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EU ENERGY TAXATION FRAMEWORK REVISION IN THE CONTEXT OF THE GREEN DEAL

Towards a green, efficient, socially just, and inclusive economy transition

Revisión del marco de tributación de la energía de la ue en el contexto del pacto verde
Hacia una transición de la economía verde, eficiente, socialmente justa e inclusiva.

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KEYWORDS

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ABSTRACT

The EU aims to reduce emissions by at least 55% by 2030. To achieve this, the European Commission launched proposals to introduce price signals through the modification or extension of the Emission Trading Scheme and the Energy Tax Directive. These instruments could have a negative impact on households and companies' competitiveness. This research focuses on the one hand, on the role of energy taxation in the achievement of climate objectives and budget stability. And, on the other, in analysing the role of taxation to develop compensatory measures so that the transition is efficient, socially fair and inclusive.

PALABRAS CLAVE

Pacto Verde Europeo
Imposición Energética
Objetivo 55
Impuesto ambiental
Derecho Tributario
Directiva sobre Imposición Energética
Impuesto energético

RESUMEN

La UE pretende reducir las emisiones en al menos un 55% en 2030. Para lograrlo, la Comisión Europea lanzó propuestas para introducir señales de precios a través de la modificación del Régimen de Derechos de Emisión y la Directiva sobre Imposición Energética. Estos instrumentos podrían producir impactos distributivos y competitivos. Esta investigación se centra, por un lado, en el papel de la fiscalidad energética en la consecución de los objetivos climáticos y la estabilidad presupuestaria. Y, por otro, en analizar el papel de la fiscalidad para desarrollar medidas compensatorias para que la transición sea eficiente, socialmente justa e integradora.

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1. Introducción

The European Green Deal (hereinafter, EGD) sets the goal of climate neutrality for the European Union (hereinafter, EU) by 2050 (European Commission, 2019a). Achieving this goal will require adapting EU policies on climate, energy, transport and, also, energy taxation, in order to reduce net emissions of greenhouse gases by at least 55% from here to 2030 compared to 1990 levels. This political commitment has become a legally binding obligation for Member States (hereinafter, MS) as a result of the approval of Regulation 2021/119 (Regulation known in the EU as: ' Climate Law'). At the same time, the priority objectives of the EGD are the foundation and lay the foundations for both the *Next Generation EU Recovery Plan* and the Union budget for 2021-2027; key instruments to encourage investment in sectors that are strategic for the ecological transition and that will boost the economic recovery of the Union after the COVID-19 crisis.

This transition will not be possible unless it is accompanied by a significant public and private investment effort. This effort must take place in a scenario in which the public debt levels of some MS have increased alarmingly due to the economic crisis caused by the COVID 19 pandemic. Thus, for example, according to estimates from the Integrated Energy and Climate Plan of Spain (hereinafter, PNIEC), the energy transition will require 236,000 million euros of public and private investment in said country between now and 2030 (PNIEC, 2020). However, unlike the procyclical policies maintained in the 2008 crisis, both the EU institutions and their MSs have agreed on the need to lead the recovery via countercyclical policies, understanding that: only with public and private investment massive recovery supported with EU funds will enable a sustainable and resilient recovery, creating jobs and repairing the immediate damage caused by COVID-19. For this reason, the *NextGenerationEU Recovery Plan* will allocate 30% of the 1.8 billion euros to finance the achievement of the EU's climate objectives. This, in turn, translates into the obligation that the measures supported by the Recovery Plan contribute to the ecological transition or to face the challenges that derive from it; having to represent an amount of at least 37% of the total allocation of the *Recovery Plan*. Thus, climate neutrality has become a key strategy within the different recovery plans presented by the MS in the context of the EU Recovery Plan (Antón, 2022).

However, the costs of achieving environmental objectives should not be entirely borne by public finances. For this reason, along with the expenditure side, various authors and international institutions have defended in recent years the role that certain instruments could play for carbon price pricing in order to decouple economic growth from the increase in polluting gas emissions (OECD, 2021a). Thus, for example, the Green Deal highlights the potential of environmental taxes to generate alternative sources of public revenue that contribute to achieving sustainable public finances, while sending appropriate price signals to consumers to guide their behavior towards alternatives. less polluting.

In this regard, the European Commission (hereinafter, EC) has defended the role that a well-designed tax system can play in supporting the green transition, understanding that taxation, as a political instrument, has the potential to help achieve the goal of climate neutrality by 2050, as well as the other environmental objectives of the EGD. As the Commission itself points out, environmental taxes are an instrument available to both the EU and its MS that help to provide the correct price signals and appropriate incentives to producers, users, and consumers to promote a less polluting consumption and contribute to sustainable growth. At the same time, they are instruments that can contribute additional tax revenue to public budgets; which can be used: to finance investments in favor of the aforementioned green transition; to reduce taxes in other areas -for example, on labor- or to finance social protection measures (European Commission, 2020).

More specifically, the EU institutions consider that certain economic instruments for carbon pricing already in force in the EU, such as the European Directive 2003/87 on Emission Rights Trading Scheme (hereinafter, ETS) or the European Directive 2003/96 on Energy Taxation (hereinafter, ETD), could play a significant and complementary role in the context of the described roadmap. For the European Commission, instruments of this type -provided they are well designed from the environmental point of view both to effectively set the price on carbon and to effectively apply the principle of "who pollutes, pays"- are destined to play a leading role in creating a suitable environment for green innovation in line with the EU Plan and the EGD

However, the EC considers that, currently, none of these instruments is being effective when it comes to introducing adequate price signals to favor changes in behavior towards less polluting alternatives. Specifically, the EC considers that the ETD, in its current version, is not aligned with the rest of the objectives of the EGD.

Until the energy supply crisis and the increase in energy prices as a result of Russia's aggression against Ukraine in 2022 - The EU imports 90% of the gas it consumes, and Russia supplies more than 40% of the gas consumed in the EU. Furthermore, 27% of oil imports and 46% of coal imports also come from Russia. (European Commission, 2022a) -, everything pointed to the fact that, in order to achieve the ambitious objectives, set by the EU, part of the Commission's efforts would be aimed at including, together with the mechanisms based on public spending, proposals to modify the economic instruments of an environmental nature already in force -ETD and ETS-. The objective of these modifications would be to guide the design and scope of application of the aforementioned instruments so that they effectively contribute both to the introduction of a carbon price signal in sectors that have been excluded up to now and to the elimination of subsidies for energy products with a worse

environmental behavior in terms of emissions, such as those that have a fossil origin. Specifically, if the objective of the EGD is to radically reduce the climate impact of the EU, it is considered imperative to include in the scope of application of the aforementioned instruments both emissions linked to the transport sector and those produced in the household sphere.

Precisely, on July 14, 2021, the EC adopted a series of legislative proposals - "Fit for 55" - that establish how it intends to achieve climate neutrality in the EU by 2050, including the intermediate objective of a net reduction of at least 55 % of greenhouse gas emissions by 2030 (European Commission, 2021 a). The package proposes to revise various elements of the EU's climate legislation - including the ETS or the ETD - to establish in real terms the instruments through which the EC intends to achieve the EU's climate objectives within the framework of the aforementioned Pact. Among other measures, the proposals are aimed at modifying the DIE to create a more detailed tax base and increase the minimum tax rates for energy taxes; to extend the ETS to cover sectors hitherto excluded, such as road transport and buildings; and to establish a border adjustment mechanism for carbon emissions to reflect greenhouse gas (hereinafter, GHG) emissions from imports, as an alternative to free emission rights in the EU.

The EC recognizes that these measures will have an impact in the short/medium term on the most vulnerable sectors and on the competitiveness of the industry. In this sense, and as will be seen in this article, a series of measures are planned to mitigate these effects. However, once again, in the current context, the damage to the economy caused by the increase in energy prices as a result of Russia's aggression against Ukraine cannot be ignored. The EC itself considers that if energy prices continue to be high, they are likely to lead to an increase in poverty and affect the competitiveness of companies. Especially energy-intensive industries have had to deal with higher manufacturing costs. High energy prices also mean higher prices for other goods, especially food. A combined increase in energy, transport and food prices would compound the pressure on low-income households, putting them at greater risk of falling into poverty. This increase, added to that experienced as a result of COVID-19, has required both the EU and its MS to adopt emergency measures to guarantee supply while coping with the increase in prices and the contagion effect of gas prices in electricity prices (European Commission, 2022a).

Through the *REPowerEU* Plan and based on the application of the measures of the "FIT for 55" Package, the Commission has added a battery of measures to reduce Russia's energy dependence and deal with the socio-economic impacts caused by the current context (European Commission, 2022b)..

The EC confirms that the *REPowerEU* Plan is based on the full implementation of the "Fit for 55" package of measures presented last year without changing the ambition to achieve climate neutrality. However, it acknowledges that the rapid phase-out of fossil fuel imports from Russia will affect the transition path or how they will achieve climate goals.

However, far from forgetting the proposal to modify the ETD, the EC encourages MS to adopt fiscal measures to support the objectives of the *REPowerEU* plan in order to encourage energy saving and reduce the consumption of fossil fuels. In this line, the EC considers that the revision of the Directive on energy taxation contributes to the objectives of the *REPowerEU* plan by establishing price signals to reduce the consumption of fossil fuels and save energy. Consequently, the EC collects in the Plan the need for the MS to quickly reach an agreement.

However, we consider that the EC's proposals should not be insensitive to the energy and social crisis caused by the pandemic first and the war later and, therefore, despite recognizing the role of energy taxation, we understand that its implementation has to take into account, in any case, the distributive and competitive impacts through its gradual application and the configuration of compensatory packages.

2. Objectives and methodology

2.1. Objectives

This research focuses, on the one hand, on the complementary but central role that well-designed energy taxation could play in order to achieve the objectives of economic recovery and transition to a green and emission-neutral economy. And, on the other, in analyzing the role of taxation to develop support measures so that the transition is efficient, socially fair and inclusive.

The study of these issues aims to highlight the importance of interdisciplinary studies in the field of Law, specifically, Environmental Tax Law. To accompany legal proposals for impact studies that take into account the effects that these measures may have not only on the legal system, but also on the competitiveness of companies or in the most vulnerable sectors.

To this end, the following issues will be analysed, using the methodology set out in point 2.2.:

The main features of energy taxation to achieve not only fiscal but also non-fiscal purposes, specifically, related to the protection of the environment. In this sense, an attempt will be made to delve into the main characteristics that an energy tax must incorporate to be considered aimed at protecting the environment.

The main characteristics of the current framework in the EU on energy taxation and its possible deficiencies to introduce an effective energy taxation to achieve environmental goals. This study will be developed in the context

of the EU Green Deal and the proposals of the European Commission to modify Directive 2003/96/EC

After obtaining the previous results, the distributional impacts and the effects on competitiveness that could be caused by the economic instruments proposed by the Commission to achieve the EU's climate and energy objectives will be considered. In this sense, the need to adopt compensatory measures will be discussed.

2.2. Methodology

This research is methodologically framed in the field of Financial and Tax Law, but part of a general and holistic approach that requires the legal study, on the one hand of the EU Economic Recovery Plan and, on the other, of the analysis of the EU policies and initiatives to achieve a neutral economy in terms of greenhouse gas emissions and move towards energy dependency.

The research presented follows a substantially legal and interdisciplinary methodology (Tax Law, Administrative Law, Energy Law, Commercial Law, Constitutional Law, International Law and EU Law) although always taking into account the necessary contributions of Economic Science. Specifically, to take into account the scientific evidence regarding the possible impacts of environmental taxation on the most vulnerable sectors and competitiveness.

The research is based on the analysis of the current legal system to detect the aspects that must be corrected, but also on the legislative proposals presented, especially by the EC in the framework of its energy and climate policies. Comparative law studies and white papers on regulations and policies will also be taken into account. Likewise, the research takes as its object of study the national and foreign doctrine. In particular, both the criteria of the Courts of Justice and those issued by European and international organizations are analyzed. In these cases, the regulatory legal spheres of the specific issue to be addressed (local, regional, national, European and supranational) will be distinguished.

On the other hand, an analysis of comparative law is followed in relation to green tax reforms and the adaptation to the legal system of different tax figures of an environmental nature and, in particular, a comparison is made of both the problems detected and the solutions. adopted by the different states of the EU. Likewise, the design of these tax figures is explored, taking into account their implications for the budgets of the State, companies and individuals. This methodology allows the search for solutions that go beyond the internal sphere and incorporate the necessary international dimension. This dimension must be taken into account to address some of the aspects of environmental taxation, specifically, with regard to measures to avoid loss of competitiveness. of EU companies or the possible distributive effects that environmental taxation may have on households. Especially if one takes into account that the environmental problem that is intended to be addressed has a global impact.

To achieve the proposed objectives, an empirical and inductive method is applied. An exhaustive study of the practical experience in the international and EU sphere, beginning by examining the current legislation in the light of European and international requirements and the challenges to be met. We also use a logical-deductive method, in order to achieve the most appropriate systematization and rationalization of the materials that are analyzed.

3. Results, Discussion and Conclusions

3.1. Results

Carbon pricing instruments are efficient and effective policies to achieve climate goals and support a green recovery. In particular, setting an explicit price on carbon can translate into changes in behavior and direct it towards less polluting alternatives in companies and consumers while mobilizing resources to achieve the budgetary and environmental objectives of the States (OECD, 2016). Emissions trading systems, on the one hand, and carbon or CO2 taxes, on the other, have become the main economic instruments to introduce price signals of this type (World Bank, 2020).

In this sense, both the EU institutions and some MS, especially in northern Europe, have traditionally opted for economic instruments that explicitly externalize carbon price signals (through carbon taxes or by CO2 and emissions trading systems such as the EU ETS).

Specifically, a number of countries have introduced tax figures to issue explicit carbon price signals (e.g., Denmark, Finland, France, Ireland, Iceland, Norway, the Netherlands, Portugal, the United Kingdom, Sweden and Switzerland), in many cases, to complete the EU ETS and compensate for the fact that Directive 2003/96/EC does not establish tax rates on energy sources based on carbon content (Larrea, 2021).

A carbon tax is an instrument for internalizing environmental costs. It is an excise tax on fossil fuel producers based on the relative carbon content of those fuels (OECD, 2022). Explicit taxes on carbon emissions, which set a tax rate for energy use based on carbon content, would be included within the family of so-called environmental taxes, a family that encompasses any tax figure that intends to incorporate into its design an environmental damage not captured by market prices and, in this way, directly correct a negative externality. In these cases, economic science indicates that it is recommended that the tax rate be close to the external marginal cost associated with emissions, consumption or production (Committee of Experts, 2022).

According to the EC, environmental taxes, by introducing appropriate price signals in the market, have the potential to become instruments of environmental policy and contribute both to achieving more efficient tax systems and a higher level of environmental protection. As the CJEU pointed out, we are talking about taxes that must present a structure (specifically, with respect to their tax base, taxable event and type of tax) designed in such a way that: either they emit a sufficient price signal between the most polluting alternatives or with worse environmental behavior so that taxpayers orient their behavior towards more sustainable alternatives; or directly promote the use of other products with less harmful effects on the environment via tax benefit or advantage (CJEU, Case C-82/12).

As far as the EU ETS is concerned, it applies a carbon price, mainly on emissions from installations in the power generation sector and from energy-intensive industries, thus incentivizing companies in these sectors to reduce emissions. In this case, the carbon price is set by the market. The auction of emission rights linked to the ETS currently provides income to the Member States through the auctions from the emission rights - the Member States raised 30,000 million euros between January 2021 and February 2022 (European Commission, 2022a) -. This income, in accordance with the EU ETS Directive, must be allocated, at least 50%, to climate-related purposes.

However, explicit carbon pricing, via ETS or carbon tax, is not the only way to achieve climate goals, there are numerous levers and indirect ways to create incentives for "decarbonization": energy taxes, car registration taxes and circulation (for example, on automobiles powered by combustion engines), the elimination of subsidies on fossil energy products or product standards and regulations. This range of instruments has the potential to emit implicit signals in carbon prices that also trigger those changes (OECD, 2021b).

Thus, energy taxation is usually included within the measures aimed at protecting the environment. However, energy taxes are, above all, collection taxes that may include certain non-fiscal elements, in this case, aimed at protecting the environment. From this point of view, and in a broad sense, energy taxation would encompass all measures of a tax nature that affect the energy sector (Villar and Pitrone, 2017). Specifically, energy taxation would include all those excise taxes that are levied either on certain energy products -coal, gasoline- or on electricity; or production technologies (nuclear, solar, wind, hydraulic) in any of its production phases (extraction, generation, distribution). In general, energy taxes are based on energy products for transportation (such as gasoline, diesel, natural gas, kerosene or fuel oil) or on energy products for stationary applications (for example fuel oil, natural gas, coal, coke, biofuels and electricity). In most cases they take the form of excise taxes on fuel consumption and normally apply a tax rate per physical unit (liter or kilogram) or energy unit (kilowatt hour or gigajoule).

However, and as some scholars have stated, although energy taxes cannot be classified *per se* as environmental taxes, the structure of certain taxes of this type would allow them to fit into both categories (Villar and Wegener, 2015). Likewise, it should be borne in mind that, although they cannot be classified as "environmental taxes" in the strict sense, it is possible to introduce "environmental tax elements" in energy taxes -for example, in the form of fiscal incentives or modulations of quantitative elements- to force its internal logic towards an environmental end.

Precisely -and if we understand the concept of environmental tax with a certain breadth, focusing fundamentally on its effects- within this category we could also include any tax figure that, on the public revenue side and through incentive techniques, intends to generate operational changes , of behavior, and in the equipment (investments) of individuals, companies and organizations, which result in lower emissions and/or use of material resources that translate, in the end, into lower environmental impacts.

In the specific case of GHG associated with energy production and consumption, excise taxes on energy products or electricity have the potential to create incentives similar to those created by carbon taxes or the ETS, despite the fact that their main purpose be tax collection (OECD, 2021 a). Thus, the effective price signal applicable to carbon emissions ("Effective Carbon Rate" - Effective Carbon Rate (ECR)-) could be the sum of the signal resulting from carbon taxes, special taxes on products energy and the prices of tradable emission permits.

In this sense, it must be taken into account that the effectiveness of price-based incentives to reduce emissions does not depend on the declared political intention; but of factors such as the existence of an adequate type of tax to motivate a change of conduct; the configuration of tax bases that include polluting energy products and a certain sensitivity of demand in response to changes in the price of the taxed energy product (OECD, 2021b). Taking these considerations into account, certain energy taxes can act as instruments to implicitly fix carbon prices and, therefore, would be equivalent to carbon or CO2 taxes from an environmental point of view. Specifically, excise taxes on energy products and electricity, even when their primary purpose is to raise revenue and are not explicitly linked to a carbon price, are seen as having the potential to create economic incentives similar to carbon taxes and prices of emission permits by increasing the tax burden in proportion to the use of the taxed product.

In fact, given that environmental policies are usually configured based on emission reduction or natural resource use objectives, it is possible to introduce tax figures that emit implicit price signals, but with sufficient capacity and suitability to achieve environmental objectives. Furthermore, an additional reason for preferentially adopting this approach has to do with the difficulties in adequately defining tax rates based on the environmental damage generated, which usually require a broad and costly empirical basis.

Therefore, the structure of energy taxes makes them suitable instruments for introducing environmental elements into them that allow them to be alienated for non-fiscal purposes, for example, to influence consumer behavior so that they make more efficient use of energy or turn to cleaner energy sources.

However, the OECD has also warned about some problems arising from taxation based on fuel or electricity compared to taxation based on carbon. Specifically, in the case of the taxation of energy products, the OECD has stated that, since tax rates are not linked to the price of carbon directly, they do not issue a consistent price between fuels or fuels with different carbon intensities. Furthermore, it generally only applies to certain fuels, for example gasoline used for road transport, and therefore does not provide a consistent and homogeneous carbon price across the economy. For their part, excise taxes on electricity are applied to the production of energy (electricity) and, in many cases, do not distinguish by energy source. In these cases, they would tend to make electricity more expensive even when it is produced from clean energy sources (OECD, 2021c).

Thus, only certain well-designed energy taxes could be part of the group of political reforms aimed at achieving the ambitious objectives of the EU in the fields of climate and energy. In particular, energy taxes could play this complementary role as long as they are designed to send incentives through the right price signals to: reduce emissions over time, improve resource efficiency; and promote sustainable practices by producers, users and consumers (Pirlot, 2020).

In this sense, various authors have stated that a tax-based fiscal system of these characteristics can represent not only a good climate and energy policy, but also a good fiscal policy in the context of a green fiscal reform (Flues and van Dender, 2020). The foregoing is confirmed, fundamentally, if one takes into account that energy-environmental taxes are: i) Effective instruments for the internalization of environmental externalities. ii) Efficient and effective instruments for achieving the climate and energy objectives assumed by the EU (promoting innovation and structural changes). iii) Additional source of public revenue. iv) Incentives to modify the behavior of consumers and producers towards more efficient patterns.

Precisely, the EGD emphasizes the potential presented by the harmonized European framework for energy taxation to: support the transition to clean energy sources; contribute to sustainable and fair growth; and reflect considerations of social equity. However, to date, the joint application of the ETD and the ETS seems to have been ineffective in introducing adequate price signals to favor changes in behavior towards less polluting alternatives.

In this sense, studies by the European Commission argue that there is room to apply the „polluter pays“ principle more rigorously through an expansion of environmental taxes and other economic instruments in the EU. And this, because it estimates that, currently, the costs of pollution and environmental damage exceed the income generated by taxes and other economic instruments introduced to deal with polluting activities. Some studies show that the external costs of air pollution and GHGs amount to approximately €720 billion per year across the EU - around 5% of EU GDP - of which only 44% is internalized in taxes or economic instruments throughout the economy (Mottershead, 2021). Along the same lines, the European Court of Auditors considers that many opportunities have been missed for a more rigorous application of the “polluter pays” principle in the EU (European Court of Auditors, 2021).

In this context, the ETD could play a key role in the field of climate and energy policy. However, the aforementioned Directive, in its current version, is not aligned with the rest of the objectives of the EGD. Precisely, the main problems associated with the design of energy taxes in some MS are attributable to the current configuration of the ETD. Therefore, the modification of this Directive is a priority if it is intended that through energy taxes adequate price signals are issued to direct behavior and investment towards sustainable energy sources and, consequently, that the energy tax contributes to the achievement of the objectives of the EGD.

Specifically, the energy taxes introduced by certain MS present some of the following problems in their design:

i) Tax quantification elements not configured, defined or directly linked to the negative environmental externalities that could be corrected.

ii) Tax base aligned with the concept of environmental taxes, but insufficient tax rates to issue corrective signals or that do not introduce differentiated tax treatments according to the environmental performance of each product.

These shortcomings concur in the case of the taxes introduced by MS within the framework of the ETD, making it an inefficient instrument both for setting carbon prices and for discouraging the consumption of fuels or fossil fuels. Therefore, despite its potential to contribute to the objectives of the EGD, in some MS the taxation of energy is still imperfect to achieve the aforementioned complementary role.

A compelling reason that would explain why the taxes introduced by the MS are not being or have been designed to achieve the combination of objectives exposed is that related to the current configuration of Directive 2003/96, on Energy Taxation. The main problem with the ETD lies in the fact that the environmental objectives take a backseat to the main objective: to achieve a harmonizing framework that subjects electricity and energy products used as fuel for heating or automotive fuel to minimum levels of taxation, with the ultimate goal of ensuring the proper functioning of the internal market.

Consequently, and as we have already pointed out in previous publications, the logic inherent in the ETD, and

transferred by many MS to the national taxes approved to comply with the minimum taxes established in it, is to tax electricity and energy products of its scope of application regardless of its fossil or renewable origin and without taking into account any consideration of its different impacts on the environment (Antón and Villar, 2014).

The current ETD does not even take into account the carbon content of each energy product, nor does it contemplate the appearance of new uses for energy, it does not cover the appearance of new energy sources (e-fuel, advanced biofuels, hydrogen.

In fact, it can be said that the current approach of the ETD does not even allow it to fulfill its main objective; ensure the proper functioning of the internal market. In this sense, the ETD has allowed that, while respecting the minimums established in it, asymmetric tax rates proliferate among MS (European Commission 2021b).

The ETD does not ensure the desirable degree of coherence in the treatment of basic fossil sources and electricity, since taking into account the energy content of each energy product, the levels of taxation vary substantially according to the product. Thus, for example, the minimum currently set for diesel used as fuel for heating is 21 euros per 1,000 litres, with its current minimum price according to its energy content being 0.59 euros/Gigajoule. This means that the price of heating oil is higher per Gigajoule than the tax rates set for coal and natural gas, for which the Directive sets a minimum price of €0.15/Gigajoule. Likewise, there are also differences between the minimums set for fuels used in transport, 359 euros per 1,000 liters for gasoline and 330 euros per 1,000 liters for diesel. According to the EC, the lower minimum rates for automotive diesel further reinforce the natural advantage that diesel has over gasoline due to its high energy content.

Precisely, one of the main criticisms of the current structure of the ETD is aimed at the configuration of the tax base and, specifically, related to the fact that it establishes a tax based on volume instead of based on energy content. And this, because it introduces a *de facto* favorable tax treatment for the most polluting fuels compared to the less burdensome alternatives for the environment.

The configuration of the ETD tax base does not ensure the desirable degree of consistency in the treatment of basic fossil and sustainable energy sources. According to the EC itself, when the energy content of the various products is taken into account, the minimum levels of taxation vary substantially depending on the product in question. Thus, the current minimum price according to energy content is 9.4 euros/Gigajoule for diesel and 10.9 euros/Gigajoule for gasoline, without this difference being justified from the point of view of the fight against climate change, since diesel has a worse performance in terms of CO2 emissions.

On the other hand, it must be taken into account that a classic broad-based tax on energy would define the tax base in terms of the energy content of each energy product (European Commission, 2021b). However, the ETD applies the minimum tax rates on the volume of energy product consumed. This option is not the most suitable for endowing energy taxes with an environmental nature, since this parameter does not reflect the energy content and CO2 emissions of each product. Thus, the current minimum price according to energy content is 9.4 euros/Gigajoule for diesel and 10.9 euros/Gigajoule for gasoline, without this difference being justified from the point of view of the fight against climate change as diesel presents a worse performance in terms of CO2 emissions.

According to the EC, this configuration results in an inefficient use of energy and a distortion of the internal market. In addition, volume-based taxation discriminates against fuels of renewable origin. And this, because the standard taxation of renewable energy products is based on the volume and rate applicable to the fossil product replaced by the renewable. This configuration results in a situation where, as long as the minimum rates are respected, the tax burden on renewable energy can be higher than that of the competing fossil fuel.

In particular, the parameter based on volume does not fit the characteristics of products such as biofuels and other renewable products, since: 1) Biofuels have lower energy content and, therefore, a higher level of volume of energy is required. these products to produce the same amount of energy as products with a higher energy content, such as fossil fuels. 2) The same tax rate is applied to renewable energy products and those with worse environmental performance.

In this sense, it must be taken into account that, although the objective of the EU legislator was to tax hydrocarbons, the reality is that, in order to avoid distortions, Article 2 of Directive 2003/96/EC opened the door for biofuels receive the same treatment as fuels of fossil origin by providing that any product intended to be used, offered for sale or used as automotive fuel or as an additive or expander in automotive fuels, will be taxed at the same tax rate applicable to equivalent automotive fuel, manifestation of the nature of a general tax on energy products attributed to the structure of the ETD.

The sum of these two factors leads to a fiscal burden on biofuels that is comparatively higher than that which falls on the same volume of fossil fuel with which it competes and which it would have to replace. Specifically, since the current minimum rate for gasoline is 359 euros/1,000 liters, its current minimum rate according to its Gigajoule content is 10.9 euros/Gigajoule, while the current minimum rate according to its Gigajoule content of renewable fuel that can replace it, bioethanol, is 17 euros/Gigajoule, since, as we have anticipated, despite having a lower energy content, the Directive reserves the same tax treatment as gasoline, 359 euros/1000 litres. For its part, the current minimum rate for diesel, 330 euros/1,000 liters, means that its minimum rate according to its

energy content is 9.4 euros/Gigajoule, while that of biodiesel is 11.7 euros/ Gigajoule.

In addition, the ETD ignores the better performance of advanced biofuels in terms of the environment and the reduction of CO2 emissions (European Commission, 2021c).

Another problem with the ETD is that it does not send a sufficient and adequate signal to generate behavioral changes aligned with the objectives of the EGD. Specifically, because its minimum tax rates are not high enough to discourage the consumption of fossil energy products, indirectly promoting fewer polluting alternatives. The absence of an increase in minimum rates for more than a decade has eroded the price signal needed to encourage investment in energy efficient technology and behaviour and has also undermined their contribution to the smooth functioning of the internal market (the harmonized tax minimums have lost their effect of convergence with the national tax rates). In fact, in the last decade, some MS have increased their rates or increased the national tax burden while others have not. As a result, there is a risk of a growing distortion of competition in the single market and an erosion of the tax base in high-tax countries.

In July 2021, the Commission presented the „Fit for 55“ package of measures to adapt the EU‘s policies on climate, energy, transport and taxation to the objectives of the EGD (European Commission, 2021a). The package proposes to review a number of elements of EU climate legislation - including the ETS and the ETD - to set out in real terms how the EC intends to achieve ambitious energy and climate targets. These measures follow the postulates of the EGD, which defends the need to „ greening“ national budgets through tax figures and carbon pricing systems that, in addition to generating income, send adequate price signals to encourage/disincentivize certain consumption or production.

Through this package of proposals, the EC has launched a new proposal to modify the ETD and which seeks to: i) Provide an adapted framework that contributes to the EU objectives for 2030 and to the achievement of climate neutrality by 2050 in the EGD context. ii) Provide a framework that preserves and improves the EU internal market by updating the scope and structure of tax rates, as well as by streamlining the use of tax exemptions and reductions by the MS. iii) Maintain the capacity to generate income for the MS budgets (European Commission, 2021b).

With this proposal, the EC intends to guide the ETD towards the creation of adequate incentives both to guide the behavior of producers and consumers and to create an environment conducive to eco-innovation. To this end, it aims to eliminate existing tax disadvantages with respect to sustainable technologies and introduce higher taxes for inefficient and polluting fuels, thus ensuring that energy taxes better reflect the impact that each energy product has on the environment and the health.

The EC will try to achieve these goals through simplification. The new proposal would help reduce the use of fossil fuels in two ways:

a) On the one hand, it intends to establish higher tax rates for fossil fuels and lower rates for renewable products, which would reduce the relative price advantage of fossil fuels compared to less polluting alternatives and, consequently, would discourage the use of fossil fuels.

b) On the other hand, it will try to review the possibility of applying tax exemptions and reductions, which currently translate into a reduction in the tax burden applicable to fossil fuels, such as gas oil used in the agricultural sector, gas oil and coal used by households for heating purposes (the possibility of exempting vulnerable households would be maintained) or fossil fuels used by energy-intensive industrial sectors. It would also put an end to the current exemption that applies compulsorily to air and water navigation and the fishing sector.

To achieve the above objectives, the EC proposes to move from a volume-based tax to a tax based on energy content, which would eliminate the de facto advantage that currently exists for fossil fuels. In addition, it intends to introduce a classification of tax rates based on the environmental performance of each energy product.

The change of the parameter, energy content instead of volume, together with the establishment of differentiated tax rates would eliminate the advantage that fossil fuels currently receive and, at the same time, would introduce preferential tax treatment for products with better environmental behavior. This will help embed energy taxation into green tax reforms aimed at striking a balance between environmental and fiscal sustainability.

In short, only by having standards for a correct environmental design of energy taxes (based on adequate tax rates, a configuration of the tax base aligned with the environmental objective to be achieved and an adequate use of income to mitigate the effects distributive) adequate incentives would be introduced, via implicit carbon prices, to modify behavior towards alternatives with better environmental behavior.

However, along with the advantages of energy taxes, certain drawbacks associated with them must also be weighed up. Specifically, because they may negatively impact vulnerable sectors or affect the competitiveness of companies.

In a context like the current one, of rising energy prices and economic crisis, the above impacts could make it difficult to adopt the new ETD proposed by the EC. In this sense, we must bear in mind the unanimity requirement to adopt harmonization measures in the field of indirect taxation required by article 113 of the Treaty on the Functioning of the European Union (TFEU) and which has already acted as a barrier to adopt the proposal

to modify the ETD presented by the EC in 2011. The potential impact of the new DIE on competitiveness and households could lead some MS to reject the proposal. This would prevent reaching the unanimity required by Article 113 and, consequently, frustrate the plans of the EC.

Faced with this barrier, the EC could try to avoid the unanimity requirement by arguing that, given that the proposed revision of the ETD focuses on environmental issues, it is possible to activate one of the so-called „passerelle clauses" provided for by the TFEU itself (European Commission, 2019b).

In particular, the Commission could propose Article 192 TFEU (environmental measures including measures of a fiscal nature) as the legal basis for the adoption of its proposal, an article that allows the adoption of proposals in the field of environmental protection through the legislative procedure ordinary provided for in article 116 (qualified majority instead of unanimity). The qualified majority foreseen in article 116 implies that the proposals presented must be approved by the vote in favor of 55% of the MS and that they represent at least 65% of the EU population (double majority rule).

In accordance with article 192.2; The Council, acting unanimously in accordance with a special legislative procedure, on a proposal from the EC and after consulting the European Parliament, the Economic and Social Committee and the Committee of the Regions, shall adopt: provisions essentially of a fiscal nature (…)

However, that same article in the second paragraph opens the possibility of activating a „parallel clause" by providing that the Council, unanimously, at the proposal of the EC and after consulting the European Parliament, the Economic and Social Committee and the Committee of Regions, may provide that the ordinary legislative procedure is applicable to the areas mentioned in the first paragraph.

However, activating this bridging clause would require, once again, a unanimous agreement by the Council on the proposal presented by the Commission and, in reality, not much progress has been made in this area. In its Resolution of February 13, 2019, on the state of the debate on the future of Europe, Parliament advocated the use of general bridging clauses (Article 48, paragraph 7, first and second paragraphs of the TFEU) and other clauses runway. More recently, in May 2022, the Report on the Final Outcome of the Conference on the Future of Europe (2022) has once again raised the issue, emphasizing the need to review the decision-making processes based on unanimity and move forward to the qualified majority.

Another possibility to deal with this reluctance of the MS would be related to paying special attention to the distributive impacts and on competitiveness linked to environmental imposition and, in this line, establishing mechanisms that mitigate and compensate said effects on certain social groups and economic sectors. In this sense, and as the economic doctrine has defended, compared to regulatory or command and control instruments, environmental taxes have the advantage that the additional income obtained can be used for distributive compensation measures and/or mechanisms to mitigate the loss of competitiveness of companies.

3.2. Discussion

The achievement of ambitious environmental objectives such as those proposed by the EU Green Deal in a limited time horizon has clear socioeconomic impacts that will require the introduction of compensatory packages and mechanisms that mitigate the loss of competitiveness (Committee of Experts, 2022).

In this sense, it must be borne in mind that the measures proposed by the EC could have a clear impact on households and the competitiveness of EU companies. Thus, on the one hand, there is the risk that the costs associated with the reinforced ETS will be passed on to final consumers or that the modification of the ETD will translate into an increase in the price of energy that will have a greater impact on the most vulnerable sectors. On the other hand, there is also the risk that, if international partners do not share an ambition comparable to that of the EU, there will be carbon leakage through the transfer of EU production to other countries where carbon reduction targets emissions are less ambitious.

The EC is aware that while introducing carbon price signals for fossil fuels and fuels in the transport or heating sector are powerful incentives for behavioral change, in the short-term consumers may not be able to change easily. their consumption patterns when it affects an important part of their income (European Commission, 2021d). And consequently, it will be necessary to address these aspects to ensure that the transition and the fulfillment of the EGD commitments by the EU provide economic opportunities for both industry and households. For this reason, the EC considers in its proposals the impact that its approval could have on the most vulnerable sectors.

In general, compensatory measures of this type can be carried out by means of modifications in the tax structure (exemptions and not subjections, discounts, reduced rates, etc.) to be applied to certain taxpayers, or by means of personalized transfers limited to certain sectors or groups. socioeconomic (according to income level, location, family composition, etc.).

In this sense, the EC proposes a combination of the measures exposed with a special emphasis on distributive compensation, through *ad hoc* funds to guarantee a fair transition, and mechanisms that mitigate possible losses of competitiveness against economies with more lax environmental regulations

Specifically, to mitigate these effects, it proposes the creation of a "Social Climate Fund" whose purpose will

be to provide specific financing to the MS to support the citizens most affected or at risk of energy poverty or mobility due to the possible economic impact that the extension of the scope of application of the ETS to road transport and buildings.

The main objective is to provide specific financing to the MS so that they can help the adaptation of the most vulnerable sectors (e.g. financing investments in energy efficiency or in new cooling and heating systems, providing access to zero and low emission vehicles, supporting public and private entities in the development of efficient renovation solutions or provision of sustainable mobility services, etc.) The EC expects to raise €72.2 billion for the Fund and intends it to reach a total of €144.4 billion with national co-financing. The idea is to finance it, on the one hand, from the EU budget -using an amount equivalent to 25% of the extra income that will be obtained from the expansion of the ETS to construction and road transport- and, on the other, with contributions from the MS that could co-finance it by using another 25% of the extra income generated by the modified ETS. The fund will be allocated to the MS based on distribution criteria -Proportion of the population at risk of poverty in rural areas; carbon dioxide emissions from burning fuels by households; percentage of households at risk of poverty with overdue bills; total population; GDP per capita of the MS- (European Commission, 2021e).

Similarly, considerations of a social nature have also been introduced in the proposal to amend the Directive on Energy Taxation. In this sense, for example, the EC proposal includes different measures to reduce the tax burden and mitigate the economic and social cost that the introduction of energy taxes would entail, complementing, in this way, the measures provided by the "Climate Fund" to cope with the impact that the new ETS would have.

Specifically, the EC provides for the possibility of: a) Exempting vulnerable households from the taxation of heating fuels for a period of ten years or introducing a transitory period of ten years to reach the minimum tax rate. b) Grant reductions for all households not less than the minimum in the case of heating fuels. c) Introduce transitional periods in order to mitigate the economic and social cost of introducing a tax on sectors that are currently exempt under the DIE: aviation or heating fuels used by non-vulnerable households (European Commission, 2021b).

The EC is also aware of the effects that the new ETD and the new ETS would have on competitiveness. In this sense, however, it must be taken into account that compensation for loss of competitiveness should be restricted to those cases in which its existence is verified and there are no other mechanisms for its mitigation. Precisely, the EC proposes the introduction of a Carbon Border Adjustment mechanism (CBAM) that prevents so-called carbon leakage by setting a price on imports of carbon-intensive products. According to the EC, this mechanism will be introduced gradually and, in the first years, a simplified system will be applied for some selected products (cement, aluminum, fertilizer, electricity production). The ultimate goal of the CBAM is to ensure that products produced in the EU and those imported - coming from countries in which a pricing system similar to that of the EU is applied or have not reduced the carbon content in their production cycles - pay the same price for carbon. For this reason, the EC argues that the CBAM does not introduce discriminatory treatment and is consistent with the WTO rules and other international obligations of the EU. Specifically, to avoid discrimination in the affected sectors, the CBAM will be introduced gradually, while the free rights that continue to be assigned under the ETS are gradually eliminated.

Many of the aforementioned compensatory systems will have a collection cost and will come into conflict with the utility of environmental taxes for tax reform processes that seek to improve the sufficiency of resources and/or the efficiency of the tax system.

In this regard, it should be borne in mind that environmental taxes are imposed in order to internalize the external costs of environmentally harmful behaviour, thus deterring such behavior by putting a price on it and increasing the level of environmental protection. In principle, these taxes must reflect the global costs for society (external costs) and, consequently, the amount of the tax paid per unit of emissions, other pollutants or resources consumed must be the same for all the companies responsible for the behavior harmful to society.

However, while it is true that tax reductions may adversely affect the objective of protecting the environment, they may nonetheless be necessary when recipients would otherwise be so competitively disadvantaged that it would not be feasible to introduce the environmental tax.

Where environmental taxes cannot be applied without jeopardizing the economic activities of certain companies, granting more favorable treatment to some companies may allow an overall higher level of contribution to environmental taxes to be achieved. Consequently, in some circumstances, tax reductions may indirectly contribute to a higher level of environmental protection. However, they should not undermine the overall objective of the tax to discourage environmentally damaging behavior and/or increase the cost of such behavior where no satisfactory alternatives are available.

Nevertheless, as has been indicated, these preferential tax treatments for certain groups or sectors could affect the incentive effects of these instruments. In this sense, it could be recommendable to opt for distributive or competitive compensation mechanisms that do not act against the incentives for environmental improvement that these taxes introduce.

Specifically, it is considered that direct transfers may be more recommendable as they do not affect the

incentive effects of these taxes on harmful emissions or consumption(Committee of Experts, 2022)..

In this sense, some authors consider that the compensations should be made preferentially using the extra collection obtained by the environmental tax in question (allocation to specific purposes). In general, an environmental revenue use is proposed in line with recent developments in green tax reforms, allocating a good part of the resources to distributive compensation, to compensate for the negative impacts on competitiveness and to promote the development and deployment of clean technologies.

As has been pointed out, environmental taxes have an advantage over other regulatory alternatives: obtaining public revenue that can be used to compensate those affected. In this sense, the economic literature on environmental taxation maintains that, in accordance with the double dividend theory, it is possible to obtain both economic and environmental benefits through a tax of this type. Specifically, by increasing revenue with the introduction of energy-environmental taxes while reducing the tax burden of other pre-existing taxes (distorting) in a neutral income framework, such as taxes on capital or labor (Delgado, Freire-González and Presno, 2022).

However, in recent years we have witnessed a new generation of green tax reforms, known as third-generation reforms, that go beyond the initial approach. Especially after the crisis of 2008, and with the consequent increase in the need for public revenue and distribution and competitive concerns. In this context, the recent waves of green tax reforms no longer pursue a "double dividend" (financial and environmental dividend) in the classical sense, but instead consist of various legislative measures introduced jointly and in coordination and combining environmental taxes with support mechanisms of a financial nature aimed at supporting the sectors most exposed to price increases and, consequently, the most vulnerable. These fiscal reforms are characterized by a more flexible and heterogeneous use of the tax collection associated with the environmental tax and adapted to the new socioeconomic environment -distribution programs, energy efficiency, support for renewable energies, etc.-. This means that the additional fiscal income obtained through these taxes could be allocated, for example, to policies for the development of advanced biofuels or energy efficiency systems in the most vulnerable households.

We find innumerable examples of these flexible reforms in countries around us. Thus, for example, in 2008 Switzerland introduced a tax on carbon dioxide (CO2) emissions, the proceeds of which are used in part to promote energy efficiency in buildings and compensatory measures for affected households and businesses; in 2019 Ireland introduced a carbon tax with fiscal consolidation goals; in 2010, Slovenia passed a tax on energy consumption that dedicates all of its revenue to financing energy efficiency programs; in 2012 Japan introduced a tax on CO2 emissions with revenue earmarked for climate change mitigation actions; or the case of the Netherlands, which in 2013 applied a surcharge on the tax on energy whose collection was used to finance renewable alternatives (Labandeira, Labeaga and López-Otero, 2018).

Furthermore, the International Monetary Fund (IMF), in the context of the pandemic, took up the initiative to promote a global carbon tax while proposing the progressive elimination of fossil fuel subsidies. The IMF defends that the extra tax revenues collected with the tax could be used to finance an instrument for the economic recovery of countries, promoting low-carbon alternative energies and other clean technologies in line with the commitments adopted as a result of the Paris Agreement (Larrea, 2021).

In any case, within the design of compensation mechanisms to palliate the distributive effects and the losses of competitiveness, the need to apply non-general or uniform strategies is emphasized. It is necessary to opt for mechanisms that identify and compensate in an almost personalized way the affected households or economic activities. To guarantee this type of specific compensation, it would be advisable to arbitrate mechanisms for direct transfers, personal income tax compensation, or specific bonuses associated with certain consumption. Subsidies for changing equipment would also be recommended as a way to resolve, in the medium and long term, the distributive impacts and those on competitiveness.

3.3. Conclusions

Carbon pricing instruments, such as the ETS or energy taxes, can result in negative distributional impacts on the most vulnerable sectors. Likewise, the adoption of these measures must take into account their impact on the loss of competitiveness of EU companies and, therefore, the risks of "carbon leakage" and relocation to jurisdictions with less ambitious environmental standards than those introduced. the EGD. Therefore, it is necessary to consider not only the impact on the current legal system and the current system of the proposals to modify the ETD or the ETS, but also the possible impacts in social, distributive and equity terms. Therefore, Commission's proposals should not be insensitive to the energy and social crisis caused by the pandemic first and the war later.

Therefore, despite acknowledging the role of energy taxation in achieving the objectives of the EGD, we understand that its implementation must take into account the distributive and competitive impacts. In particular, a gradual application of these measures would be advisable. A gradual application with temporary regimes for some sectors would increase social acceptance and facilitate the adaptation of the affected sectors.

The previous position, in turn, could be a factor that would allow obtaining the favorable vote of all the MS to approve the measures proposed by the EC. And, consequently, it could constitute a strategy to overcome the barrier of unanimity, required by article 113 of the TFEU, to adopt the provisions referring to the harmonization

of the legislation related to taxes on specific consumption.

The accelerated deterioration of environmental quality and the need to reduce the energy dependency of countries like Russia could discourage the adoption of transitory measures and gradual adaptation. In these cases, the adoption of initiatives such as the ETS or the ETD will require the configuration of compensatory packages that deal with the distributional impacts and on business competitiveness. These mechanisms should be designed taking into account, in addition, the need to increase the acceptance of the Commission's proposals both from the social point of view and from the point of view of MS

The tax system, both from the income and spending side, has the potential to complement the just transition strategies that are designed to deal with the social, distributive and labor impacts of the change in the production model

References

Antón Antón, A. & Villar Ezcurra, M. (2014). Inherent Logic of EU Energy Taxes: Toward a Balance Between Market Protection and Environment Protection. In L. Kreiser et.al. (*Eds.*). *Environmental Taxation and Green Fiscal Reform: Theory and Impact, Critical Issues in Environmental Taxation* (pp.55-68). Edward Elgar.

Antón, A. (2022). Implicaciones fiscales de una recuperación económica verde y socialmente justa. In J.M. Macarro, J.M. Martín, y J. Ramos (*Eds*). *Desafíos fiscales en un mundo post-Covid: valoración y retos pendientes a nivel interno e internacional* (pp. 549-584). Tirant lo Blanch.

Committee of Experts (2022). *Libro Blanco sobre la Reforma Tributaria*. Ministerio de Hacienda.

Delgado, F.J.; Freire-González, J. and Presno, M.J. (2022). Environmental taxation in the European Union: Are there common trends?. *Economic Analysis and Policy, 73*, 670-682.

European Commission (2019a). *The European Green Deal, COM (2019) 640 final*. European Commission.

European Commission (2019b). *A more efficient and democratic decision making in EU energy and climate policy, COM (2019) 177 final.* European Commission.

European Commission (2020). *Fair and simple taxation supporting the recovery strategy, COM (2020) 312 final.* European Commission.

European Commission (2021a). *'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality, COM (2021) 550 final*. European Commission.

European Commission (2021b). *Impact assessment report Accompanying the document Proposal for a Council Directive restructuring the Union framework for the taxation of energy products and electricity, SWD (2021b) 641 final*. European Commission.

European Commission (2021c). *Proposal for a Council Directive restructuring the Union framework for the taxation of energy products and electricity, COM/2021/563 final*. European Commission.

European Commission (2021d). *Working Document Impact Assessment Report (SWD (2021) 621 final*. European Commission.

European Commission(2021e). *Proposal for a Regulation of the European Parliament and of the Council establishing a Social Climate Fund, COM (2021) 568 final*. European Commission.

European Commission (2022a). *REPowerEU: Joint European Action for more affordable, secure and sustainable energy, COM (2022) 108 final*. European Commission.

European Commission (2022b). *REPowerEU Plan, COM (2022) 230 final. European Commission.*

European Court of Auditors (2021). The Polluter Pays Principle: Inconsistent application across EU environmental policies and actions. European Court of Auditors. https://www.eca.europa.eu/Lists/ECADocuments/SR21_12/SR_polluter_pays_principle_EN.pdf

Flues, F. & K. van Dender (2020). Carbon pricing design: Effectiveness, efficiency and feasibility: An investment perspective. OECD Taxation Working Papers, 48.

Labandeira, X., Labeaga, J.M. y López-Otero X. (2018). *Nuevas Reformas Fiscales Verdes: Evaluaciones Ex-ante para España. Economics for Energy*. WP 03a/2018. https://labandeira.eu/es/publications.php?sec=4

Larrea Basterra, M. (2021). La fiscalidad sobre el carbono en Europa. principales desarrollos y tendencias. *ICADE. Revista de la Facultad de Derecho, 111*, 1-27.

Mottershead, D. (Et. al.) (2021). *Green taxation and other economic instruments. Internalizing environmental costs to make the polluter pay*. European Commission.

OECD (2016). *Effective Carbon Rates. Pricing CO2 Through Taxes and Emissions Trading Systems*. OECD. https://doi.org/10.1787/91ad6a1e-en.

OECD (2021a). *Taxing Energy Use for Sustainable Development: Opportunities for energy tax and subsidy reform in selected developing and emerging economies*. OECD.

OECD (2021b). *Carbon Pricing in Times of COVID-19: What Has Changed in G20 Economies?*. OECDE.

OECD (2021c). *Effective Carbon Rates 2021: Pricing Carbon*. OECD.

OECD (2022). *Organisation for Economic Co-operation and Development. Glossary of statistical terms.*

OECD. http://stats.oecd.org/glossary

Pirlot, A. (2020). Exploring the Impact of EU Law on Energy and Environmental Taxation. In H. Panayi, W. Whaslehner and E. Traversa (*Eds.*). *Research Handbook in European Union Taxation Law* (pp. 359–388). Edward Elgar.

PNIEC (2020). *Plan Nacional Integrado de Energía y Clima 2021-2030*. Ministerio para la Transición Energética y el Reto Demográfico

Villar Ezcurra, M. & Wegener Jesses, P. (2015). *Energy taxation and key legal concepts in the EU State aid context: looking for a common understanding*. CEU EDICIONES.

Villar Ezcurra, M., & Pitrone, F. (2017). The concept of "environmental taxes" in the Energy Sector: possible solutions in a State Aid Context. In M. Villar Ezcurra (*Ed.*). *State aids, taxation and the energy sector* (pp.11-24). Thomson Reuters-Aranzadi.

World Bank (2020). *State and trends of carbon pricing 2020*. World Bank.