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# *Portuguese Green Taxation: From normative foundations to policy challenges*

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# Secção

# Investigação Científica / Scientific Research*

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# Portuguese Green Taxation: From normative foundations to policy challenges

# Fiscalidade Verde Portuguesa: dos fundamentos normativos aos desafios de política pública

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**ABSTRACT**: Green tax benefits have become an increasingly relevant instrument for climate-related protection and sustainable development within the European Union and, more specifically, in the Portuguese tax legal system. However, their legal design and practical effectiveness remain insufficiently explored, particularly regarding their consistency with the polluter-pays principle and their actual contribution to ecological transition. This paper addresses that gap through a doctrinal and comparative legal analysis of the relevant EU and Portuguese tax legal frameworks, complemented by a critical review of legal doctrine and policy sources. The findings show that, despite their potential as instruments of ecological policy, several Portuguese green tax benefits still present structural weaknesses, including an imbalanced link between fiscal advantage and eco-friendly performance, the risk of regressive effects, and a limited capacity to generate immediate and measurable environmental outcomes. From a theoretical and practical perspective, the study suggests that these measures require a more coherent legal design, with clearer eligibility criteria and stronger conservation conditions, to better align tax policy with environmental effectiveness, social fairness, and sustainability objectives.
**KEYWORDS**: Sustainable development; EU environmental law; Green taxation; Green tax benefits; Polluter-pays principle; Portugal.

**RESUMO:** Os benefícios fiscais verdes tornaram-se um instrumento cada vez mais relevante para a proteção climática e o desenvolvimento sustentável no âmbito da União Europeia e, mais especificamente, no sistema jurídico-fiscal português. Contudo, a sua conceção jurídica e eficácia prática permanecem insuficientemente exploradas, particularmente no que respeita à sua consistência com o princípio do poluidor-pagador e ao seu contributo real para a transição ecológica. Este artigo aborda essa lacuna através de uma análise jurídica doutrinária e comparada dos quadros fiscais relevantes da UE e de Portugal, complementada por uma revisão crítica da doutrina jurídica e de fontes de política pública. Os resultados mostram que, apesar do seu potencial como instrumentos de política ecológica, vários benefícios fiscais verdes portugueses apresentam ainda fragilidades estruturais, incluindo um desequilíbrio entre a vantagem fiscal e o desempenho ecológico, o risco de efeitos regressivos e uma capacidade limitada de gerar resultados ambientais imediatos e mensuráveis. Numa perspetiva teórica e prática, o estudo sugere que estas medidas exigem uma conceção jurídica mais coerente, com critérios de elegibilidade mais claros e condições de conservação mais rigorosas, de modo a alinhar melhor a política fiscal com a eficácia ambiental, a equidade social e os objetivos de sustentabilidade.

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**PALAVRAS-CHAVE:** Desenvolvimento sustentável; Direito ambiental da UE; Fiscalidade verde; Benefícios fiscais verdes; Princípio do poluidor-pagador; Portugal.

## Introduction

The ongoing and accelerated changes to the climate, the progressive degradation of natural resources, and the growing awareness of the necessity for a sustainable ecological transition have resulted in environmental protection becoming a central focus in contemporary legal, economic, and political discourse[4]. In this context, taxation has assumed an increasingly significant role, not only as a means of generating public revenue, but as a mechanism for guiding behavior, internalizing ecological externalities, and promoting sustainable development. It is therefore evident that green taxation is a field of particular importance in the realm of interdisciplinary collaboration between tax law, environmental law, and sustainability policies[5].

At the European Union level, environmental protection and sustainability are fundamental objectives of regulatory and political action, reflected in the Treaties and in numerous secondary legislation instruments[6]. The design and implementation of green tax instruments in Member States have been influenced by principles such as the polluter-pays principle, the integration of environmental requirements into other public policies, and sustainable development. This influence is also evident in the Portuguese legal system[7].

In the Portuguese constitutional and legal system, green taxation is predicated on two key principles. Firstly, it is grounded in the fundamental duties of environmental protection as enshrined in the Constitution of the Portuguese Republic[8]. Secondly, it is anchored in the extra-fiscal functions of taxes, a concept that has been recognized by the Portuguese legal framework[9]. The use of taxes for environmental objectives signifies a paradigm shift in the conventional understanding of taxation, wherein its

[4] SCHANDL, Heinz et al.. Navigating sustainability transitions: A science for policy approach. *Sustainable Production and Consumption*, 2025, vol. 58, p. 385–395. DOI: 10.1016/j.spc.2025.07.001.
[5] KALAŠ, Branimir et al.. Environmental taxes and sustainable development in the EU: A decade of data-driven insights. *Systems*. 2025, vol. 13, n.º 7, 503. DOI: 10.3390/systems13070503.
[6] FAN, Yuezhen and SHI, Linsong. The role of government fiscal incentives in green technological innovation: A nonlinear analytical framework. *International Review of Economics & Finance*. 2025, vol. 103. DOI: 10.1016/j.iref.2025.104529.
[7] ALDEIA, Susana Cristina. The European Union carbon border adjustment mechanism as a green tax policy instrument. *Central European Economic Journal*. 2025, vol. 12, n.º 59, pp. 85–101. DOI: 10.2478/ceej-2025-0006.
[8] Article 66: The environment and quality of life are two interrelated concepts.
[9] The definition is provided in the Portuguese Tax Benefits Statute, in its Article 2.

dual role of revenue generation and regulatory oversight is now explicitly recognized[10].

In this context, the present paper aims to analyze the green taxation regime in Portugal, based on the principles and rules of the European Union on green taxation, the environment and sustainability, and framing them within the national constitutional and legal system. This paper will present a comprehensive overview of the main instruments and categories of green taxation that have been adopted in Portugal, with a particular focus on the currently existing green tax benefits and incentives, assessing both their potential environmental effectiveness and the challenges or limitations associated with their design and implementation. The paper will also pay particular attention to the polluter-pays principle and the theory of externalities[11].

Notwithstanding the potential inherent in the establishment of green tax benefits, the limitations, and weaknesses of such a policy will also be addressed, both in terms of its environmental effectiveness and its economic, social, and legal impacts. The paper goes on to identify certain limitations of the study and to propose avenues for future research, thus contributing to a critical reflection on the current and future role of green taxation and green tax benefits in the Portuguese and European context.

## 1. EU principles and rules for green taxation, environmental protection, and sustainability

The *1987 Brundtland report* (also known as *Our Common Future*), issued by the World Commission on Environment and Development, defined "sustainable development" as growth that meets the needs of the present society without compromising the ability of future generations to meet their own needs. 28 years later, the *Paris Agreement on Climate Change*[12] and the *2030 Agenda for Sustainable Development*, both adopted in 2015, reflected the urgency of an international cooperation between States on a development model grounded in sustainability principles and climate preservation, providing a wide range of social, economic, environmental and governance policies. In particular, the *2030 Agenda for Sustainable*

[10] HUA, Lei. The impact of environmental taxation on the structure and performance of industrial symbiosis networks: An agent-based simulation study. *Heliyon*. 2024, vol. 10, n.º 3, e25675. DOI: 10.1016/j.heliyon.2024.e25675.

[11] ALDEIA, Susana Cristina. Environmentally friendly tax measures in the Portuguese jurisdiction: Enforcement of the polluter pays tax principle. *International Journal of Law and Management*. 2023, vol. 65, n.º 6, pp. 511–522. DOI: 10.1108/IJLMA-02-2023-0018.

[12] This agreement is a legally binding international treaty on climate change adopted by 195 Parties at the United Nations Climate Change Conference (COP21) in Paris, France, on December 12, 2015. It entered into force on November 4, 2016.

*Development*, approved by the United Nations Organization, defined a set of seventeen goals and targets (the *Sustainable Development Goals* (SDGs)) to be achieved by all countries by 2030. The 17 SDGs address the three major dimensions of sustainable development – social, economic, and environmental – and provide an "action plan" to promote peace, environmental sustainability, justice, and equality by eradicating all forms of poverty, combating inequalities, and climate change[13].

Bearing in mind this global framework, and considering that the Charter of Fundamental Rights of the European Union also refers to the sustainable development in its article 37[14], the Union's political and cultural structures are currently based on some priority goals related to sustainable growth and climate protection. Therefore, many strategies and measures have been adopted in the most recent years to promote these objectives, including regulations, directives, recommendations, and other initiatives.

Against this background, it is important to highlight the *European Green Deal*. Adopted in December 2019, it constitutes the European Union's strategic framework to achieve climate neutrality, providing a set of legislative proposals with the aim of making the Union' climate, energy, transport and taxation policies suitable for reaching at least a 55% reduction in greenhouse gas emissions by 2030 and net-zero by 2050[15]. These policy commitments were subsequently translated into binding legal obligations through the European Climate Law (Regulation EU 2021/1119), which formally establishes and amplifies the Union's long-term objective of climate neutrality by 2050, as well as the mechanisms for monitoring progress and ensuring compliance.

In order to promote the aimed "sustainable development" and achieve the goal of climate neutrality, EU Member States are developing and enforcing ecological

[13] For further developments about Sustainable Development Goals (SDGs), consult CUNHA, Ricardo. Os "Objetivos do Desenvolvimento Sustentável" da ONU perante a fragmentação administrativa e constitucional global. In: Direito, Sustentabilidade Ambiental e Desenvolvimento Humano. Braga: Universidade do Minho, 2022, pp 131-141. DOI: 10.21814/uminho.ed.101.9. The *Europe Sustainable Development Report 2025* (available at https://eu-dashboards.sdgindex.org/chapters) analyses the performance of the EU and European countries on the implementation of the SDGs in 2025.

[14] Settling the sustainable development as a goal for States related with the establishment of policies that promote the environmental protection and the improvement of the quality of the environment.

[15] In this regard, the decision (EU) 2022/591 of the European Parliament and of the Council of April 6, 2022 on a General Union Environment Action Programme to 2030 (available at https://eur-lex.europa.eu/eli/reg/2021/1119/oj/eng) emphasizes the importance of accelerating «the green transition to a climate-neutral, sustainable, non-toxic, resource-efficient, renewable energy-based, resilient and competitive circular economy in a just, equitable and inclusive way, and to protect, restore and improve the state of the environment by, inter alia, halting and reversing biodiversity loss. It supports and strengthens an integrated policy and implementation approach, building upon the European Green Deal» (article 1.2).

protection mechanisms essentially through two main methods: the *direct method*, whereby the State defines an green policy, approves its mandatory rules and the consequent sanctions; and the *indirect method*, whereby the State creates positive or negative economic incentives to reduce contaminating behaviors[16]. Examples of the latter include subsidies, green taxestaxes, and green tax benefits.

In the context of this indirect eco-friendly regulation, EU Member States have been relying on taxation to penalize environmentally harmful behaviors, namely through the imposition of taxes on energy, transport, pollution, and resources[17]. These fiscal instruments aim to internalize negative environmental externalities, thereby aligning private and social costs in accordance with Pigouvian economic theory[18]: by imposing costs on harmful activities, Member States can discourage practices that generate pollution or resources depletion, in an application of the so-called polluter-pays principle[19]. A paradigmatic example of EU-level instruments is the Regulation (EU) 2023/956 of the European Parliament and of the Council of May 10, 2023 establishing a carbon border adjustment mechanism[20], applying a carbon cost to imported goods to prevent carbon leakage and ensure a level playing field.

Complementing these measures, EU Member States are authorized to establish positive fiscal incentives, also known as green tax benefits, aimed to promote behaviors that generate positive ecological outcomes. These fiscal instruments exploit the extra-fiscal function of taxation, whereby tax reductions and incentives are designed not primarily to raise revenue, but to steer economic performances towards public policy objectives, including climate and ecological goals[21].

The following section will analyze the characteristics and practical implications of these green tax benefits, emphasizing their potential as well as the challenges involved in implementing them.

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[16] OLIVEIRA, Maria Odette. Os impostos ambientais – alguns aspectos da sua temática. Fiscalidade: Revista de Direito e Gestão Fiscal. 2004, n.º 19/20. Disponível em: https://www.isg.pt/wp-content/uploads/2021/02/19_20_3_Impostos-ambientais-Revista-Fiscalidade.pdf.

[17] DIAS, Sara Luís and RIBEIRO, João Sérgio. Taxation policies as an environmental protection instrument: The Portuguese case. In: *Taking on Climate Change Through Green Taxation*. Hershey: IGI Global, 2023, pp. 265–281. DOI: 10.4018/978-1-6684-8592-7.ch011.

[18] MARDONES, Cristian. Pigouvian taxes to internalize environmental damages from Chilean mining − A computable general equilibrium analysis. Journal of Cleaner Production. 2022, Volume 362, 132359. DOI: https://doi.org/10.1016/j.jclepro.2022.132359.

[19] ALDEIA, Susana Cristina. Environmentally friendly tax measures, *cit.*, 2023.

[20] Available at https://eur-lex.europa.eu/eli/reg/2023/956/oj/eng.

[21] EKINS, Paul & SPECK, Stefan. Environmental Tax Reform (ETR): A Policy for Green Growth, Creating Sustainable Growth In Europe. Oxford: Oxford Academic, 2011, pp. 3-26. DOI: 10.1093/acprof:oso/9780199584505.001.0001.

## 2. Tax benefits for environmental sustainability: significance and constraints

The literature highlights that green taxes have objectives that go beyond eco-friendly protection, sustainability promotion, and corrective purposes, being recognized that green taxation can serve as an additional public revenue source, shifting the focus away from corrective goals[22]. Indeed, the European Commission[23] acknowledges green taxation as an instrument to «promote sustainable growth, support intergenerational fairness and maintain tax revenue levels for EU Member States while allowing them to cut other, more distortive, taxes such as those on labour», being assumed that «green taxation can help reboot the EU's economy as we recover from the COVID-19 pandemic».

The establishment of *green taxes* allows the generation of additional income sources by displacing the tax burden on income for other facts related to ecological behaviors, also allowing the replacement of *ordinary taxes* for this new category. These *green taxes* pursue eco-friendly policy objectives while also aim to increase the State's revenue, thereby promoting the satisfaction of collective needs. It is therefore important to recognize that green taxes are an additional, real source of revenue[24].

Under these conditions, it becomes difficult to strike a balance between the corrective purpose and the revenue related dimension. In fact, there are very few strictly corrective taxes because, in the context of increasingly pressing economic needs, revenue generation is currently one of the primordial objectives. This situation could affect the main objective of combating negative externalities, as financial income will also be considered in the moment of the determination of the tax measure.

Furthermore, we cannot ignore the impact that this difficult balance has on how taxpayers view green taxation. Taxpayers will be able to perceive the fight against negative ecological externalities and related taxes as mere justifications for increasing the tax burden. This situation creates problems with the acceptance of this type of taxation and impacts, in a negative way, the corrective behaviors. Survey evidence suggests that many citizens perceive green taxes as dubious, often questioning whether they primarily serve to increase general tax burdens rather than deliver eco-

[22] DIAS, Sara Luís and RIBEIRO, João Sérgio. Taxation policies as an environmental protection instrument, *cit.*, 2023.
[23] As displayed in https://taxation-customs.ec.europa.eu/green-taxation-0_en.
[24] BORGES, Felipe and MERLIN, Lise. The (in) viability of green tax reform in Brazil. Veredas do Direito. 2018, vol. 15, n.º 33. DOI: 10.18623/rvd.v15i33.1243.

friendly benefits[25], which can undermine public support and compliance (unless revenues are clearly earmarked for sustainability-oriented purposes).

In this context, introducing green tax benefits (such as tax reductions or incentives for investments in renewable energy, energy efficiency, or sustainable transport) is conceptually grounded in the logic that preferential tax treatment encourages less polluting consumption and investment activities by addressing positive externalities[26] and mitigates the related negative perceptions by framing fiscal policy in a positive and compensatory light.

Tax benefits for environmental sustainability function as a form of economic incentive to influence taxpayers' behavior in a manner that aligns with sustainability-oriented objectives. Consequently, the use of green tax benefits as public policy instruments, an element of an extra-fiscal nature thoroughly integrated into contemporary tax systems, is encouraging the implementation of positive incentives (an indirect form of tax expenditures) as opposed to the imposition of punitive green taxes. The fundamental logic of the initiative is rooted in behavioral science, with the overarching objective being to motivate individuals to make more environmentally sustainable choices regarding investment, consumption, and mobility[27].

In fact, empirical evidence suggests that green tax incentives can significantly stimulate innovation and encourage research and development activities[28], being able to promote less polluting consumption and investment activities by internalizing positive externalities[29]. Moreover, experimental evidence suggests that incentive-based instruments, such as subsidies, are perceived more favorably than punitive measures, indicating that positive fiscal instruments may encounter greater support from stakeholders and the public[30].

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[25] BARANZINI, Andrea & CARATTINI, Stefano. Effectiveness, earmarking, and labeling: testing the acceptability of carbon taxes with survey data. *Environ Econ Policy Stud*. 2017, 19, pp. 197–227. DOI: 10.1007/s10018-016-0144-7.

[26] KÖPPL, Angela & SCHRATZENSTALLER, Margit. Aspects of Environmentally Beneficial Tax Incentives: A Literature Review. WIFO Working Papers 621/2021, 2021. https://www.wifo.ac.at/wp-content/uploads/upload-1503/wp_2021_621_.pdf.

[27] LÓPEZ-PÉREZ, Sugey et al.. A systematic review of current debates on environmental taxation and sustainability. In: *Corporate Climate Responsibility and Education*. Hershey: IGI Global Scientific Publishing, 2025, pp. 1–26. DOI: 10.4018/979-8-3373-1937-7.ch001.

[28] YIN, Hong et al.. Fiscal & tax incentives, ESG responsibility fulfillments, and corporate green innovation performance. International Review of Economics & Finance. 2025, Volume 98, 103838. DOI: 10.1016/j.iref.2025.103838.

[29] KÖPPL, Angela & SCHRATZENSTALLER, Margit. Aspects of Environmentally Beneficial Tax Incentives, *cit.*, 2021.

[30] CASCAVILLA, Alessandro et al. Environmental Taxes and Subsidies for Sustainability: Experimental

However, some limits must be observed, given that tax benefits constitute a derogation from the general rules of taxation, as tax advantages with an exceptional nature[31]. Without underlying objectives, such advantages could not truly be called *tax benefits*, rather constituting a privilege that, given the principle of equality, have no reason to exist, which is why it is not possible to conceive a tax benefit that do not constitute a means to achieve a hierarchically higher value purpose than the tax justice and the equality of all the taxpayers[32]. This happens because the principle of fiscal equality is embedded in the idea of generality and universality, according to which all the citizens and legal persons are bound to the duty to pay taxes, and uniformity, requiring that this duty shall be measured by the same criteria – the ability-to-pay criteria[33].

Therefore, in the *Guidelines on State Aid for Climate, Environmental Protection and Energy 2022* (2022/C 80/01)[34] – where the European Commission «identified a number of categories of environmental protection and energy measures» (clause 2.2./16) «to facilitate the development of economic activities in a manner that improves environmental protection» (clause 2.1/12), recognizing that the adoption of reductions in taxes or parafiscal levies are measures that can be used in this context (clause 4.7) –, the European Commission ensured that tax reductions and other fiscal incentives must be targeted, proportionate, and compatible with the internal market, providing Member States with a coherent legal basis to encourage environmentally sustainable behavior while preventing distortions of competition.

Building on these European guidelines, the following chapter examines the design, scope, and implementation of green tax benefits in Portugal, evaluating how national instruments align with EU principles and assessing their effectiveness in promoting sustainable economic activity.

## 3. Green Tax Benefits implemented in Portugal: an overview

In Portugal, green fiscal policy has historically relied primarily on green taxes

Evidence on Consumer Preferences for Business Strategy. *Business Strategy and the Environment*, 2025. DOI: 10.1002/bse.70338.

[31] ROCHA, Ana Paula. Environmental Non-Governmental Organizations' Tax Regime: The Portuguese Case. Taking on Climate Change Through Green Taxation. In: Taking on Climate Change Through Green Taxation. Hershey: IGI Global, 2023, pp. 82-100. DOI: 10.4018/978-1-6684-8592-7.ch004.

[32] FREITAS PEREIRA, Manuel. *Fiscalidade*. Coimbra: Almedina, 2014, 5th ed..

[33] CASALTA NABAIS, José. *Direito Fiscal*. Coimbra: Almedina, 2021, 11th ed..

[34] Available at https://eur-lex.europa.eu/EN/legal-content/summary/2022-guidelines-on-state-aid-for-climate-environmental-protection-and-energy.html.

aimed at penalizing environmentally harmful activities. In this context, and regarding the categories of Portuguese taxes with relevance to environment and sustainable protection, we can distinguish four relevant categories:

- Transport taxes, related to vehicle ownership, use, circulation, and importation. Notably, Law n.º 22-A/2007 of 29 June established the current legal framework for the Portuguese vehicle tax (ISV) and single circulation tax (IUC);
- Energy taxes, levied on energy products such as gasoline, fuel oil, diesel, natural gas, and electricity. The Excise Duties Code, approved by Decree-Law n.º 73/2010 of 21 June, introduced the Portuguese Petroleum and Energy Tax (ISP) and the Tax on Electricity Consumption;
- Pollution taxes, connected to polluting emissions into the air or water. Examples include the Carbon Tax in sectors outside the EU Emissions Trading System, introduced by the Law n.º 82-D/2014, from December 31, the Waste Management Tax (TGR), introduced by Decree-Law n.º 178/2006 of 5 September, and the Water Resources Fee (TRH), introduced by Law n.º 58/2005 of 29 December and regulated by Decree-Law n.º 97/2008 of 11 June; and
- Natural resources taxes, related to the use and extraction of natural resources. In this context, the Law No. 33/96 establishes the general framework for forestry policy and the sustainable management of forest resources, underpinning the application of fees and charges associated with the use of such resources.

Notwithstanding, and following the 2014 Green Tax Reform (enacted by the Law n.º 82-D/2014, from December 31), Portugal took a significant step towards the expansion of its green taxation, through the approval of green tax benefits and incentives in addition to the corrective measures posed by green taxes. In fact, in the last decade Portugal has introduced and significantly reinforced a variety of green tax benefits and fiscal incentives, thereby expanding the range of fiscal policy tools available. To date, the green tax benefits established in Portugal are instruments operating within a multi-level legal framework that encompasses national, constitutional, and European Union law. Furthermore, and regarding their use in climate protection and sustainability, these tax benefits are public policy instruments of an extra-fiscal nature (as follows from the dogmatic construction of this type of fiscal mechanism, as previously mentioned, and in accordance with the Portuguese Tax

Benefits Statute)[35].

A recent study by ANDRÉ CARVALHO[36] identified thirty-eight green tax incentives for companies operating in Portugal. A selection of these Portuguese green tax benefits is presented in Table 1. The tax benefits selected for analysis were those that are currently in force in Portugal and that are most clearly connected to sustainability-oriented and sustainability objectives. Attention was paid to their legal relevance, practical significance, and representativeness (tax expenditure) across the fundamental areas of green taxation.

Table 1. Green tax instruments in the Portuguese tax system

| TAX | GREEN TAX BENEFIT | TAX INSTRUMENTS | TAX EXPENDITURE (2024)[37] |
|---|---|---|---|
| **Corporate Income Tax (CIT)** | Tax incentive for the purchase of public transport passes for employees (Article 43(15) of the CIT Code) | Income deduction | 430.880,17€ |
| | Reduction in the Autonomous Tax Rate for Plug-in Hybrid Passenger Car Expenses (Art. 88, No. 18 of the CIT Code) | Tax Rate Reduction | 81.420.398,52€ |
| | Reduction in the Autonomous Tax Rate for Expenses Related to Vehicles Powered Exclusively by Electricity (Article 88(20) of the CIT Code) | Tax Rate Reduction | 9,356,325.24 € |
| **Municipal Property Tax** | Municipal Property Tax Exemption for urban buildings undergoing urban regeneration (Article 45(1) of the Tax Benefits Statute) | Exemption | 330,015.55 € |
| **Taxes on Petroleum Products** | Exemption from Taxes on Petroleum Products for biofuels and gases from renewable sources (Article 90 of the Excise Duty Code) | Exemption | 117,290,453.83 € |
| **Vehicle Taxes** | Reduction in Vehicle Taxes for light passenger vehicles with plug-in hybrid engines (Article 8(1)(d) of the Vehicle Taxes Code) | Tax Rate Reduction | 83,770,678.77€ |
| | Intermediate Vehicle Taxes rate for light passenger vehicles with hybrid engines (non- | Tax Rate Reduction | 2,245.55 € |

[35] TAN, Zhe et al.. An overview on implementation of environmental tax and related economic instruments in typical countries. *Journal of Cleaner Production*. 2022, vol. 330, 129688. DOI: 10.1016/j.jclepro.2021.129688 and CUNHA, Ricardo and DIAS, Sara Luís. The regulatory impact assessment of green tax benefits in Portugal: The case of autonomous taxation of plug-in hybrid vehicles. In: Corporate Climate Responsibility and Education. Hershey: IGI Global Scientific Publishing, 2025, pp. 347–374. DOI: 10.4018/979-8-3373-1937-7.ch010.

[36] CARVALHO, André. *As políticas fiscais ambientais em Portugal: uma avaliação ex-post dos benefícios fiscais ambientais através da litigância arbitral tributária*. Master Thesis, Escola Superior de Gestão – Politécnico do Cávado e do Ave, Barcelos, 2025.

[37] Statistics from the Portuguese Finance Portal: https://info.portaldasfinancas.gov.pt/pt/dgci/divulgacao/estatisticas/Pages/default.aspx, accessed on 4 April 2026.

| | | | |
|---|---|---|---|
| | plug-in) (Article 8(1)(a) of the Vehicle Taxes Code) | | |
| **Local Property Transfer Tax** | Exemption from Local Property Transfer Tax on the First Transfer of Renovated Property for Rental or Permanent Housing (Article 45(2)(c) of the Tax Benefits Statute) | Exemption | 24,699.74 € |
| **Road Tax** | Road Tax exemption for special and sustainable vehicles (Article 5(1)(e) of the Road Tax Code) | Exemption | 193,199.50 € |

Source: Adapted from CARVALHO, André. As políticas fiscais ambientais em Portugal, *cit.*, 2025.

Analyzing Table 1, it is possible to see that the selected tax benefits have a strong focus on the transport sector (which is central to climate policy), are used as transition instruments, and are consistent with carbon neutrality objectives. The Tax Rate Reduction category is the most represented for the Portuguese selected tax benefits. Exemptions are also widely used.

Within the scope of the Portuguese Corporate Income Tax, the selected tax incentive for social passes encourages companies' employees to use public transport instead of their own vehicles, which has a positive effect on reducing emissions, congestion, and urban pollution. Also, the reduction in autonomous taxation for electric and plug-in hybrid vehicles encourages companies to electrify their fleets, thereby contributing to the energy transition[38].

In the context of the Municipal Property Tax and Local Property Transfer Tax, the presented tax benefits indirectly affect the environment by promoting the reuse of existing buildings, reducing pressure on virgin land, and contributing to the reduction of the ecological footprint associated with new construction impact[39]. Thus, the tax benefits under study encourage urban regeneration and densification, reducing travel and emissions associated with urban sprawl[40].

In the case of Taxes on Petroleum Products, the exemption for biofuels is in line with the decarbonization of the energy sector, provided that the sustainability of the production chain is ensured[41].

[38] DINIS, Ana. *A tributação autónoma em Portugal – uma abordagem jurisprudencial*. Coimbra: Almedina, 2022.
[39] CARVALHO, André; DINIS, Ana and PEREIRA, Liliana. Assessing tax policies for urban rehabilitation: The role of tax incentives on sustainability. In: *Assessing Policy Landscapes in Taxation Dynamics*. Hershey: IGI Global, 2024, pp. 33–70. DOI: 10.4018/979-8-3693-3908-4.ch002.
[40] DINIS, Ana. Promoting fiscal incentives for urban regeneration: Local government digital presence. In: Good Practices and New Perspectives in Information Systems and Technologies. Cham: Springer, 2024, Lecture Notes in Networks and Systems, 990. DOI: 10.1007/978-3-031-60328-0_34.
[41] LUNDBERG, Liv; CINTAS SANCHEZ, Olivia and ZETTERHOLM, Jonas. The impact of blending mandates on biofuel consumption, production, emission reductions, and fuel prices. Energy Policy. 2023, vol. 183, 113835. DOI: 10.1016/j.enpol.2023.113835.

The Vehicle Taxes function as a classic environmental tax, levied at the time of purchase and influencing technological choices, so the tax benefits presented favor the penetration of lower emission technologies[42].

Also, as a recurring tax, the Road Tax exemption is particularly effective in internalizing ecological costs associated with vehicle ownership and use, while rewarding low- or zero-emission options[43]. This tax benefit is therefore consistent with modern green taxation, as it acts in a continuous and predictable manner.

Nevertheless, the application of the selected tax benefits is not immune to critique.

In the context of CIT benefits and concerning plug-in hybrid vehicles that exhibit variable conservational efficiency depending on the utilization pattern (electric mode vs. combustion), there is a risk of regressive tax benefits, favoring companies with greater financial capacity to renew their fleets[44].

In the case of Municipal Property Tax and Local Property Transfer Tax, tax benefits are not explicitly conditional on energy efficiency or sustainability-oriented performance criteria for buildings, which reduces their direct environmental impact[45].

In the case of Taxes on Petroleum Products, the exemption for biofuels is consistent with the decarbonization of the energy sector, provided that the sustainability of the production chain is assured. However, the reduced rate for heating oil may be environmentally ambiguous, potentially contradicting climate objectives by encouraging the use of fossil fuels. Furthermore, it could even compromise the polluter-pays principle[46].

In the case of Vehicle Taxes, given the existence of a clearly defined ecological hierarchy: electric > plug-in hybrids > conventional hybrids, the maintenance of tax

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[42] CICCONE, Adrian. Environmental effects of a vehicle tax reform: Empirical evidence from Norway. *Transport Policy*. 2018, vol. 69, pp. 141–157. DOI: 10.1016/j.tranpol.2018.05.002.

[43] URRUTIA-MOSQUERA, Jorge and FÁBREGA, Jorge. Impact of fiscal incentives in the consumption of low emission vehicles. *Case Studies on Transport Policy*. 2021, vol. 9, n.º 3, p. 1151–1159. DOI: 10.1016/j.cstp.2021.06.003 and WAPPELHORST, Sandra; MOCK, Peter, and YANG, Zifei. *Using vehicle taxation policy to lower transport emissions: An overview for passenger cars in Europe*. Washington, DC: International Council on Clean Transportation, 2018. Disponível em: https://theicct.org/wp-content/uploads/2021/06/EU_vehicle_taxation_Report_20181214_0.pdf

[44] CUNHA, Ricardo and DIAS, Sara Luís. The regulatory impact assessment of green tax benefits in Portugal, *cit.*, 2025.

[45] CARVALHO, André; DINIS, Ana and PEREIRA, Liliana. Enhancing urban regeneration through digital transparency and open government. In: *Proceedings of 19th Iberian Conference on Information Systems and Technologies (CISTI 2024)*. Cham: Springer, 2026, Lecture Notes in Networks and Systems, 1753. DOI: 10.1007/978-3-032-12888-1_38.

[46] ALDEIA, Susana Cristina. Environmentally friendly tax measures, *cit.*, 2023.

benefits for non-plug-in hybrids has the potential to result in a delay to the transition to fully electric solutions[47].

Overall, these examples demonstrate that the Portuguese green tax benefits raise concerns about the actual application of the polluter-pays principle, the possible existence of regressive incentives (that favors companies with greater financial capacity), and the potential reduction or delay of direct environmental impact. These conclusions highlight the importance of a mandatory revision of these tax benefits' structure on the following aspects:

- It shall be considered the introduction of conditions that explicitly take into account the climate-related, and energy-efficiency, such as a proportional allocation of the benefit according to the energy improvement achieved (that does not focus solely on high final performance) in the case of Municipal Property Tax and Local Property Transfer Tax benefits or the progressive phasing out of tax benefits for non-plug-in hybrid vehicles in the case of Vehicle Taxes;
- The Corporate Income Tax benefits for plug-in hybrid vehicles may be conditioned to the actual ecological outcomes, for example by requiring a minimum share of driving in electric mode, supported by robust monitoring and reporting mechanisms;
- Finally, legislative amendments should gradually eliminate the reduced tax rate on heating oil and reinforce sustainability requirements for biofuel exemptions, being combined with measures such as social tariffs or energy vouchers.

These legislative amendments have the potential to strengthen the Portuguese green tax benefits as more progressive, ensuring greater compliance with the core principles of green taxation and achieving the objective for which those tax incentives were established: the effective climate protection and climate-related,sustainability.

## 4. Contributions, limitations, and future research

This research contributes to the literature on ecological taxation by specifically analyzing the main green tax benefits currently in force in Portugal in the light of the European legislation and the main principles of green taxation, providing guidance in

[47] SCHUB, Hendrik; PLÖTZ, Patrick and SPREI, Frances. Electrifying company cars? The effects of incentives and tax benefits on electric vehicle sales in 31 European countries. *Energy Research & Social Science*. 2025, vol. 120, 103914. DOI: 10.1016/j.erss.2024.103914.

the potential alignment of those incentives with the climate objectives and a coherent environmental tax policy.

The findings show that, despite the potential of the green tax benefits as instruments of sustainable development, several Portuguese benefits still present structural weaknesses, including an imbalanced link between fiscal advantage and ecological performance, the risk of regressive effects, and a limited capacity to generate immediate and measurable sustainability-oriented outcomes. From a theoretical and practical perspective, the study suggests that these measures require a more coherent legal design, to better align tax policy with environmental effectiveness, social fairness, and sustainability objectives. Three main improvements are suggested:

- The introduction of conditions that explicitly reflect environmental and energy-efficiency considerations. For example, benefits could be allocated proportionally to the energy improvements achieved, rather than focusing solely on high final performance. This could be applied to Municipal Property Tax and Local Property Transfer Tax benefits, as well as to the gradual phase-out of tax advantages for non-plug-in hybrid vehicles under Vehicle Taxes;
- Corporate Income Tax benefits for plug-in hybrid vehicles could be made conditional on actual sustainability-oriented performance. For instance, a minimum proportion of driving in electric mode could be required, supported by robust monitoring and reporting mechanisms;
- Finally, legislative amendments should progressively remove the reduced tax rate on heating oil and strengthen sustainability criteria for biofuel exemptions, alongside complementary measures such as social tariffs or energy vouchers.

Notwithstanding, as this paper is expository and theoretical in nature, it is important to recognize some limitations inherent to its methodology and analytical scope. Firstly, the choice of a dogmatic and conceptual approach implies the absence of an in-depth empirical analysis of the concrete effectiveness of green taxation instruments in Portugal, particularly regarding their actual capacity to induce environmentally responsible behavior or reduce measurable ecological impacts. Secondly, the study does not provide a quantitative assessment of the economic and social effects of green taxation, particularly about its distribution of burdens, potential regressive effects, and implications for economic competitiveness.

Furthermore, the analysis focuses on the current regulatory and principled

framework, without exploring in detail the practical application of the rules, relevant case law, or the administrative challenges associated with the implementation of green taxes. Similarly, the comparative dimension is only implicitly considered, leaving room for further systematic analysis of green taxation models adopted in other European Union Member States or in non-EU legal systems.

In this regard, future research could benefit from taking an interdisciplinary approach that combines legal analysis with empirical methodologies and integrates contributions from environmental economics, political science, and public policy. Comparative studies should also be developed to analyze the jurisprudential and administrative evolution of green taxation. Finally, future research could examine the role of green taxation in the context of climate transition and carbon neutrality, as well as the relationship between fiscal, regulatory, and market instruments. This would contribute to a more integrated and critical understanding of the potential and limitations of green taxation.

## Conclusions

This paper focuses on the main green tax benefits currently in force in Portugal. It critically analyses their legal structure in the light of the European legislation on environmental sustainability and the main principles of green taxation.

While punitive green taxes remain present in the Portuguese legal system, striking a balance between their corrective purpose and their revenue-related dimension is deemed as challenging. This can undermine the public acceptance of this type of taxation and have a negative impact on the desired corrective behaviors. In contrast, green tax benefits are grounded in the idea that preferential tax treatment encourages less polluting consumption and investment by addressing positive externalities, while mitigating negative perceptions by presenting fiscal policy in a positive, compensatory light.

However, Portuguese green tax benefits raise some concerns related to the lack of strict sustainability-oriented performance criteria, to their potential regressive impacts, and to the non-compliance with fundamental principles of green taxation (such as the polluter-pays principle). This could compromise the achievement of the proposed environmental goals and the public acceptance of these measures.

In this context, this research highlights these shortcomings and proposes improvements – such as clear eligibility criteria and conditions based on sustainability-

oriented performance within the scope of these benefits –, in order to contribute to the construction of a more progressive and equitable environmental tax framework in Portugal that is in line with the European legislation and the main principles of green taxation.

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