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ENVIRONMENTAL FISCAL REFORM
– ILLUSTRATIVE POTENTIAL IN PORTUGAL

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Environmental fiscal reform: illustrative potential in Portugal

- based on established practices across Europe

Introduction

More long-term structural changes in the fiscal system may help create an improved basis for economic activities and economic growth, as it has been pointed out many times, for instance in the EU's Council of Ministers (2012);

“Shifting taxation away from labour to boost employment and economic growth had already been emphasised in the Annual Growth Survey of 2011 and in the European Council conclusions of March 2011, and is also included in the Annual Growth Survey for 2012. ‘Green tax reforms’, which consist in increasing the share of environmentally-related taxes, while reducing others, have a role to play in this context. Environmental taxation and the removal of environmentally harmful subsidies should be integral parts of the European Semester and may contribute to a wider fiscal consolidation process in Member States whilst facilitating the restructuring towards a resource-efficient and low-carbon economy”

Portugal is one of several Member States that has reached a high level of public debt in relation to GDP and which is struggling to meet the long-term convergence criteria, as well as the more short-term performance goals that have been agreed. In this context it has already been emphasised how a revenue neutral adjustment of the tax burden can help improve the economy (2011 Memorandum of Understanding between the Government of Portugal and the Troika¹).

Portugal experienced high economic growth rates in the 1990's, where Portugal began to benefit from access to the European market and the dynamics of European integration. However, the world market oil price increases around year 2000 plaid a role in triggering the slowing of Portugal's economy in the first years of the past decade, and even before the present crisis when Portugal's economic growth fell below average in the European Union.

Also the current fiscal crisis is linked, although in a more complex way, with a peak in world market energy prices that via inflation fears and interest rate adjustments contributed to a collapse of bad housing loans and dubious lending practices globally. Hence the transition in Portugal's energy supply, with renewables now accounting for over half the electricity supply, is promising.

High resource and energy costs are a drain for Europe's economies, because Europe depends to a large extent on imports from outside (EEA, 2010). On this background the European Union's 2020 strategy for improving Europe's competitiveness emphasises improved resource efficiency as one of its key thematic targets.

Impacts of environment-related taxation should not be equated with impacts of high energy and resource prices. Whereas high energy prices benefit mainly the oil and gas suppliers abroad, in the

¹ European Central Bank, European Commission and International Monetary Fund (IMF).

case of taxation, revenues remain in the national economy. Revenues from taxation of energy and other environmentally-related items can be used to undertake a tax shift, whereby labour taxation can be relieved. In this way a tax shift can support a lowering of labour costs as required for strengthening the traded-goods sector and for improving the overall performance of the economy. In particular when lowering employers' social contributions the tax shifting may benefit directly competitiveness. Lowering of income taxes for salary earners is also useful to compensate for higher environmentally-related taxes.

Portugal's tax bases

With a tax-to-GDP ratio of 31.5% Portugal was by 2010 in terms of the overall tax pressure ranking 20th in EU27, following Spain and Poland, while followed by Greece and Ireland.

The tax structure is ranked 13th for the contribution of indirect tax revenues (such as environmentally-related taxes) to total tax revenues, while 16th for direct tax revenues. Social security contributions are as well relatively mid-range, ranking 18th in the EU in 2010, and with a notable role for employers being maintained.

With regard to corporate taxes, a sub-category of direct taxation, Portugal is ranked 7th in the EU. Consumption related taxes make up for 11.7 % of GDP, with Portugal ranking 14th in the European Union.

The implicit taxation of labour is in line with the overall tax burden and Portugal ranks according to Eurostat 19th, with such taxes (incl. social contributions) amounting in 2010 to 41 per cent of total taxation.

According to Eurostat definitions the environmentally-related taxes include energy taxes, transport taxes, pollution taxes and resource taxes.

Portugal was in the mid-1990's leading in Europe with regard to environmentally-related taxes (EEA, 1996). In 1995 the environmentally-related taxes made up 11.5% of total tax revenues. Portugal was in this respect number one in EU15, while it ranked 4th when considering the relationship to GDP of environmentally-related taxes.

Inflation has gradually eroded the environmentally-related tax bases in Portugal, as adjustments required to maintain revenues have not been introduced. Over the past 15 years Portugal has seen one of the largest declines in environmentally-related taxes in Europe, only exceeded by Italy. In real effective terms (adjusted for inflation and currency depreciations) revenues are 5% lower than in 1995, but when considering their relationship to GDP these taxes have declined in fact by 1/3.

Portugal in 2010 was consequently ranked 14th in EU27 when it comes to environmentally-related taxes in relation to GDP. The ratio in 2010 was 2.5% relative to GDP and 7.9% of total taxation (including social security contributions).

In the 2011 Memorandum of Understanding (MoU) it was agreed to introduce legislation to ensure indexation of all excise taxes, including those related to energy, with core inflation. Vehicle related taxes might still be in need of indexation.

What is environmental fiscal reform?

Environmental fiscal reform (EFR) involves policy measures that shift revenue-raising instruments from labour and capital to resource use and pollution. In addition to environmentally-related taxes, environmental fiscal reform may also involve introducing full-cost pricing (with user-charges for water supply, waste disposal and sewage), auctioned permits in emissions trading schemes and the phasing out of environmentally harmful subsidies.

Environmental fiscal reform has in those countries which implemented such tax policies in the past (for example Estonia, Sweden, Denmark, Finland, Netherlands, Slovenia, Germany and UK) often been designed to be fully or partially revenue neutral, thus aiming to relieve the pressure on labour as a tax base.

Environmental fiscal reform can deliver five dividends:

- (1) increased resource productivity and eco-innovation;
- (2) increased employment;
- (3) improved health of environments and people;
- (4) a more efficient tax system;
- (5) sharing the financial burdens of an ageing population also according to consumption

These dividends have been described and analysed comprehensively in reports from EEA and other international institutions.

Between 1996 and 2006 the European Environment Agency (EEA) published four reports (EEA, 1996, 2000, 2005 and 2006) on market based instruments and the potential for environmentally-related taxation in the EU. More recently EEA has published two technical reports addressing the impacts of Environmental Tax Reform (ETR) on eco-innovation, on equity, and on the feasibility of reform (EEA, 2011a; EEA, 2011b).

Other bodies such as the OECD (OECD, 2001, 2006 and 2010) and Green Budget Europe, plus a wide range of EU and national research activities (for example Soares, 2003, Clinch and Dunne, 2006, Wissema and Dellink, 2007, Convery et al., 2007, Andersen and Ekins, 2009, Green Fiscal Commission, 2010, and Ekins and Speck, 2011) have focused on answering questions around the purpose, validity and effectiveness of many ETR instruments.

Whilst this considerable research into the multiple benefits of ETR has helped to stimulate reforms in some member states, it is now recognised that the main barriers are largely institutional, requiring common understanding between many stakeholders and appreciation of the different national contexts within which EFR and ETR can work.

An important aspect when considering the introduction of environmentally related taxes and charges is that when they are effective, the base on which they are charged will shrink. Having some understanding of the relationship between the increase in a tax and its environmental impact is necessary to make credible estimates of revenue. However, environmentally related taxes and charges can improve energy, water and other resource efficiencies as well as spur innovation (OECD, 2010).

Experience also shows that as resource efficiencies improve some of the gains in income that then arise are spent on more consumption, e.g. driving further in more fuel efficient cars, so that the total consumption of energy and resources can increase following improvements in eco-efficiency. This is the “rebound effect”; see for example: Sorrell, 2007, Polimeni et al, 2008, and Barker et al., 2009.

Both a shrinking environmental tax base and the rebound effect can be offset by gradually raising the tax in line with the eco-efficiency gains. Such gradual environmental tax increases are justified by the increasing knowledge about the real harm (as with air pollution for instance) and by continuing resource depletion and scarcities.

Climate change, biodiversity loss, ecosystem degradation, the human health impacts of chemical pollution, growing material resource scarcity, concerns about food, energy and water security, as well as national budget deficits and an increasingly ageing population are current challenges facing the European Union. At the same time, there is increased understanding of the inter-linkages between many environmental, economic and social problems, pointing to the cost-effectiveness of integrated packages of policy measures (EEA, 2010).

A policy that shifts part of the tax base to environmentally damaging consumption activities can be a vital part of an overall policy package that aims to tackle these multiple challenges, as recommended in “Europe 2020”, the EU’s growth strategy for the coming decade. According to the European Commission (2012) “The best job-related outcomes for green tax revenues are obtained as a result of lowering taxes and social security contributions paid by employers and/or employees”.

Experiences gained in several EU member states, which have implemented environmentally-related taxation under tax reforms in the 1990s and early 2000s, show broadly positive results.

Environmental Fiscal Reform extends the tax reform idea to include the reduction of environmentally harmful subsidies, so as to free up scarce financial resources for more efficient use elsewhere.

Another consideration when discussing the rationale of an EFR is that the burden of much existing environmental pollution and degradation often falls more onto the poorer parts of a population, who also frequently have less access to green environments. Therefore, the expected environmental improvements from environmental taxes, as well as the effect of reducing labour taxes (perhaps targeted on the young or unskilled workers) as part of an EFR, can help redress the greater impacts of some environmental taxes on poorer households, such as taxes on domestic energy (see EEA, 2011a).

Some features of environmentally-related taxation and tax expenditures in Portugal

- It is energy taxes that make up for the greater part of environmentally-related taxes in Portugal – about 3200 million € - whereas taxes related to transport account for 1200 million €. According to Eurostat the revenues related to pollution and resources in 2010 account for merely 1 (one) million euro. National figures indicate additional revenues of 48 million euro from ring-fenced waste taxes and water service taxes not counted by Eurostat.
- The base for transport taxes (vehicle registration tax and annual motor tax) has been shifted towards greater emphasis on an annual tax. The annual tax constitutes 30% of transport revenues. The acquisition tax targets specifically CO₂ emissions. Portugal's level of taxation for motor vehicles is in average about €250 per vehicle per year, about half the level in EU15 (ERF, 2011). In the MoU Portugal has committed itself to raise vehicle sales taxes and did so with a 7.5% increase in 2012 (ENDS Daily 18.10.2011).
- Company cars are widespread in Portugal and account for 55% of the annual sales of passenger vehicles (Copenhagen Economics, 2010:24). Since 2001 a scheme has been in place to ensure that benefits associated with their private use are subject to taxation. Portugal applies a tax declaration model based on acquisition costs. Enforcement is reported to have considerable potential for improvement. Furthermore, the annual income tax declaration on acquisition costs (9%) is rather low, only about half the tax declaration value in other Member States (Copenhagen Economics, 2010:26). Reducing tax expenditures on company cars has been included in Portugal's MoU with the Troika.
- Road user charges are gradually being extended to the greater part (2/3) of the national network of highways and are reported to have caused a substantial diversion to other roads, in some road sections more than 30%. Specific charging for noise and air pollution from lorries (cf. Eurovignette directive) is yet to be considered.
- Taxes on motor fuels make up for most of the energy taxes. Since 1995 taxation of petrol and diesel has decreased in real terms by 10 eurocents per liter. Diesel taxation is with €367 per 1000l somewhat higher than the EU minimum rate of €330 per 1000l, and aligned fully to the tax rate in Spain, while petrol with €585 per 1000l is taxed considerably higher than as well the EU minimum (€359) as the Spanish rate (€463). Motor fuel taxes declined in real effective terms with 1-1½ eurocents per litre for petrol and diesel respectively even between 2010 and 2012(Q4).
- A tax on electricity respecting the EU minimum rate has recently been introduced and with the same tax rate for business and household use.
- End-user taxes of electricity are presently somewhat higher in Spain, Greece and Italy than the rate in Portugal. On the other hand pre-tax electricity tariffs to household consumers in Portugal are generally in the top compared to other European countries (IEA, 2009:126). To the extent that inefficiencies gradually can be eliminated with liberalization of the electricity market, it allows for the public budget to reap part of the dividend. In the short term, the drop in CO₂-allowance costs also provides some leeway.
- Reduced VAT rates traditionally have been applied for several environmentally-related tax bases. A reduced VAT rate for household consumption of electricity and natural gas was abolished in

2012. An intermediate rate of 13% remains in place for diesel fuel for heating, coloured diesel and low sulphur fuel oil (IEA, 2009:23; TAXUD, 2013), while the general VAT rate has been increased to 23%. Tax rates are also levied at reduced rates for specific purposes and sectors of the economy, such as railways, inland navigation and agriculture (OECD, 2013).

- Portugal is part of the emission trading system (ETS) for CO₂ allowances in the European Union. Under this system allowances are required for large emitters in order to increase emissions beyond the historical level. There is no carbon tax in place for non-ETS emitters. Ireland is one of several EU member states to recently have introduced a carbon tax and OECD (2011a:142) has recommended that Portugal should also consider one.
- Emissions of conventional air pollutants have decreased over the last decade, and Portugal complies with the ceilings for emissions agreed under the so-called NEC Directive. Health costs of air pollution are well documented and suggest the need for further emission reductions in the years to come. Unlike many other EU Member States no air pollution taxes exist in Portugal, although legislation to this purpose was passed in 1990 (Santos et. al., 1999). Such taxes could support further emission reductions in a cost-effective way.
- According to the most recent FAO data Portugal suffers from water scarcity to an extent that would place the country on the global top-10 list of OECD-countries with water scarcity (OECD, 2011b; FAO, 2013). Water withdrawal per capita is the second highest in OECD, exceeded only by Spain – and about three times the level in Israel. More than 20% of the theoretically available water resource is utilised. Full-cost water pricing has been introduced, yet actual water tariffs do often not reflect contributions from EU structural funds to water supply. High losses in retail water supply are reported, estimated at an average of 36% of water withdrawn, but in some areas as high as 60-70% (OECD, 2011b:79). The recently introduced water abstraction tax approximates 2 eurocent/m³ for urban water supply and 0.3 cents/m³ for industry. Irrigation water use pays 0.02 cents/m³ while accounting for 70% of withdrawals.
- There are user charges for sewerage and waste water treatment in place, but although they are mostly volumetric according to consumption, some maintain fixed charges and 20% of municipalities remain without user charging (OECD, 2011a:80). With regard to final end-of-pipe waste water discharges to aquatic bodies, there are novel economic instruments in place targeting emissions. Agriculture is freed of any taxes regarding pesticides and mineral fertilisers. Experiences in EU member states illustrates that the use of taxes, possibly with full revenue recycling, can help improve the management of both water quantity and quality.
- Portugal has introduced a tax on landfilling and incineration of waste. The tax rates have been gradually increased to a level of 4-6 euro per tonne of waste in 2011, while the revenues are ring-fenced for environmental purposes (Fischer et. al. 2012:72).
- Packaging for beverages is not subject to taxation in Portugal. Portugal has an official aim to reduce the number of plastic bags used by consumers by 90%, yet shopping bags are not subject to taxation.

- Mayors around Portugal have recently tabled specific proposals for a local tourist tax. Proposed rates of 1-3 euro per night would have to be considered in view of the actual burdens on public infra-structure (peak-load demand for instance on water supply, waste disposal and road infrastructure) as well as aspects of land-use and land-use impacts (urbanisation of coastal areas, loss of landscape values and biodiversity) which we do not explore here.
- However, 40 million tourists visit Portugal every year and the majority of them arrive by plane. Departures are liable to VAT, yielding 15 million € annually, but no specific air travel tax is in place.

What role for environmental fiscal reform in Portugal?

Under the current circumstances of fiscal consolidation, a dynamic approach to revenue-neutrality focuses on the opportunities for broadening the tax base, whereby planned increases in labour taxation can be avoided and a stimulus for the economy be achieved (Pereira and Pereira, 2011).

The sixth update of Portugal's MoU with the Troika outlines the following specific opportunities for increasing taxes in 2013;

- amending the personal income tax to yield an additional EUR 3 billion
- increase corporate tax revenues with EUR 200 million
- increase indirect taxes with EUR 685 million
- increase social contributions with EUR 270 million

However, the revenues that could be generated as a result of environmental fiscal reform in Portugal might be used to substitute for some or all of these tax increases.

In fact, without going beyond practices elsewhere in Europe there seems to be sufficient potential to allow Portugal to reinstate the role of environment-related taxes at the 1995-level. In addition, there are also environmentally-related tax expenditures – although omitting these tax expenditures would not as such add to environmentally-related taxation as defined by Eurostat, nevertheless they could provide additional relief to the budget.

Using this potential for environmentally-related taxation would not only provide fiscal relief, it would also help protect the environment and sustain the use of natural resources, while making Portugal's economy more competitive.

In the following the potential for environmental tax reform in Portugal is presented. Our approach is to consider the revenue potential from a perspective of realism, which implies that proposals do not go beyond what is already in place in other EU Member States.

The base year of this analysis is 2010 when environmentally-related tax revenue was €4.3 billion and total tax revenue (including social security contributions) was €54 billion (Eurostat and European Commission, 2012).

Policies in place but not included in the 2010 figures include minor adjustments of petrol and diesel taxes as well as an increase of vehicle taxation included in the 2012 budget. The revenues of these policies amount to an estimated €114 million and would increase the environmental tax ratio to approximately 2.7% of GDP from 2.6% in 2010.

The potential to increase environmentally-related taxes sums to €2.2 billion. These revenues as a spin-off would generate an estimated additional €0.2 billion in VAT. There are also environmentally-related tax expenditures amounting to €0.7 billion which could be considered.

Additional revenues from environmentally-related taxes could be obtained by measures introduced gradually over a four year period:

- Taxes on petrol and diesel have declined in real terms over many years in Portugal, but the challenge is that neighbouring Spain maintains its diesel tax rate close to the EU minimum, providing limited leeway for Portugal. In particular the international lorry traffic takes advantage of the Spanish situation, but there are also many passenger vehicles that would do so if diesel was taxed more heavily in Portugal. The advantage conveyed alone to diesel drivers in passenger vehicles is worth over €500 million annually when considering the discrepancy to the petrol tax in Portugal. However, by adjusting the annual circulation tax for passenger diesel vehicles with an 'offset' tax, the overall taxation of diesel and petrol cars could be balanced. Denmark has for many years practised such a scheme, differentiated according to vehicle classes.
- HGV-Eurovignette: The so-called Eurovignette directive has been amended to allow the social costs of air pollution and noise to be reflected in the charging structure for infrastructure use by heavy-goods vehicles (HGV). This can be done by introducing a separate external-cost charge on top of the infrastructure tolls currently due. It will support HGV fleet renewal and apply to both foreign and domestic vehicles. HGV's account for half of the road transport sector's emissions of air pollutants that are known to be damaging to health. Charging for air pollution and noise in this way would make up for the low diesel tax for HGV's (EEA, 2013).
- A tax on electricity has been introduced in 2012 according to the EU minimum rate of the Energy Taxation Directive. If the electricity tax for households and businesses is gradually aligned to levels that have been introduced in Spain and Greece, there would be potential for a more significant revenue stream, even if some of the revenues are used to compensate deprived households with a 'green check'
- There has been over the past decade in Portugal a switch from mineral oils to gas, with the latter becoming an energy carrier of major significance. While mineral oils traditionally have been subject to taxation, gas on the other hand has been very mildly treated, and the dash from oil to gas may also have contributed to the erosion in environmentally-related taxes over the past decade. Restoring energy taxation by increasing the taxes on gas, for instance to the level in Spain, offers a significant revenue potential.
- The introduction of a carbon taxation scheme has been recommended in the recent OECD Environmental Performance Review of Portugal (2011a:142). While emitters under the European emissions trading scheme (ETS) are subject to a carbon price, a range of industries and emitters are falling outside the scope of the ETS. Introducing a carbon tax for non-ETS emitters would ensure a more balanced approach to mitigation and more fair terms of competition. Such a tax is included in the

European Commission's proposal for a revision of the Energy Taxation Directive. Carbon taxes are in place in several European countries; most recently Ireland introduced a €15 carbon tax for non-ETS emissions. Studies indicate that a carbon tax of about €15 would suffice for Portugal to meet its climate commitments (Pereira and Pereira, 2011). A carbon tax could be phased in gradually, while taxing gas at the Spanish level would already pre-empt some of the carbon tax revenues.

- Hydropower royalty: Portugal is within the OECD area a leading country in the development of hydropower. According to the most recent data 35% of Portugal's electricity production is based on hydropower. Hydropower requires utilisation of water resources from surface water and ground water. The further expansion of hydropower is based on contractual obligations between the government and operators. However, old hydropower stations where investments have been returned produce at low costs, while earning windfall profits from the European ETS. Spain is one country that has recently introduced a royalty payment for old hydropower to reflect the value derived from the natural resources involved. This royalty payment is up to 22% of the electricity price (Ernst and Young, 2013).
- Water abstraction tax: there would be significant revenue potential from increasing the existing water abstraction levy to a more substantial tax for all utilities and industries abstracting water. If the tax applies to 90% of abstracted volumes, rather than the customer metered volumes, then there will be a strong incentive for utilities to reinforce their capacity to react quickly against spills, which may bring leakage rates down from rates of 30-40 per cent prevalent in many areas. This would in turn be helpful for local landscapes and for biodiversity, in particular in areas affected by droughts and water scarcity. Applying a rate system more in line with Israel would contribute towards achieving a higher level of water resource efficiency. This would involve a levy of 7 cents/m³ for residential consumers. Industry would be liable to 2 cents and irrigation to 1 cent per m³. The increase from present rates might not apply in winter time.
- Increasing the tax rates on waste, without going as far as for instance in Ireland (50 € per tonne), would further support at the same time waste recycling and waste minimisation, as well as fiscal consolidation.
- Packaging taxation: under the EU's Packaging and packaging waste directive there is a take-back obligation for 55% of the packaging marketed and a system of fees to finance the operational schemes required. Such schemes do not provide strong incentives to minimise on packaging and shift to less burdensome materials (paper and glass is less burdensome than plastics and metals for instance). A complementary tax on beverage packaging can provide such incentives, in particular if the tax rates are differentiated according to environmental burdens of different materials.
- Shopping bags of plastic and paper could be subject to a 15 eurocents tax, similar to the one in place in Ireland, which greatly reduced littering with shopping bags.
- Air pollution taxes on SO₂ and NO_x could complement taxation of emissions from HGV's and bring a substantial revenue contribution, even if introduced at a modest level. Taxes on air pollution from fossil fuels furthermore improve on the relative price advantages of renewables in the electricity market, and can provide a needed relief to the demand for subsidies and feed-in tariffs. This is because they improve the competitive position of renewables.
- Pesticide taxation: current approval systems reflect human health concerns, whereas impacts on biodiversity can not always be ruled out, hence it is desirable to

be efficient in the use of pesticides. Several countries apply taxes to curb overly generous use of pesticides and reinvest some of the proceeds in research and development related to pesticide use, while there are also examples that revenues can be generated that contribute to the general budget too. (Branth Pedersen et. al., 2012).

- Resource taxes: Portugal is often said to possess few natural resources, but figures from 2010 indicate the extraction of 4½ million tonnes of natural resources from 56 mines, involving an export value of €735 million². Furthermore, mining and extraction activities have a potential to increase in view of the global resource scarcities and the pursuit for rare earth metals, as underlined by Portugal's new strategy to boost mining concessions (PLMJ, 2013). Currently mining royalties are applied on an ad-hoc basis for each concession and there appears to be no systematic approach. Adopting an explicit natural resource taxation scheme to capture the economic rent from natural resources would be more in line with principles of environmental and economic sustainability. Among EU Member States Estonia has successfully established such a taxation scheme with a set of mineral resources extraction charge rates for minerals belonging to the state (cf. Annex 5, table 1 in Statistics Estonia, 2009). Tax rates are differentiated according to the specific resources ranging up to €4 per m³.

Additional revenues from environmentally-related tax expenditures and subsidies could be obtained by phasing them out gradually:

- Company cars provide a significant revenue potential: By increasing the annual tax declaration of the acquisition costs to the level of 18% for newly purchased company cars, which is in line with declaration rates used in other Member States, there would be a major revenue potential. Changing the tax base from acquisition costs to the list price of vehicles could be expected to add a further 15% to the revenues.
- Abolishing special VAT rates and reduced tax rates for specific sectors provides a further revenue potential of some significance (OECD, 2013).

Table 1 provides a concise overview of the potentials for environmentally-related taxes and/or environmentally harmful subsidies as mentioned above. Estimates are provided for potential revenues. Behavioural responses are taken into account to a certain extent. Revenues are indicative and will require more careful calculations on basis of energy and transport sector modelling in particular. Nevertheless they serve to illustrate the relative significance of the different options available. Taxes that are already in place can be raised soon, whereas new tax instruments will require a phase of legislative and technical preparation. Due consideration has been given to this aspect with the phased implementation illustrated. The line with the grand total indicates the sum of all measures if tapping all potentials simultaneously.

² Mineral exploitation features world class deposits as Neves-Corvo (Cu, Sn) and Panasqueira (W), as well as deposits producing salt, feldspar, kaolin, ball clay and fire clay, ornamental stones and some other mineral substances. Portugal is presently one of the main EU producers of copper, tin and tungsten concentrates and an important world producer of ornamental stones (euromines.org)

Table 1. Illustrative Potential for Environmentally-related Taxes and Removal of Environmentally-related Tax Expenditures in Portugal, 2013-2016, Million €³

Environmentally-related taxes

Transport taxes	2013	2014	2015	2016	Comment
Air travel tax	49	98	98	98	Differentiated rates, longer flights 14€; short flights 3€ per passenger (UK approach and tax rates)
HGV vignette scheme			170	170	Harmonised approach of EU Directive 2011/76 – based on costs of air pollution and noise for Heavy Goods Vehicles.
Annual offset tax diesel vehicles		594	594	594	Balanced taxation of passenger vehicles' motor fuels. Offsetting tax per passenger diesel vehicle, in average €200.
Sum	49	692	862	862	

Energy taxes	2013	2014	2015	2016	Comment
Motor fuel excises	69	137	137	137	Adjust tax rates with inflation to 2010 effective level in Portugal
Electricity	83	166	166	166	Align to level in Spain and Greece
Gas; industry and heating	30	60	60	60	Align to tax rate in Spain of 1.15 €/GJ
Carbon tax		83	171	171	CO2/Carbon tax for non-ETS emissions, rising gradually to 15 €/ton (Ireland's approach)
				108	Further increase by 2016 to rate of ETD proposal: 20 €/ton
Hydropower		116	116	116	Royalty of 10-20% for large hydropower, similar as Spain
Sum	182	562	650	758	

Pollution and resource taxes	2013	2014	2015	2016	Comment
Water abstraction levy		101	101	101	Increase rates outside winter time. Tax abstracted water so water pipe leakage could be reduced from 30-40% to 10%.
Waste and incineration tax	56	112	112	112	Apply rate of 35 €/ton – supporting reuse and recycling industry
Beverage packaging		107	107	107	Apply rates according to environmental burdens
Shopping bags		30	30	30	Same rate as Ireland (15 cents/pc).
Resource taxes		35	35	>35	Royalty on resource rents as in Estonia.
SO ₂ and NO _x			95	95	Same rates as for HGVs to reduce health costs
Pesticide tax			100	100	Supporting biodiversity and human health
Sum	56	385	580	580	

Sum of all environmentally-related taxes	287	1,639	2,092	2,200	
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VAT (23 %)	47	146	183	196	for consumption-related taxes
Total incl. VAT	334	1,785	2,275	2,396	

Removal of environmentally harmful subsidies

Charge Category	2013	2014	2015	2016	Comment
Railways and inland navigation	27	27	27	27	Fuel tax exemption
Agriculture	67	67	67	67	Fuel tax reduction
Certain industries and fixed engines	45	45	45	45	Fuel tax reduction
Heavy fuel oil, gas oil and kerosene	27	27	27	27	align reduced VAT rates to standard (non-motor fuels)
Agriculture	41	41	41	41	Align reduced VAT rates on fuels to standard
Company cars	60	180	300	420	18% of acquisition cost in annual tax declaration (up 9%)
	9	27	45	63	Change from acquisition costs to list price
Total	276	414	552	690	

Grand total

	2013	2014	2015	2016	Comment
All sources	610	2,199	2,827	3,086	

³ Based on experiences gained in other European countries - with a gradual implementation over a period of four years. ETD is the EU's Energy Taxation Directive 2003/96/EC.

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