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Environmental Taxes and Their Role in the Economics of Sustainable Development

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The purpose of this article is to answer the question of the role of environmental taxes in the economics of sustainable development. The first part of the article discusses the idea of sustainable economic development and the economics of sustainable development. Then, environmental taxes are defined, their essence explained and their role in the economics of sustainable development discussed in theoretical terms, which finally allows for showing the role of these taxes in practice. The fourth part of this article discusses the environmental tax reform. A theoretical and empirical analysis carried out in the article allows us to state that the tax system should play a fundamental role in shaping sustainable economic development, but in practice it is still difficult to carry out the appropriate environmental tax reform.

Keywords: environmental tax, sustainable development and tax, environmental tax reform.

Podatki ekologiczne i ich rola w ekonomii zrównoważonego rozwoju

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Celem niniejszego artykułu jest odpowiedź na pytanie, jaką rolę odgrywają podatki ekologiczne w ekonomii zrównoważonego rozwoju. W pierwszej części artykułu omówiono ideę zrównoważonego rozwoju gospodarczego i ekonomii zrównoważonego rozwoju. Następnie zdefiniowano podatki ekologiczne i wyjaśniono ich istotę oraz omówiono ich rolę w ekonomii zrównoważonego rozwoju w ujęciu teoretycznym, co finalnie pozwoliło na ukazanie roli tych podatków w praktyce. W czwartej części niniejszego artykułu omówiono ekologiczną reformę podatkową. Przeprowadzone w artykule analizy zarówno teoretyczna, jak i empiryczna pozwoliły stwierdzić, iż system podatkowy powinien odgrywać zasadniczą rolę w kształtowaniu zrównoważonego rozwoju gospodarczego, jednakże w praktyce nadal jest trudno przeprowadzić właściwą ekologiczną reformę podatkową.

Słowa kluczowe: podatek ekologiczny, zrównoważony rozwój a podatek, ekologiczna reforma podatkowa.

JEL: F63, H23, H71, Q01

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1. Introduction

The economics of sustainable development postulates an alternative organisation of the global economy of the 21st century in accordance with a new paradigm of a sustainable integrated economic, environmental and socio-cultural order. As emphasised by, among others, Cieślukowski (2016), an appropriate tax system is an important element of this order. However, a question arises at this point as to what the "appropriate tax system" is like and as to the role of taxes in shaping sustainable economic development?

The purpose of this article is to present the role of the so-called environmental taxes in the economics of sustainable development. The accomplishment of such a goal, however, requires discussing briefly the idea of sustainable economic development and the concept of the economics of sustainable development, and then defining environmental taxes and explaining their essence. The discussion of the above terms and issues forms the basis for a proper debate on the role of environmental taxes in the economics of sustainable development in both theoretical and practical terms. The above-mentioned issues are also related to the environmental tax reform, which is discussed in the last part of this article.

2. The Idea of Sustainable Economic Development and the Economics of Sustainable Development

Embarking on the subject of this study, it is instrumental to mention the idea of sustainable economic development that emerged in the 1960s. Created in 1968 by the Roman Club – an international organisation studying global problems – the idea was "an attempt to answer the questions about threats related to the dynamic development of Western economies, depletion of non-renewable natural resources, pollution of the environment, fast demographic growth rate, deepening division between the well-being of highly developed countries and the rest of the human population suffering from hunger and malnutrition and general instability – and in many cases the breakdown – of the ecosystem." (Płachciak, 2011). The impulse to integrate this idea into a theoretical framework came from the United Nations Conference on Environment and Development held in 1992 in Rio de Janeiro. During this conference, new guidelines for the development of the world, referred to as *sustainable development* in the drafted document (United Nations [UN], 1992, item 1.1), were agreed, and a definition of sustainable development was formulated as follows: "Sustainable development is a strategy for environmental, social, technical & technological and organisational transformations aimed at achieving a rational and sustainable level of social well-being that can be passed on to future generations without concerns as regards the threatened destruction of natural resources and ecosystems" (Instytut Ochrony Środowiska,

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1993). It is worth noting that this definition is most frequently treated as the applicable one (Cieślukowski, 2014).

Speaking about the economics of sustainable development, it should be stressed that this is a new trend in the economic theory that takes into account the achievements of schools that are alternative to neoliberal economics, including the new institutional economics, social economics, ecological economics and industrial ecology (Cieślukowski, 2014). Czaja (2011) accentuates that the economics of sustainable development still remains at the stage of conceptualisation of basic notions and categories. The problem with establishing a strict theoretical framework is due primarily to the multidimensionality of the issue of sustainable development. Dobrzański (2007) articulates that "sustainable development is everything." Explaining his statement, he claims that sustainable development applies to "all elements and aspects of the life of society, interdependent social, natural and economic issues in various temporal and spatial scales."

3. Environmental Taxes (and Charges) in the Economics of Sustainable Development – A Theoretical Outline

As accented in the introduction, an appropriate tax system is an important element of sustainable economic development. Taxes are classified as instruments of economic policy and in the economics of sustainable development are to be used, among others, to stimulate specific actions for sustainable development (Rogall, 2010; Czaja, 2011). As Cieślukowski (2014) highlights, these instruments are most often associated with the so-called environmental taxes and the greening of the fiscal system. Therefore, it is worthwhile to explore the genesis of environmental taxes and the idea of the greening of the tax system, which goes back to the neoclassical school of the 1920s and the so-called Pigovian tax. In *The Economics of Welfare,* Pigou assessed environmental degradation due to external factors and proposed using environmental taxes by internalising environmental costs, in principle by imposing a tax on the perpetrator of environmental damage (the so-called "polluter pays" principle) (Pigou, 2009). Moreover, the economics of sustainable development adopted mainly the achievements of ecological economics, initiated in the 1980s, and the resulting concept of the greening of the tax system.

It should be noted that the concept of both the environmental tax and the effects of the greening of the tax system are not unambiguous, as particularly emphasised by Bartniczak and Ptak (2011). However, the concept of environmental tax should be properly defined. The review of related literature provides various definitions of environmental taxes. In addition to "environmental taxes", which is the most common term, there are also such terms as "ecological taxes", "green taxes", "eco-fees", "eco-taxes" or "Pigovian taxes" (Bartniczak & Ptak, 2011).Most generally, the literature

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considers environmental taxes to be all kinds of public tributes that have a positive impact on the environment (Małecki, 2007). The environmental policy attributes an important role to environmental fees which supplement taxes in the fiscal regime and, in addition to the fiscal function, they also shape desirable environment conscious behaviours (Małecki, 2006). It is worth pointing out with regard to the taxes that while being usually called "environmental" in the scientific literature, they are most frequently termed "environmentally related taxes" in the studies by international institutions (e.g. OECD, Eurostat) and in national statistical documents prepared by the Central Statistical Office [Główny Urząd Statystyczny – GUS]. Małecki (2016) underlines that this nomenclature is the result of reflection and changes in the interpretation of these financial instruments of environmental nature. The author notes that "according to new interpretations, only one category is adopted, and thus – also one name in relation to all financial environmentally related burdens borne by business entities, other organisations and households" (Małecki, 2016, p. 4). In view of the foregoing, the term "environmentally related taxes" refers not only to taxes but also to other charges of a similar nature, and therefore both to fees and all kinds of payments, surcharges, write-offs, etc. Hence, this concept essentially refers to broadly understood environmental (ecological) taxes (and charges).

The above reasoning seems to be justified since both environmental taxes and charges are a kind of payment for the use of environmental resources. However, when analysing the concept of environmental tax and environmental charge in the context of the tax law doctrine, it should be stressed that despite the mentioned similarity, taxes and charges are structured differently. Environmental taxes involve adding the so-called environmental surcharge to prices of products that are harmful to the environment and, consequently, they are a far more practical solution than the charges. They allow for broadly and extensively burdening the products that are scattered and used widely; consequently, it is the final consumer (user) who pays in accordance with the "ultimate perpetrator pays" principle. Conversely, environmental charges operate in a completely different way because they are based on the "polluter pays" principle (Ziółko, 2016). Therefore, as Kryk, Kłos and Łucka (2011) underline, environmental taxes better meet the transparency criterion than environmental charges, which are in turn hidden in the prices of final products to be paid by final consumers who in the majority of cases are not aware of them. Another difference between the environmental tax and the environmental charge is that the tax burden is imposed without any counter performance from public authorities and is generally channelled directly to the central budget; and this tax is imposed on an activity or thing that has a negative impact on the environment. Environmental charges, on the other hand, are financial burdens that are not fully equivalent because they are enforced by public authorities and collected in exchange for the mere possibility of using natural resources

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or environmental assets. Moreover, unlike environmental charges, proceeds from environmental taxes contribute to the state or local government budget, without any connection to the subject of taxation, which means that they can also be expended on non-environmental purposes (Małecki, 2012).

The greening of the tax system consists mainly in: introducing innovatory solutions through the construction of new environmental taxes and charges, restructuring the taxes already included in the system to ensure the fulfilment of a more effective function of environmental protection, and limiting all subsidies that are harmful to the environment (e.g. Barde, 1999; Organisation for Economic Co-operation and Development [OECD], 2001, 2003). According to the representatives of ecological economics, all activities within the framework of the greening of the tax system should be carried out in accordance with the principle of revenue neutrality, i.e. they should not affect the aggregate amount of budget revenues, only their structure (Bartniczak & Ptak, 2011). As a result, the tax burden should be shifted away from labour, capital and consumption towards the use of natural resources and environmental pollution. By contrast, as Wallart (1999) underscores, when revenues from environmental taxes increase the aggregate budget resources or are used to finance additional expenditures, we cannot talk about the environmental reform.

In the context of the above considerations, it should also be added that the introduction of new taxes to protect the environment (the so-called Pigovian taxes) requires the knowledge of both marginal external costs and the effective level of pollution, which is particularly emphasised by Głuchowski (2002).

4. Environmentally Related Taxes in the Economics of Sustainable Development – A Practical Outline

When talking about the meaning of taxes in the economics of sustainable development, the extent of environmental taxation should be determined. Scientific studies and reports of international institutions most frequently use for this purpose the indicators that depict the amount of revenues from environmentally related taxes (environmental taxes) in relation to total tax revenues (expressed as a percentage) or in relation to the GDP. Leszczyłowska's (2013) analysis of the development of environmental taxes in the European Union based on Eurostat data concludes that revenues from environmental taxes in the entire European Union have been on a similar level every year since 2000. However, the share of environmental taxes in the EU GDP declined regularly starting from 2003, with a slight increase observed since 2009, which the author explains with an overall fall in the GDP in this period. Furthermore, in the period analysed by the author, the structure of revenues from environmental taxes is stable and as follows: 75% of environmental tax revenues is generated from taxes on

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energy products, almost 20% from taxed vehicles and transport and less than 5% from taxes on pollution and natural resources.

It should be clarified here that according to the regulation of the European Parliament and of the Council on European environmental economic accounts, environmentally related taxes and charges are assigned to four generally defined type groups, i.e.:

1. Energy taxes,
2. Transport taxes,
3. Pollution taxes,
4. Resource taxes.

It is worth noting that sometimes reports of international institutions recognise pollution taxes and resource taxes jointly. In addition, the classification of specific taxes to appropriate type groups is dictated in principle by the tax base. Nevertheless, it should be noted that in some cases such a classification is not unequivocal, which is evident from the example of the excise duty on cars, which can be included in the group of transport taxes as well as pollution taxes due to the fact that the use of cars causes both the emission of pollutants into the air and noise. Also, as Ziółko (2016) notes, a specific tax may have more than one tax base, as exemplified by the fuel tax with a different tax rate imposed on leaded petrol than on unleaded petrol or diesel oil (this rate is different depending on the content of sulphur). Another example is the car registration tax which has different tax rates depending on whether the vehicle is a passenger car or truck, and depending on different types and sizes (Małecki, 2006).

In Poland, in accordance with the requirements of the regulation cited above, environmentally related taxes have been assigned to four type groups. Table 1 below presents a list of environmentally related taxes applicable in Poland, adopted by the Central Statistical Office [GUS] for the purposes of Eurostat reporting. 22 such taxes can be identified: 9 within the „Pollution" type group, 6 within the „Transport" type group, 5 within the „Energy" type group, and 3 within the „Resources" type group. The environmentally related taxes listed in the table can also be classified into two groups: excise duties – all credited to the central budget and local taxes – made available to self-governments (communes), which in some cases can determine tax rates.

Analysing the document *Environmental economic accounts* prepared by the Central Statistical Office [GUS] in December 2017, it can be noted that the amount of environmentally related taxes goes up year by year in Poland, as shown in Table 2 below. For example, in 2008 they amounted to PLN 34 billion, and in 2015 to almost PLN 48 billion. When we look at the structure, we see the dominant share of energy taxes, which in the analysed period accounted for from 82% (in 2008) to 88% (in 2013) in the overall structure of environmentally related taxes (86% in 2014 and 2015). On the other hand, resource taxes contribute the smallest share –

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they ranged from 0.3% (2013) to 0.8% (in 2009) in the analysed period. In turn, pollution taxes and transport taxes contribute a similar share, standing at around 8% of total environmentally related taxes in most years of the analysed period. In terms of sequence, this structure corresponds to the structure observed in the EU, but in Poland the share of revenues from taxes on energy products is higher than in the EU where it stood at around 75% in the analysed period.

Environmentally related taxes	**Assignment to the type group**
Excise duty on fuel for heating or driving purposes	Energy
Excise duty on LPG	
Excise duty on electricity	
Custom tax on imported mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	
Compensatory payments for failure to purchase the required amount of renewable energy	
Excise duty on passenger cars	Transport
Custom tax on imported vehicles, aircraft, vessels and associated transport equipment	
Vehicle registration and licensing fees	
Motor vehicle tax	
Charges for the lack of a vehicle take-back network	
Fuel surcharge	
Excise duty on lubricating oils	Pollution
Charges for the discharge of waste water	
Gas and dust emission fees	
Product fees for packages	
Product fees for lubricating oils	
Product fees for tyres	
Product fees for batteries and accumulators	
Fees for end-of-life electrical and electronic equipment	
Charges for ozone-depleting substances	
Fees for water intake	Resources
Charges for the removal of trees and bushes	

Tab. 1. List of environmentally related taxes applicable in Poland, adopted by the Central Statistical Office [GUS] for the purposes of Eurostat reporting. Source: Małecki, P.P. (2016). Podatki ekologiczne w Polsce na tle innych krajów Unii Europejskiej. Optimum. Studia Ekonomiczne. p. 11.

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Type group	2008	2009	2010	2011	2012	2013	2014	2015
Energy taxes	27.98	28.41	33.07	34.93	36.15	35.26	38.11	40.86
Transport taxes	3.22	3.08	3.01	2.96	3.05	3.20	3.47	3.82
Pollution taxes	2.73	2.91	3.04	3.19	2.74	1.31	2.46	2.92
Resource taxes	0.18	0.21	0.15	0.14	0.14	0.12	0.16	0.12
Total (PLN million)**:**	**34.11**	**34.61**	**39.27**	**41.22**	**42.08**	**39.89**	**44.20**	**47.71**

Tab. 2. Environmentally related taxes by type group in 2008–2015 in Poland. Source: prepared by the author based on Environmental economic accounts (2017), Appendix 2.

Figure 1 shows that in Poland the share of environmentally related taxes in the GDP amounted to 2.65% in 2015 and was above the average for the entire European Union, which was 2.44%. However, it is worth noting that this is a relatively small share compared to the general level of fiscalism measured by the share of all contributions and taxes in the GDP. In 2015, this rate stood at 33.3% in Poland and at 41.4% in the entire European Union (Eurostat, 2017).

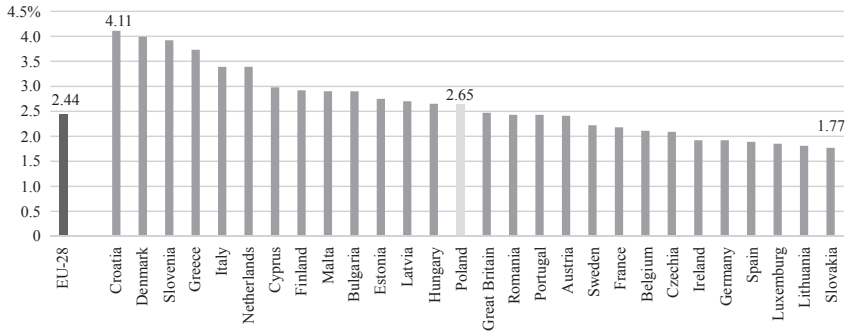

Fig. 1. The share of environmentally related taxes in the GDP in the European Union in 2015. Source: Prepared by the Central Statistical Office [GUS] based on Eurostat data (Eurostat's Database, http://ec.europa.eu/eurostat/, Environmental tax revenues [env_ac_tax], 18.12.2017).

Total revenues of the European Union countries from environmentally related taxes reached EUR 359.3 billion in 2015, which accounted for 2.44% of the EU-28 GDP (Eurostat, 2017). It is worth adding that in the European Union revenues from environmentally related taxes have been growing at a rate of 2.4% annually since 2002 and in 2015 increased by EUR 95 billion compared to the base year (2002).

A comparison of environmentally related tax revenues in various European Union countries reveals a significant variation. When analysing the data for 2015, we can note that the highest environmentally related tax revenues-to-GDP ratio was recorded in Croatia (4.11%), followed by Den-

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mark, Slovenia and Greece. By contrast, the lowest (below 2%) level of environmentally related taxes in relation to the GDP is reported in Slovakia, Lithuania, Luxembourg, Spain, Ireland and Germany (Eurostat, 2017). However, looking at this ratio, we should remember that the value of the GDP varies across the indicated countries.

At the end of the discussion on the practical use of taxes in the economics of sustainable development, it is worth giving examples of interesting solutions from different countries. An environmentally-friendly solution is the tax introduced at the beginning of the 21st century on the Balearic Islands belonging to Spain. All tourists who visit any of the islands of this archipelago (including Ibiza, Mallorca and Menorca) are obliged to pay the Eco Tax of EUR 1 per each day of stay. It is an interesting environment supporting solution because all proceeds are intended for cleaning the beaches, maintaining the ecological balance in the Balearic Islands and improving tourist infrastructure. Considering that the Balearic Islands are visited by over 10 million tourists (data for 2012), proceeds from this tax are significant.

Another unconventional solution is the tax on cattle contaminating the atmosphere, which was introduced in Estonia in 2008. Given that factories are scarce in this country, the Estonian authorities decided to fight harmful emissions of greenhouse gases (which also include methane) by taxing breeders of cows whose excrements emit this gas. It is emphasised, however, that the breeders of other animals that also emit methane were not taxed. It is worth adding that in 2003 a similar idea appeared in New Zealand; however, it aroused strong social opposition and thus the introduction of this tax was abandoned.

Another solution to combat global warming with taxes is a tax on grilling introduced in the Belgian region of Wallonia in April 2007. Inhabitants of this region are obliged to pay EUR 20 each time they fire up a grill. The need to pay the fee is controlled by the Wallonian authorities with the help of a helicopter equipped with thermal imaging cameras. The advisability of introducing this tax was confirmed by environmentalists who estimated that an average of 50 to 100 g of greenhouse gases was discharged to the atmosphere during grilling.

Worthy of note is also the solution used in China, where 45 billion pairs of disposable sticks are used to eat, for which 25 million trees are cut. In order to reduce the scale of forest logging, a 5% tax on the sale of sticks was introduced there in 2006 (Forbes.pl).

5. Environmental Tax Reform

The last aspect which is worth paying attention to in the context of the subject of this study is the Environmental Tax Reform (ETR), also named the Environmental Fiscal Reform (EFR). It is a concept that involves the

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implementation of changes in the tax system in line with the requirements of eco-development. These changes are primarily related to shifts of tax burdens from labour resources to natural resources consumed (Podgajniak, 2005), and consequently the ETR will bring about a change in the structure of tax revenues of the state.

As Śleszyński (2005) emphasises, state revenues from new environmental taxes in the environmental tax system should be used to reduce earlier taxes that were imposed on labour or capital. It should be stressed that the ETR should be comprehensive, and it is necessary to carry out detailed scenarios of changes preceded by model economic analyses.

The analysis performed by Borys (2004) shows that different environmental tax reforms were put in place on a diversified scale in eight European Union countries: Sweden (in 1991), Denmark (in 1994), the Netherlands (in 1996), Great Britain (1996), Finland (1997), France (in 1999), Germany (1999), Italy (1999) and Ireland (2002). As Burzyńska (2007) points out, the environmental tax reform follows the development trend in the European Union countries, and new initiatives are being taken. At the EU level, the environmental tax reform was viewed as an opportunity for economic growth, jobs and a clean environment in the *Green Paper on market based instruments for environment and related policy purposes* (Commission of the European Communities, 2007). In Poland, the discussion on stimulating the environmental policy through tax mechanisms reached its peak at the time of our country's entry into the European Union structures. The Sejm debate on the advisability of the implementation of the environmental tax reform in Poland began in November 2004 (Biuletyn Biura Studiów i Ekspertyz Kancelarii Sejmu, 2005). However, as Czerwiński (2008) notices, afterwards the discussion on this subject became far less heated. According to the author, "this is largely due to the prism of other mechanisms of financing and pursuing the state's environmental policy; in particular, creating greenhouse gas emissions trading markets or an extended mechanism for deposit, emission or environmental fees (Czerwiński, 2008, p. 51). However, it is noticed that the possibilities of stimulating the environmental policy through taxes remain invaluable especially when faced with the crisis of functioning of the instruments listed by the author.

A review of ETR solutions applied in selected countries by Śleszyński (2005) allowed for putting forth the following conclusions:

1. A characteristic feature of the ETR is the explicit shift of tax burdens away from labour or capital towards taxation of "pollution" (taxation of potential sources of pollution).
2. Scandinavian countries pioneered the ETR and were later followed among others by Western European countries (including the Netherlands, Germany and Italy).
3. In Western European countries, the ETR focuses mainly on the energy sector. This sector is indicated as the most appropriate venue for new

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environmental taxes due to the global warming effect caused by excessive emissions of greenhouse gases from the combustion of fossil fuels.
4. The significance of the ETR measured by the ratio of revenues generated from „environmental taxes" to total budget revenues is strongly diversified.

The analysis of the extent of environmental taxes in individual EU states, carried out by Małecki (2016), indicates that it depends on many factors such as: the size of a given country and the level of its economic development, its economic and legal system, its development priorities and the level of environmental awareness and the willingness of the society of a given country to pay taxes.

The related literature indicates that the environmental tax reform, apart from such benefits as the improvement of the condition of the environment, should contribute to the creation of additional benefits, which is referred to as the so-called double-dividend hypothesis (Bartniczak & Ptak, 2011). In reference to German experience, Rogall (2010) points to a five-fold dividend. These additional benefits include: growing number of new jobs, strengthening the social security system, reducing both costs and the dependence of the national economy on the importation of resources and maintaining world peace. As indicated at the beginning of this subchapter, the environmental tax reform should result in the improvement of the state of the environment coupled with a simultaneous increase in the number of jobs and, at the same time, a reduction in the related tax and social security burdens. As Czerwiński (2008) points out, these effects are visible in the countries of Western Europe that have introduced environmental tax reform solutions. However, on the other hand, the author notices that the experience of these countries indicates that the reform was rarely accompanied by a real GDP growth, which is caused by a decline in the competitiveness of these industries which are subject to environmental taxes and charges. Czerwiński (2008) notes that at global level a decline is observable in the competitiveness of the countries that apply certain mechanisms of the environmental tax reform vis-à-vis the states that do not apply such mechanisms.

In the context of the above considerations, it is worth thinking about the possibility of putting an environmental tax reform into practice in Poland. The concept of such a reform in line with the idea of sustainable economic development seems to be correct, as demonstrated by the effectiveness features of ETR solutions stressed in the related literature. The basic argument for the introduction of the ETR is, according to Kudełko (2008), "a call to extend the environmental regulation system over a larger number of users of the environment so as to make the 'polluter pays' principle more extensive than it has been to date." This is undoubtedly a valid argument, but it must be confronted with the current, so far quite few, attempts to implement the ETR in individual countries. The analysis of the feasibility

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and desirability of the introduction of the ETR made by Kudełko (2008) shows a rather limited scope of the environmental tax reform in European Union countries, and the lack of common interest in carrying through the ETR results, among others, from a sceptical perception of taxes as effective tools for solving environmental problems. An important argument against the ETR is also the adverse distribution effects that are felt in the energy sectors and among the less affluent social groups. In addition, the results of research into the impact of the ETR (including the existence of a double dividend) are not entirely convincing, especially in economic aspects, as it is basically impossible to empirically verify the results of model tests, which results from the fact that the real effects of the ETR can be strengthened or weakened by other factors and changes in the economy. As a result, only the environmental effectiveness of the ETR can be assessed, i.e. the environmental dividend in the form of reduced or stabilised CO_2 emissions, which until now has been considered the most visible effect. However, the argument in favour of the existence of an environmental dividend is difficult to uphold, especially considering the needs of the then economy and the specifics of the fuel market. The fact that the substitution of certain fuels is limited and very costly is a serious obstacle to achieving even low environmental effectiveness. It should be noted that only very high rates of environmental taxes can enforce some minor changes in the structure of consumption of energy carriers.

It is worth noting that the research on the ETR carried out so far does not allow for determining environmental tax rates on the basis of external costs, which is postulated by the economic theory. The reason for this is, first and foremost, the lack of methods for estimating external costs and, secondly, the scope of potential distributional effects resulting from, for example, high rates on taxes on fuels. Therefore, the lack of convincing research in this area may constitute an important argument for the opponents of the ETR.

Also, attention should be given to justified fears of such a reform reported by Śleszyński (2004). First, the ETR tax solutions ultimately affect the standing of enterprises by burdening them with the costs of these solutions, thereby deteriorating their competitiveness both on the domestic and foreign markets. Second, the solutions proposed under the ETR may contribute to an increase in inflation. Third, such a tax reform may have a regressive character – creating or exacerbating distribution problems in the society. Therefore, industrial lobbies (including in particular the strong lobby of the energy sector) can be expected to protest against the implementation of the ETR, claiming that the ETR may lead to a lower competitiveness of these entities, a decrease in production and lower profits. There is also a real risk related to the inevitable passing on a rise in prices of higher taxed energy onto consumers. In connection with the foregoing, the existence of distribution effects is most often interpreted as an additional

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cost of the ETR, which in turn may lead to the loss or severe criticism of the essence and objectives of the ETR.

In the context of the above considerations, it is also worth paying attention to the very practical legitimacy of the implementation of the ETR, which requires – at the designing stage – taking into account the specifics of the given country's economy, in particular a number of determinants related to structural factors (with particular emphasis on energy intensity of the economy, importance of energy sectors and their share in the GDP generation structure, energy security, etc.) as well as economic goals pursued by the government. In the Polish economy, fossil fuels are of great importance in the energy balance of the country (which is disadvantageous from the environmental point of view), making it a much more difficult barrier for our country to overcome in order to effect deep structural changes called for in the ETR than in the countries with a diversified structure of fuel consumption. In addition, if we add such goals of the country's economic policy, highlighted by all political parties, as: reducing unemployment, maintaining low inflation or increasing the competitiveness of enterprises, then we can notice that environmental aspects are less important.

Additionally, it should be pointed out that the current Polish tax system is assessed as inefficient and ineffective. The critics of the current tax system see a barrier to a faster economic growth in high tax thresholds and social burdens. However, taxation of energy carriers, coupled with a simultaneous reduction of these burdens, could be seen as a move towards a proper reform of the system and the ETR could be accepted by both decision makers and entrepreneurs, provided that the principle of fiscal neutrality is respected. Unfortunately, the current uncertain situation on the fuel market creates neither a political nor a social climate for undertaking more serious tax reforms in this regard.

6. Final Remarks

Summing up the above-mentioned issue, it can be concluded that environmental taxes (or more strictly: environmentally related taxes) can fulfil an effective function of environmental protection and be a way to reduce pollution and excessive use of natural resources. Through the stimulating function, they can encourage changes in the behaviour of individual consumers, entire households and enterprises towards more environmentally friendly and fitting the perspective of sustainable development. A properly structured tax system can stimulate the implementation of technological and organisational innovations and encourage structural changes. Also, environmental taxes increase budget revenues although, according to the demands of representatives of the ecological economics, none of the activities within the framework of the greening of the tax system should affect the overall amount of budget revenues, but only their structure. It needs

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also to be stressed that these taxes should be constructed in such a way as to prevent an excessive exploitation of the environment and to develop in the population the habit to save and act in accordance with the principle of economy, without coming under social criticism, and to increase environmental awareness.

Referring to Eurostat data and an analysis of the development of environmental taxes in the European Union by Leszczyłowska (2013), this article shows that environmental tax revenues have been at a similar level since 2000 in the European Union, and since 2003 the share of these taxes in the EU GDP has been decreasing systematically. This is disturbing, taking into account the postulated view that in the economics of sustainable development taxes are to be used, among others, to stimulate specific actions for sustainable development. Data for Poland are slightly better – in 2015 Poland ranked above the EU average in terms of the share contributed by environmentally related taxes to the GDP, and this ratio stood at 2.65%, which ranking Poland 14th in the European Union. Both in the European Union and in Poland, the largest budget revenues from environmentally related taxes are derived from taxes belonging to the Energy type group, followed by Transport and Pollution and finally Resources.

As indicated in this article, although the tax system should play a key role in shaping sustainable economic development, it is still difficult to carry through an environmental tax reform, which is confirmed by the studies undertaken to date.

References

Barde, J.P. (1999). *Environmental taxes. Recent developments in China and OECD countries.* OECD.

Bartniczak, B. & Ptak, M. (2011). *Opłaty i podatki ekologiczne. Teoria i praktyka.* Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.

Biuletyn Biura Studiów i Ekspertyz Kancelarii Sejmu. Ekologiczna reforma fiskalna jako instrument integracji polityk sektorowych z polityką ekologiczną. *Konferencje i Seminaria, 2*(58)05.

Borys, G. (2004). *Prośrodowiskowa reforma podatkowa w krajach Unii Europejskiej* (Confrence procedings). Łódź.

Burzyńska, D. (2007). Ekopodatki podstawą reform systemu podatkowego. *Acta Universitatis Lodziensis. Folia Oeconomica,* (208), 25–38.

Cieślukowski, M. (2016). Podstawowe kategorie podatkowe w ekonomii zrównoważonego rozwoju. *Annales Universitatis Mariae Curie-Skłodowska, sectio H–Oeconomia*, *50*(1), 83–91.

Cieślukowski, M. (2014). Podatki i system podatkowy w ekonomii zrównoważonego rozwoju. *Studia Oeconomica Posnaniensa, 2*(6), 194–207.

Commission of the European Communities. (2007). Green paper on market based instruments for environment and related policy purposes. COM(2007) 140 final, {SEC(2007) 388}. Brussels.

Czaja, S. (2011). Nowe kategorie ekonomiczne w teorii zrównoważonego i trwałego rozwoju. In B. Poskrobko (Ed.), *Teoretyczne aspekty ekonomii zrównoważonego rozwoju*. Białystok: Wydawnictwo Wyższej Szkoły Ekonomicznej w Białymstoku.

MOST WIEDZY Downloaded from mostwiedzy.pl

Czaja, S. (2005). Teoretyczne i praktyczne problemy związane z wdrażaniem ekologicznej reformy fiskalnej. In Biuletyn Biura Studiów i Ekspertyz Kancelarii Sejmu. Ekologiczna reforma fiskalna jako instrument integracji polityk sektorowych z polityką ekologiczną. *Konferencje i Seminaria, 2*(58)05, 59–73.

Czerwiński, Sz. (2008). Jaki podatek od zanieczyszczonego środowiska? W jakim stopniu rozwiązania podatkowe powinny służyć realizacji polityki ochrony środowiska? *Kwartalnik Prawa Publicznego, 8*(3–4), 51–63.

Dobrzański, G. (2007). Wstęp. In B. Poskrobko & G. Dobrzański (Eds.), *Problemy interpretacji i realizacji zrównoważonego rozwoju*. Białystok: Wydawnictwo Wyższej Szkoły Ekonomicznej w Białymstoku.

Eurostat. (2017). *Taxation trends in the European Union. Data for the EU Member States, Iceland and Norway.* Luxembourg.

Główny Urząd Statystyczny. (2017). *Rachunki ekonomiczne środowiska.* Retrieved from http://stat.gov.pl/download/gfx/portalinformacyjny/pl/default aktualnosci/5484/7/2/1/rachunki_ekonomiczne_srodowiska.pdf

Głuchowski, J. (2002). *Podatki ekologiczne.* Warszawa: Dom Wydawniczy ABC.

Instytut Ochrony Środowiska. (1993). *Dokumenty końcowe Konferencji Narodów Zjednoczonych „Środowisko i Rozwój"*. Warszawa.

Kryk, B., Kłos, L., Łucka, I.A. (2011). *Opłaty i podatki ekologiczne po polsku.* Warszawa: Wydawnictwo Fachowe CeDeWu.

Kudełko, M. & Pękala, E. (2008). Ekologiczna reforma podatkowa-wyzwania i ograniczenia. *Problemy Ekologii, 12*(1), 17–24.

Leszczyłowska, A. (2013). Rozwój podatków ekologicznych w Unii Europejskiej w latach 2010-2012. *Zarządzanie i Finanse, 11*(2, part 2), 215–226.

Małecki, P.P. (2016). Podatki ekologiczne w Polsce na tle innych krajów Unii Europejskiej. *Optimum. Studia Ekonomiczne, 2*(80), 3–15.

Małecki, P.P. (2012). *System opłat i podatków ekologicznych w Polsce na tle rozwiązań w krajach OECD.* Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.

Małecki, P.P. (2007). Kontrowersje wokół definiowania podatków i opłat ekologicznych. In S. Owsiak (Ed.), *Finanse jako przedmiot badań interdyscyplinarnych*. Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.

Małecki, P.P. (2006). *Podatki i opłaty ekologiczne.* Kraków: Wydawnictwo Akademii Ekonomicznej w Krakowie.

Nowikowa, A. *Najdziwniejsze podatki świata.* Retrieved from https://www.forbes.pl/prawo-i-podatki/najdziwniejsze-podatki-swiata/2xhy4b1#slide-10 (18.12.2017).

Organisation for Economic Co-Operation and Development. (2001). *Environmentally related taxes in OECD countries. Issues and strategies.* Paris.

Organisation for Economic Co-Operation and Development. (2003). Environmental taxes and competitiveness: An overview of issues, policy, options, and research needs. *OECD Papers, 3*(12).

Pigou, A. (2009). *Economics of welfare.* New Jersey: Transaction Publishers.

Płachciak, A. (2011). Geneza idei rozwoju zrównoważonego. *Ekonomia. Economics. 5*(17), 231–248. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.

Podgajniak, T. (2005). *Ekologiczna reforma fiskalna.* In Biuletyn Biura Studiów i Ekspertyz Kancelarii Sejmu. Ekologiczna reforma fiskalna jako instrument integracji polityk sektorowych z polityką ekologiczną. *Konferencje i Seminaria, 2*(58)05, 49–58.

Rogall, H. (2010). *Ekonomia zrównoważonego rozwoju.* Poznań: Zysk i S-ka.

Regulation (EU) No 691/2011 of the European Parliament and of the Council of 6 July 2011 on European environmental economic accounts [2011] OJ L192 of 22.7.2011.

Śleszyński, J. (2004). *Ekologiczna reforma podatkowa. Wyzwania dla polskiej polityki ochrony środowiska*. Białystok: Wydawnictwo Ekonomia i Środowisko.

Śleszyński, J. (2005). Ekologiczna reforma fiskalna w krajach Unii Europejskiej. In Biuletyn Biura Studiów i Ekspertyz Kancelarii Sejmu. Ekologiczna reforma fiskalna

 DOI 10.7172/1644-9584.75.4

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jako instrument integracji polityk sektorowych z polityką ekologiczną. *Konferencje i Seminaria, 2*(58)05, 9–30.

United Nations. (1992). *Report of the United Nations conference on environment and development, Rio de Janeiro, 3–14 June 1992, vol. 1. Resolutions adopted by the conference, Annex II, Agenda 21.* New York.

Wallart, N. (1999). *The political economy of environmental taxes.* Cheltenham: Edward Elgar Publishing Limited.

Ziółko, M. (2016). *Podatki ekologiczne w Polsce*. In P. Urbanek & E. Walińska, *Ekonomia i nauki o zarządzaniu w warunkach integracji europejskiej*, *Ekonomia i Zarządzanie w Teorii i Praktyce, 9*. Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

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