



# Methodological Guidelines for Environmentally Related Tax Revenue Accounts





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# Foreword

This document is part of the OECD programme of work on environmental information and indicators and on the implementation of the System of Environmental-Economic Accounting (SEEA). It was developed by the OECD Working Party on Environmental Information (WPEI), building on Eurostat's experience, and reviewed by the OECD Environment Policy Committee. The work benefited, in particular, from inputs by delegations of Australia, Austria, Estonia, Sweden and the European Commission (Eurostat). The pilot testing of the draft guidelines was conducted by the Australian Bureau of Statistics, the Central Bank of Costa Rica and the Kazakhstan Bureau of National Statistics. The active engagement of these parties was essential and is much appreciated.

The document reflects discussions at the Joint Meetings of Tax and Environment Experts (JMTEE) in November 2018, the Joint OECD-UNECE Seminar on the Implementation of the SEEA in February 2019 as well as the London Group on Environmental Accounting in March 2019 (written procedure).

This document was edited by Florian Flachenecker, Ivan Haščič and Miguel Cárdenas Rodríguez, and under the supervision of Nathalie Girouard (Head of the Environmental Performance and Information Division of the OECD Environment Directorate). Lydia Servant and Gabriella Scaduto-Mendola prepared the report for publication. Natasha Cline-Thomas provided communications support. An initial version was prepared in consultation with OECD colleagues in the Environment Directorate (ENV), the Statistics and Data Directorate (SDD) and the Centre for Tax Policy and Administration (CTPA).

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# Executive summary

This document presents the OECD approach and methodological guidelines for compiling environmentally related tax revenue (ERTR) accounts. The guidelines are in line with the System of Environmental-Economic Accounting (SEEA) and the System of National Accounts (SNA), and build on applications in countries. They ensure, to the extent possible, coherence with available national and international data sources and manuals (OECD Policy Instruments for the Environment (PINE) database, OECD Revenue Statistics and the IMF Government Finance Statistics Manual).

The OECD guidelines aim to support the compilation of harmonised ERTR accounts internationally. Developing the guidelines provided an opportunity to reflect on the conceptual foundations of existing methods and identify aspects that might deserve to be further developed in the future. The statistical guide developed by Eurostat for compiling ERTR accounts was used as a starting point, and a few refinements and four “memo items” are introduced:

- Increased focus on taxes levied on greenhouse gas (GHG) emissions arising from different activities by splitting their tax revenue into two sub-categories: an energy related part (recorded as an energy tax) and a non-energy related part, such as certain GHG emissions related to landfills or agriculture (recorded as a pollution tax). This further strengthens the internal consistency of the accounts, while allowing the OECD accounts fully consistent with those reported by Eurostat.
- Introduction of four "memo items" (i.e. information items that do not change the total) to enhance the relevance of the accounts for policy work: (i) certain land taxes, (ii) taxes on oil and natural gas extraction, (iii) taxes on the resource rent (profit taxes only) and (iv) elevated VAT levied on environmentally related tax bases. These items describe important transactions concerning the use of environmental assets and their joint collection is considered a useful source of additional information.

The practical application of the OECD guidelines was successfully pilot-tested in 2018-19, and subsequently two rounds of data collection were conducted in 2019 and 2021 involving OECD member and partner countries. The results show that it is feasible to compile ERTR accounts, including the refinements and additions outlined in this document. They also show that the guidelines can facilitate the compilation of SEEA-consistent ERTR accounts across OECD member countries and beyond.

# 1. Introduction

Implementing the System of Environmental Economic Accounting (SEEA) (United Nations et al., 2014<sup>[1]</sup>), building related global databases, and monitoring the use of environmentally related policy instruments are well-established core activities of the OECD. To support analyses on green growth, policy integration and structural policies, OECD work focuses on progressively establishing an integrated database on the economy and the environment. This work builds on a set of SEEA-consistent accounts, including environmentally related tax revenue (ERTR) accounts. Against this backdrop, this document presents the OECD approach and methodological guidelines to compile ERTR accounts, building on a long tradition of OECD work on environmentally related taxation.<sup>1</sup>

ERTR accounts open new possibilities for empirical analyses in a range of policy domains, including the transition towards green growth. ERTR accounts provide several benefits: First, they can easily be linked to a range of economic and social data in line with the System of National Accounts (SNA) (United Nations, 2009<sup>[2]</sup>). Second, given their systematic and coherent structure rooted in internationally agreed definitions, standards and accounting principles, these accounts facilitate international comparisons. Third, they are disaggregated by industries and households, and hence amenable to input-output and other industry-level analyses. Evidence gained from linking ERTR accounts to other accounts (e.g., air emissions, energy, material flows) and to socio-economic data will help establish more granular insights into the environmental, economic and social effects of environmental policies across industries, countries and time. These insights can support country reviews such as the OECD Environmental Performance Reviews and Economic Surveys.

ERTR accounts have been compiled already in 42 countries, including in Europe<sup>2</sup>, OECD countries such as Australia, Canada, Colombia, New Zealand and the United Kingdom, and non-member countries such as Albania, Kazakhstan, Mongolia and the Russian Federation (Eurostat, 2022<sup>[3]</sup>; (United Nations Statistics Division, 2022<sup>[4]</sup>); (OECD, 2022<sup>[5]</sup>)). Given their potential to provide additional information and evidence for policy making and evaluation, a broader diffusion and implementation of ERTR accounts should be encouraged globally.

This document presents the OECD methodological guidelines for the compilation of ERTR accounts (hereafter referred to as "the guidelines") and recommends next steps for scaling-up the compilation of ERTR accounts across OECD member, accession and key partner countries, and beyond.

The objectives of the guidelines are twofold:

- **Expand compilation building on existing methodologies and data:** The guidelines aim to facilitate the uptake and compilation of internationally harmonised ERTR accounts in line with the SEEA by considering lessons from existing applications and available data sources. They draw in particular on (i) existing accounting frameworks ([SEEA](#) and [SNA](#)), (ii) applications in countries ([Eurostat's statistical guide](#) on environmental taxes (European Commission, 2013<sup>[6]</sup>) and Australia's [ABS discussion paper](#)<sup>3</sup>) and to the extent possible (iii) available national and international data sources and manuals ([OECD Policy Instruments for the Environment \(PINE\) database](#), [OECD Revenue Statistics](#) and [IMF Government Finance Statistics Manual \(GFSM\)](#)). This exercise also serves as a starting point for further aligning information on ERTR across the accounts, the OECD PINE database, the OECD Revenue Statistics, and possibly beyond (e.g., OECD Taxing Energy Use).



- **Identify areas for future development:** This work on developing and testing methodological guidelines provides an opportunity to reflect on existing applications for the compilation of ERTR accounts. While the methodology developed by Eurostat was used as a starting point, the guidelines identify three aspects that can complement existing approaches (see Section 2.9). First, they provide further details on greenhouse gas (GHG) emissions by introducing two sub-categories for taxes on energy and non-energy related GHG emissions. Second, the guidelines include four "memo items" for certain land taxes, taxes on oil and natural gas extraction, taxes on the resource rent (profit taxes only), and elevated VAT. Third, a common platform is developed that aims at ensuring coherence between the industry-level ERTR accounts and the instrument-level information provided in the OECD PINE database on environmentally related tax rates and the physical volumes being taxed.<sup>4</sup>

The remainder of this paper is structured as follows. Section 2 outlines the core features of the guidelines. Section 3 concludes with suggestions for next steps to expand ERTR accounts across countries and includes a research agenda to further advance the implementation of these and related accounts. Annex A illustrates the accounting of taxes on natural resource extraction in SNA and in the ERTR accounts. Annex B provides a practical implementation guide outlining the main steps and data sources to compile ERTR accounts in line with the guidelines.

## 2. Methodological guidelines for compiling ERTR accounts

This section introduces the OECD approach to compiling ERTR accounts that are consistent with the SEEA. The core features include:

- The definition of a tax (Section 2.1)
- Identifying environmentally related taxes and deriving ERTR (Section 2.2)
- Allocating ERTR to tax base categories (Section 2.3)
- Allocating ERTR to industries and households (Section 2.4)
- The type of tax incidence used for ERTR accounts (Section 2.5)
- Treating non-residents (Section 2.6)
- Allocating ERTR to years (Section 2.7)
- Allocating ERTR to levels of government (Section 2.8)

The last section (Section 2.9) summarises how existing applications can be complemented by introducing:

- Sub-categories for taxes on energy and non-energy related GHG emissions;
- Four memo items on other important issues, namely on certain land taxes, taxes on oil and natural gas extraction, taxes on the resource rent, and elevated VAT; and
- A common platform aiming to ensure coherent reporting of ERTR, environmentally related tax rates and the physical volumes being taxed.

### 2.1. Definition of a tax

The guidelines follow the OECD definition of taxes,<sup>5</sup> which is identical to the SNA and the SEEA:

*“Taxes are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units.”* (OECD, 2001<sup>[7]</sup>; United Nations, 2009<sup>[2]</sup>; United Nations et al., 2014<sup>[1]</sup>)

The guidelines recommend to only record revenue generated from taxes that comply with the aforementioned definition. For the purposes of the ERTR accounts, this ensures consistency with information compiled using the SNA, the SEEA, Eurostat’s guide, the IMF GFSM (IMF, 2014<sup>[8]</sup>) as well as existing data in the OECD PINE database (OECD, 2017<sup>[9]</sup>) and the OECD Revenue Statistics (OECD, 2017<sup>[10]</sup>). Therefore, ERTR accounts compiled using these guidelines can be compared and linked to a wide range of existing environmental, economic and social data.

It is important to note that the SNA, OECD PINE, OECD Revenue Statistics and IMF GFSM cover all taxes that fall under the above-mentioned definition, independently of their legal name or the motivation underlying their introduction. In particular, they include all *payments to government* that function like taxes, including the so-called *tax-like fees and charges* (OECD, 2017<sub>[10]</sub>). The guidelines include such payments in the ERTR accounts.

While a clear-cut separation between taxes in the SNA sense and fees/charges is not always possible, existing methods and accounting frameworks follow common conventions.<sup>6</sup> When in doubt, one simplifying consideration helps making the distinction: the proportionality between the payment made and the service provided to the payer. If a payment results in little or no service provided by the government, or a licence is granted automatically on payment without prior or subsequent activities undertaken by the government, or another party other than the payer receives the service, it is considered as a tax and it is included in the ERTR accounts.

The guidelines also recommend including revenue generated from permit schemes (e.g., auctioning or selling permits or certificates for GHG emissions or water effluents), in line with the approaches in the SNA, the SEEA, the OECD Revenue Statistics, the OECD PINE, IMF GFSM and Eurostat's guide. The allocation of payments across years follows the accrual principle, i.e. the revenue is recorded at the time when the polluting activity takes place (see Section 2.7 for details). This timing is likely to deviate from the time the payment is made to the government as part of the auctioning process. The revenue raised by the auctioning or selling of permits is allocated to the energy or pollution tax categories, depending on the type of activity covered by the permits. In case the permits are initially allocated free of charge, no revenue arises.

## 2.2. Identifying environmentally related taxes and deriving ERTR

The next step is to separate environmentally related from other taxes and derive ERTR data. This section describes the method to identify environmentally related taxes. A logical starting point for compilers is to consult existing data on tax revenue reported in the national accounts, the OECD Revenue Statistics, the OECD PINE database, and/or the national tax lists, even if not all ERTR can be directly distilled from them (see Annex B for further information on potential data sources). It is crucial to note that the decision of whether (or not) a tax is considered environmentally related is made according to the specific tax base on which the tax is levied.

It is important to explain the rationale for referring to the taxes described in these guidelines as *environmentally related*, given that some existing approaches label the same taxes as *environmental*. In the economics literature, *environmental* taxes are motivated by internalising externalities through the alignment of tax rates with marginal external costs, or – more loosely – by using taxes to reduce environmentally harmful behaviour.<sup>7</sup> In practice, the identification of *environmentally related taxes* is made by using tax bases of particular environmental relevance (OECD, 2006<sub>[11]</sub>), without requiring environmental motives or the alignment of tax rates with marginal external costs (Table 1). Importantly, while existing approaches (SNA, SEEA, IMF GFSM and Eurostat's guide) refer to such taxes as *environmental*, their identification method is identical to the one outlined in these guidelines for *environmentally related taxes*.<sup>8</sup>

These considerations, in line with existing OECD work on this issue (OECD, 2006<sub>[11]</sub>), yield the following definition of environmentally related taxes:

“Environmentally related taxes are taxes whose tax base is a physical unit (or a proxy of it) of something that has a proven, specific, negative impact on the environment.” (United Nations et al., 2014<sub>[11]</sub>).

Ideally, environmentally related tax bases comprise physical units that are directly linked to environmental pressures (e.g., emissions, pollutants). However, for practical or administrative reasons, these tax bases are sometimes not directly taxed. Instead, inputs or outputs of activities closely linked to environmental pressures (e.g., fuel consumption, ownership of cars) are used. In such cases and in line with existing approaches, these tax bases should be used to identify environmentally related taxes.

Table 1 provides a list of tax bases to identify environmentally related taxes. The list is generally in line with other approaches in use with a few additions, which are discussed in Section 2.9. It describes the currently identified tax bases with environmental relevance and should be seen as a “living list” that could be adjusted over time. There is no straightforward objective criterion that could be used to define what is “environmentally related” since such taxes are crosscutting standard tax classifications.<sup>9</sup> Therefore, the list of environmentally related tax bases is a practical way to identify relevant taxes. If a tax base is considered environmentally related, all revenue arising from this tax is recorded as ERTR in the accounts.

The decision on whether a particular tax base is environmentally related can to some extent be country-specific, in particular regarding the level and type of environmental pressures associated with the tax base. For instance, Table 1 indicates that electricity is an environmentally related tax base. However, the environmental pressures arising from electricity generated by burning coal versus from hydropower, for instance, differ in both magnitude and type of pressures (e.g., CO<sub>2</sub> emissions for coal and biodiversity impacts from land use change, if any, for hydropower). Thus, in exceptional circumstances, country compilers may choose to not include certain tax bases in the absence of a proven, specific, negative impact on the environment.

For the time being and in accordance with other approaches in use, the guidelines recommend excluding the following taxes from the ERTR accounts:

- Taxes not considered as such in the national accounts are excluded from the ERTR accounts. The only exception are tax revenue raised on profit taxes related to the resource rent, which are recommended to be recorded under Memo Item 3 (see Section 2.9 for details). The reasons for including this information as a memo item are its relevance for policy analyses, its limited availability as well as comparability across countries.
- In principle, the guidelines recommend excluding general value-added taxes (VAT) and goods and services taxes (GST), general profit taxes, personal income taxes and labour taxes from the ERTR accounts. The reason for excluding such general taxes is that they are considered to not change relative prices in the same way that taxes levied on environmentally related tax bases do. There are two exceptions (see Section 2.9 for details): (i) It is conceptually in line to include in the ERTR accounts the revenue generated from an elevated VAT rate levied on tax bases that are environmentally related and included in Table 1 because such tax would alter relative prices; (ii) profit taxes related to the resource rent are included in the ERTR accounts under Memo Item 3.

Table 1. List of environmentally related tax bases

<b>Tax base category</b>	<b>Details</b>	<b>Environmentally related tax bases</b> <i>(consumption, production and trade as well as measured and estimated values; if appropriate)</i>
<b>Energy</b> including fuel for transport	<i>Energy products for transport purposes</i>	Unleaded petrol, leaded petrol, diesel, other energy products for transport purposes (e.g., liquefied petroleum gas, natural gas, kerosene, fuel oil, biofuels)
	<i>Energy products for stationary purposes</i>	Light fuel oil, heavy fuel oil, natural gas, coal, coke, biofuels, electricity, district heat, other energy products for stationary use
	<i>Energy-related GHG emissions</i>	Energy related carbon content, energy related emissions of CO <sub>2</sub> and other GHGs (including proceeds from permit schemes)
<b>Transport</b> excluding fuel for transport		Motor vehicles: production, trade or sale (one off taxes), registration or use (recurrent, e.g., annual taxes), vehicle insurance (excludes general insurance taxes), road: use (e.g., motorway taxes), congestion (e.g., congestion charges and city tolls), other means of transport: railways, waterways (e.g., taxes on ships), air (e.g., flights and flight tickets)
<b>Pollution</b>	<i>Non energy-related GHG emissions</i>	Non-energy related carbon content (e.g., peat), emissions of CO <sub>2</sub> and other GHGs not related to energy (e.g., cattle-breeding, meat diets, rice cultivation, cement); including proceeds from permit schemes
	<i>Pollutant emissions to air (excluding GHGs)</i>	Nitrogen oxides emissions, sulphur oxides emissions, other air pollutants (e.g. particulate matter, volatile organic compounds, ammonia, mercury), products containing heavy metals (e.g. paint, solvents)
	<i>Ozone depleting substances</i>	Ozone depleting substances (e.g., chlorofluorocarbons, halons, hydrochlorofluorocarbons)
	<i>Effluents to water</i>	Effluents of oxidisable matter (biochemical oxygen demand, chemical oxygen demand), other effluents to water, wastewater collection and treatment (e.g. fixed annual taxes)
	<i>Non-point sources of water pollution</i>	Synthetic pesticides (taxes based on e.g. chemical content, price or volume), synthetic fertilisers (taxes based on e.g. phosphorus or nitrogen content or price), products containing chemicals of emerging concern (e.g. pharmaceuticals, personal care products), manure (taxes based on nitrogen released)
	<i>Waste management</i>	Waste collection, treatment or disposal, individual products (e.g., batteries, electrical and electronic equipment, tyres, motor oil, lubricants), packaging (e.g., beverage containers, plastic bags, pallets)
	<i>Noise</i>	Noise (e.g., aircraft take-off and landings)
	<i>Radiation</i>	Radiation, radioactive substances
<b>Resources</b>	<i>Resource extraction, abstraction, harvesting</i>	Freshwater resources, forest resources (e.g. timber), fisheries resources, natural biological resources (e.g., wild plants and animals), minerals (excluding oil and natural gas; including exploration activity), landscape changes (e.g., cutting of trees)
<b>MEMO ITEM 1</b>	<i>Certain land taxes</i>	Land conversion taxes (e.g., from forest to agricultural land use), taxes on land or soil characteristics of environmental relevance (e.g., m <sup>2</sup> of soil sealing, soil quality), taxes on certain land uses (e.g., intensive agriculture and forestry, surface mining)
<b>MEMO ITEM 2</b>	<i>Taxes on oil and natural gas extraction</i>	Extraction of oil and natural gas
<b>MEMO ITEM 3</b>	<i>Resource rent taxes (profit taxes only)</i>	Profits related to the resource rent (e.g., from mining, fisheries)
<b>MEMO ITEM 4</b>	<i>Elevated value-added taxes (VAT)</i>	Elevated VAT on environmentally related tax bases

### 2.3. Allocating ERTR to tax base categories

Disaggregating ERTR into several categories can be helpful to structure the accounts and support more detailed analyses. The guidelines, in line with existing approaches, distinguish among four tax base categories: energy, transport, pollution and resources. This breakdown arises predominantly due to practical reasons by clearly focusing on the most common tax bases and to highlight areas of particular policy interest.<sup>10</sup>

The four environmentally related tax base categories are the following:

- **Energy:** Included is all tax revenue from energy products, both for transport and stationary purposes, and from energy-related GHG emissions. This category further includes ERTR generated by permit schemes as long as they are recorded as taxes in the national accounts and based on energy related GHG emissions. Tax revenue from non-energy related GHG emissions is included in the pollution tax base category, thereby ensuring the internal consistency between energy related and non-energy related emissions.
- **Transport:** This category excludes ERTR from transportation fuel, as these are covered under energy taxes. In turn, the transport category includes tax revenue related to the ownership, production, trade and use of motor vehicles as well as the use of transport services (airplane, ships, railways, etc.). This also includes “one-off” ERTR such as the registration of a vehicle.
- **Pollution:** This category comprises tax revenue from all other sources of pollution not listed above, and notably non-energy related GHG emissions, pollutant emissions to air and water, waste management and noise. Any tax revenue from energy-related GHG emissions is excluded from this category since such revenue is covered under the energy tax base category. Tax revenue from non-energy related GHG emissions comprise, for instance, taxes levied on emissions related to peat degradation, cattle breeding and synthetic fertilizer application.
- **Resources:** This category comprises resource-related tax bases of environmental relevance. Included are ERTR linked to the extraction of natural resources, both renewable and non-renewable with the notable exceptions of land taxes (reported under Memo Item 1), taxes on oil and natural gas extraction (reported under Memo Item 2) and taxes on the resource rent (reported under Memo Item 3) as explained in greater detail in Section 2.9. Only tax revenue that is recorded as such in the national accounts is included in this category (see Annex A).

The exact tax base is decisive in allocating tax revenue to one of the aforementioned tax base categories and subcategories. For instance, a tax levied on mining operations could be categorised as resource tax, land tax, resource rent tax or pollution tax, depending on the specific tax base:

- if the amount of mineral extraction (e.g., in tonnes) is taxed, it would be considered a resource tax and included in the ERTR total;
- if the land used for extracting minerals (e.g., in hectares) is the tax base, it would be classified as a land tax and not included in the ERTR total, but reported under Memo Item 1;
- if a tax is levied on the profits arising from mineral extraction, it would not be included in the ERTR total, but be recorded as a resource rent tax under Memo Item 3; and
- if toxic water effluents or noise arising from the extraction of minerals is taxed, it would be considered a pollution tax and included in the ERTR total.

This example demonstrates that information on the exact tax base is crucial in allocating tax revenue to the relevant tax base category.

As mentioned previously, ERTR are crosscutting the standard tax classifications. Therefore, the four tax base categories are not directly comparable to numerous tax categories in the SNA and the OECD Revenue Statistics. However, most ERTR are likely to be included in the disaggregated tax categories on

production and imports in the SNA (e.g., excise taxes, car registration taxes, pollution taxes) and on goods and services in the OECD Revenue Statistics (e.g., excise taxes, recurrent taxes on motor vehicle taxes).

In addition to the four tax base categories, compilers are asked to explicitly report two sub-categories covering energy and non-energy related GHG emissions. As shown in Table 1, energy-related GHG emissions are a sub-category of energy tax bases, whereas non-energy related GHG emissions are a sub-category of pollution tax bases.

## 2.4. Allocating ERTR to industries and households

In line with existing approaches (SEEA, Eurostat's guide and OECD PINE), the guidelines recommend allocating ERTR – in addition to the four tax base categories outlined in Section 2.3 – according to the International Standard Industry Classification ([ISIC rev. 4](#)) as well as to households and non-residents. The minimum level of disaggregation for industries, households and non-residents that is recommended by the guidelines is shown in Table 2. In accordance with the breakdown of estimated air emission accounts (Flachenecker, Guidetti and Pionnier, 2018<sup>[12]</sup>), more granularity is needed for the manufacturing industry (ISIC-C) than for other industries (e.g., ISIC-I to ISIC-U) to enable policy relevant analyses.

**Table 2. Minimum level of disaggregation of the ERTR accounts**

Code	Description
A	Agriculture, forestry and fishing
B	Mining and quarrying
C10-C12	Manufacture of food products, beverages and tobacco products
C16-C18	Manufacture of wood, paper, printing and reproduction
C19	Manufacture of coke and refined petroleum products
C20-C21	Manufacture of chemicals, basic pharmaceuticals and preparations
C22-C23	Manufacture of rubber and plastic products and other non-metallic mineral products
C24-C25	Manufacture of basic metals and fabricated metal products, except machinery and equipment
C13-C15;C26-C33	Other manufacturing
D	Electricity, gas, steam and air conditioning supply
E	Water supply; sewerage, waste management and remediation activities
F	Construction
G	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	Transportation and storage
I-U	Other services
HH	Resident households as consumers
NR	Non-resident industries and households
TOT	Total economy

*Note:* Further disaggregation would be desirable; see Annex B

The industry classifications should be used according to the “tax payer” principle (see Section 2.5). Resident households as consumers are added to complement industry-related activities. The differentiation between resident and non-resident goes back to the fact that the SEEA and the SNA consider accounts according to the principle of the residence of the units involved, and not the territory where the activity takes place (see Section 2.6).

Some compilers may have industry breakdowns for several tax base categories available as part of their national accounts; this could serve as a starting point, even if the tax base categories might not be fully in line with the ones in the ERTR accounts. However, in case insufficient information is available to identify the “tax payer”, expert judgment and estimation methods might be needed. This is particularly important when ERTR needs to be allocated to more than one industry. More details and possible data sources that can support making the allocation are outlined in Annex B.

The guidelines follow Eurostat's guide and recommend allocating ERTR to ISIC codes by applying different methods depending on available data. For instance, using supply-use tables from national accounts, using complementary data on the tax bases such as data on energy use or waste disposal, or using micro data could be good starting points in case no detailed information is readily available. More information on potential data source can be found in Annex B.

## 2.5. The type of tax incidence used for ERTR accounts

The guidelines recommend allocating ERTR to industries and households according to the “tax payer” principle, i.e. revenue is allocated to the user(s) of the tax base. Hence, the “tax payer” might differ from the entity from which (e.g., for efficiency reasons) the tax revenue is collected (i.e. it might differ from statutory incidence). This approach is in line with Eurostat's guide and the OECD PINE database.

As a guiding principle, it is recommended to:

- Allocate tax revenue collected directly from the users of the tax base to these users. For instance, an extraction tax (e.g., on the volume in tonnes) would be allocated to the mining and quarrying industry (ISIC-B) because the tax base is the extraction and the “user” of the tax base is the extractive industry. Similarly, a tax levied on the use of minerals and collected from the user(s) of the minerals would be allocated to these users.
- Allocate tax revenue from the consumption of a natural resource to the user(s) of the natural resource, even if the revenue is collected from another entity that does not use the resource. For example, a tax on the consumption of minerals and collected from a mineral extractor would be allocated to the user(s) of the minerals (e.g., ISIC-C24).
- Table 3 provides a few other selected examples for illustrative purposes.

To identify the “tax payer” in practice, Australia's ABS discussion paper recommends using industry and household specific information. For energy taxes, it recommends to use the information provided in the energy accounts, and for transport taxes to use statistics on gross fixed capital formation and household final consumption expenditure on vehicles from the national accounts.



**Table 3. Selected examples of the “tax payer” principle**

<b>Tax base category</b>	<b>Details</b>	<b>Selected examples</b>
		<i>allocation to ISIC industries and households (HH)</i>
<b>Energy</b> including fuel for transport	<i>Energy products for transport purposes</i>	Diesel fuel purchased by farmers (ISIC-A), Kerosene use of airlines (ISIC-H), Petrol fuel purchases by households (HH), Refining mineral oil (HH, ISIC-H, ISIC-A, etc.)
		Light fuel oil use in large industrial facilities (ISIC-C), Electricity and natural gas supply (ISIC-D)
	<i>Energy products for stationary purposes</i>	Electricity and natural gas consumption (HH, ISIC-C, etc.) Electricity and natural gas import (ISIC-D, etc.) Electricity and natural gas export (non-residents)
		<i>Energy related GHG emissions</i>
<b>Transport</b> excluding fuel for transport		Car registration for private use (HH), Car registration for commercial use (ISIC-H, etc.), Congestion charges (HH, ISIC-H, etc.)
<b>Pollution</b>	<i>Non-energy related GHG emissions</i>	Methane emissions from agricultural activities (ISIC-A), GHG emissions from the manufacturing of chemical products (ISIC-C)
	<i>Pollutant emissions to air</i>	Pollution emitted from coal-fired power plants (ISIC-D)
	<i>Ozone depleting substances</i>	Use of refrigerants in refrigeration and air-conditioning (ISIC-I, HH, etc.)
	<i>Effluents to water</i>	Discharging wastewater (ISIC-C, HH, etc.)
	<i>Non-point sources of water pollution</i>	Fertilizer and pesticide use in agricultural production (ISIC-A)
	<i>Waste management</i>	Purchase of plastic bags or beverage containers (ISIC-I, HH)
		Purchase of batteries (HH, ISIC-J, etc.)
<i>Noise</i>	Generators of noise such as airports (ISIC-H)	
<b>Resources</b>	<i>Resource extraction, abstraction, harvesting</i>	Ground-water abstraction for irrigation (ISIC-A), Stream water abstraction for power plant cooling (ISIC-D), Extraction of minerals (ISIC-B)

*Note:* These are stylised examples for illustrative purposes only. The list of examples is not exhaustive and might need to be adapted to country-specific circumstances.

## 2.6. Treating non-residents

In line with the SNA, the SEEA and Eurostat’s guide, the guidelines recommend applying the principle of the residence of the units involved, and not the territory where the activity takes place. It is recommended to make data on ERTR of non-residents explicit in order to ensure coherence across other SNA and SEEA accounts, and to allow switching from the territory principle to the residence principle and vice-versa (once information on the ERTR of residents abroad is additionally compiled).

This category comprises non-resident households, corporations and foreign governments. While this item might be relatively small in most countries and challenging to account for in practice, any attempt to report this item would improve the comparability of the accounts with other SEEA modules. Eurostat’s guide refers to several approximation methods to account for non-residents (e.g., transportation fuels used to estimate air emissions from road transport, airport taxes).

## 2.7. Allocating ERTR to calendar years

Another important issue is how to ensure consistency over time. Since ERTR accounts are expected to be reported on an annual basis for each calendar year, it is crucial to define at which point in time an ERTR

materialises. Generally, there are two possible approaches: accounting according to the *accrual* or *cash* basis. The former accounts for taxes when the liability to pay taxes arises, and not necessarily when they are paid. The latter accounts for the tax when the payment is actually made.

The guidelines follow the principle of accrual accounting in line with the SNA, SEEA, Eurostat's guide, OECD Revenue Statistics and IMF GFSM (unless it is infeasible for compilers). This means that the ERTR should be recorded when the taxable activity takes place, which is not necessarily equivalent to when the tax authorities are notified, when a tax demand is issued, when the tax is due to be paid, or when the payment is actually made.

This is particularly important when it comes to revenue from the auctioning of, for instance, emission permits. According to the guidelines, such payments should be recorded – if possible – at the time the emissions occur (and not necessarily when the emission permits are being auctioned).

## 2.8. Allocating ERTR to different levels of governments

Optionally, the guidelines suggest disaggregating ERTR also by the levels of government whose budget is replenished. Such a breakdown would be in line with the SNA, OECD Revenue Statistics,<sup>11</sup> and IMF GFSM, but has – so far – not been applied to ERTR accounts.

The levels of government depend on the country-specific context, but generally comprise central, state and local governments. While a breakdown according to such entities would be desirable, the implementation in practice depends on the structure of the country, the competencies given to sub-national levels and the availability of such information. Compilers are invited to report this information in case it is available or to explain why it is not available.

## 2.9. Summary of refinements and additions relative to existing approaches

The guidelines are based on existing approaches (most notably Eurostat's guide) and complement these by including two sub-categories for taxes on energy and non-energy related GHG emissions, four memo items (for certain land taxes, taxes on oil and natural gas extraction, taxes on the resource rent (profit taxes only), and elevated VAT), and a common platform aimed at ensuring coherence between the industry-level ERTR accounts and the instrument-level information provided in the OECD PINE database on environmentally related tax rates and the physical volumes being taxed.<sup>12</sup>

The four memo items extend the existing accounting approaches to other important transactions concerning the use of environmental assets. Joint collection of data on such transactions is seen as useful. To ensure coherence with other reporting processes (Eurostat, OECD PINE), the four memo items are to be reported separately, and they are not added to the total ERTR (i.e. they leave the total ERTR unchanged).

The refinements and additions are shown in Table 1 and further explained hereafter:

- **Sub-categories for GHG emissions:** The guidelines recommend focusing on GHG emissions by additionally accounting for ERTR from energy and non-energy related GHG emissions separately and explicitly reporting them. The energy related GHG emissions are a sub-category of energy taxes and non-energy related GHG emissions fall under pollution taxes. This ensures that (i) splitting tax revenue between energy and non-energy related GHG emissions is consistent with the allocation of ERTR to the energy and pollution tax base categories, thus further improving the internal consistency of the ERTR accounts while allowing the accounts to be comparable with those compiled using Eurostat's guide, and (ii) ERTR arising from directly taxing GHG emissions (i.e. GHG emissions as tax bases) are made explicit at a more granular level, hence improving the policy relevance of the ERTR accounts.<sup>13</sup>

- **Memo item on certain land taxes:** Land use and land use change are associated with environmental pressures (e.g., nutrient runoff from farmland, wastewater discharges from industrial facilities, loss of open space and air pollution from residential development and transport infrastructure) (Hascic and Wu, 2006<sup>[13]</sup>; IPCC, 2006<sup>[14]</sup>). Eurostat's guide recommends excluding land taxes from ERTR accounts, in particular those general land taxes that are uniformly levied on the size or value of land, as they do not change relative prices and ensuring comparability across countries is challenging. However, differentiated land taxes can change relative prices, and certain land taxes directly capture environmentally related activities, for which comparability can be ensured.

Therefore, the guidelines suggest to include particular land taxes, most notably but not exclusively: (i) Land conversion taxes levied on the amount of land converted from a more natural to a more anthropogenic land use type providing fewer ecosystem services (e.g., from forest to cropland, from wetland to drained agricultural land use, from agricultural to residential land use); (ii) taxes according to specific land or soil characteristics (e.g., taxes on m<sup>2</sup> of soil-sealing, soil quality)<sup>14</sup>; and (iii) elevated tax rates on certain types of land uses (e.g., intensive agriculture and forestry, surface mining, tax bases listed in Table 1). Importantly, such taxes are included solely based on the aforementioned features, independently of their legal name or the motivation underlying their introduction. This is consistent with other OECD work that suggests that land taxes could be more frequently used as a policy instrument to achieve environmental objectives (Blöchliger, 2015<sup>[15]</sup>; Brandt, 2014<sup>[16]</sup>).

In short, the reasons for including such types of land taxes are that they change relative prices and their tax bases are directly environmentally related, thus ensuring the consistent application of the definition of environmentally related taxes.

- **Memo item on taxes on oil and natural gas extraction:** The guidelines suggest including a memo item on ERTR from taxes on oil and natural gas extraction. This item would complement existing ERTR of taxes on other raw material extraction to cover ERTR from extraction or abstraction of all natural resources. In line with existing approaches, taxes on the extraction or abstraction of other resources (e.g., water, minerals, biological resources) are recorded as resource taxes.

Eurostat's guide recommends excluding revenue from taxes on oil and natural gas extraction motivated by concerns that they are only relevant for certain countries and by the heterogeneous ownership structures of oil and natural gas assets (see Annex A).<sup>15</sup> However, including revenue from taxes levied on oil and natural gas extraction (excluding profit taxes related to the resource rent) helps avoid any arbitrary exclusion of certain raw materials that can be identified as environmentally related (Section 2.2) and to close the gap of coverage of ERTR across the extraction or abstraction of all natural resources.

- **Memo item on resource rent taxes (profit taxes only):** The guidelines suggest including information on taxes levied on profits related to the resource rent, even if these taxes are not recorded as such in the national accounts.<sup>16</sup> The SEEA and Eurostat's guide recommend to not record profit taxes related to the resource rent as part of the ERTR accounts.<sup>17</sup> However, the activities underlying the generation of the resource rent are certainly environmentally relevant, and the additional information provides policy makers and researchers with valuable data on how and to which extent resource rents are being taxed.<sup>18</sup>
- **Memo item on elevated VAT:** VAT is often uniformly levied on all products, thereby not changing relative prices. In case reduced VAT rates apply for certain products (e.g., food, books), this can be considered a subsidy and should not be recorded in the ERTR accounts. However, elevated VAT rates levied on environmentally related tax bases covered in Table 1 are conceptually in scope of the ERTR accounts. Therefore, the revenue generated from an elevated VAT rate on environmentally related tax bases are included in the ERTR accounts, because such taxes alter

relative prices. It is important to note that only the additional revenue from the elevated VAT rate above the standard VAT rate is recorded in the ERTR accounts under Memo Item 4.

The guidelines also provide a basis for developing a platform aimed at ensuring coherence between the industry-level ERTR accounts and the instrument-level information reported in the OECD PINE database on ***environmentally related tax rates and the physical volumes being taxed***. This will enable more in-depth analyses of the factors associated with changes in the ERTR accounts as well as feed into empirical investigations. To this end, it would be useful to crosscheck the environmentally related tax rates, the underlying physical volumes being taxed and exemptions (all at the tax base level) as part of reporting on ERTR. This will ensure coherence between the ERTR accounts and the information reported to other databases, such as the OECD PINE database.

# 3. Conclusions and next steps

These methodological guidelines support compiling ERTR accounts in line with the SEEA, while ensuring consistency with data collected in the OECD Revenue Statistics and the OECD PINE database. The practical application of the OECD guidelines was successfully pilot-tested in 2018-2019. The results show that it is feasible to compile ERTR accounts in countries with varying degrees of experience, though their full completion may require additional work. They also show that the guidelines can facilitate the compilation of SEEA-consistent ERTR accounts across OECD countries and beyond.

The feasibility study and two rounds of data collection from OECD and selected non-OECD countries indicate that it is possible to integrate the reporting of ERTR accounts into the WPEI's regular data collection. Countries that already report ERTR accounts to Eurostat are welcome to report, on a voluntary basis, on the split between revenue from energy and non-energy related GHG emissions taxes, as well as on the four additional memo items. This can help to further align the two approaches (OECD, Eurostat). In the meantime, the accounts compiled using the OECD approach can be made consistent with Eurostat data (though not vice-versa). These methodological differences will require further discussions with Eurostat and international partners with the aim to progressively achieve full harmonisation.

To refine the measurement of ERTR accounts even further, the following points could be explored as part of a **research agenda**:

- **Further aligning existing data:** The compilation of ERTR accounts provides an opportunity to align data on revenue from environmentally related taxes (and environmentally related fees and charges) with the data collected in the OECD Revenue Statistics and the OECD PINE database, and to better understand the reasons for any differences across these data sources [ENV/EPOC/WPEI(2018)7].
- **From environmental relevance to environmental costs:** The existing approach to identify environmentally related taxes is based on tax bases that are of environmental relevance (see Table 1). This approach has many practical benefits and ensures a sufficient level of “objectivity” necessary for accounting purposes. A related body of literature studies to what extent environmentally related tax rates internalise negative environmental externalities. A dedicated empirical study could explore how closely the ERTR accounts reflect internalisation of negative environmental externalities.

Future extensions of this work could go beyond taxes (the ERTR accounts) and compile information also on the revenue from **environmentally related fees and charges**. This is important because they are no different in terms of internalising negative environmental externalities; in fact, the environmental economics literature makes no difference between the two and treats fees and charges as equivalent to “taxes”.

Another future work stream could focus on **subsidies**. While the OECD has worked extensively on both environmentally beneficial and environmentally harmful subsidies (OECD, 2005<sup>[17]</sup>), including the development of an OECD inventory of support measures for fossil fuels (OECD, 2018<sup>[18]</sup>), compiling accounts on environmentally related subsidies has not been done so far. However, information on environmentally beneficial subsidies is collected in the OECD PINE database and work on environmentally harmful subsidies is on-going at OECD (including support for fossil fuels, fisheries, agriculture and biodiversity-harmful subsidies). Future work could usefully build on these elements for compiling accounts on environmentally related subsidies, including experiences in countries (e.g., Sweden, Italy, New Zealand) and on work done by Eurostat.

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## Notes

<sup>1</sup> See for instance (OECD, 1993<sub>[30]</sub>; OECD, 1995<sub>[20]</sub>; OECD, 1997<sub>[28]</sub>; OECD, 1997<sub>[29]</sub>; OECD, 2000<sub>[35]</sub>; OECD, 2001<sub>[26]</sub>; Johnstone and Serret, 2006<sub>[34]</sub>; OECD, 2007<sub>[27]</sub>; OECD, 2010<sub>[22]</sub>) or (OECD, 2013<sub>[24]</sub>; OECD, 2013<sub>[23]</sub>; OECD, 2013<sub>[21]</sub>; OECD, 2015<sub>[25]</sub>; OECD, 2016<sub>[31]</sub>; OECD, 2017<sub>[32]</sub>; OECD, 2018<sub>[33]</sub>).

<sup>2</sup> The EU mandated the compilation of ERTR accounts in 2013 ([Regulation 691/2011](#)). Eurostat compiles and disseminates ERTR accounts for 33 countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Türkiye and Switzerland.

<sup>3</sup> ABS' discussion paper on ERTR accounts is based on the recommendations described in the SEEA and generally in line with Eurostat's guide.

<sup>4</sup> See Table 1 and Section 2.9 for details.

<sup>5</sup> There is on-going work that may lead to the revision of the OECD definition of taxes to include also payments to supra-national institutions.

<sup>6</sup> The following are considered taxes in the SNA and the OECD Revenue Statistics: Payments by persons or households for licences to own or use vehicles, boats or aircraft and for licences for recreational hunting, shooting or fishing are treated as taxes. However, payments for all other kinds of licences (e.g., driving or pilot's licences, firearm licences) or fees to government (e.g., payments for passports, airport fees, court fees) are not treated as taxes.

<sup>7</sup> For a more detailed discussion see (OECD, 2017<sub>[19]</sub>).

<sup>8</sup> The SNA mentions *environmental* taxes in §29.110-29.113, the SEEA in §4.148-4.165 and the IMF GFSM in §A7.115-A7.134.

<sup>9</sup> For instance, in the SNA taxes are classified regarding taxes on production and imports, income and wealth, and capital. In the OECD Revenue Statistics, taxes are classified according to income, profits, capital gains, earnings, payroll, number of employees, property, goods and services, and others. Nevertheless, most ERTR are likely to be part of taxes on production and imports in the SNA and on goods and services in the OECD Revenue Statistics.

<sup>10</sup> For instance, it is relatively straight-forward to distinguish taxes on energy products from those levied on transport equipment or transport services, thus facilitating their reporting in two separate tax categories. Moreover, while transport fuels could be grouped together with taxes on motor vehicles to get a clearer picture of the overall revenue paid by the transport sector, for a number of countries it is not possible to distinguish revenue raised on transport fuels from other energy products. In addition to introducing the pollution and resource tax categories at a later stage, these considerations lead to the initial structure and categorisation that still underlies Table 1.

<sup>11</sup> According to OECD Revenue Statistics, the central government includes all governmental entities whose competence extends over the whole territory, whereas the state/provincial/regional or local government are independent from the central government whose competence extends over a limited territorial space.

<sup>12</sup> Including the optional breakdown according to levels of government (Section 2.8) could also be considered a complement to existing approaches.

<sup>13</sup> From the climate policy perspective, these are the first-best policy instruments that are advocated most widely because they tax directly the emissions rather some proxy. As such, their importance is likely to increase in the future, which is supported by explicitly reporting on them.

<sup>14</sup> For instance, Kazakhstan introduced a land tax levied on the amount of agricultural land use with differentiated tax rates according to the quality of the soil.

<sup>15</sup> Payments to governments based on state-owned subsoil assets are considered rent in the SNA, OECD Revenue Statistics and IMF GFSM. Sometimes these rents are described as “royalties” (see SNA §7.110: “The regular payments made by the lessees of natural resources such as subsoil assets are often described as royalties, but they are treated as rent in the SNA.”).

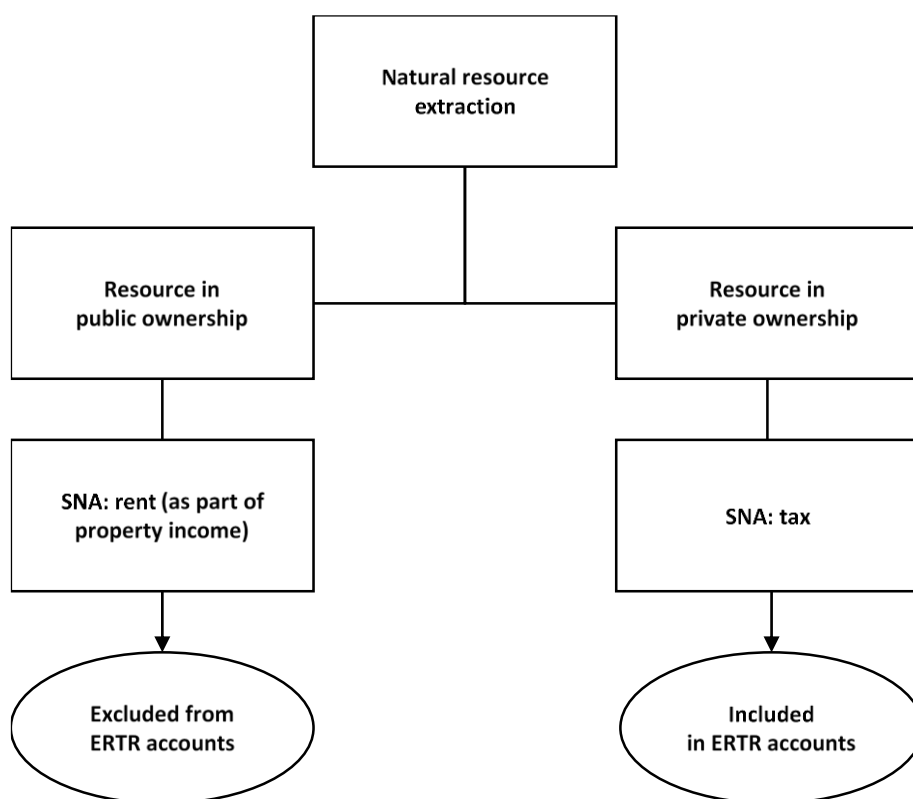
<sup>16</sup> According to the SNA: “Rent is the income receivable by the owner of a natural resource (the lessor or landlord) for putting the natural resource at the disposal of another institutional unit (a lessee or tenant) for use of the natural resource in production.” (United Nations, 2009, p. 156<sup>[2]</sup>). According to Eurostat’s guide, “the resource rent can be defined as the value of output less all extraction costs, including a normal return to fixed capital, and represents a kind of ‘pure profit’ from extraction.”

<sup>17</sup> The SEEA and Eurostat’s guide argue that “payments by an extractor to the owner of the mineral resources corresponding to a share of the resource rent should be shown as property income even if they are described as taxes and treated as such in a government’s own accounts” (United Nations, 2009, p. 588<sup>[2]</sup>).

<sup>18</sup> The inclusion of Memo Items 1-3 allows deriving all tax revenues that relate to the resource rent by combining the information on extraction taxes recorded under the resource tax category with resource rent related taxes in Memo Items 1-3.

# Annex A. Accounting for taxes on natural resource extraction

Figure A.1. Accounting for natural resource extraction in the SNA and the ERTR accounts



## Annex B. Practical compilation guide

This compilation guide summarises the main steps to derive ERTR accounts in practice. The compilation guide covers the most important aspects of the OECD guidelines, and compilers are encouraged to consult the main document for a detailed description of the underlying concepts, definitions and principles. This practical compilation guide incorporates the insights gained during a feasibility study documenting the implementation of the guidelines [ENV/EPOC/WPEI(2018)6/REV1/ADD], and two rounds of data collection from OECD and interested non-OECD countries.

Figure B.1. illustrates the process underlying the compilation of ERTR accounts described in these guidelines. The ERTR accounts are broken down by industries using ISIC classifications, households, non-residents and – optionally – the levels of government. The ERTR accounts apply the “tax payer” principle. At the same time, the ERTR accounts are also classified according to four tax base categories (energy, transport, pollution and resources) as well as two sub-categories (energy and non-energy related GHG emissions).

Compiling ERTR accounts according to these guidelines can be described chronologically as follows.

### 1. **Compiling a general tax list:**

- Compile a general list of taxes that is consistent with the definition described in the SNA (see Section 2.1 for details). Such detailed tax lists will serve as a starting point to identify environmentally related taxes.
- This exercise should be repeated every time the accounts are updated to ensure relevant changes are included.
- Potential data sources: Use existing information on tax revenues reported in the national accounts, national tax lists from the Ministry of Finance, or information reported in the OECD Revenue Statistics.

### 2. **Identifying environmentally related taxes:**

- Drawing on the general tax list and the list of environmentally related tax bases (see Table 1) identify taxes that are environmentally related and exclude all other taxes. All revenue from taxes levied on environmentally related tax bases should be reported as ERTR in the accounts.
- Additionally, collect ERTR for certain land taxes, extraction taxes on oil and natural gas, resource rent taxes and elevated VAT, as described in Section 2.9.
- For all taxes identified as environmentally related, include the detailed information at the tax base level, including tax rates, tax revenue, exemptions and the physical volumes underlying the ERTR.
- Potential data sources: The identification of environmentally related taxes is likely to require additional information on the exact tax base, such as the tax legislation, detailed information from the Ministry of Finance or sub-national agencies. This information is necessary to distinguish whether (or not) specific taxes are levied on environmentally related tax bases. Additionally, information reported in the OECD PINE database could be consulted.

### 3. **Allocating ERTR to tax base categories:**

- Based on tax-specific information, classify ERTR according to four base tax categories (energy, transport, pollution, and resources) and the two sub-categories (energy and non-energy related GHG emissions) (see Table 1 for details).

- If an ERTR spans across several tax base categories, the ERTR should be split according to an allocation key reflecting the relative contribution of each tax base category to the total ERTR of the categories involved in the split. If such split is not possible, the allocation could be done according to the category most aligned with the tax.
- Potential data sources: For this step, tax-specific information on the tax base could be used, similar to the previous step. Once the exact tax base is identified, the allocation to the four tax base categories and the two sub-categories can directly be made in line with Table 1.

#### **4. Allocating ERTR to industries, households and non-residents:**

- Using tax-specific information on the tax bases, allocate ERTR to ISIC industries, households and non-residents.
- Generally, the allocation to industries, households and non-residents is based on the “tax payer” principle, i.e. the final user of the tax base (Sections 2.4 and 2.5).
- Potential data sources: This step is likely to be country and tax-specific. Nevertheless, supply-use tables in the national accounts that allow identifying the use of the exact tax base or firm-level data on the use of the tax base can support the allocation of ERTR to ISIC industries, households and non-residents. Similarly, vehicle registries, fuel purchases, VAT registers, among others, could be used for individual taxes. Sometimes detailed firm-level data (e.g., data from government bodies collecting the tax) are available to support the allocation, in particular when a tax base is used by multiple industries. The identification of the final user of energy-related tax bases could be based on information provided by energy flow accounts and statistics on gross fixed capital formation and household final consumption expenditure on vehicles from the national accounts for transport taxes. For non-resident ERTR from fuel taxes, for instance, ratios between resident/non-resident breakdown of physical consumption from the energy account could be used. For products subject to ERT, these ratios are used to split the original fuel excise tax estimate between resident and non-resident liabilities.

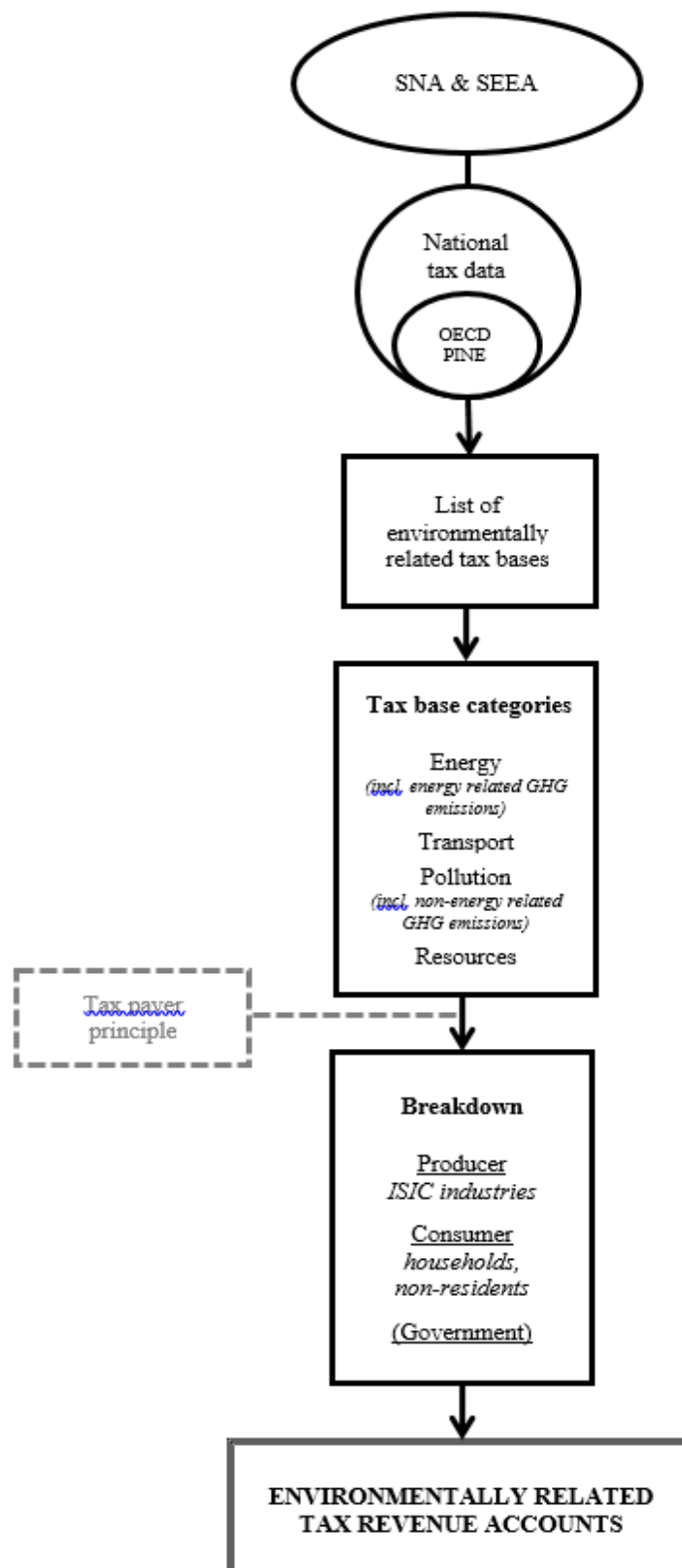
#### **5. Allocating ERTR across calendar years:**

- Allocate ERTR to the calendar year in which the liability for these taxes arises, i.e. applying the accrual principle (Section 2.7). In case it is not possible to apply the accrual principle, countries can report on a cash basis. However, this should be made explicit in the ERTR accounts.
- Potential data sources: Since the tax revenue recorded in the national accounts should already follow the accrual principle, the allocation of ERTR across years can – in most cases – be done by directly using the information provided in national accounts. For the more challenging cases related to emission permits, additional data sources for firm-level activities might be required.

#### **6. Optional: Allocating ERTR to levels of government:**

- Split the ERTR according to three levels of government whose budget is replenished by environmentally related taxes (Section 2.8), namely (i) central, (ii) state, (iii) and local.
- Potential data sources: Existing data reported in the OECD Revenue Statistics could be an adequate starting point for making the distinction between different levels of government. Additionally, information provided by the finance ministry or sub-national agencies could be used.

Figure B.1. Visualisation of compiling ERTA accounts



# Methodological Guidelines for Environmentally Related Tax Revenue Accounts

This report presents the OECD methodological guidelines for compiling Environmentally Related Tax Revenue accounts. The guidelines are in line with the System of Environmental Economic Accounting and ensure consistency with national and international data sources and manuals. The OECD guidelines are based on those of Eurostat with refinements and additional memo items. First, revenue from greenhouse gas taxes is split into two sub-categories: an energy-related part (recorded as an energy tax) and a non-energy-related part (recorded as a pollution tax). Second, four "memo items" are introduced to enhance the relevance of the accounts for policy work: (i) certain land taxes, (ii) taxes on oil and natural gas extraction, (iii) taxes on the resource rent and (iv) elevated VAT levied on environmentally related tax bases. The practical application of these guidelines was successfully pilot-tested in 2018-19, and the guidelines were implemented in the 2019 and 2021 rounds of data collection from OECD member and partner countries. The results show that it is feasible to compile the accounts, including the refinements and the additions outlined in this document, across OECD and beyond.



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