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Energy Taxation, Environmental Protection and State Aids

Tracing the Path from Divergence to Convergence

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Why this book?
Fighting climate change, protecting the environment and ensuring sustainable development are priority issues in the public agenda of governments at international, European and national levels. As a result, national legislators face the challenge of establishing a fiscal framework for the energy sector that promotes both security of supply and the sustainable use of energy, penalizing polluting technologies and rewarding the most efficient.

The liberalization of the energy sector in Europe is being achieved by using a combination of sector regulation and competition law. One of the European Union's major objectives is to create an internal market for energy – that is, a competitive internal energy market as a strategic instrument with the objective of providing consumers with a choice of companies supplying gas and electricity at reasonable prices, and ensuring market access for all suppliers, especially at the retail level. From this perspective, the rules on State aid play an important role.

This book aims to fill the gap in the literature on energy taxation, by bringing together experts to discuss how a global problem of taxation can be approached with a global answer. Within this framework, the book focuses on various means by which the European Union can approach these issues, taking into account its legal constraints, including the prohibition of State aid within the internal market, as well as the aspiration to establish sustainable environmental protection, in line with the goals established in its supranational law.

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Introduction

Pasquale Pistone and Marta Villar Ezcurra

Fighting climate change, protecting the environment and ensuring sustainable development are priority issues in the public agenda of governments at international, European and national levels. As a result, national legislators face the challenge of establishing a fiscal framework for the energy sector that promotes security of supply and also the sustainable (and environmental) use of energy, penalizing the polluting technologies and rewarding the most efficient.

The liberalization of the energy sector in Europe is being implemented by using a combination of sector regulation and competition law. One of the European Union's priority objectives is to create a genuine internal market for energy, i.e. the existence of a competitive internal energy market as a strategic instrument in terms both of giving European consumers a choice between different companies supplying gas and electricity at reasonable prices, and ensuring market access for all suppliers, especially at the retail level. From that perspective, the rules on State aid play an important role.

However, at a European level, large asymmetries exist in energy taxation. National rules are dispersed and not aligned. This may suggest the existence of barriers to competition and a barrier to the achievement of an internal energy market. Economists, environmentalists and tax experts have addressed the topic of environmental taxes, analysing their suitability, scope, impact on the various regulated sectors (water, waste and energy), etc. However, the connection between energy taxation and competitiveness, particularly competition law, has been an underexplored area.

The function of this peer-reviewed book, therefore, is to fill the existing gap in the international literature on energy taxation, bringing together experts from different parts of Europe and the world to discuss how a global problem of taxation can be approached with a global answer. Within such a framework, the emphasis falls specifically on ways in which the European Union can approach these issues, taking into account its legal constraints, including the prohibition of State aid within the internal market, and the aspiration to establish sustainable environmental protection, in line with the goals established in its supranational law.

The object of this book is interdisciplinary, since it brings together European law, including competition law, with tax law, environmental law and policy within its scope, to provide a comprehensive analysis of all relevant elements. The content of the book reflects an innovative line of research that is being conducted under the auspices of a Jean Monnet Project,[1] by an international research team, coordinated by the editors and steered by the International Bureau of Fiscal Documentation (IBFD) in cooperation with various renowned researchers and specialists from around the world. A preliminary version of several papers was presented at a conference organized by the University Institute of European Studies at CEU San Pablo University partnered with IBFD, and held in Madrid on 29 and 30 January 2015 with the support of the Directorate-General for Education and Culture of the European Commission.

The five parts of this book correspond to specific issues concerning energy taxation that have actual or potential relevance to the theoretical and/or practical application of EU State aid law. They are ordered in a logical way from the general to the specific. In Part I we analyse models of state intervention in taxation and the environment, taking into account some of the key models. Part II deals with the challenge of determining whether a tax intervention should be revenue driven or environmentally targeted. Part III presents an analysis of the State aid rules as they apply to taxes with environmental purposes and tax exemptions or reliefs in energy taxes. Part IV focuses specifically on State aid and EU Council Directive 2003/96/EC through the perspective of improving the environmental dimension and, finally, Part V studies the relation between energy taxation and competitiveness, aiming to address the risk of carbon leakage.

This book starts off with a global approach to the topic. A critical analysis of the current application of State aid rules to tax reliefs in the energy sector and new trends, proposals and case law are some of the issues analysed by Villar (chapter 1). The need for a common understanding of key legal concepts, such as "environmental taxes" or "selectivity", is emphasized and, among other contributions, an integrated approach is defended for improving environmental protection at the EU level.

1. Jean Monnet Project "Energy taxation and State aid control: looking for a better coordination and efficiency (ETSA-CE)". Reference: 553321-EPP-1-2014-1-ES-EPPJMO-PROJECT, coordinated by Prof. Marta Villar Ezcurra (CEU San Pablo University).

1. In search of models of state intervention: Taxation and the environment

In searching for a model of State intervention on taxation and the environment, firstly a theoretical approach is needed and, secondly, the study of relevant examples.

In this regard, Soler and Gil (chapter 2) highlight that the goal of a theoretical analysis is to explore how state intervention may be designed and implemented for environmental protection. On the one hand, from a positive viewpoint, tax incentives are available to create a framework where that protection is granted and improved. On the other hand, the so-called "green taxes", based on the polluter-pays principle, may affect taxpayers' behaviour and correct negative externalities. Soler and Gil tackle both possibilities in order to achieve an additional fiscal aim, while a fair balance between environmental protection and tax law principles is achieved.

Three relevant real-world examples are analysed. Firstly, from a US perspective, an analysis of the federal energy tax incentives in the United States is performed by Milne (chapter 3), focusing on measures designed to encourage conservation, energy efficiency or the increased use of renewable energy. Although the federal tax code has not aggressively used tax policy to increase the price of fossil fuels, the US experience illustrates legal, technical design and policy considerations that inform the use of tax preferences. This analysis serves as an example of measures used by a country not subject to State aid rules.

Secondly, Andersen (chapter 4) addresses the pioneering model of Scandinavia, undisputedly a reference as a test bench. The contribution focusing on that model looks at the approaches adopted in Scandinavian countries for the taxation of energy use and the associated pollutants. While Denmark places more emphasis on energy taxes and Sweden on carbon taxes, the actual pattern that emerges shows some consistency. The schemes for supporting renewables are highly complex in their own right, further complicated by the discrepancies between Denmark and Sweden due to differences between their power sectors and the share of to-carbon energy carriers required for their energy transitions.

Finally, in relation to Spain, Rodríguez (chapter 5) offers a review of the situation regarding environmental taxation and its future. The OECD concluded in a recent report that Spain must "specify a carbon component in the tax on fuels used in the sectors not covered by the EU emissions trading

system". The author presents arguments in favour of a green fiscal reform, but considers it an inopportune time to carry out such a reform.

2. Tax treatment of the energy sector: Should the tax intervention be revenue driven or environmentally targeted?

To answer this question, Rozas (chapter 6) considers whether a tax on electricity production is a good option, by analysing the Spanish case within the context of European law. The Spanish tax model for electricity is indeed complex and serves as an example illustrating the problem addressed. The electricity financing system in Spain consists of three specific taxation models applied to electricity: an excise duty levied on the supply of electricity of which the structure is similar to other excises of this nature, a tax on the production of electricity which is combined with another tax on the production of hydropower, and two more taxes on the generation and storage of nuclear waste. All of them are state taxes. Besides that, there are also different regional taxes affecting the emission of polluting gases, as well as certain electricity assets (such as generating plants and transportation facilities) that have a significant impact on the landscape or that present known risks.

Following that contribution, Pitrone (chapter 7) examines the design of energy taxes in the European Union, focusing on the pros and cons of including environmental elements in their structure. Following the origins and history of energy taxation, the author emphasizes the need to find a balance between fiscal and environmental goals in order to achieve the European energy and climate change goals.

Regarding environmental border tax adjustments (BTAs) in respect of energy taxes, Pirlot (chapter 8) analyses their limits and opportunities. The author defines the concept of BTAs in respect of energy taxes and describes five tax models through which such BTAs could be adopted. Her research highlights the main legal conditions under international trade law that restrict the adoption of BTAs in respect of energy taxes. The author also draws attention to non-legal conditions that may prevent the development of energy taxes for environmental purposes.

To conclude the second part, Long (chapter 9) offers an analysis of the challenges to China posed by carbon BTAs under global climate change and China's countermeasures. The author upholds the necessity of having a hybrid mechanism combining carbon tax with cap and trade to counter

global climate change. Taking into account that the shortcomings of a cap-and-trade system can be remedied effectively by a carbon tax, the author wonders why a carbon tax and a cap-and-trade system are not implemented simultaneously. However, he realizes that this should be implemented only if this hybrid system would be effective in countering climate change and could realistically be carried out.

3. State aid schemes for environmental protection in the form of tax exemptions or reliefs in energy taxes

This part presents an analysis of the State aid rules applying to taxes with environmental purposes and tax exemptions or reliefs for energy taxes. The first contribution here considers the rationale behind the current concept of fiscal State aid, through an analysis of the EC Draft Notice on the Notion of State aid. Maillo (chapter 10) tackles this topic and concludes that we should take into account that we are moving towards stricter control, from an internal market rationale to a more competition-like approach (without fully abandoning the internal market rationale) therefore with a more micro-economic focus, which leads to more private enforcement and (limited) decentralization. A further deepening of these trends would not be surprising and could shed light on the future evolution of the concept.

Following that analysis, and before examining the rules applying to tax exemptions and reliefs, Ferreiro (chapter 11) analyses whether the environmental purpose of a tax can be considered justification for its selective design and, if so, how the tax should be designed in order to be qualified as a general measure. To that end, three relevant cases brought before the European courts dealing with taxes with environmental purposes from a State aid law perspective are examined. The author holds that the selective definition of the main elements of the structure of a tax with environmental purposes will only be justified by the underlying logic of the tax, if its structure is in line with that purpose and if the latter is precisely defined, i.e. in a way that makes it possible to keep track of achievement.

Regarding the rules applying to tax exemptions and reliefs, as Grau (chapter 12) points out, the legal framework defined for aid in the form of reduction in or exemptions from environmental taxes is applicable also to energy taxes and tax incentives. However, aid in the form of reduction in or exemptions from environmental taxes takes into account only environmental taxes that discourage environmentally harmful behaviour and increase the level of environmental protection. Energy policies do not enable taxes

on energy and tax incentives requiring a special regime to be approached only from the point of view of environmental objectives. A potential separate legal framework for energy tax exemptions or reductions in relation to EU State aid law might be addressed in either specific guidelines or a block exemption regulation, because the categories in the General Block Exemption Regulation (GBER) change over time as the Commission acquires further experience in a particular field of aid.

Furthermore, Verrigni (chapter 13) analyses the role of the "polluter-pays" principle as one of the cornerstones of the European Community's environmental policy, whereby the principle of proportionality is also examined. In fact, regarding the environment, aid is considered proportionate only if it would not have been possible to achieve the same results with less aid; in other words, the aid must be limited to the minimum necessary to achieve the level of protection desired. The author considers Italy's perspective and concludes that it would be desirable for the environmental tax system to finally shift away from a typically national level, as it is still too firmly linked to the single national legal systems, which are affected by cyclical environmentalist drives and sudden retreats, resulting in a chaotic and incoherent overproduction of taxes, of which the environmental purpose is mostly secondary.

4. State aid and EU Council Directive 2003/96/EC: Improving the environmental dimension

In Part IV, Antón (chapter 14) analyses the combination of excise reliefs and supply obligations of RES from a State aid perspective. After examining the promotion of biofuels in the EU context, the main support system for promoting biofuels in the European Union, the Spanish situation, as well as the quota system, the author concludes that the current tax treatment provided by Directive 2003/96/EC for biofuels does not take into account their characteristics. This translates into a comparatively higher tax burden for these products than that applied to traditional fossil fuels. For this reason, the author believes that it would be appropriate to maintain some kind of tax reduction on energy taxation for biofuels, at least until the Energy Taxation Directive is revised by the Council in a way that takes into account the peculiarities of these products.

Thereafter, del Federico and Giorgi (chapter 15) examine the compatibility of tax exemptions coordinating energy taxes and the Emission Trading Scheme (ETS) in the context of free and/or auctioning allowances and

Treaty on the Functioning of the European Union (TFEU) rules. In that sense, the authors highlight that it is fundamentally important to the topic to analyse the impact of the Commission's proposal regarding the compatibility of energy taxes and the ETS with respect to State aid prohibition rules. The authors firstly examine the Commission's aims in order to test if the proposal is in line with the target. Secondly, they study free and auctioning allowances, as they may represent in themselves a tax measure. Then they use an analysis of European Court case law as an approach to test the compatibility of the system with respect to State aid prohibition rules and to the overriding aim of protecting the environment.

5. Energy taxation and competitiveness: Addressing the risk of carbon leakage

López-Ibor (chapter 16) highlights that, while energy efficiency is a pillar of the EU energy market, energy services are also a new conveyor of the energy single internal market. Therefore, it is necessary to balance the gains in productivity made by the competitiveness of the system, and the environmental sustainability requirements. The author tackles EU energy efficiency regulation, national regulation on energy services and also considers cases resolved by the European Commission on the assumption of individual notification of energy saving and efficiency measures to conclude, as a general rule, that the regime for State aid for energy saving and efficiency projects should promote the use of financing instruments over non-repayable aid.

Finally, Traversa and Wolff (chapter 17) discuss the impact of EU law on the framing of an efficient energy tax policy, whether at the EU or Member State level, focusing particularly on the freedom of movement of goods (article 110 of the TFEU) and EU harmonization of rates and exemptions as it applies to VAT. The analysis shows that, when using taxation as an instrument of energy policy, it appears particularly difficult to strike a balance between the objectives of the European Union's internal market and those of a sustainable, secure and efficient energy policy.

This book has been submitted to a peer-review process. In that regard, we would like to express our thanks not only to all the contributors but also to the reviewers, and especially to Estela Ferreiro for her dedicated work as assistant editor.

Chapter 2

Environment and Taxation: State Intervention from a Theoretical Point of View

Elizabeth Gil García and María Teresa Soler Roch

2.1. Introduction

2.1.1. Research questions

Environmental protection may require state intervention in two different ways: in a positive way, by promoting structures which grant and improve that protection, and in a negative way, by correcting inadequate behaviours and activities that result in damage to the environment. This intervention can be implemented by the use of public funds and, more specifically, by means of tax policy measures. In this case, it is important to note that the tax measures will differ depending on whether we deal with the first or with the second way mentioned above.

In the first instance, tax incentives (as well as subsidies) may play an important role, taking into account that they have a positive effect on taxpayers, but a negative impact on tax revenue; therefore, key legal principles such as ability to pay, equality, effectiveness and proportionality apply, which means that the goal of these tax measures (protection of the environment) as a valid justification should be considered in light of the fairness of the tax system.

In the second instance, the most relevant example is the so-called "green taxes", which show the reverse situation so far as they imply an increased tax burden on taxpayers and more revenue for the Treasury. Although from a different perspective, in this case principles such as ability to pay and equality, proportionality and coherence, especially its consistency with the polluter-pays principle should also be considered.

Whatever the case may be, the core topic deals with the use of tax policy measures in order to achieve a non-fiscal objective, and the main challenge is how to design and implement these measures in order to achieve a fair balance between the public interest, i.e. protecting the environment, and the basic tax law principles.

2.1.2. Outline

This chapter is organized as follows: the two main sections will focus on state intervention in terms of public funding and the tax burden respectively (sections 2.2. and 2.3.), with subsections on assessing the means and effects of tax incentives (section 2.2.2.) and green taxes (section 2.3.1.) in light of some relevant tax law principles and legal constraints (sections 2.2.3. and 2.3.3.). The conclusion seeks to provide answers to the research questions proposed.

2.2. Intervention by means of public funding

2.2.1. The goal: Environmental protection

When Yellowstone Park was established in 1872 as the first national park in the world, a new concept was born for preserving and protecting the environment. However, environmental protection has not always been based on the value of natural resources and its relationship to life conditions. In the 1890s, the United States reported a Canadian foundry for polluting their croplands, but their motivation was economic and not environmental. Beyond the economic dimension, the purpose of environmental law (as well as environmental taxation) should be "the protection of the natural systems that make life possible, namely water, air and land".[1]

In the early 1970s, strict environmental regulations were introduced in OECD countries for the first time[2] in order to combat the rise in greenhouse gases and global warming. These issues certainly are at the centre of the major challenges faced by our society and undoubtedly have led to an increasing awareness of environmental issues among citizens. As a result, it is possible to affirm that present-day society sees the environment as something valuable and worthy of protection.

This value has been reflected in sectoral laws at the domestic level and, furthermore, environmental protection was established as a goal protected under the constitution in many countries, i.e. in article 9 of the Italian Constitution (1947),[3] in article 66 of the Portuguese Constitution (1976)

1. R. Martín Mateo, *Manual de Derecho Ambiental* p. 53 (Aranzadi 2003).
2. OECD, *Environmental Principles and Concepts* p. 12 (Paris 1995).
3. In the case of the Italian Constitution, environmental protection is not expressly enshrined, but a broad body of literature recognizes it when art. 9 mentions the landscape's conservation (P. González Trevijano, *La protección constitucional del medio ambiente*,

and in article 45 of the Spanish Constitution (1978), among others.[4] The recognition of the above-mentioned value, that is, environmental protection, at the constitutional level means, to some extent, a legal enshrinement. In other words, there is a legal basis for protecting the environment.

Within the EU framework, the original version of the founding Treaties of the European Union did not include any reference to the environment. However, according to European Court of Justice (ECJ) case law, environmental protection was considered an implicit aim of the European Union,[5] i.e. case 91/79 *Commission v. Italian Republic*, case 302/86 *Commission v. Kingdom of Denmark* or case C-300/89 *Commission v. Council*. Presently, the Treaty on European Union (TEU) points out "the protection and the improvement of the quality of the environment" (article 3) as an objective of the European Union. On the other hand, the Treaty on the Functioning of the European Union (TFEU) notes that the responsibility is shared between the European Union and the Member States in environmental issues (article 4) and regulates environmental policies (articles 191-193).

The legal basis for protecting the environment is the starting point for the development of legal measures addressing the need to protect and preserve the environment. Inasmuch as environmental protection has become a cross-cutting principle, it should be present in all sorts of measures. In a similar vein, the ECJ established in case C-300/89 that "…environmental protection requirements shall be a component of the Community's other policies".

The so-called "command-and-control" regulations consist of a set of rules that are mandatory for producers and consumers, i.e. the obligation for vehicles to use a catalyst as the principal after-treatment emission control device. Moreover, governments can make use of other tools for environmental protection, such as economic instruments, innovation policies and information programmes.

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in *Tratado de Tributación Medioambiental*, Vol. I, p. 28 (F. Becker, L.M. Cazorla & J. Martinez eds., Aranzadi 2008)).

4. On the other hand, for instance, the French Constitution (1958) does not enshrine environmental protection. Nevertheless, since 1971 (when the Ministry of the Environment was created), there has been an increasing development of measures in the area of atomic energy, the landscape or pollution, etc. (P. González Trevijano, *La protección constitucional del medio ambiente*, in *Tratado de Tributación Medioambiental*, Vol. I, p. 28 (F. Becker, L.M. Cazorla & J. Martinez eds., Aranzadi 2008).

5. Cf. F. Jacobs, *The Role of the European Court of Justice in the Protection of the Environment*, 18 Journal of Environmental Law 2, pp. 185-205 (2006); M.L. Schemmel & B. de Regt, *The European Court of Justice and the Environmental Protection Policy of the European Community*, 17 Boston College International and Comparative Law Review 1, pp. 53-83 (1994).

Regulations contributed significantly to reducing pollution in the seventies. However, some economists argue that there are other means more effective than regulations, such as those based on the economic method, because they lead to a more productive and cleaner environment with a low cost.[6]

Actually, command-and-control regulations are effective in situations of serious environmental degradation, but they imply a high management cost and do not promote technological improvements. While rules apply, similar to all companies and households (typically heterogeneous), market-based financial instruments are based on company-specific cost curves. Fiscal measures provide companies with more flexibility to adapt and change their behaviour to avoid paying a certain type of tax in future or to obtain certain tax reliefs.

Similarly, the OECD estimates that a wide array of policy instruments are needed, often in combination, to mainstream environmental considerations into economic decisions.[7] In general, regulations are supplemented by fiscal measures that aim to fund pollution prevention and control measures, as well as to provide incentives for implementing them and fostering technological innovation,[8] i.e. more efficient energy-saving technologies.

It is frequently stated that market incentives alone are not enough to produce an adequate supply of environmental protection measures and if there is no opportunity for profit, this goal will not be undertaken by firms in the decision-making process. Therefore, public funding can be used to bring about environmentally friendly behaviour by companies (and individuals as well).

The primary purpose of taxation is to raise revenue to finance government expenditure. Nevertheless, governments today often use tax legislation to influence individuals' behaviour in order to achieve their objectives. These extra-fiscal goals are legitimated by constitutional values or other priorities, i.e. the fight against climate change and global warming. In fact, in most developed countries, governments use the tax system to change the behaviour of actors in the private sector by incentivizing (subsidizing) activities

6. P.R. Krugman & R. Wells, *Introducción a la economía: microeconomía* p. 462 (Reverte 2006).
7. OECD, *Environmental Outlook to 2050: The Consequences of Inaction* p. 27 (OECD 2012).
8. E. Gil García, *Un nuevo modelo de tributación como medio para alcanzar la sostenibilidad energética* p. 13 (Impuestos, Ed. La Ley, Jan. 2014).

they wish to promote.[9] State intervention in order to encourage actions that are considered to be desirable may also influence the generation of research and knowledge for economic growth.

It is common knowledge that several environmental policies have usually been implemented to repair the damage caused by pollution. In such cases, as we stated, command-and-control regulations are very effective since the polluting party pays for the damage done to the natural environment with a restorative function. However, prevention measures could be seen as a better way of protecting the environment. If the aim is to prevent environmental risks, a new production model is needed that will require highly environmentally friendly investments.

Under the precautionary principle in environmental law, which is based on the common-sense adage that it is better to be safe than sorry, there is a responsibility to intervene and protect the environment from exposure to severe or irreversible harm.[10] This principle is detailed in article 191(2) of the TFEU and it aims at ensuring a higher level of environmental protection through preventative decision-taking in the case of risk. Actually, this is the only explicit reference at the EU level. However, as the Commission says, "it would be wrong to conclude that the absence of a definition has to lead to legal uncertainty".[11] At the international level, the principle was enshrined at the Rio Declaration on Environment and Development (United Nations, 1992). In particular, its Principle 15 states that "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities".[12] Hence, as the Commission highlights, "this principle has been progressively consolidated in international environmental law, and so it has since become a full-fledged and general principle of international law".[13]

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9. R.S. Avi-Yonah, *Taxation as Regulation: Carbon Tax, Health Care Tax, Bank Tax and Other Regulatory Taxes*, Law & Economics Working Papers, p. 2 (University of Michigan Law School 2010).

10. According to O'Riordan & Cameron, the precautionary principle provides "no more than general indications of what might be desirable policy and practice…" (T. O'Riordan & J. Cameron, *Interpreting the Precautionary Principle* p. 8 (Routledge 1994)). For further information, *see* W. Jackson, *Protecting Public Health and the Environment: Implementing the Precautionary Principle* (Island Press 1999).

11. *Communication from the Commission on the precautionary principle*, COM(2000) 1 final, p. 9 (Brussels, February 2000).

12. This Declaration is available online on the website of the United Nations Environment Programme at http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163.

13. *Communication from the Commission on the precautionary principle*, COM(2000) 1 final, p. 10 (Brussels, February 2000).

International agreements covering global or regional environmental protection are increasingly based on proactive or preventative measures, which encompass collective action and burden sharing.[14] In this context, governments are in charge of creating appropriate incentives for businesses and consumers to make choices that can help prevent future environmental problems. This idea of the introduction of measures to prevent future environmental problems can supplement the polluter-pays principle, because the former addresses "the prevention of environmental degradation due to human activity".[15] As the precautionary principle "shall be widely applied", not only regulations but also tax measures could be implemented by states to ensure an appropriate level of environmental protection. In other words, there is a risk of irreversibility altering the environmental basis for sustained economic prosperity.[16]

State intervention may improve the efficient functioning of markets and even correct market failures. The fact that part of the benefit from an investment will accrue to market participants other than the investor, will lead undertakings to underinvest. Actually, environmental innovation is dependent on the technological facilities of the company and on its ability to take full advantage of the benefits derived from the innovative activity. It is the authors' view that environmental innovation can be considered a "double positive externality", because apart from the ordinary positive effects (i.e. production of new high technology or economic benefits for the company), eco-innovation is to society's advantage. On the one hand, it may provide new knowledge and environmental possibilities, and on the other, the environmental challenges may promote further innovation. A minimum level of eco-innovation may create and strengthen high technology, such as the so-called "end-of-pipe" techniques.

Therefore, tax incentives related to environmental innovation may promote investment in new technologies by companies. The authors are of the opinion that the use of tax incentives to create positive externalities can be based on a behavioural response. That is, if a taxpayer benefits via tax incentives for his activity, he may be expected to grant and improve environmental protection.

14. T. O'Riordan & J. Cameron, *Interpreting the Precautionary Principle* p. 15 (Routledge 1994).
15. T. van den Brink, *Greening Tax Complementary to the Sustainability Agenda?*, 48 European Taxation 5, p. 252 (2008).
16. OECD, *Environmental Outlook to 2030* p. 28 (OECD 2008).

In the next two sections (sections 2.2.2. and 2.2.3.), the authors tackle how tax measures are designed where they take the form of incentives for environmentally friendly behaviour while essential tax law principles are respected.

2.2.2. Means and effects of subsidies and tax incentives

Obviously, the first step towards a *greener system* of taxation must be the removal of subsidies and tax incentives for activities that are environmentally destructive as well as economically disastrous.

An important issue to resolve is whether to use direct subsidies or tax incentives to foster environmental protection. In the first instance, we are talking about the payment or tax concession from the government.[17] That is, a financial public measure that involves a transfer of state resources in favour of a committed person in developing a valuable activity using such resources.[18] On the other hand, a tax incentive should be understood as a measure modifying the normally applicable tax regime in order to encourage certain activities of taxpayers,[19] i.e. the reduction of activities harmful or particularly dangerous to the environment.

Ideally, eco-projects where the social but not the private return exceeds the total cost should be subsidized in order for them to be undertaken.[20] In other words, funding an eco-project that would have been undertaken with private funds would be a waste of resources.[21] The development of that project would not create new environmental structures, only costs in terms of revenue foregone. The government decides which projects are worthwhile, while it is the market which makes that decision in the case of tax incentives. The latter are somewhat less transparent than are subsidies per se. This lack of transparency makes it difficult to compare tax incentive data (and impacts) across countries, sectors, or industries (OECD, 1996). However,

17. R.P. Steenblik, *A note on the concept of "subsidy"*, 23 Energy Policy 6, pp. 483-484 (1995).
18. J.J. Bayona de Perogordo & M.T. Soler Roch, *Materiales de Derecho Financiero* p. 124 (Ed. Compás 2010).
19. A. Zalasinski, *General Report – Tax Aspects of Research and Development within the European Union*, in *Tax Aspects of Research and Development within the European Union* p. 60 (W. Nykiel & A. Zalasinski eds., LEX and Wolters Kluwer Business 2014).
20. Å. Hansson & C. Brokelind, *Tax Incentives, Tax Expenditures Theories in R&D: The Case of Sweden*, 6 World Tax Journal 2, p. 176 (2014).
21. Id.

some forms of tax incentives (i.e. exemptions from property tax) are as readily quantifiable as grants and may be just as transparent.[22]

Furthermore, tax incentives differ from subsidies in that their value often increases simultaneously with the general tax burden. In this sense, tax incentives provide some built-in "buffering capacity" against the effects of changes in the general tax structure, in a way that subsidies do not.[23]

In terms of effectiveness, it is preferable to combine both instruments. Hence, incentives may fund those projects that do not qualify for subsidies.

Another issue to consider is the moment at which state intervention is most needed, since tax incentives could be designed to deduct expenditures against taxes paid or when a profit is made. To put it the other way round, this means that incentives can be provided to foster investments in environmentally related technologies, such as alternative fuels, or the conservation of soil and water; or they can take the form of measures that fiscally privilege certain types of income, such as the patent for a new hydraulic system for the chemical sector.

In our view, if governments decide in favour of an incentive on the cost side (i.e. a deduction on renewable energy that reduces the tax owed), they will stimulate the creation of environmental structures, eco-innovation and environmentally friendly investments. If, on the contrary, they prefer to promote the exploitation of patents and *know-how* with an environmental relevance, they will provide incentives on the income side. The existence of both types of incentives may imply a broad protection with the corresponding loss of public revenue.

As previously mentioned, tax incentives (as well as subsidies) may play an important role in promoting structures which grant and improve environmental protection. Indeed, governments may encourage (or discourage) certain activities or behaviours through the tax system, based on the possibility that the taxpayer may obtain a tax advantage (i.e. a reduction in the tax burden). A number of incentives are in place to help protect the environment, such as, agricultural land programmes; expensing of forest replanting costs (but not the costs of maintaining existing forests as habitat); deductibility or direct tax credits for clean energy efforts (renewable fuels and vehicles, utility energy conservation efforts); government sharing of

22. A. Easson, *Tax Incentives for Foreign Direct Investment – Part II: Design Considerations*, 55 Bulletin for International Taxation 8, p. 366 (2001).
23. OECD, *Subsidies and environment: exploring the linkages* p. 13 (OECD 1996).

costs for species protection and wetlands rehabilitation; and tax incentives for preserving open spaces.

Even those tax incentives which are not directly connected to environmental variables may have significant indirect implications for the environment, i.e. deductions for mortgage interest payments, family allowances for children and dependants, insurance and pension deductions from taxable income or medical deductions.

In this context, tax reliefs may take the traditional form of exemptions, allowances, credits, deferrals or special rates. Moreover, tax incentives may be extended to the traditional parameters of production, consumption or property. That is, tax reliefs may focus on environmentally friendly activities, assets and projects; additionally, these incentives may benefit individuals (personal income tax, PIT) and companies (corporate income tax, CIT).

Firstly, it is possible to grant exemptions to those companies that are carrying out less polluting activities in such a way that certain types of income are not included in the tax base. In some countries, for instance, energy is not included in the tax base for VAT. In order to bring about environmentally friendly behaviour by companies, such exemptions should be specifically linked to the income with an environmental relevance. In the energy sector, for example, not all the income generated will be related to clean and green production. Thus, a partial exemption associated with income related to bettering the environment may contribute to creating structures which protect the environment, i.e. income generated by the production of renewable energy.

Secondly, special deductions or allowances are granted in the definition of taxable income (i.e. amounts deducted from gross income to arrive at taxable income). For instance, allowances for certain transport activities between the home and the workplace are sometimes deductible from personal income.

Thirdly, governments can offer credits that are deducted from total tax liability. Frequently, such credits are not allowed to exceed total tax liability, i.e. they are “non-wastable”. The forms of R&D tax credits may be extended to green tax credits. On the one hand, there is a value or volume-based tax credit which is calculated as a percentage of the expenditure on environmental structures or eco-innovation, so the green tax credit is proportional. It will fund environmentally friendly investments that would have taken place anyway, because it does not require new eco-innovation to be undertaken

and it does not effectively contribute to improving environmental protection. On the other hand, there is an incremental-based tax credit that is only available to those companies whose expenditure on eco-innovation exceeds a certain base.[24] Thus, corporations carrying out these types of activities will be eligible for a tax credit when the amount of expenses is above a limit.

In order to ensure that enterprises increase their current expenditure level on green issues, it is preferable to design incremental-based credits. However, there will not be any difference between an incremental and volume-based scheme for companies performing eco-innovation for the first time as long as the expected net present value of the credit per extra euro spent on environmental innovation today is the same.[25] Some scholars agree on this complicated matter when drafting an incremental-based incentive. Several approaches have been employed by countries to define the base for the credit; they can be classified into the rolling-average base, fixed-base and sales based methods.[26]

Tax allowances and tax credits tend to have different effects on large and small companies and on the decision-making process. On the one hand, tax allowances permit companies investing in eco-innovation to deduct more from their taxable income than they actually spend on green projects and environmental innovation. On the other hand, tax credits allow companies to deduct a specified percentage of environmental expenditures, which applies against payable income tax. According to the OECD (2002), the value of a tax allowance depends on the CIT rate, while a tax credit does not; unused tax allowances may be carried forward to offset future tax under normal loss carry forward provisions, while the carry forward of unused tax credits requires the creation of a special pool to track unused credits.

Then there is a relief in the form of a delay in paying tax, the so-called "tax deferral". A tax deferral promotes environmental protection indirectly rather than with direct incentives such as allowances and credits. It is questionable whether the delay in paying constitutes a real incentive to protect the environment. That is, companies may be allowed to save profits in special funds that will be taxed later. Thus, we are incentivizing some activities that

24. M. Abdellatif, *Looking for Efficient Tax Incentives to Stimulate Research and Development and Economic Growth*, 15 New Zealand Journal of Taxation and Policy 2, pp. 141-142 (2009).
25. European Commission, *A study on R&D Tax Incentives. Final Report*, Taxation Papers – Working Paper 52, p. 34 (Luxembourg 2014).
26. OECD, *Tax Incentives for Research and Development: Trends and Issues* p. 16 (OECD 2002).

are less harmful to the environment, but they are taxed at a later stage. To make tax deferral an authentic tax incentive in favour of the environment, the subsequent tax liability may depend on the way in which those funds are eventually used.

Finally, a special or reduced tax rate applies to certain economic activities or agents. An example of this is the lower VAT rates applicable to food, energy, fuel, heating and power consumption.

2.2.3. Legal constraints at the domestic and EU level

It is widely understood that tax incentives lead to new goods and services, increased productivity and higher income. However, it is commonly assumed that tax reliefs may also cause distortions, are difficult to administer and open to abuse, as well as having a negative impact on tax revenue. In addition, countries offering special tax measures may engage in the so-called "race to the bottom", which means that generous incentives cause a decrease in the national tax revenues with a corresponding reduction in public services – being alternatively shifted to less mobile bases, i.e. workers and consumers, in order to maintain public services.[27] Therefore, reliefs for environmentally friendly behaviour do not tend to be regressive, but they can never hold as significant a place in the environmental tax armoury as charges.[28]

According to the OECD, government decisions supporting certain economic activities through tax incentives or subsidies may have unintended side-effects, such as effects on competition, particularly when they have a differential impact on corporations within the market. Agricultural production subsidies, for instance, were originally designed to correct environmental problems. However, they may not respond directly to the goal of environmental protection and, consequently, they may create unintended and negative environmental side effects.

At the domestic level, when tax measures are implemented to accomplish the goal of environmental protection, relevant legal principles such as ability to pay, equality, effectiveness and proportionality should be applied in light

27. A. Bal, *Competition for Research & Development Tax Incentives in the European Union – How an Optimal Research & Development System Should Be Designed*, 66 Bulletin for International Taxation 10, p. 573 (2012); European Commission, *Tax reforms in EU Member States*, Working Paper no. 38, pp. 48-49 (2013).
28. D.F. Williams, *Taxation and the Environment*, The Tax Journal, p. 18 (2008).

of the fairness of the tax system. These principles, whether or not expressly enshrined in the constitution, are fundamental concepts of tax law. For instance, the Spanish Constitution has enshrined these principles in article 31 as tax justice criteria for the accomplishment of the duty to contribute.

Tax incentives have their origin in a tax policy decision based on different principles and criteria. The ability to pay and the principle of equality are criteria of tax justice that generally imply the prohibition of fiscal privileges. Nevertheless, some extra-fiscal goals may be legitimated by constitutional values or other priorities, such as environmental protection. Under some conditions, tax incentives and the principle of equality may be compatible. Some constitutional criteria need to be met, such as proportionality (fair balance), an objective and a reasonable justification. Therefore, tax incentives should be checked according to these criteria, depending mainly on the comparability and the type of tax incentive, because, i.e. it is not the same incentives linked to enterprises' costs or to their income.

Environmental protection as a goal protected under the constitution is grounds for the justification as well as the motivation of the provision. Usually, that goal will be the objective as well. However, specific objectives would be preferable, i.e. promoting renewable fuels or preserving open areas in order to accomplish strategic extra-fiscal goals, because they can contribute to the general aim pursued and they can serve as a higher justification for the use of public funds. Moreover, reaching specific green objectives or combating particular environmental problems provides a strong motivation for offering fiscal privileges.

Concerning the subjective aspect, individuals and corporations may benefit from tax reliefs. As we have seen, there are some incentives conferred in the framework of the PIT. Individuals, as consumers, can take into account these incentives in their decisions. Then again, enterprises – both multinational and medium-sized enterprises – will not only internalize environmental issues in the decision-making process, but they will also see eco-innovation as an opportunity for profit; accordingly, they will have a strong motivation to invest in environmentally friendly activities and projects. These investments can generate positive externalities for their own business as well as social advantages.

Another issue to evaluate is the impact on the tax burden – due to the fact that the cost of a tax incentive is measured as the revenue foregone from that measure, assuming all other concessions remain in place. Fiscal analysts are opposed to the use of tax expenditures to achieve policy objectives

because the revenues foregone from tax reliefs require the imposition of higher marginal tax rates elsewhere, which may have a negative impact on both incentives and economic efficiency.[29]

As we mentioned earlier, the decrease in national tax revenues will imply a lesser turnover of public expenditure with the consequent reduction in public services, such as education or health. In these cases, proportionality is the principle used to ensure a fair balance between the promotion of constitutional goals or other priorities and the maintenance of the public expenditure level in order to satisfy the needs of the welfare state.

Although tax incentives are a valuable tool for promoting environmentally friendly behaviours, they may qualify as State aid and fall within the scope of the general ban on granting aid expressed in article 107(1) of the TFEU. The objective of State aid rules is to ensure that government interventions do not distort competition and trade inside the European Union, that is, they seek to provide a balance between activities which are anti-competitive and the need to support activities which contribute towards a well-functioning and equitable economy.[30]

Then, article 107(1) of the TFEU pronounces a general prohibition of State aid, but measures can be declared compatible if one of the exemptions of article 107(2) or 107(3) is fulfilled. All criteria contained in article 107(1) of the TFEU must be fulfilled, because if one single criterion is missing, the measure granted will not be subject to the State aid rules.

Succinctly put, the aid must consist of a transfer of public resources – including resources granted by regional or local authorities – to an organization involved in economic activity. Financial transfers that constitute State aid may take different forms such as capital injections, loan guarantees or tax exemptions, etc. That measure must confer an economic advantage that the undertaking would not have received in the normal course of business.[31] The measure granted must be selective. A measure is said to be selective if it favours only certain undertakings, i.e. when instead of being a "general measure", it targets particular businesses, locations or types of companies, etc. The aid must distort or have the potential to distort competition.

29. OECD, *Subsidies and environment: exploring the linkages* p. 71 (OECD 1996).
30. B. Pérez Bernabeu, *R&D&I Tax Incentives in the European Union and State Aid Rules*, 54 European Taxation 5, p. 182 (2014).
31. The ECJ has interpreted the term *undertaking* in this field in a wide sense as any entity which exercises an activity of an economic nature and which offers goods and services on the market, regardless of the legal form and the way of financing of this entity.

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