets/2021/Documents/Budget/Carbon%20tax%20document.pdf>

⁴⁹ <https://www.cso.ie/en/releasesandpublications/er/esst/environmentalsubsidiesandsimilartransfers2018/>

⁵⁰ https://www.cso.ie/en/media/csoie/releasespublications/documents/rp/fossilfuelandsimilarubsidies/Fossil_Fuel_and_Similar_Subsidies.pdf

Sweden

The recently adopted climate policy framework in Sweden strengthens the ties between the budget bill and climate policies. In 2017, Sweden adopted a climate policy framework laying down the implementation of the Paris Agreement, with a target of zero net GHG emissions by 2045. The framework also envisages the adoption of a Climate Act (in force since January 2018) which requires every government to pursue a climate policy based on climate goals adopted by Parliament. Finally, the framework calls for the establishment of a climate policy council, tasked with providing an independent assessment of how the overall policy presented by the government is compatible with climate goals.⁵¹

The Climate Act requires the government to present every year a climate report in its budget bill. The report should contain a report of the development of greenhouse gas emissions, a report of the policies which will have the largest impact on emissions throughout the year, as well as an assessment of the adequacy of these policies in meeting national climate targets. In addition the Climate Act requires the government to present every four years a policy action plan on how climate goals are to be achieved.

Sweden's investment in sustainable growth and green transition for 2021 amounts to EUR 880 million. In its 2021 budget bill, Sweden features information on investment for sustainable growth and the green transition, listing programmes and their corresponding allocations for 2021, 2022 and 2023. These include energy efficient renovation of buildings, transition of the transport sector, support to public transports, and maintenance of railways.⁵² Arguably, the amounts indicated in this reform do not capture fully the extent of climate and environmental spending, which would be rather spread across several reforms. For the 2020 budget, the amount of environmental and climate related spending was about EUR 1.4 billion.

Finland

Environmental and climate goals are a top priority of Finland's government agenda. "Carbon-neutral Finland that protects biodiversity" is one of seven strategic themes defined in the government programme.⁵³ The government has set Finland's goal of being carbon neutral by 2035 and carbon negative soon thereafter. In the draft budget for 2020, various appropriations have been identified as contributing to this goal, including, among others, (i) appropriations for start-ups and investment grants for the environment and renewable energy; (ii) environmental compensation and promotion of organic farming; (iii) support for research, development and innovation projects for development of the bio-economy, promotion of the circular economy and transition to a low carbon society; (iv) funds allocated to the development of public transport services, with a view to reducing emissions from passenger transport, and support the purchase and conversion of electric passenger cars. For budgets 2020 and 2021, these appropriations amounted to EUR 2.3 and 2.2 billion (Table 4).

⁵¹ <https://www.government.se/495f60/contentassets/883ae8e123bc4e42aa8d59296ebe0478/the-swedish-climate-policy-framework.pdf>

⁵² <https://www.government.se/4a72a5/globalassets/government/dokument/finansdepartementet/pdf/bp-2021/reforms-in-the-budget-bill-for-2021.pdf>

⁵³ <https://valtioneuvosto.fi/en/marin/government-programme/strategic-themes>

Table 4. Carbon-neutral Finland, key measures (€ million)

| | 2020 budgeted | 2021 budget |
|--|---------------|--------------|
| 1. Carbon neutral Finland that protects biodiversity | 657 | 641 |
| 2. Globally influential Finland | 271 | 370 |
| 4. Dynamic and thriving Finland | 229 | 236 |
| 4.1. Transport network development | 424 | 220 |
| 4.2. Agriculture | 687 | 702 |
| In total | 2 268 | 2 168 |

Source: [Budget review 2021: Review on central government budget proposal, October 2020](#)

Note: The summary excludes all operating expenses as well as various non-governmental grants and membership fees.

The 2020 draft budget contains a number of taxes which contribute to achieving carbon neutrality. These include in particular (i) energy taxes levied on traffic fuels, machine and heating fuels and electricity; (ii) transport fuel taxes, including tax increase on transport fuels in August 2020; (iii) vehicle taxes, partly based on emissions; (iv) taxes on beverage packaging and waste tax. A tax reform for sustainable development is being prepared during the current parliamentary term (2019-2023) to promote the transition to carbon neutrality, consisting of energy tax reform, transport tax reform, promotion of the circular economy and the introduction of an emission-based consumption tax.

The draft budget for 2020 presented estimates for environmentally harmful subsidies in Finland, amounting to EUR 3.6 billion. Based on the OECD assessment tool to determine environmentally harmful subsidies, Finland carried out the survey ‘Environmental Impact of Subsidies of the Ministry of Agriculture and Forestry Industry 2012, Harmful Aid 2013, Preparation of Structural Policy Program 2013 and Harmful Biodiversity Aid 2015’. The survey revealed that a large part of subsidies are part of the tax system, but are also found among budgetary appropriations. Environmentally harmful subsidies mainly target three sectors: transport (EUR 1.4 billion), energy and agriculture (€1.1 billion each). Some major subsidies include lower-than-normal diesel tax rate on energy, adjusted by the vehicle tax on propulsion tax, and a lower than standard rate for non-road machines (€390 to 450 million); lower electricity tax rates for industry and greenhouses (EUR 630 million); refunds for energy intensive companies. Within the appropriations, harmful subsidies can be classified as compensation for the indirect costs of emissions trading and some agricultural subsidies, including allowances to compensate for the effects of natural disparities (EUR 532 million).

ANNEX B: STATISTICAL AND OTHER STANDARDS FOR ENVIRONMENTAL REVENUE AND EXPENDITURE

Revenue side

Commonly agreed statistical standards have long underpinned data on environmental taxation. In 1997, the European Commission (including Eurostat), the OECD and the International Energy Agency developed the first harmonised statistical framework for environmentally related taxes (referred to as *environmental taxes*⁵⁴). These statistics are framed in the legislations on environmental accounts and on national accounts (ESA 2010). Accordingly, an environmental tax is defined as a tax on a base which has a negative impact on the environment.⁵⁵ The framework distinguishes four types of environmental taxes: energy taxes, transport taxes, pollution taxes and resource taxes.

Collection and reporting of environmental non-tax revenue is limited. Eurostat does not report data on environmental revenues other than tax revenues.⁵⁶ Non-tax revenues include, among others, fines from sanctions, road-transport duty, charges associated with environmental activities, tolls for polluting vehicles. Information on some specific non-tax revenue is available in the OECD Policy Instruments for the Environment (PINE)⁵⁷ database, with data since 1994 for most OECD Member States and some non-OECD countries. The information is quite country specific, and provides an overview of the overall revenue (including taxes) and expenditure policies applied to a country. The policies are of very diverse nature, spanning from charges for tree protection in Austria (Vienna), fines for non-compliance with waste regulation in Bulgaria, to fishing charges in Croatia and charges for packaging in Poland. For each policy, accrued revenue, the rate and base of the tax/fine/charge are presented jointly with the years of introduction and last revision of the policy, existing exemptions and possible earmarking. Given its granularity, the extent of information reported is quite different across countries, which may make comparisons challenging.

Expenditure side of the budget

Identifying environmental related expenditure is challenging and remains an open issue. No consensus has so far been reached on how to define environmental-related expenditure, including expenditures that are *not* favourable to the environment. As a consequence, data on environmental expenditures are scattered across databases and compiled using diverse approaches. A review of these databases and recent initiatives is provided in what follows.

Eurostat collects three sets of data on environmental expenditure for the general government:

- The **environmental protection expenditure accounts (EPEA)** are satellite accounts, consistent with the European System of Accounts (ESA 2010). They provide information on monetary transactions which have as their main purpose the *prevention, reduction and elimination of pollution and of any other degradation of the environment*.⁵⁸ EPEA do not

⁵⁴ This term is also used in the United Nations System of Environmental-Economic Accounting (SEEA 2012), which was adopted as an international statistical standard in 2012.

⁵⁵ Eurostat 2013, "Environmental taxes - A statistical guide"

⁵⁶ Nonetheless, Eurostat collects information on other environmentally related payments to government (fees and charges). Still, only few countries report this type of data and this is not published by Eurostat.

⁵⁷ <https://pinedatabase.oecd.org/#>

⁵⁸ The legal and conceptual framework behind EPEA is presented in the Regulation (EU) 691/2011 and draws in part on the first international statistical standard for environmental-economic accounting, the System of Environmental-Economic Accounting — SEEA, adopted by the United Nations Statistical Commission in 2012. Yet, compared to the SEEA, the EU EPEA have a larger scope of the accounting framework, introduce additional concepts and combine classifications and/or extend their breakdowns to capture relevant economic transactions and related flows (Eurostat 2019)

include activities with a positive environmental impact for which, however, environmental protection is not the main goal.⁵⁹ The mandatory variables collected include: (i) output of EP services, broken down into market output and non-market output, (ii) gross fixed capital formation and acquisition less disposals of non-financial, non-produced assets (such as land) for the production of EP services and final consumption of EP services by the units of the general government and NPISH (not-for-profit institutions serving households) institutional sectors, and (iii) environmental transfers on environmental protection, payable and receivable by general government. The two indicators relevant for public finance are: *national expenditure on environmental protection (NEEP)* and *environmental transfers*. The latter are presented by environmental activity, using the classification of environmental protection activities (CEPA).⁶⁰ Data on intermediate consumption, compensation of employees, consumption of fixed capital and other taxes less subsidies on products are submitted by the Member States only on a voluntary basis.

- **The COFOG database for expenditure by government function** presents environmental protection expenditure in national accounts by the following environmental protection activities: waste management, waste water management, pollution abatement, protection of biodiversity and landscapes, R&D in environmental protection. In line with the EPEA methodology, only activities with environmental protection as main objective are in principle included. Yet, in the compilation phase the expenditure of a ministry or agency could all be assigned to the same COFOG code, irrespectively of the underlying goal of a specific programme.⁶¹
- Eurostat collects data on environmental subsidies and similar transfers, submitted on a voluntary basis (**Environmental Subsidies and Similar Transfers database, ESST**). The ESST collects information on current and capital transfers by institutional sector and by NACE activity of the recipient. A split in terms of type of activity is also requested following CEPA and the classification of resource management activities (CReMA). Data are not yet published.⁶²

<https://ec.europa.eu/eurostat/documents/3859598/10142242/KS-GQ-19-010-EN-N.pdf/ed64a194-81db-112b-074b-b7a9eb946c32>).

⁵⁹ EPEA excludes activities which do not directly serve an environmental protection purpose but which produce specifically products which use services an environmental protection purpose. These are called *non-characteristic EP activities*; e.g. construction of waste treatment plants and equipment; production of noise and heat insulating materials; production of equipment to reduce air pollution.

⁶⁰ The international standard on Classification of Environmental Protection Activities (CEPA) includes the following categories: protection of air and climate, wastewater management, waste management, protection of soil, groundwater and surface water, noise and vibration abatement, protection of biodiversity and landscapes, protection against radiation, research and development, other environmental protection activities. Given the ambiguity that could emerge when a measure has a positive impact on one environmental objective but a negative impact on another one, to ensure comparable data across countries, statisticians have agreed in 2015 on an indicative compendium of environmental activities and products

<https://ec.europa.eu/eurostat/documents/1798247/6191549/EGSS+list+of+env+products.xlsx>

⁶¹ The EPEA and COFOG databases are tightly linked, and in principle data should match. COFOG data are the main source for compilation of EPEA data (Eurostat 2019 <https://ec.europa.eu/eurostat/documents/3859598/10142242/KS-GQ-19-010-EN-N.pdf/ed64a194-81db-112b-074b-b7a9eb946c32>).

⁶² CEPA classification is complemented by the Classification of Resource Management Activities (CReMA), a classification of resource management activities and expenditure set out in Regulation (EU) 691/2011 on European environmental economic accounts for compilation of Environmental Goods and Services Sector accounts (EGSS). CReMA includes the following categories: management of waters, management of forest resources, management of wild flora and fauna, management of energy resources, management of minerals, Research and Development activities for resource management and other non-classified activities.

Data are fully available in the COFOG database. The EPEA NEEP and environmental transfers indicators are available for most Member States since 2014 (mandatory according to the Regulation) and since 2006 only for a handful of countries.⁶³ There is a two-year reporting delay. COFOG reports data for all Member States with detailed information on the different expenditure categories since 1995 (based on ESA2010) and information, not always complete, for the different components of environmental activities. A discussion has recently been launched within Eurostat on a revision of the legal basis, for a possible change in the scope and deadlines of the existing data collections.⁶⁴

Besides COFOG data, the OECD presents expenditure for environment in its PINE database. The database has information on environmentally motivated subsidies, with an indication of the type of subsidy scheme (grant, tax reduction) and a description of the scheme (e.g. tax reduction for the purchase of an electric vehicle in Belgium).

Some more specific methodologies have been developed to track climate-related spending.⁶⁵ Eurostat provides data on climate protection within the CEPA classification, under EPEA and under COFOG, where its first item consists of climate and air protection. However, as noted, data availability is limited. Also, given that EPEA only cover activities whose primary goal is environmental protection, all activities that benefit the environment as a secondary goal are excluded. To overcome these limitations, two initiatives have recently been developed within the EU:

- **The common methodology for tracking climate-related expenditure across the EU funds and within the EU 2021-27 Multiannual Financial Framework (MFF)** builds on the existing OECD Rio Markers methodology.⁶⁶ While the whole EU budget should be consistent with the Paris Agreement, ‘Sustainability proofing’ have been developed to ensure investment focuses on sustainable and green projects. Such methodology applies the following markers to signal the extent to which each expenditure item contributes to climate action: a 100% marker applies when climate action is the primary goal (e.g. spending on wind farms, carbon sinks); a 40% marker applies when the expenditure item is climate-related, but climate action is not the first objective (e.g. spending on biodiversity, car sharing schemes, or air quality measures); a 0% marker applies when the item has no climate related content. An intensive work to streamline and improve the climate tracking methodology, based on the OECD Rio marker, is currently in progress.
- In July 2020, the Commission issued a Regulation on the **EU taxonomy on environmentally sustainable activities**⁶⁷. The objective is to set out uniform criteria for determining whether an economic activity is environmentally sustainable, for the purposes of promoting sustainable/green investment. The taxonomy is developed for six environmental objectives: climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling,

⁶³ Data on EPEA NEEP are estimated by Eurostat since 2006 for all EU Member States. For almost all EU countries NEEP data are available for years 2014-2016 (i.e. mandatory years according to Regulation). The coverage differs significantly among countries for non-mandatory years (previous to 2014). The majority of countries are still not able to provide longer time series. The provision of longer time series is one of the main goals to be reached, as mentioned also in the ESEA strategy for the period 2019-2023: expand the data offer (including longer time series back to 2000 or 1995).

⁶⁴ <https://ec.europa.eu/eurostat/documents/1798247/6191525/European+Strategy+for+Environmental+Accounts/>

⁶⁵ A similar initiative applies also to biodiversity: https://ec.europa.eu/environment/nature/biodiversity/financing_en.htm

⁶⁶ The common methodology for tracking climate expenditure is adopted by the Commission Implementing Regulation (EU) No 215/2014 of 7 March 2014 and amended by the Commission Implementing Regulation (EU) No 1232/2014 of 18 November 2014. For the OECD Rio Markers see https://www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook_FINAL.pdf

⁶⁷ https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en

pollution prevention control, and protection of healthy ecosystems. The Regulation establishes the main framework and mandates the Commission to develop technical screening criteria for sustainable economic activities through delegated acts. Supported by inputs from the Commission 'Technical Expert Group on Sustainable Finance' (TEG), the first delegated acts have been finalised providing technical screening criteria for a list of activities related climate-change mitigation and climate-change adaptation. The technical screening relies on two principles: first, an activity should contribute to significantly reducing GHG emissions and second, it should not cause significant harm to any of the other five environmental objectives of the EU taxonomy. Activities can contribute to reducing GHG emissions either because they are already low-carbon ('green' activities, e.g. afforestation), or by contributing to the transition while still producing emissions ('greening of' activities, e.g. cleaner production of steel and cement), or, also, by enabling low-carbon performance ('greening by' activities, such as the production of solar panels).

It must be noted that Member States report their environmental policies and measures in the context of national energy and climate plans (NECPs). Regulation (EU) 2018/1999 on the governance mechanisms for the energy union requires Member States to submit integrated national energy and climate plans on a ten year basis, starting with the period 2021-2030. The NECPs should contain objectives, targets and contributions with respect to the five dimensions of the energy union: decarbonisation, energy efficiency, energy security, internal market, R&I and competitiveness. The NECPs should provide an outlook for each dimension, present planned policies and an assessment of impacts. The Commission reviews these plans and provides an assessment which could also include country specific recommendations. The first NECPs submitted by the Member States have been assessed and analysed by the Commission.⁶⁸

⁶⁸ https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans_en

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