The Interaction of Carbon Taxation with other National Measures

Part B: Assessing the interaction of carbon taxation with excise duties, VAT, and income taxation

Final Paper by the UN Committee of Experts on International Cooperation in Tax Matters

(Advance Unedited Version)

At its Twenty-third Session in October 2021, the UN Tax Committee established the Subcommittee on Environmental Taxation. The Subcommittee is mandated to:

- Produce practical guidelines on targeted, additional, and emerging issues in the area of carbon taxation, which are not covered or fully developed in the Handbook on Carbon Taxation for Developing Countries. These guidelines could initially be released as stand-alone materials, and later be assembled in a publishable format. Relevant issues might include: (i) the interactions of a carbon tax with other environmental and environmentally-related taxes, (ii) the role of a carbon tax in a broader fiscal reform, including the consideration of distributional effects; and (iii) in collaboration with the Extractive Taxation Subcommittee (if one is created), work on practical tax policies/measures/incentives with the potential to accompany countries' efforts in transitioning from fossil fuel energy to renewable sources.

- Pay particular attention to the needs and priorities of, and the barriers faced by, developing countries, and report on relevant cases of current country practices, policy considerations and administrative issues.

- Work on any additional relevant environmental taxation issues as requested by the Committee.

During its mandate, the Subcommittee engaged in five workstreams, as follows: Workstream 1: The interaction of carbon taxation with other national measures; Workstream 2: The role of carbon taxes and other measures in supporting energy transition; Workstream 3: The interaction between carbon taxes and carbon offset programs; Workstream 4: Border carbon adjustment measures and how developing countries can avoid undesired spillover effects from their implementation by other jurisdictions; and Workstream 5: Environmental tax measures other than carbon taxes that are relevant for developing countries.

This document constitutes Part B of Workstream 1. It was approved by the Committee at its Thirtieth session in March 2025. Part A of Workstream 1, titled "*Interaction between carbon taxes and other environmental measures (emissions trading and climate policy)*," was approved at the Committee's Twenty-eighth session. Part C, titled "*Phasing out fossil fuel subsidies*," was approved at the Committee's Twenty-ninth session. Advance unedited versions of Parts A and C are available on the Committee's webpage.

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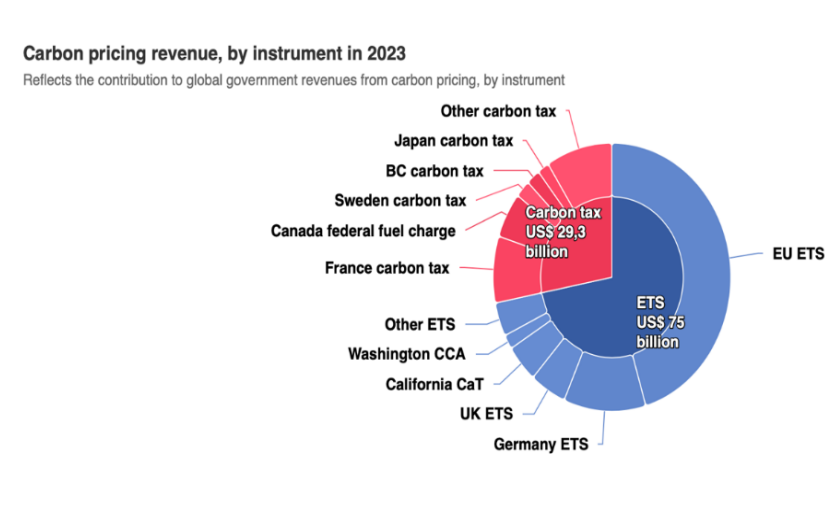
1. Introduction

Carbon taxation is a critical tool in the global efforts to address climate change. By placing a direct price on carbon emissions, it provides an environmental steering effect[1] to generate incentives for business and households to produce, consume more climate friendly products and to innovate. By promoting investment in low-carbon options, carbon taxes play a key role in propelling the economy towards sustainability. Countries globally continue to introduce carbon taxes as part of broader environmental and fiscal policies to reduce greenhouse gas (GHG) emissions while mobilizing domestic revenue.

However, carbon taxation does not exist in a vacuum; it interacts with other elements of the tax system, such as excise duties, value-added tax (VAT), personal income tax, and corporate tax. These interactions can either enhance the effectiveness of carbon taxation, create inefficiencies, or result in unintended economic consequences. As a result, policymakers need to carefully consider how carbon taxation aligns with existing fiscal policies to ensure coherence, maintain revenue stability, and avoid conflicting incentives, to ensure a balanced and effective approach to mitigating climate change.

The relationship between carbon taxation and other fiscal measures is particularly important in designing a 'smart mix' of instruments that influence carbon pricing as a signal for environmental transition[2]. This interplay may also have a significant impact on tax revenue collection, which is often differentiated by sector – see further Figure 1.

Figure 1: Carbon pricing revenue by instrument in 2023



Source: World Bank Carbon Pricing Dashboard for country data: https://carbonpricingdashboard.worldbank.org/

[1] The potency of the environmental steering effect will depend on the ability of producers to pass on cost increases to consumers. Economists therefore examine the elasticities. These have been discussed in *Part A: Interaction between carbon taxes and other environmental measures (emissions trading and climate policy)* of the paper *"The Interaction of Carbon Taxation with other National Measures*" available on the Committee' webpage.

[2] A 'smart mix' acknowledges that all instruments used in the area of environmental policy (taxation, emissions trading, liability rules, command-and-control regulation) have their limitations thus creating the need for a combination of instruments so as to use the respective instruments to maximise the benefit to society and to realize the policy objectives. Some discussion on this is provided in the paper "Interaction between carbon taxes and other environmental measures (emissions trading and climate policy)" available on this link: https://financing.desa.un.org/what-we-do/ECOSOC/tax-committee/thematic-areas/environmental-taxation

Understanding the interactions between various instruments is particularly important as an effective carbon taxation design can support sustainable development while safeguarding fiscal revenues. The need to balance environmental goals with economic realities, ensuring that carbon pricing does not disproportionately impact low-income households or deter necessary investments in energy transition is key. To aid policymakers, this paper examines the relationship between carbon taxation and key tax instruments, analysing their interactions and implications for both revenue collection and climate policy. It explores the interaction of carbon taxation with excise duties (Section 2), VAT (Section 3), personal income tax (Section 4), and corporate income tax (Section 5) before presenting key takeaways for developing countries (Section 6).

Note: This paper was finalized and approved by the UN Tax Committee in March 2025. It includes data, examples, and policy discussions that were current at the time of drafting. While some developments may have evolved since then, the analysis and country examples remain valuable for understanding the interaction of carbon taxes with other fiscal instruments in support of energy transition and revenue stability.

2. Context for Policy Interactions

Carbon taxation interacts with other fiscal measures in multiple ways, shaping both its environmental effectiveness and economic impact. The 2021 UN Handbook on Carbon Taxation for Developing Countries [3] categorizes these interactions [4] into three categories: complementary, overlapping or countervailing.

- **Complementary measures** have different policy objectives, but they reinforce each other, making them more effective.
- **Overlapping measures** have similar objectives but create inefficiencies in the process. They can for example increase the social costs of achieving emissions reductions, increase the economic burden for the regulated companies or the administrative costs for the regulator. Nevertheless, there may be situations where such policy overlaps may be helpful in achieving decarbonization of a particular sector.
- **Countervailing measures** have adverse effects on decarbonization measures but could still be justifiable as they pursue other important societal goals and objectives. For example, phasing out coal-based energy generation for example would be complementary to a carbon tax. A carbon emissions trading scheme can be overlapping with a carbon tax. Tax rebates on (high emission) cars would constitute a countervailing measure to a carbon tax.[5]

Policy measures can also fall within a fourth category and be '**redundant**' if they do not achieve any additional emission reductions while creating additional costs to society.[6] This would be the case of unnecessary tax incentives –when a green investment would have been carried out irrespective of them. To reduce emissions, countries should aim at "filling-the-gap" policies that use revenues to address emissions that the tax would miss, while avoiding reinforcing behaviors that are anyway incentivized by the tax. For example, carbon tax revenues used to incentivize businesses to install solar panels are

3 UN Handbook on Carbon Taxation for Developing Countries available at: https://financing.desa.un.org/document/un-handbook-carbon-taxation-developing-countries-2021

4 The UNDP has launched the SDG Taxation Framework, which establishes the notion of a national carbon price. That should be consistent with its Nationally Determined Contributions, in the interest of aligning fiscal measures with the climate targets put forward by the Paris Agreement. See UNDP, SDG Taxation Framework Handbook, 2025, available at: https://www.taxforsdgs.org/brochures.

5 Many more examples are enlisted in Table 9 on p. 174 of the UN Handbook.

6 See Interactions J. Gundlach, R. Minsk and N. Kaufman (2019) Between a Federal Carbon Tax and Other Climate Policies, https://www.energypolicy.columbia.edu/publications/interactions-between-federal-carbon-tax-and-other-climate-policies/, p. 22.

often redundant, since many of those businesses would have likely installed the panels because of the tax anyway[7].

Key considerations for policymakers

Consider different instruments to help the economy to transition, bearing in mind budgetary considerations.

Consider smart instrument mixes and policy interactions of the various instruments.

The interaction between carbon taxes with emissions trading systems and fossil fuel subsidies have been explored in other parts of Workstream 1.[8,9] Those mechanisms, alongside fuel excise duties, influence carbon prices in different ways. A recent analysis by the OECD assesses both positive and negative carbon prices, measuring the impact of fuel excise duties, carbon taxes, and emission trading systems as positive pricing mechanisms, while identifying fossil fuel subsidies as a factor reducing effective carbon prices. These assessments have been used to calculate net effective carbon rates (net ECRs) for 79 countries, covering approximately 82% of global emissions. The data reveals that reductions in carbon rates are primarily concentrated in implicit carbon pricing mechanisms, such as fuel excise taxes, which have been subject to adjustments in response to economic and energy policy shifts. Further details on these trends are provided in the following box.

The net effective carbon rate

If the sum of excise taxes, carbon taxes, and emission trading is taken to be an effective price on carbon (an "effective carbon rate", ECR, in OECD terminology), then the revenue from effective carbon rates already consisted in 2016 of 95.2% of excise tax revenue, 3.2% of carbon tax revenue, and 1.6% of revenues from emission allowances. There was an expansion in the base of carbon mitigation taxes in 2021[10]. The share of emissions covered by an explicit carbon price and fuel excise taxes in 2023 has remained unchanged compared with the share of emissions covered in 2021[11]. Approximately 42% of GHG emissions across the 79 countries are subject to a positive net ECR[12],

[7] UN Handbook, p. 157.

[8] The advance unedited version of "*Part A: Interaction between carbon taxes and other environmental measures (emissions trading and climate policy)*" of the paper "*The Interaction of Carbon Taxation with other National Measures*" is available on the Committee's webpage.

[9] *"Part C: Phasing Out Fossil Fuel Subsidies"* of the paper "*The Interaction of Carbon Taxation with other National Measures*", available on the Committee's webpage. Recent dialogue shows that "three-quarters of subsidies granted to the oil and gas industry were focused on exploration and production activities, and most oil and gas subsidies were delivered through taxation policy, such as lower taxes or accelerated depreciation. While coal generally caused the highest environmental impacts per dollar of subsidy, it also generally had lower taxes than other fuel types". WTO, Fossil Fuel Subsidy Reform (FFSR) *Summary Report* of the Meeting held on 26 November 2024, 25-0344, 13 January 2025, INF/TE/FFSR/R/5. https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/INF/TEFFSR/R5.pdf&Open=True

[10] OECD (2023), pp. 57-58.

[11] OECD (2024), p. 11. Pricing Greenhouse Gas Emissions 2024: Gearing Up to Bring Emissions Down, OECD Series on Carbon Pricing and Energy Taxation, OECD Publishing, Paris, pp. 6-8. https://doi.org/10.1787/b44c74e6-en.

[12] OECD (2024), p 15. The Net Effective Carbon Rate (Net ECR) is an indicator representing the effective tax rate on GHG emissions (measured in EUR/tCO2e) net of subsidies. The Net ECR attempts to account for negative carbon prices in the form of fossil fuel subsidies that decrease pre-tax prices of domestic fossil fuel use and may

accounting for carbon taxes, emissions trading systems, fuel excise taxes and fossil fuel subsidies. About 27% of GHG emissions in 2023 are covered by explicit carbon prices – an ETS, a carbon tax, or both - while the share covered by fuel excise taxes, an implicit form of carbon pricing, is lower at 23%. The change in rates has been mixed. Overall, the average net ECR declined to EUR 14.0/tCO2e in 2023 from EUR 17.9/tCO2e in 2021. Explicit carbon prices increased, primarily reflecting the increase in average ETS permit price and modest carbon tax increases. Implicit carbon prices in the form of fuel excise taxes remain the strongest price signal, despite decreasing relative to 2021 levels. This was accompanied by an increase in fossil fuel subsidies.

In an effort to address concerns over energy affordability and security, governments ramped up fossil fuel subsidies and introduced rate reductions and exemptions to fuel excise taxes. As a result, the net ECR of road transport, buildings and agriculture strongly declined between 2021 and 2023. Road transport remains priced at the highest average net ECR across sectors, despite a substantial decrease of 24%.

It has become clear in recent years that there is no silver bullet for carbon pricing and energy policy as countries have opted for a complex array of policy instruments to mitigate climate change that suit their economic, political and social circumstances. As policy action ramps up, the challenge increasingly is to understand policy interactions internationally.

When making the choice of various instruments to achieve climate goals, governments can consider how existing tax systems will influence the expected cumulative effects of carbon pricing mechanisms, taking into account equity concerns and the need for tax packages that ensure public support.

In response to climate change, governments may deploy a broad set of fiscal policy measures that are not strictly speaking environmental taxes. These include in particular tax expenditures such as lower excise duties, reduced VAT rates, reduced personal income taxes or corporate income tax deductions and accelerated depreciation programmes. These measures have the potential to either undermine or reinforce the incentives set by carbon taxes. Each of these types of taxes will be examined in this paper in terms of their complementary, undermining/countervailing, redundant or reinforcing effect on carbon taxation and its (joint/combined) potential to set incentives for transitioning towards a low-carbon economy and for channelling investments towards R&D and innovation.

The transition towards a carbon friendly economy requires fundamental changes in a wide array of sectors and consumption patterns. Efforts to reach net-zero targets will necessitate deep transitions to sectors that may currently be paying significant amounts of tax. Maintaining a stable tax base may be critical for many countries. Such transitions also require the setting of incentives by different

counteract the price signals from fuel excise taxes, carbon taxes and ETS permit prices. The net effective rates take into account negative carbon pricing or energy policy instruments resulting from consumption subsidies that lower pre-tax energy prices below reference prices. Changes in subsidies result from not only from policy changes, such as changes in the regulated pre-tax price, but also from changes in the reference price and therefore fluctuate with market conditions (e.g. an increase in the reference price, all else equal, would result in an increase in the subsidy amount and thus a higher negative price). This is unlike instruments such as carbon taxes and fuel excise taxes, which are not normally driven by broader market forces, but more by policy intervention. Together with preferential treatment, subsidies lower the price paid on emissions and energy.

governments to support climate policies and to garner public support[13]. Raising an adequate amount and quantity of revenue is essential for government's broader fiscal policy and often a precondition to be able to credibly support climate change policies.

Catalysing private finance is critical because both climate mitigation and adaptation require vast amounts of funding. The transformation of the global economy needed to achieve net-zero emissions by 2050 would require $9.2 trillion in annual average spending on physical assets, which amounts to an average annual GDP expenditure of 7.5% of global GDP.[14] Incentivising private funding that is geared towards environmental objectives becomes crucial. With properly structured incentives, private initiatives will play an essential role in seeking out and implementing the least-cost options for climate mitigation and adaptation.

3. Excise duties

3.1 Overview

Excise duties are specific consumption taxes typically applied to a range of products, such as petroleum products. They are usually charged based on the volume or other physical characteristics of a good (or even its energy content). These duties are passed on to the consumer and they are not levied when the goods are finally consumed but on upstream transactions, once when the goods are released for consumption.[15]

In low-income countries (LICs) and middle-income countries (MICs), excise taxes represent a significant share of revenues within the category of taxes on goods and services. In turn taxes on goods and services contribute the greatest share of total taxes. Excise taxes also form a larger share of revenues within taxes on goods and services in LICs and MICs (56% and 51%, respectively) than in high-income countries. However, in many countries a recent trend has been observed: the share of excises and custom duties has been decreasing, while the VAT has been growing[16]

[13] In a context of territorial decentralization, collaboration is key when detailing the contents of different regulations and their practical application. It is necessary to avoid not only redundant effects but also redundant requirements and allow to maximize the impact of carbon taxation interacting with other taxes.

[14] McKinsey & Company (2022), The net-zero transition, available at: https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring

[15] An indirect tax – such as VAT, an import levy or an excise duty – is a tax levied on a material or legal event of an accidental or temporary nature and upon a (legal or natural) person, who can often be an intermediary and not the person responsible for this event (hence the indirect character of the tax). European Commission: Directorate-General for Taxation and Customs Union, Taxation trends in the European Union – Data for the EU Member States, Iceland, Norway – 2022 edition, Publications Office of the European Union, 2022, p. 27 https://data.europa.eu/doi/10.2778/417176 For example, in the European Union, excise duties are indirect taxes on the sale or use of specific products, such as alcohol, tobacco and energy. EU excise duty rules cover all energy products used for heating and transport, as well as electricity. https://taxation-customs.ec.europa.eu/taxation/excise-duties/excise-duty-energy_en

[16] Excise revenues declined as a share of GDP in 21 countries – with all but two of these decreases being smaller than 0.3 p.p. – while they increased in six and were unchanged in ten countries. The contribution of taxes on goods and services to total revenues has fallen from 34.5% in the late 1990s to 32.1% in 2020. OECD (2023), Tax Policy Reforms 2023: OECD and Selected Partner Economies, OECD Publishing, Paris, pp. 16-19. https://doi.org/10.1787/d8bc45d9-en.

In 2021, the taxes on goods and services other than VAT amounted to 24%, in Africa to 26%, in Asia-Pacific to 20%, and in Latin American countries to 20%[17].

3.2 Interaction Between Excise Duties, Carbon Taxes, and Energy Policies

Many countries have fuel excise duties on energy use. A carbon tax can be integrated in the existing energy tax framework and can become a component of the overall taxation of energy products. Carbon taxes in several countries are integrated with the excise tax system for energy products (e.g. the Nordic countries, France and Mexico)[18]. This integration allows governments to set a price on carbon by combining excise duties and carbon taxes on fossil fuels. It is important to carefully manage how changes in excise taxes interact with carbon pricing, as shown (in the box below) by data indicating that excise taxes in large emitters have influenced carbon pricing trends.

Excise taxes and large emitters

A broadening of fuel excise tax bases in large emitters is expected in data from 2022[19]. The widespread cuts to fuel excise taxes, among other factors, are likely to reduce average net effective carbon rates (ECRs) in real terms in 2022. For example, in the past, net ECRs were highest in the road transport sector due to the predominance of fuel excise taxes. The fall in real terms net ECRs in this specific sector is expected to be stronger than for electricity and industry.

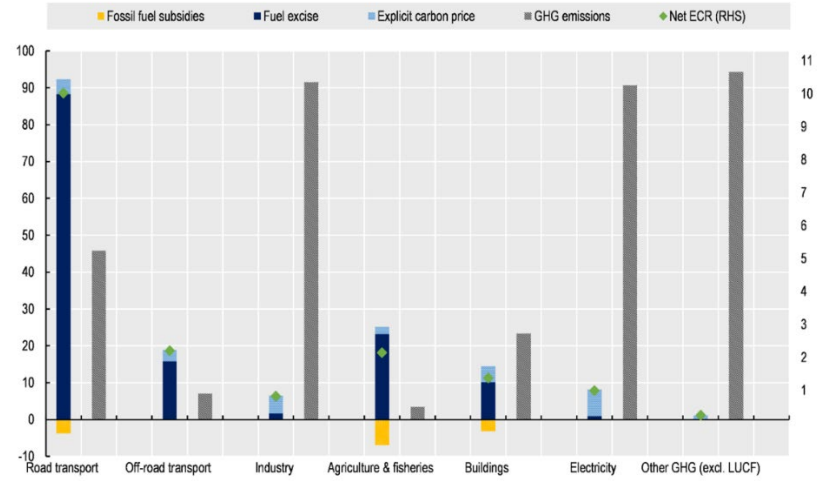
To ensure that excise duties support the transition to a low-carbon economy, countries should assess how excise taxes affect key sectors and consider the specific strategic importance of these sectors to their economies. The interactions between carbon taxes and other excise duties may differ across sectors, and therefore, the design of these taxes should be tailored to each country's economic and environmental objectives.

[17] See OECD (2023) Revenue Statistics in Africa 2023 ─ Nigeria available at https://www.oecd.org/tax/tax-policy/revenue-statistics-africa-nigeria.pdf, last visited 22/08/2024

[18] A carbon tax has been added to an already existing general excise tax, either as part of the general excise duty (e.g., in France) or as a separate tax (e.g., in Denmark, Finland, Norway and Sweden).

[19] ECR data for 2023 is foreseen for late 2024.

Figure 2: Average effective carbon prices and GHG emissions by sector, 2018-2021



Note: Net ECRs and its components (LHS) are averaged across all GHG emissions of the 71 countries covered in the report, including those emissions that are not covered by any carbon pricing instrument. Effective price information is for 2021, with the exception of fossil fuel subsidy estimates that are based on data for 2020. GHG emissions (RHS) are the sum of fossil-fuel related CO2 calculated based on energy use data for 2018 from IEA (2020[43]) and "other GHG" from Climate Watch (2020[44]).
Source: (OECD, 2022[42]).

StatLink 2 https://stat.link/c1qh3f

Tax incentives continued to be a popular policy tool to support the transition towards lower carbon consumption and production options in 2022. Some jurisdictions began to adapt these green incentives to target other economic and social considerations, including reducing foregone revenues, supporting domestic production, and addressing equity concerns[20]. A small number of jurisdictions raised taxes on fossil fuels, primarily to promote environmental sustainability. Some of the jurisdictions that have undertaken reforms to increase carbon taxes, and energy tax rates for fuels, though to a lesser extent, have also provided relief through energy tax reductions. This indicates common concerns of balancing short-run energy affordability demands and longer-term environmental sustainability priorities. These types of concerns may lead to changes in the excise taxes as well. However, maintaining stability of carbon prices has been shown to limit the extent to which clean investment is foregone by risk-averse investors[21].

The countries' possibilities to adapt their own systems of excise taxes during the transition may be limited or enhanced when they have to consider regional rules. They should carefully assess their options. In regional groupings, excise duties may be (partly) harmonized[22], e.g., in the European Union, petrol taxes have been approximated substantively –both with regard to the system and some minimum tax rates. EU law defines which goods are subject to harmonized excise duties not to harm the functioning of the internal market and under which circumstances they are exempt[23]. Tax rebates are normally administered by the end users asking for a tax reimbursement. Another way is to introduce

[20] OECD (2023), p. 57.
[21] OECD (2023), p. 60.
[22] It is important to exercise caution with a regional approach, ensuring careful design and implementation. Otherwise, the spillover effects could negatively impact the entire region, rather than just one country.
[23] Council Directive (EU) 2020/262 of 19 December 2019 laying down the general arrangements https://eur-lex.europa.eu/legal-content/EN/TXT/ PDF/?uri=uriserv:OJ.L_.2020.058.01.0004.01.ENG. For further information, https://ec.europa.eu/taxation_customs/business/excise-duties-alcohol-tobacco-energy/general-overview/common-provisions_en Council Directive 2008/118/EC of 16 December 2008 concerning the general arrangements for excise duty and repealing Directive 92/12/EEC, Official Journal of 14 January 2009, Nr. L9, p.12 *et seq*. Specific directives for each category of product define the tax base and minimum tax rates (including several derogations).

approval procedures for businesses, which under tax control may receive the fuels tax exempted. The Energy Tax Directive[24] determines the framework for imposing excise duties on energy products and electricity. Heating fuel is usually taxed at lower levels than energy products used as propellant. Energy products are also exempt from excise duty if they are used to produce electricity[25]. Gradual reductions in the electricity tax rate (as proposed in Denmark) aim to promote more investment in green technologies in the energy sector and more sustainable energy use[26].

3.3 Adapting Excise Tax Policies for Energy Transition and Climate Goals

A jurisdiction's experience with indirect taxation may be the starting point[27] to implement a carbon tax through the existing tax instruments, such as excise taxes and duties. A country may introduce or already have in place excise taxes on fossil fuels –although rates may differ across fuel types– and taxes on energy or resource taxes, which in practice, together with emission trading systems, set a price on carbon. This is relevant to conduct a previous benchmarking analysis and set an adequate tax rate[28].

A carbon tax can be implemented as a new separate tax or be incorporated as part of an already existing excise duty levied on fuels. Although such a carbon tax is a tax on carbon emissions, in practice, the tax base is a product. The carbon tax rates are calculated on the basis of average carbon content of the fuels but expressed by weight or volume units in the tax legislation.

Also, other excise taxes that are not carbon taxes reduce energy use and hence carbon emissions, especially if they are strictly calculated on the basis of energy content. However, they do not usually do so in a cost-effective way, because they are not aligned with the carbon content or the broader pollution profile of the taxed fuels. If an excise tax is designed in proportion to carbon content, it generates an incentive for a low-carbon energy mix. In some cases, the introduction of a carbon tax has been combined with a reduction in the pre-existing excise tax covering the same fuels.

Since most jurisdictions already collect some form of fuel tax, excise duty or levy, they likely already have the necessary administrative infrastructure in place. When a carbon tax is designed using the existing excise tax administration system (Fuel Approach), existing tax collection mechanisms can be utilized to administer the tax effectively. Choosing the same taxpayer for the new carbon tax will mean low additional administrative costs for both the taxpayers and the tax authorities[29]. Countries without experience in excise duties on energy may want to strive to grant the least exemptions/price differentiations possible to avoid complexity and thereby reduce implementation costs. A key

[24] Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity, Official Journal of 31 October 2003, Nr. L283 p.51 *et seq*.
[25] Schoen, W.: *EU Tax Law: An Introduction*, Working Paper of the Max Planck Institute for Tax Law and Public Finance, No. 2019-12, pp. 82-86.
[26] OECD (2023), p. 60.
[27] An excise tax is usually expressed as a per unit tax established on a specific volume or unit of an item, whereas a sales tax or value added tax is an ad valorem tax and proportional to the price of the goods. There are also ad valorem excise taxes, such as the carbon tax in Costa Rica which is calculated as a percentage of the price of certain fuels. For a detailed overview of the main design features of value added taxes, retail sales taxes and excise duties (including for alcoholic beverages, tobacco, household fuel and vehicles), see OECD (2022), Consumption Tax Trends 2022: VAT/GST and Excise, Core Design Features and Trends, OECD Publishing, Paris, https://doi.org/10.1787/6525a942-en.
[28] The interaction between carbon taxes and those instruments was explored in Chapter 10 of the 2021 UN Handbook on Carbon Taxation for Developing Countries.
[29] Applying a tax to fuels normally does not require direct measurement of emissions and is often built upon existing excise taxes, thereby making thresholds unnecessary.

consideration is to consult widely with the different actors within society to get their input prior to introducing the tax.

Temporary rate reductions of excise duties and value added taxes on energy products have been quite common in recent years to allow affordability. The economic context may change unexpectedly due to many reasons (e.g. energy prices rising) and therefore it is necessary to carry out a dynamic adaptation of the 'smart mix'. As governments have sought to implement visible policy measures that could have an immediate impact on the budgets of households and businesses who had to cope with elevated energy prices, tax measures have been a key component of support packages. The extent to which governments reduced energy taxes was determined by a number of factors including national exposure to global energy markets and their transmission to consumer prices, post-pandemic fiscal space, legal limits, and accompanying policy levers (such as transfers, subsidies, and price caps) along with political economy considerations. The vast majority were introduced on a temporary basis for an initial period of 3-6 months but were extended as high energy prices transmitted into higher inflation[30]. The following table summarizes some country experiences.

Table: Changes to taxes on energy use

	Rate increase/Base broadening		Rate decrease/Base narrowing	
	2021	2022 or later	2021	2022 or later
Fuels, sector specific:				
Agriculture	SWE	FRA[4], NLD		SWE[1]
Heating	DNK, FIN, SWE	DNK, FIN[2], NLD	FIN[1]	DEU, NLD, NOR
Transport	FIN[2], GBR		CZE, SVN[2]	NOR, NZL, PRT
Fuels, all sectors:	ALB, LVA[2], NLD	DNK[3], GBR, JER, PRT		AUT[1], BGR, DEU[1], EST[1], IRL[1], ISR[1], ITA[1], NLD[1], SWE, UKR[1], ZAF[1]
Carbon tax	AND, AUT, CAN, DNK, FIN, IDN, IRL, LUX, LVA, NLD, NOR, UKR, ZAF[3]	AND, AUT, CAN, COL, DNK, IRL, NOR, PRT, SGP, ZAF[3]		GBR, SWE
Electricity consumption	SWE	NLD, SWE	DNK, FIN, NLD	AUT, BGR, DEU, DNK, EST, FRA[1], NLD
VAT/GST				ITA, POL

Note: 1 denotes a temporary measure; 2 tax related to biofuels; 3 taxes indexed to inflation, 4 a postponed measure. Tax expenditures for non-road diesel fuel in France (*gazole non routier*) are accessible to companies operating in the agricultural and forestry sector, as well as to the industrial and construction sectors.
Source: OECD Annual Tax Policy Reform Questionnaire.

Source: OECD (2023), Table 3.12, p. 61.

Many of these urgent tax measures may have been countervailing to the ones pursuing climate goals. While the immediacy and visibility of temporary tax cuts were advantageous, their often-untargeted nature raised budgetary costs and dampened incentives to lower energy consumption[31]. There has been

[30] OECD (2023), p. 60.

[31] "Global increases in energy prices were the major driver of changes in environmentally related tax policy in 2022. Many governments, especially in Europe, cut environmentally related taxes, specifically excise taxes on road transportation fuel, to support households and businesses with energy affordability concerns, as they sought to implement visible policy responses whose benefits could be experienced immediately. [...] As the year progressed, policy makers grappled with the difficulties of transitioning from initial broad support measures

some criticism: reduced rates weaken the price signals that can encourage behavioural change, richer households benefit more from reduced rates for necessities in absolute terms than poorer households, and the overall distributional effect of reduced rates on nonessential items may be regressive; reduced rates often entail a significant budgetary cost that may be captured by producers rather than passed through to consumers (particularly in less competitive markets) and can cause administrative complexities (given the different treatment of comparable goods and services)[32].

In some cases, excise taxes can also play a role in the transition to electric vehicles (EVs). For instance, Iceland has introduced a 5% excise tax on new vehicles, including electric ones, to raise revenue. Similarly, other countries, including the United Kingdom, Mauritius, and Thailand, have used excise tax policies to promote EV adoption through either tax reductions or subsidies. These examples show that excise taxes can be adapted to support broader environmental goals, such as reducing reliance on fossil fuels and encouraging the use of greener technologies. The consideration of additional policy dimensions when revising EV tax incentives, such as trade, tax revenue erosion, and equity considerations, appears to be a nascent trend in a growing number of jurisdictions, given the bias tax incentive design can exhibit[33].

Table 3.13. Changes to taxes on motor vehicles and other transport taxes

	Rate decrease/Base narrowing		Rate increase/Base broadening	
	2021	2022 or later	2021	2022 or later
Road transport				
Excise, import tariff and VAT / GST	JPN[t], TUR	MUS[EV], THA[EV], UKR[t], RWA[EV]	CAN, ICE, SYC[t], TUR	ISL
Registration tax		JPN[t]	DEU, IRL[EV] NOR[EV]	JER, ZAF
Vehicle tax	PRT, SVN	CZE[t]	NLD, SWE	ISL, GBR[EV]
Road use tax		NLD	NLD, SWE	DNK
PIT and CIT incentives and subsidies for EV		SWE	BEL, NLD, SWE	USA[EV]
Air transport				
Air ticket taxes	DEU[a]	DEU[a], GBR	NLD, PRT	BEL, NLD

Note: [a] denotes a pre-planned annual change, [t] a temporary measure, [EV] a measure in favour of electric vehicles. For PIT and CIT incentives and subsidies for EV, a rate increase or base broadening means that the incentives or subsidies in favour of EV is increasing.
Source: OECD Annual Tax Policy Reform Questionnaire.

4. Value Added Taxes

4.1 Overview

A value-added tax (VAT) applies to goods and services at every stage of production and sale. It can be comprehensive if it covers all economic activity from the earliest stage of the supply chain through to the retailer. In some countries, the VAT does not extend to the retail stage. VAT is levied on the sales price of the product. As VAT is a broad-based tax on consumption, in principle applied equally to all products, it does not change the relative price of carbon-intensive goods. However, many countries

towards more targeted policy responses as their fiscal cost rose and the risk of altering price signals that might discourage the transition to more environmentally sustainable energy use grew. Improving energy independence and security also became heightened concerns". OECD (2023), pp. 56-57.

[32] A number of jurisdictions introduced or extended temporary reductions in the VAT rate applied to energy products, as reported in the OECD Special Feature of the Tax Policy Reforms 2022. OECD (2023), p. 6. and p. 49.

[33] The adoption of new electric vehicle tax incentives has slowed in high-income countries but is becoming increasingly common in middle-income countries. Approximately two-thirds of OECD countries applied tax rebates or exemptions for electric or hybrid vehicles (EVs and HEVs, respectively). Continuing an emerging trend observed over the past three years, several HICs limited EV tax incentives or improved their targeting to address equity and efficiency concerns. OECD (2023), pp. 61-62.

apply reduced VAT rates on specific products. Thus, VAT interacts with effective energy rates[34] by providing a form of subsidy for certain products. If the VAT base includes fuel excise duties (as they generally do), these duties obviously contribute to the VAT burden. The VAT rate applicable to a product therefore has a dual impact on the total amount of taxes collected and on their composition.[35] In other words: broad-based policies can have compounding effects, making their effects even larger, i.e. a reduction in the fuel excise tax rate will also lead to a reduced amount of VAT applicable to the fuel product, because VAT is applied to a tax base that includes excise duties.

Tax rates differ between jurisdictions: Andorra for example has a tax rate of 4.5%, while Hungary has 27% and Guernsey, British Crown Dependency 0%. The differences in the tax rate are, however, described as being smaller than in the area of income taxes[36], often falling within the range of 10% to 20%. The VAT approximately accounts for 20% to 30% of government revenues. In 2021 it accounted for 28% of government tax revenues in African countries, for 26% in the Asia Pacific region, 30% in Latin American countries and for 20% in OECD countries.[37] It is thus an important source of revenue.

4.2 VAT Differentiation, Policy Implications, and Environmental Impact

VAT rates can differ substantially between different products and their usage. Similar reduced VAT rates can be quite broad and include postal, medical, dental and welfare services (such as in Albania), primary groceries, medical services, financial services, education and insurance (as in Indonesia) or needs of the elderly such as transportation or medical expenses (such as in the Philippines). Countries thus employ reduced VAT rates for categories of goods deemed essential or important for society), this makes VAT sometimes administratively costly (both for businesses and tax administration) to collect, and may offer incentives for tax fraud, particularly in cash-based transactions. In addition, broad-based policies tend to be more expensive for governments, less efficient in providing relief and weaken incentives for all households to reduce energy use or switch to renewable energies instead[38].

VAT focuses on the value added of goods and services and as such are not environmental taxes. The economic costs are imposed on parties that often have little ability to influence the carbon efficiency of production. Thus, VAT tax rate reductions – even if passed on to the (end) consumers – may do little to determine production methods of companies. The environmental steering effect of VAT tax rates is therefore more indirect than that of a direct carbon tax. Polluters may not be incentivised to green production processes if they can simply pass on costs to (end-)consumers or down the supply chain. VAT, like any sales tax, drives a wedge between the price paid by the final consumer and what the seller receives. Depending on the relative steepness of the demand and supply curves (elasticity) the VAT can be passed on to consumers in the form of higher prices, leading to a decline in real income of households. To the extent that the VAT cannot be passed on to consumers, it affects sellers.

[34] OECD (2024), p. 16 describes effective energy rates as being composed of carbon taxes, ETS permit prices, fuel excise taxes and electricity excise taxes that are applied to an energy base and are measured in currency per Giga Joule of Energy. It can be used as an indicator for the overall price burden per unit of energy for a specific jurisdiction. Effective energy rates does not distinguish between CO2 efficient and inefficient energy sources as electricity excise taxes apply to both types.

[35] OECD (2024), p. 72 and Box 3.1.

[36] Victor Thuronyi (2003, p.312) notes, "while there are differences in VAT from one country to another, compared with the income tax VAT laws are remarkably similar." https://www.researchgate.net/publication/4983766_Value-Added_Taxes_in_Developing_and_Transitional_Countries_Lessons_and_Questions

[37] OECD (2023) Revenue Statistics in Africa 2023 ─ Nigeria available at https://www.oecd.org/tax/tax-policy/revenue-statistics-africa-nigeria.pdf, last visited 22/08/2024

[38] Van Dender et al., 2022.

4.3 VAT as a Policy Tool for Green Transitions

Nevertheless, VAT could still be used in a complementary fashion to carbon taxation to support green transitions. VAT taxes, particular tax reductions, can be used to support carbon taxation measures and guide consumers towards more environmentally friendly consumption patterns. A 'green VAT' may also be viewed favourable by the public. Examples may include higher VAT rates for carbon intensive foods (meat tax) or for (plastic) packaging material. In 2021, the European Union revised its VAT directive to remove by 2030 the possibility of EU Member States to apply reduced rates and exemptions to goods and services deemed detrimental to the environment and to the EU's climate change objectives.[39] In the alternative a 'green VAT tax' rate may also encompass a reduced tax rate. The United Kingdom for example has introduced a temporary zero-rate for VAT applying to energy saving installations in residential buildings.[40] VAT is, however, a crude measure as it might benefit expensive goods more and thus impacts the cost-effectiveness of investments.

Moreover, different VAT tax rates may be difficult to apply for industrial products that could be produced with different processes (steel beams produced with renewable electricity or with coal) and hence be administratively burdensome, costly and prone to fraud and errors.

It also needs to be pointed out that VAT reductions narrow the tax base, which may result in unintended outcomes, such as benefiting wealthier households more than less advantaged ones.[41] Poorer households, for example, may not own homes or vehicles, making them less likely to benefit from VAT reductions on energy-saving installations like solar panels. Similarly, since poorer households spend larger shares of their income on consumption, VAT increases are conventionally viewed as regressive. Even though a recent OECD report finds that VAT is either roughly proportional or slightly progressive in most of the 27 OECD countries, it still emphasises that VAT increases, including VAT base broadening measures that impact the poor, should be accompanied by compensation measures for poorer households, such as targeted tax credits or benefit payments.[42]In conclusion, while VAT can complement carbon taxation, it remains a crude measure and given its limited environmental steering effect, cannot serve as a substitute for carbon taxation. In general, value-added taxes or sales taxes rates apply equally to a wide range of goods and therefore do not change the relative prices of products or services. In practice, there are some exceptions to these whereby preferential rates are applied to products such that they change the relative price of carbon- or energy-intensive products, compared to less carbon or energy-intensive products. VAT rates can therefore play a limited role in carbon pricing in some specific cases[43].

5. Personal income taxes

5.1 Overview

A personal income tax is a tax imposed on income of individuals. The concept of income differs between jurisdictions but often includes wages, salaries, interest, dividends, and rental income. The most typical form of income tax relates to wages and salaries and is generally withheld by employers.

[39] https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6608
[40] Energy-saving materials and heating equipment (VAT Notice 708/6) https://www.gov.uk/guidance/vat-on-energy-saving-materials-and-heating-equipment-notice-7086
[41] Stefanie Geringer (2023), The EU VAT Rate Reform 2022 from an Environmental Policy Perspective, EC Tax Review, Volume 32, Issue 1 (2023) pp. 16 – 25
[42] OECD Taxation Working Papers: Reassessing the regressivity of the VAT. OECD Taxation Working Papers. Organisation for Economic Co-Operation and Development (OECD). 2022. https://doi.org/10.1787/22235558
[43] OECD (2024), p.12.

Income taxes on other forms of income such as rental income can be levied through payments directly by taxpayers.

Income taxes differ considerably between countries. Depending on the type of tax they can be a flat rate, progressive or regressive. There are countries that do not levy personal income taxes (the Bahamas; Bermuda, British Overseas Territory; Monaco; and the United Arab Emirates) while some countries have low income taxes even in the high tax brackets (Kazakhstan 10%; Hong Kong, Special Administrative Region of China 16%; and Iraq 15%) and others have higher income tax rates in the high tax bracket (the Netherlands 49.5%; Türkiye 40%; and Zimbabwe 45%).[44] Regarding interest payments and dividends tax rates also differ between countries and so do capital gains taxes relating to e.g. the sale of real estate or stocks.

Personal income taxes on average account for 9% to 24% of government revenues[45]. In 2021 it accounted for 17% of government tax revenues in African countries, for 16% in the Asia Pacific region, 9% in Latin American countries and for 24% in OECD countries.[46] It is thus an important source of revenue.

5.2 The Potential Role of Personal Income Taxes in Green Transitions

Income taxes are not environmental taxes. Changes in income tax rates generally do little to create an environmental steering effect and to induce environmentally friendly behaviour or production. Similarly general reductions (e.g. exemptions, tax credits etc.) on income derived from professional or personal economic activity (e.g. salaries or wages) may do little to incentivize green transitions. There are, however, examples of such tax reductions targeted towards environmentally friendly behaviour and hence the possibility that income taxes could offer some complementarity to carbon taxation. Belgium for example employs an income tax reduction for CO2 efficient company cars that employers include in their employee's remuneration package47, thereby aligning personal income tax policy with broader environmental objectives. Under the Belgium scheme both the employer and the employee are incentivised to opt for CO2 efficient cars, contributing to the reduction of transport emissions.

Similarly, personal income taxes can be used to incentivize private investment in green technologies. For example, offering income tax reductions for dividends or profits from investments in renewable energy or eco-friendly technologies can help to channel private capital towards green initiatives. Accelerated depreciation programs[48] could help to incentivize investments in green technology and help to channel investment flows towards green objectives. Depreciation is the recognition in tax that the value of an asset declines over time, due in particular to wear and tear. In bookkeeping terms, the investment value is spread out over several years. In tax terms the cash income generated by an investment and over which income tax has to be paid is reduced by possible operating costs and depreciation (a fictitious non-cash expense) that represents a loss to the value of the investment. Increasing the depreciation schedule will thus reduce the amount of taxable profit over which income

[44] See https://taxsummaries.pwc.com/quick-charts/personal-income-tax-pit-rates

[45] Personal income taxes here cover taxes levied on the net income or profits (i.e. gross income minus allowable tax reliefs) of individuals and does include capital gains. See OECD (2023) Revenue Statistics in Africa 1990-2021, A5, p. 329 available at https://www.oecd.org/en/publications/revenue-statistics-in-africa-2023_15bc5bc6-en-fr.html

[46] OECD (2023) Revenue Statistics in Africa 2023 ─ Nigeria available at https://www.oecd.org/tax/tax-policy/revenue-statistics-africa-nigeria.pdf, last visited 22/08/2024

[47] KBC (2024), Tax treatment of company cars in 2024, available at https://www.kbcbrussels.be/business/en/products/credit/fiscaliteit-bedrijfswagens.html

[48] Depreciation programmes are also addressed under the section on corporate income taxation below.

tax has to be paid and hence helps to reduce cash expenses. Increased depreciation can therefore help to guide investments into green technology and to propel the transition of the economy.

It is important to point out that the transition of the economy towards carbon neutrality requires vast financial resources that cannot only come from government sources. The role of personal income taxes as a guiding tool for green investments may therefore be an important complement to carbon taxation is designed well.

5.3 Personal Income Taxes as a Tool for Equity and Carbon Cost Mitigation

Another important role for personal income taxes is mitigating the adverse effects of carbon taxation on lower-income groups. Personal income taxes can be designed in a progressive way and serve redistributive and equity objectives. Lower income earners pay a lower percentage of their income in terms of taxes than higher income earners. Besides using income tax rates to achieve this, also the tax base can be adjusted via tax exemptions or tax credits that create a distributive effect. A wealth or property tax for example may be primarily paid by financially advantaged members of society. The distributive property of income tax can be used to garner public support and to mitigate the adverse effects of carbon taxation on poor households. At the same time the taxing of carbon emissions paired with the lowering of other taxes enables society theoretically to reap a double benefit of reducing environmental degradation and tax distortions while keeping the same level of government revenues (double dividend hypothesis)[49].

The box below briefly describes two examples where carbon taxes have been combined with income tax reductions.

Combining carbon taxation with income tax reductions – practical experiences:
Income tax reductions were combined in the 1990s in Sweden and Denmark with the introduction of carbon taxation. In Sweden, which conducted a major tax reform in 1991, the carbon tax introduced in 1991 was combined with a reduction in personal income taxes and a change in corporate taxation. The reduction in the income tax was only partially offset by changes in value added tax and the broader Environmental Tax Reform in other tax areas. The income tax reductions in Sweden were thus not budget neutral – this was also not the intention of the reform. In later years, namely going forward from 2001 until 2006 the term "green tax shift" was used to mark tax policy that was aiming at reducing the tax on labour while increasing the tax on emissions.

Additionally, Denmark used the carbon tax proceeds to reduce income taxes. In this case, the income tax reduction was not budgetary neutral. Importantly the Danish approach ensured that proceeds raised by households would only be recycled back towards households so that there was no cross-subsidization of industry. Such an approach can help to foster more political acceptability among voters.

In both cases described in the box above personal income tax reductions were debt financed, and thus offsetting the carbon cost burden of taxpayers. Debt-financing of environmental tax shifts[50] asks future generations to bear additional costs, something that they may not be able to shoulder given the often-substantial debt level of low-and middle-income countries.[51] Income tax reductions can give rise to

[49] D. Pearce (1991) The role of carbon taxes in adjusting to global warming, Economic Journal, 101 (1991), pp. 938-948

[50] Not all tax shifts or reductions are debt financed. The British Columbia carbon tax for example is not debt financed.

[51] Over the past decade the external debt stock of low- and middle-income countries has risen and outpaced economic growth. This gives rise to concerns about these countries' ability to service their debt. World Bank (2023) International Debt Report 2023

additional domestic demand and economic stimuli and hence public support. It needs to be pointed out, however, that also income tax reductions should be targeted towards the low-income sections of society to address equity concerns because carbon pricing can be regressive.

Personal income taxes are not environmental taxes but can be used to complement carbon taxes. Since salary and wage taxes do not unfold an environmental steering effect their function is limited to mitigating the carbon costs, especially of disadvantaged members of society. Other forms of income taxes can be used to encourage private investment in green initiatives.

6. Corporate income tax

6.1. Overview

Corporate income tax is a direct tax levied by governments on business profits. Tax rates vary between jurisdictions and is generally calculated as a percentage of corporation's net income. Tax rates sometimes also differ between domestic and foreign corporations. Several jurisdictions tax the income of corporations based on their global income, regardless of where income has been earned. Other jurisdictions, such as the United States of America, employ a territorial tax system that obliges corporations to only pay taxes on income earned within the respective jurisdiction.

Corporate taxes differ substantially from country to country. In some countries, the rates are very low (Guernsey, British Crown Dependency has a low tax bracket of 0% tax Cayman Islands, British Overseas Territory has no corporate income tax, Barbados and Hungary for example only has 9%). In other countries corporate tax rates are higher: In Indonesia the tax rate is set at 22%, Pakistan at 29% and in Kenya and Mexico it is set at 30%.[52] Differences thus still seem to persist even though in 2021 136 countries agreed to a plan of the OECD to implement 15% global minimum tax rate.

Corporate income tax on average accounts for 9% to 19% of government revenues. In 2021 it accounted for 19% of government tax revenues in African countries, for 18% in the Asia Pacific region, 15% in Latin American countries and for 9% in OECD countries.[53] It is thus an important source of revenue.

Even though corporate income taxes account for substantial shares of government income, it bears mentioning that there is tax competition between jurisdictions, despite initiatives for a global minimum tax rate. Multinational corporations may act upon different tax rates and move corporate profits abroad. Such tax competition puts pressure on corporate income taxes and may lead to the broadening of income tax incentives taking the form of specific deductibles or accelerated depreciation schedules.[54]

6.2 Examining Corporate Tax Measures in Climate Action

Corporate taxes focus on corporate profits and are not environmental taxes. Changes in corporate tax rates for entire sectors will therefore do little to unfold an environmental steering effect that could incentivize more environmentally friendly production within a sector.

Corporate taxes could nevertheless be used in a complementary fashion to carbon taxation if they are used to support green transitions. Corporate income tax rates, particularly derogations from standard rates, could in theory constitute subsidies for corporations and incentivize ecologically friendly behaviour, i.e. investments in particular sectors. As outlined above under personal income taxes also

[52] https://taxsummaries.pwc.com/quick-charts/corporate-income-tax-cit-rates
[53] OECD (2023) Revenue Statistics in Africa 2023 – Nigeria available at https://www.oecd.org/tax/tax-policy/revenue-statistics-africa-nigeria.pdf, last visited 22/08/2024
54 Depreciation programmes are also addressed under personal income taxation above.

accelerated depreciation programs could help to incentivize investments in green technology and help to channel investment flows towards green objectives and help to catalysing private finance towards a green transition of the economy.

It should, however, be pointed out that reduced corporate tax rates or accelerated depreciation is a crude instrument that does little to incentivize green investments within advantaged sectors as it is not geared to estimate or reflect the actual externalities, unless it is specifically targeted towards specific green assets.

7. Conclusion and takeaways for developing countries

The use of explicit carbon pricing[55] mechanisms is growing as jurisdictions seek ways of quickening the transition towards low carbon economies. Nine jurisdictions increased carbon tax rates in 2022 and announced scheduled rate rises for the future, as well as greater stringency of measures, to support national green transition and carbon neutrality plans. For instance, South Africa raised its carbon price by 7% to ZAR 144 in 2022, while Ukraine tripled its carbon rate to UAH 30 (EUR 0.75). Colombia broadened its carbon tax base to include coal and announced it will gradually increase the tax rate applied to coal from 25% of the carbon tax rate in 2025 to the full rate by 2028[56].

Carbon taxation is only one of various instruments that can be used to address climate change. In practice several instruments are employed in conjunction with each other – ideally in a smart mix, that reflects the unique circumstances of each country.

Carbon taxes must consider the already operating domestic tax framework that usually includes personal and corporate income taxes, VAT and excise duties. Carefully crafted tax incentives and reductions in traditional taxes as well as accelerated depreciation can support the effectiveness of carbon taxation. A sound combination of tax incentives can help change consumption patterns, promote investments in green technology and thereby propel the transition of the economy towards decarbonization.

These are the main takeaways for developing countries:

- Public support for environmental measures is needed and may be provided through incentives in different taxes.
- However, keeping government revenue streams is vital, especially in countries with high debt levels. Therefore, attention must be paid to the cost of tax expenditures.
- Private investments are critical for a successful transition of the economy. Carefully designed tax incentives will contain an economic steering effect and encourage parties to adopt environmentally friendly behaviours.
- The impact of tax incentives should be assessed together with other tools employed in the transition, paying attention to interactions with other tools and the consequences for strategic sectors of the economy. The design of carbon taxes and related incentives should focus on simplicity and transparency to ensure effective implementation.
- Revenues from carbon taxes are generally low in comparison to traditional sources of revenue. Traditional sources of revenue may come under pressure as the economy moves towards decarbonisation.

[55] Explicit carbon prices are measures designed specifically to target GHG emissions or the carbon content of fuel.
[56] OECD (2023), p. 59.

- In developing countries, excise duties, for instance, contribute a significant share of total tax revenue. Thus, when defining a carbon tax in relation to other existing excise duties, governments should consider how both taxes can be structured to complement each other without negatively affecting revenue.

Developing countries face challenges in decarbonizing their economies. As they work toward achieving climate objectives, maintaining fiscal stability, and fostering public support, a well-designed combination of carbon pricing and other tax measures will be critical.

In conclusion, while carbon taxes play a crucial role in driving the transition towards a low-carbon economy, they need to be implemented in a way that reflects the broader fiscal and economic context of each country. Developing countries can advance tax policy as a lever for both economic growth and environmental protection by integrating carbon taxation with personal, corporate, and consumption taxes, while using targeted incentives to support green investments and enhance sustainable development.