REFOCUSING ECONOMIC AND OTHER MONETARY INSTRUMENTS FOR GREATER ENVIRONMENTAL IMPACT: HOW TO UNBLOCK REFORM IN EECCA COUNTRIES

Final report

The main weakness of the application of monetary instruments for pollution prevention and control in EECCA over the last 20 years has been the lack of concern for their environmental effectiveness. The poor definition and distortion of the functions of individual monetary instruments and the exclusive focus on revenue raising are the key barriers to the improved implementation of these tools in line with international practices. This report's objective is to help EECCA countries to address these barriers to reform and to create a coherent mix of economic and other monetary instruments that would contribute to the overall greening of their economies.

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TABLE OF CONTENTS

SUMMARY OF POLICY RECOMMENDATIONS................................................................................................. 3

1. INTRODUCTION ........................................................................................................................................ 5
   1.1 Scope and objective............................................................................................................................. 5
   1.2 Role of monetary instruments in promoting green growth............................................................... 5
   1.3 Methodology and structure................................................................................................................ 6

2. TYPES AND FUNCTIONS OF MONETARY INSTRUMENTS FOR POLLUTION PREVENTION AND CONTROL IN EECCA................................................................. 7
   2.1 Pollution taxes and charges ................................................................................................................ 7
   2.2 Product taxes ..................................................................................................................................... 11
   2.3 Administrative fines ........................................................................................................................... 14
   2.4 Environmental damage compensation ............................................................................................. 16

3. RE-ORIENTATION AND STREAMLINING OF MONETARY INSTRUMENTS ..................................... 18
   3.1 Focusing and strengthening pollution taxes ..................................................................................... 18
   3.2 Making product taxes a tool for greening the economy ................................................................. 21
   3.3 Increasing the role of monetary penalties for non-compliance ....................................................... 23
   3.4 Remediating rather than compensating environmental damage .................................................. 24

4. IMPROVED ADMINISTRATION OF MONETARY INSTRUMENTS ..................................................... 25
   4.1 Discretion of competent authorities ................................................................................................. 25
   4.2 Revenue collection and earmarking ................................................................................................. 26
   4.3 Payment enforcement ....................................................................................................................... 28

5. CONCLUSIONS....................................................................................................................................... 29

REFERENCES ............................................................................................................................................... 32

Tables
   Table 1. Environmental tax rates for selected products in Armenia and Moldova (% of value)........... 12

Figures
   Figure 1. Basic tax rates for SO2 emissions in selected EECCA countries (2012)............................. 9
   Figure 2. Basic tax rates for nitrate discharges in selected EECCA countries (2012), EUR per tonne . 9
   Figure 3. Excise taxes on motor fuels in selected EECCA countries and OECD, EUR per tonne ...... 12
   Figure 4. Fines and economic benefit of non-compliance in Azerbaijan....................................... 15
   Figure 5. Marginal SO2 abatement cost curve for the Russian Federation.................................... 20

Boxes
   Box 1. Use of environmental product taxes in OECD countries.......................................................... 13
   Box 2. Earmarking: Main advantages and disadvantages ................................................................. 27
SUMMARY OF POLICY RECOMMENDATIONS

1. The objective of this report is to help countries of Eastern Europe, Caucasus and Central Asia (EECCA) to identify ways in which existing monetary instruments for pollution prevention and control could be made more environmentally effective, in line with the goal of promoting green growth. The report addresses the instruments that EECCA countries most commonly use in relation to pollution impacts: pollution and product taxes or charges, non-compliance penalties and environmental damage compensation payments.

2. Over the last ten years, EECCA countries have been making efforts to improve the design and implementation of these monetary instruments. The instruments’ administrative efficiency (including the collection rates) has substantially improved across the EECCA region. The environmental tax rates have increased, the number of pollutants subject to taxation were in some countries reduced from hundreds to more practical levels (less than twenty), and the use of product taxes and administrative fines for legal entities has expanded.

3. Despite this progress, the design of these instruments, individually and collectively, remains flawed. The excessive emphasis on revenue raising and the way in which this has distorted the functions of the individual monetary tools have eroded the government’s credibility in implementing these instruments and undermined their environmental effectiveness.

4. **Clarifying and adhering to appropriate policy functions is the most urgent intervention to improve the system of monetary instruments.** EECCA governments, and particularly ministries of economy, finance and environment, should agree on the core function of each instrument:

   - Reducing releases of priority non-hazardous pollutants – for pollution taxes or charges;
   - Changing consumption patterns and revenue raising – for product taxes;
   - Preventing violations of environmental requirements by removing the economic benefit of non-compliance – for fines; and
   - Ensuring that the responsible parties finance the remediation of environmental damage they cause – for damage compensation payments.

5. In support of these policy functions, **it is important to improve the design of each instrument in order to increase its environmental and fiscal effectiveness.** The key measures include:

   - Pollution taxes/charges should be focused on a few non-hazardous air and water pollutants that are discharged primarily by large stationary point sources and can be monitored at reasonable costs. Every unit of pollution of a given parameter should be taxed at the same rate, which should exceed the marginal abatement cost of that pollutant;
• Product taxes should be used more extensively to address pollution from mobile sources (taxes on fuel and vehicles), diffuse pollution from agriculture (pesticides and fertilisers) and waste management problems (batteries, tires, etc). Their broad application makes them particularly suitable to be the primary source of environment-related revenues. The methodologies for setting their rates, and the lessons learned from OECD countries, should be explored further;

• To be an effective enforcement tool, administrative fines for legal entities (juridical persons) should exceed the economic benefit the operator gains as a result of non-compliance and should adequately and transparently account for the seriousness of the offence; and

• Liability for environmental damage should be re-oriented from being a penal regime designed to punish the party responsible for the damage toward a system focused on remediating the damage.

6. Pursuing the reform of monetary instruments as part of a green tax reform or the development of a green growth strategy would help to create the critical mass of political support for its implementation. The implementation of these recommendations requires close coordination and collaboration between different government agencies, notably ministries of economy, finance, justice and environment. This could be done through broad formal consultations and/or in inter-ministerial committees or working parties that would prepare and oversee the reforms through dialogue fuelled by a high-level consensus of the need for the overall greening of the economy. Analysis and dialogue will be necessary to address stakeholder concerns, in particular in relation to the potential loss of industry’s competitiveness and negative distributional impacts.

7. In parallel, EECCA governments should sustain efforts aimed at raising the administrative effectiveness of monetary instruments and their transparency. The latter is particularly important for building public support for further reform.

8. The continued international exchange of relevant experience among EECCA countries and with their OECD partners, within the “Environment for Europe” process and beyond, would help to strengthen the administrative and analytical capacity of EECCA environmental authorities and enable them to pursue these reforms. International exchange can also help address concerns of reduced competitiveness, enterprise relocation to other jurisdictions and distorted level playing field for businesses. In addition, international partners can help EECCA countries assess the feasibility of introducing new instruments, such as payments for ecosystem services, and eventually support their implementation.
1. INTRODUCTION

1.1 Scope and objective

9. In an effort to implement the Polluter Pays Principle, countries of Eastern Europe, Caucasus and Central Asia (EECCA) use both “conventional” economic instruments of pollution prevention and control (pollution and product taxes) as well as monetary instruments related to other regulatory regimes such as environmental enforcement (fines) and liability (damage compensation payments). The latter types of payments are conventionally not regarded as economic instruments in OECD countries, but are considered in this report due to the existing overlap in their functions in EECCA with those of the conventional economic instruments in influencing the environmental behaviour of economic actors. Moreover, EECCA governments have historically considered these tools as central to environmental policy implementation and have expressed demand for help in re-designing the current system based on earlier work on individual instruments. The report focuses on these instruments and does not cover natural resource taxes, subsidies or user charges for water abstraction, wastewater treatment and waste management services covered by other areas of work of the EAP Task Force1.

10. The main weakness of the application of monetary instruments for pollution prevention and control in EECCA over the last 20 years has been their exclusive emphasis on revenue raising and not on environmental effectiveness. This, coupled with the poor understanding by government policy makers and other stakeholders of the appropriate functions of individual monetary instruments are the key barriers to the improved implementation of these tools in line with international practices. Accordingly, this report concentrates on improving the environmental effectiveness of these instruments rather than their revenue-raising potential.

11. The report’s objective is to help EECCA countries to address these barriers to reform and to create a coherent and environmentally effective policy mix of economic and other monetary instruments for pollution prevention and control. Its target audience includes key government stakeholders (ministries of environment, economy, finance and justice) as well as non-governmental and academic institutions.

1.2 Role of monetary instruments in promoting green growth

12. Taxes on pollution (or on such proxies to pollution as environmentally harmful products), if well designed, can create incentives for the reduction of the negative environmental impact at the least resource cost (so-called static efficiency), as well as promote and guide green innovation (dynamic efficiency). This innovation both reduces emission levels at a lower economic cost as well as decreases the tax burden on the polluter. Taxes and other economic instruments provide businesses with a reasonable degree of certainty that innovation and investment to reduce the scale of environmental damage will be worthwhile.

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1 The Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force, www.oecd.org/env/eap), with its Secretariat hosted by the OECD, has been providing support to environmental policy reforms in the countries of the region since 1993. Its current work covers, among others, economic instruments for water resources management and environmentally harmful subsidies.
13. Expanding the use of environmentally related taxes plays an important part in the “green tax reform”, allowing to shift part of the burden away from corporate and personal income taxes and social contributions that impede economic growth. Environmentally-motivated fiscal reform can also be an efficient new source of revenue where this is needed for funding important welfare-enhancing expenditure programmes, covering health, environment, education, etc. The green tax reform helps realign the economy that is characterised by an insufficient use of labour resources and an excessive use of natural resources. Since the 1990s, several OECD countries (including the Scandinavian countries, the Netherlands and Germany) have introduced comprehensive, revenue-neutral green tax reforms, where new environmental taxes are offset by the reduction of existing taxes. The experience of these green tax reforms can be used as a model by EECCA countries.

14. The role of effective non-compliance penalties and sound environmental damage liability rules is to establish an environmental and economic level playing field (by eliminating perverse economic advantages of bad environmental behaviour) and to facilitate the restoration of damaged natural assets.

1.3 Methodology and structure

15. The EAP Task Force has conducted a substantial amount of work on the design and implementation of economic instruments of pollution control in EECCA, including a comprehensive survey and analysis of the implementation of these instruments across the region (OECD, 2003), guidance on the determination and application of administrative environmental fines (OECD, 2009a), a recent document on introducing good international practices in the implementation of liability for environmental damage in the region (OECD, 2012), as well as a number of country-specific case studies. The present report is consistent with the analysis and recommendations contained in these documents. The report also draws on the extensive body of work on environmentally-related taxes which has been conducted by the OECD, including the Economic Instruments Database it maintains jointly with the European Environment Agency (OECD, 2012a).

16. As part of the preparation of this report, a questionnaire developed by the EAP Task Force secretariat and filled out by experts from every EECCA country (with active participation of the Russian and Central Asian Regional Environmental Centres) served to update and complement the information on the use of different types of economic instruments across the region. The expert meeting on 5-6 March 2012 in Warsaw, Poland discussed the outline and preliminary key messages of the document. The report’s policy recommendations will be discussed at the EAP Task Force meeting on 24-25 September 2012 in Oslo, Norway.

17. The report structure covers different aspects of unblocking the reform of monetary instruments in EECCA. Chapter 2 provides an overview of the current practices in the use of monetary instruments for pollution prevention and control in the region. Chapter 3 elaborates recommendations on the design of each major type of monetary instruments in the region. The issues of discretion of competent authorities in the administration of these tools, as well as revenue collection and payment enforcement are addressed in Chapter 4. Finally, Chapter 5 presents the conclusions of the analysis.
2. TYPES AND FUNCTIONS OF MONETARY INSTRUMENTS FOR POLLUTION PREVENTION AND CONTROL IN EECCA

18. All EECCA countries use monetary instruments of pollution prevention and control. In addition to pollution taxes and charges, the most widely used instrument (applied in every country except Georgia), a few countries use taxes for environmentally harmful products. All countries in the region have systems of environmental liability, or damage compensation, and several countries have established administrative fines for legal entities (along with those for physical persons). New instruments, such as payments for ecosystem services and greenhouse gas emissions trading, are in an early stage of development, and their implementation prospects in the region are uncertain.

19. The design of monetary instruments of environmental policy has diversified significantly across EECCA countries since their introduction in the early 1990s, but still retains many common elements. Their declared objective is to change the environmental behaviour of economic agents: cut pollution releases, reduce the production and consumption of environmentally harmful products, deter non-compliance and compensate environmental damage. However, as shown by the earlier studies (e.g. OECD, 2003a), all these instruments, given the way they are designed and implemented, in practice serve the sole purpose of raising revenue – for the general budget, in most cases, or for earmarked environmental funds.

20. This chapter provides an overview of the current status of implementation of the main types of monetary instruments across the EECCA region and analyses their primary functions, environmental effectiveness, and linkages between them.

2.1 Pollution taxes and charges

Current practice

21. The OECD distinguishes between charges and taxes: the term “charge” is usually applied when the payments are provided in return for a service, whereas unrequited payments are commonly referred to as “taxes”. However, in EECCA countries a payment is only considered to be a tax if it is stipulated by the Tax Code, which with respect to pollution levies is currently the case only in Belarus, Ukraine and Kazakhstan. In the other EECCA countries that use pollution levies, they are referred to as “charges”. While recognising the tax nature of these payments, this paper uses the terminology accepted in EECCA countries.

22. Pollution taxes and charges are the most widely used economic instrument of environmental protection in the EECCA region: they exist in all the countries except Georgia (which eliminated pollution charges in 2005). Historically, pollution charges in most EECCA countries were levied universally on all “nature users” (juridical or physical persons) that are subject to environmental permits. This is still the situation in a few countries such as Azerbaijan and Moldova. In most others, there are exemptions for state-owned companies (in Belarus, for example, they account for 55% of the output, according to the World Bank) and state or municipal budget-funded organisations. There are also exemptions for farms (in Belarus) and waste recycling companies (in Ukraine), intended to create more favourable economic conditions for these sectors.
23. Pollution charges in EECCA have traditionally been set for hundreds of air and water pollutants (corresponding to the number of substances regulated by environmental quality standards), as well as on “placement” (storage and disposal) of several (usually four) categories of hazardous waste, based on toxicity, and one or two categories of non-toxic solid waste. The number of air and water pollutants covered by the pollution charge system has been significantly reduced over the last decade in all the countries except Moldova, Ukraine and Turkmenistan. For example, the list of parameters has been reduced to 16 for air and 13 for water in Kazakhstan (compared to well over a thousand parameters ten years earlier) and to 6 for air and 14 for water in Armenia.

24. The use of carbon taxation is extremely limited in EECCA. Ukraine has introduced a tax on CO₂ emissions, but its level is negligible – EUR 0.02 per tonne – compared to the carbon price in the European market. While Kazakhstan has established a general legislative framework for the introduction of greenhouse gas emissions trading, this instrument has not yet been fully designed in that country.

25. Another historic feature of the EECCA pollution charge systems has been the multi-fold differential between pollutant-specific “basic” rates that apply to discharges within established emission limit values (ELVs) and the rates for discharges exceeding the ELVs. This arrangement, still in place in Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Russia and Uzbekistan, is tantamount to a penalty for violating the emission or effluent limit. Several countries (e.g. Armenia, Kyrgyzstan) also impose higher rates on pollutants discharged without a valid permit. The non-compliance multiplier varies from two in Kyrgyzstan to 25 in Russia. However, other EECCA countries, notably Belarus, Moldova and Ukraine, have abandoned non-compliance multipliers and use the same rates for emissions or effluents within and beyond ELVs.

26. The basic charge rates even for common pollutants vary greatly from country to country. Figures 1 and 2 show basic pollution charge rates for sulphur dioxide emissions into the air and for nitrate discharges into water bodies in those EECCA countries where they are the highest (the other countries’ rates are significantly lower). The range of rates is equally huge with respect to waste generation: from EUR 0.03 per tonne of most hazardous (category 1) waste in Azerbaijan to EUR 513 per tonne of the same category of toxic waste in Belarus.

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2 In Turkmenistan as well as in Belarus, payments for wastewater effluent are not differentiated by pollutant but are based on the discharge volume.

3 All values in EUR are given based on exchange rates of national currencies as of February 2012.
Figure 1. Basic tax rates for SO2 emissions in selected EECCA countries (2012)

Source: Responses to the OECD/EAP Task Force questionnaire, 2012

Figure 2. Basic tax rates for nitrate discharges in selected EECCA countries (2012)

Source: Responses to the OECD/EAP Task Force questionnaire, 2012

27. Only six EECCA countries (Belarus, Kazakhstan, Kyrgyzstan, Russia, Ukraine and Tajikistan) make annual adjustments of the pollution tax/charge rates for inflation (using a coefficient set in the annual budget law, which is often lower than the real inflation rate). In Moldova, the rates are linked to the minimum wage level which is re-evaluated periodically.

28. Most EECCA countries use different multipliers that increase the charge rates to account for local environmental conditions: air emissions in urban areas, wastewater discharges into particular water bodies, pollution releases in nature protection and recreation areas, etc. Such coefficients may be set by the government (as in Russia) or be at the discretion of sub-national implementing agencies (as in Kazakhstan). Belarus and Ukraine do not use any local coefficients.
29. On the other hand, reduced rates in Kazakhstan are applied to companies with ISO 14001-certified environmental management systems as well as to energy companies and municipal water and waste service providers. Russia is currently considering a legal provision that would exempt from pollution charges those companies that have implemented best available techniques. Belarus and Moldova have provisions for deducting environment-related expenditure (in Belarus – only capital investments) from the due amount of pollution taxes/charges. Russia and Ukraine presently do not allow such offsets (as they would violate the Budgetary Code), but both countries are exploring legal ways to come back to this system, which has long been criticised for the lack of transparency (OECD, 2003a).

Environmental effectiveness

30. Pollution taxes aim to increase the costs of discharging polluting substances into the environment and should provide a direct incentive for polluters to reduce such discharges. The environmental effectiveness of this instrument is the extent to which it achieves this objective. There are no in-depth macroeconomic studies in EECCA of the impact of pollution taxes/charges on the total level of emissions of individual pollutants. However, there are several reasons to believe that pollution tax and charge systems in EECCA fail to provide pollution abatement incentives.

- The lack of focus on principal pollutants undermines the system’s effectiveness. With the tax/charge base of dozens or even hundreds of air and water pollutants, the system does not reflect any policy objectives or priority pollution problems (which is a deficiency of EECCA countries’ environmental policy frameworks in general). While the substantial reduction in the number of taxed parameters in four countries of the region (Armenia, Belarus, Kazakhstan and Kyrgyzstan) has made the scope of their systems comparable to those of some OECD countries (for example, 11 air pollutants are taxed in the Czech Republic and 15 in Estonia), the dispersion of the tax base continues to weaken the instrument’s incentive impact.

- The fact that pollution releases are typically estimated and not measured also diminishes the environmental effectiveness of the pollution taxes/charges. Discharge estimates based on inputs and technology characteristics (often with respect to the original design rather than current performance) provide no direct link between the actual pollution reduction and the reduction of pollution tax/charge liability, thereby not giving a financial reward for making environmental management improvements. There is also a lack of administrative control over the computation of due payments: because of the huge number of liable enterprises, environmental authorities do not have resources to compare actual discharges with the numbers they submit and to prevent underreporting.

- In theory, environmental taxes exploit different opportunities for pollution abatement by creating incentives for those firms (or economic sectors) with the lowest abatement costs to undertake most abatement, resulting in an efficient, cost-minimising pattern of pollution reduction. However, in most EECCA countries the tax/charge rates are low compared to marginal abatement costs, providing little incentive for reducing the level of pollution. For example, only in Belarus, Kazakhstan and Ukraine are the basic SO2 tax rates higher than the costs of the cheapest SO2 abatement technology of about EUR 100 per tonne (OECD, 2003b). In these three countries, industrial enterprises (responsible for serious air pollution problems) may find it more

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4 Ten-year trends of the total air and water pollution discharges (OECD, 2012c) show modest decoupling of the economic growth and the total pollution loads. However, it is impossible to judge based on these trends whether or not the pollution taxes/charges for individual parameters have played any role in this decoupling.

5 In Belarus, the SO2 tax rate is EUR 345 per tonne. In Ukraine, it will reach EUR 116 in 2014. In Kazakhstan, the use of the non-compliance component of the pollution taxes makes the rates comparable with abatement costs.
expensive to pay the tax than to reduce the emissions. In other EECCA countries any noticeable pollution abatement effect from this instrument is unlikely. In contrast, an incentive SO\textsubscript{2} tax in Denmark has a rate of EUR 1460 per tonne\textsuperscript{6} (OECD, 2012a). A similar comparison can be made for water pollution taxes: Kazakhstan has the highest rate in EECCA for nitrate discharges (a little over EUR 8 per tonne), while in Denmark the respective rate is EUR 2,680 per tonne.

31. EECCA ministries of finance (and, to a large degree, ministries of environment) see pollution taxes/charges primarily as a source of government revenue. The ministries of environment try to achieve this revenue-raising objective by applying the taxes/charges for a wide range of parameters to a broad base of polluters, making the system fundamentally ineffective. At the same time, the lion's share of the revenue is generated by very few pollutants. For example, in Armenia three air pollutants accounted for 93\% of the 2002 revenue from charges on air pollution: particulate matter, nitrogen oxides and sulphur dioxide. In the case of water pollution charges, 93\% of the revenues came from two parameters, biochemical oxygen demand and suspended solids (OECD, 2004a).

32. The non-compliance component of pollution charges in EECCA plays the role of a surrogate of an administrative fine for exceeding the ELV set in a permit. This arrangement was put in place in EECCA countries at the time when administrative fines could only be imposed on physical persons but not on legal entities. The result was that the government was interested in keeping ELVs at excessively stringent levels in order to maximise the “penalty” element of the pollution tax/charge. The recent elimination of the non-compliance component in Belarus, Moldova and Ukraine is a positive development. Still, the non-compliance component of pollution charges in Azerbaijan, Kazakhstan and Russia, where administrative fines for environmental violations by legal entities have been introduced (see Section 2.3), effectively duplicates such fines’ primary function of punishing the offender. More generally, the approach to determining a fine is quite different from the methodology for setting a tax rate, as will be discussed in Chapter 3.

2.2 Product taxes

*Current practice*

33. All EECCA countries impose taxes on environmentally harmful products (such as motor fuels and imported vehicles), but only several of them have product taxes mandated by environmental legislation.

34. Armenia and Moldova have the most advanced systems of taxes (sometimes also referred to as charges) on environmentally harmful products. Armenia imposes taxes on 29 categories of imported products and 26 categories of domestically produced ones (Armenia does not produce cars, so it only taxes imported ones). The tax rate is a percentage of the customs value of imported goods (between 0.5\% and 3\%, except for old imported cars which are taxed at up to 20\%) or the same percentage of the sales turnover for domestically produced goods. The list contains a wide range of products: oil and oil products (except gasoline and diesel fuel, subject to excise taxes), batteries, asbestos-containing materials, detergents, plastic packaging, tyres and ozone-depleting substances, etc. However, the list of product categories subject to the tax contains several inconsistencies and lacks clear definitions. For example, asbestos products are assembled under one product group with vehicle breaking liquids; and detergents are subject to both the product tax and the water pollution charge (OECD, 2004a).

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\textsuperscript{6} East European OECD countries (e.g. Estonia, Poland, the Czech Republic, Slovakia) have significantly lower air pollution tax rates with a limited incentive impact.
35. In Moldova, environmentally-related product taxes are imposed only on 16 product categories, with rate differentiation for petrol (based on lead content), heavy oil (based on sulphur content), pesticides and batteries (based on chemical content). In addition, Moldova has a product tax on plastic packaging for beverages (except dairy products) that are set in absolute values, between EUR 0.05 and EUR 0.2 per item. Table 1 compares the tax rates for key product categories in Armenia and Moldova.

<table>
<thead>
<tr>
<th>Product category</th>
<th>Armenia</th>
<th>Moldova</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos-containing materials</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Lead car batteries</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Lithium car batteries</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Luminescent and mercury-containing bulbs</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Detergents</td>
<td>0.5</td>
<td>-</td>
</tr>
<tr>
<td>Fertilisers</td>
<td>-</td>
<td>1.5</td>
</tr>
<tr>
<td>Ozone-depleting substances (freons, halons)</td>
<td>2.0</td>
<td>-</td>
</tr>
<tr>
<td>Motor vehicles up to 20 (based on age of vehicle)</td>
<td>up to 20</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Responses to the OECD/EAP Task Force questionnaire, 2012

36. All countries in the region have excise taxes on motor fuels. The excise taxes on petrol are higher than those on diesel fuel in every country, as they are in OECD countries, but the absolute tax rates are much lower than the OECD average (Figure 3). A few countries further differentiate the tax rates based on the quality (linked to the environmental characteristics) of motor fuels levels. In Russia, for example, diesel is subject to an excise tax rate that is about half of that imposed on petrol. Since 2011, motor fuels that conform to Euro-4 and Euro-5 quality standards are taxed at lower rates than those fuels that do not.

![Figure 3. Excise taxes on motor fuels in selected EECCA countries and OECD](image-url)

Source: OECD, 2012a; internet queries

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7 In case of tax differentiation between quality grades of petrol, the highest tax rate was used.
37. In addition, several EECCA countries (Azerbaijan, Kazakhstan, Kyrgyzstan and Ukraine) have special fuel taxes labelled as “charges on air emissions from mobile sources”. These are essentially taxes that in Azerbaijan, Kyrgyzstan and Ukraine are levied on companies that produce or import motor fuels. Kazakhstan has a different system, where the tax is paid by enterprises that own motor vehicles but not by owners of private vehicles, the biggest source of air pollution. In Kazakhstan and Kyrgyzstan diesel fuel is subject to higher tax rates than unleaded petrol, while in Azerbaijan the rate for diesel is seven times lower than for petrol, and in Ukraine the two rates are equal. Ukraine also differentiates between diesel fuels with different sulphur content. The environmental taxes on motor fuel are quite low: the highest rate is in Ukraine, less than EUR 7 per tonne of fuel.

38. A number of EECCA countries are interested in introducing environmental taxes for a wide range of products. For example, Russia is developing a “technical regulation” that would govern the management of environmentally harmful products and establish respective product taxes. Ukraine is also actively exploring this issue.

39. On the contrary, Belarus has recently abandoned its environmentally-related product taxes (with the exception of taxes on ozone-depleting substances). Environmental taxes on fuel were discontinued in 2010, and those on solvent-containing products, plastic, glass and paper were eliminated in 2011. This policy decision was made based on a study that showed that the costs of administering the collection of these product taxes exceeded the revenues generated by them. The environmentally-related product taxes have been replaced in Belarus by a system of extended producer responsibility, which requires producers and importers of environmentally harmful products to collect and recycle a certain percentage of their volume.

Environmental effectiveness

40. Product taxes are imposed in order to influence purchasing habits by reducing the demand for an environmentally harmful product and/or to raise budget revenue or funds for environmental protection programmes associated with product recycling, reuse and/or safe disposal. Tax rate differentiation can be applied to discourage the use of polluting products and encourage the use of cleaner alternatives. These instruments are best applied to products consumed in large quantities and in diffuse patterns (energy products, motor vehicles, fertilizers, pesticides, lubricant oils, etc.). Box 1 provides examples of their use in OECD countries.

**Box 1. Use of environmental product taxes in OECD countries**

Most OECD countries have implemented taxes or charges on environmentally harmful products. The most widespread are taxes on energy products, differentiated to reflect their relative environmental impact: in addition to excise taxes, this can be an “energy tax” (as in the Netherlands), a “mineral oil tax” (as in Austria), a “carbon tax” (as in Ireland), a “CO₂ tax” (as in Denmark), or a “climate change levy” (as in the UK). Energy products are responsible for the lion’s share of the revenues generated by product taxes. Other most frequently taxed products include (the list of countries using the respective taxes is not exhaustive):

- batteries (Belgium, Denmark, Hungary, Italy, Slovakia, Sweden);
- motor vehicles (direct taxes based on vehicle weight or motor power in Australia, differentiated registration fees and road transportation duties in many other countries);
- different kinds of packaging (Belgium, Denmark, Hungary, the Netherlands, Poland);
- lubricating oils (Canada, Hungary, Slovakia);
- pesticides (Canada, Denmark, Norway);
- tyres (Canada, Denmark, Poland, Slovakia);
- ozone-depleting substances (the Czech Republic, Poland);
- paint and other solvent-containing products (Belgium, Canada);
- electric bulbs (Denmark, Slovakia); and
- electric and electronic equipment (Canada, Hungary, Poland, Slovakia).

*Source: OECD, 2012a*
41. The list of products presented in Box 1 and those subject to product taxes in Armenia or Moldova are largely similar, with a few exceptions like electric and electronic equipment. The major difference is in the way their rates are set. In Armenia and Moldova, these are *ad valorem* taxes (which is partly explained by their primary application to imported goods), while in OECD countries they are usually set *ad quantum*: per kilogramme (or litre) or sometimes per item (e.g. for tyres or batteries)\(^8\). Therefore, it is difficult to compare most of the rates without more in-depth analysis of product prices. The exception is the tax on plastic packaging in Moldova, which has a rate comparable with the one in Denmark (EUR 0.11 per item). As mentioned above, the *ad quantum* taxes on motor fuels in EECCA are much lower than in OECD countries.

42. There are no economic studies in Armenia, Moldova or other EECCA countries on the incentive impact of their product taxes. There are few such case studies in OECD countries as well (e.g. Convery and McDonnell, 2003), partly because empirical data on consumer responses to product taxes are scarce, and partly because it is often difficult to isolate the impact of the product tax on consumption and production from that of other factors (OECD, 2006b). In order for such taxes to be environmentally effective, alternative cleaner products should be available (which is sometimes not the case in EECCA), and the tax rate on harmful products should be high enough to make a significant price difference in favour of such alternatives.

2.3 Administrative fines

*Current practice*

43. While all EECCA countries have long had administrative monetary penalties for offences committed by physical persons, several of them (Russia, Kazakhstan, Belarus, Azerbaijan and Georgia) have in the last decade established administrative penalties for legal entities (juridical persons). The minimum and maximum limits for administrative fines are fixed for several categories of environmental violations in each country’s Code of Administrative Offences (CAO).

44. The CAO usually defines general criteria guiding the competent authority in deciding on the exact amount of the fine in a particular case. There may be attenuating circumstances such as voluntary reporting of the violation by the offender before it was discovered by the competent authority, as well as aggravating circumstances such as repeated or continued violation in spite of the order of the competent authority. However, the CAO typically does not establish criteria for assessing the severity of an offence.

45. In a unique case in the EECCA region, Kazakhstan has a provision in the CAO setting administrative fines for violation of (air) emission limit values by large enterprises at ten times the pollution tax rate applicable to the exceedance amount (i.e. 100 times the basic rate). For wastewater discharge and waste management violations by large businesses, Kazakhstan’s CAO makes the fine equal to the monetary value of the damage inflicted by the violation (which basically also links them to pollution tax rates, see Section 2.4).

46. There are no formal requirements to relate the size of a monetary penalty to the economic benefit to the offender from the violation (especially considering the fact that only a few EECCA countries have administrative penalties for enterprises), to the violator’s intent, or the violator’s ability to pay the penalty.

\(^8\) There are very few examples of ad valorem product taxes, including the tax on pesticides in Denmark and the tax on plastic packaging in Poland.
Environmental effectiveness

47. The first goal of a penalty is to deter people from violating the law. Specifically, the penalty should persuade the violator to take precautions against falling into non-compliance again and dissuade others from violating the law. Successful deterrence is important because it provides the best protection for the environment. In addition, it reduces the resources necessary to administer the laws by addressing non-compliance before it occurs. OECD countries’ experience shows that the possibility to impose significant administrative monetary penalties on companies makes enforcement more expedient and efficient (OECD, 2009a).

48. The traditional environmental economics theory assumes that regulated entities are rational when making compliance decisions: they decide whether to comply or not based on the balance between expected compliance costs (i.e. expenses for technological and management improvements to meet environmental requirements) and non-compliance costs (i.e. value of monetary penalties, liability for the potential environmental damage, etc.). In other words, if it is cheaper to violate a requirement, an operator would do so. In order to achieve the desired deterrence effect, competent authorities must raise the costs of non-compliance by raising the probability of an offence being detected (via intensive compliance monitoring) and punished; making non-compliance response swift and certain; and imposing penalties high enough to outweigh economic benefits of non-compliance.

49. As mentioned above, those EECCA countries that have established fines for legal entities do not take the economic benefit of non-compliance into account when determining the size of the fine. This means that it pays for the offender not to comply with the requirements, and the fines do not create any deterrence effect and, therefore, are environmentally ineffective. The clearest example of this is Azerbaijan, which has the highest nominal rates of administrative fines in EECCA (the maximum fine for legal entities is about EUR 14,000). A study of selected enforcement cases in Azerbaijan (OECD, 2010a) showed that the economic benefit of non-compliance exceeded the imposed fine (even at its maximum rate for the given offence) in every case (Figure 4).

![Figure 4. Fines and economic benefit of non-compliance in Azerbaijan](image)

50. The role of environmental fines in EECCA is limited to revenue raising instrument, and environmental enforcement authorities sometimes consider annual revenue estimates for the fines as fiscal targets for their assessment and collection. Still, the collection rates of administrative fines in EECCA are quite low: less than 40% of imposed fines are actually paid in Azerbaijan and Georgia due to the weak payment enforcement procedures (OECD, 2009a; 2010a).
2.4 Environmental damage compensation

Current practice

51. All EECCA countries have legal provisions for parties responsible for causing harm to the environment (the notion of environmental damage had not been clearly defined until Russia did this very recently) to pay monetary compensation to the state. The legislation in EECCA countries establishes the primacy of monetary compensation of the harm to “in-kind” environmental remediation by the responsible party (albeit the latter can be ordered by a court along with a monetary compensation).

52. Competent authorities have traditionally relied on damage calculation methodologies that were largely theoretical in nature. The Soviet-era “Temporary Methodology on… Assessing Environmental Damage Incurred by the Economy and Caused by Environmental Pollution” (1983) was the first one to address the issue of environmental damage in the conditions of a planned economy. This document was the foundation of the statutory approach to environmental damage assessment in EECCA countries. The statutory approach uses fixed cost parameters as surrogates of actual remediation costs to calculate a certain value accepted as damage. Thereby the calculation of damage is extremely simplified and does not involve expensive data collection and economic assessment and justification by independent experts. However, practice demonstrates that they result in significant underestimation of the damage.

53. Many EECCA countries calculate the value of the damage based on current pollution tax/charge rates, which have no relation to the extent of the damage caused or the cost of remediating it. For example, in Kazakhstan the damage from an unauthorised release of a certain pollutant (or type of waste) is stipulated to be directly proportionate to the mass of the pollutant emitted in excess of the permitted limit and the tax rate for that pollutant (multiplied by 10). The link to pollution tax/charge rates is most often present in methodologies related to air pollution (e.g. Moldova’s “Instruction for Calculating Damage from Air Pollution from Stationary Sources” of 2004), which is not accidental, since it is next to impossible to estimate a monetary value of damage from an incremental increase in air emissions.

Environmental effectiveness

54. Liability for environmental damage in most OECD countries is understood as an obligation for the responsible party to bear the costs of restoring the environment. The remediation is usually conducted by the party responsible for the damage under an administrative or court order, in accordance with specific clean-up and restoration project conditions. In cases of public health or environmental emergency, non-compliance with remediation orders, or uncertainty about responsible parties, public authorities in most OECD countries can directly proceed with remediation and then use civil liability provisions to recover the remediation costs from the liable parties. The extent to which responsible parties bear the direct costs of remediating the damage they have caused is a measure of the environmental effectiveness of the liability regime (which, if properly designed, also has a damage prevention function).

55. In contrast, it is common in EECCA countries that the monetary compensation for environmental damage goes to the treasury without any guarantee that it will be spent on environmental remediation. In Moldova, the responsible party can pay monetary compensation to the Environmental Fund or conduct environmental measures for the amount equal to the value of the damage (calculated using a complex formula), not necessarily related to remediating the inflicted damage. Following the same logic, state-owned enterprises in Uzbekistan are exempted from monetary compensation of environmental damage (not to transfer money between different state accounts). This makes environmental damage compensation in its current design in EECCA exclusively a revenue-raising instrument.
56. In recent years, most EECCA countries have introduced legislative provisions for *optional* damage assessment based on actual remediation costs. However, even where environmental damage is real and EECCA government authorities have the will to address a particular liability situation, there is little regulatory guidance in the region on how to assess the needs for (scope), and costs of, remediation. While recent regulatory documents declare the principles of damage assessment based on actual remediation costs, there is still a disconnect between these declarations and the methods used in practice. There are very few, if any, standards for site risk and impact assessment, technique selection, and definition of clean-up levels. In addition, there is limited capacity and expertise in the region to undertake damage assessment: the circle of regional experts remains small while international consultants are too expensive to be relied upon routinely.
3. RE-ORIENTATION AND STREAMLINING OF MONETARY INSTRUMENTS

57. As discussed in Chapter 2, the excessive emphasis on revenue raising leads to the confusion and distortion of the appropriate functions of the individual monetary tools, creating a key obstacle to their reform. It is important, therefore, to improve the design of each instrument in accordance with good international practice in order to increase its environmental effectiveness and to clarify the interaction between different tools.

3.1 Focusing and strengthening pollution taxes

58. Pollution taxes levied on the quantity of pollution released into the environment can have two broad purposes, defining two general types of this instrument:

- Incentive taxes, which are levied with the objective of changing environmentally damaging behaviour without the primary intention to raise revenues for the government (in fact, the revenues from a fixed-rate tax inevitably fall if the tax is effective and the emissions subject to the tax decrease). To achieve this incentive impact, polluters should be sensitive to production cost changes represented by the pollution tax, the tax rate should be high enough to make pollution reduction cost-effective, and emission monitoring and payment enforcement should be strong.

- Revenue-raising taxes, which are introduced to yield substantial revenues for targeted environmental programmes but still may influence behaviour. For a revenue-raising tax to be successful, there should be a fairly stable tax base to provide a predictable revenue stream; the tax burden should either be widely distributed or fall on the part of the regulated community that benefits most from the revenue disbursement; and the administrative costs must be kept low. Since these conditions are difficult to meet with a pollution tax system, particularly one that covers many pollutants, it is generally considered in OECD countries not to be an effective source of revenues (OECD, 2001), in a stark contrast to environmental product taxes.

Tax base

59. No matter what the primary purpose of a pollution tax is, but especially if it is to reduce pollution releases, it is essential that the tax be levied only on a limited number of priority non-hazardous pollutants. This recommendation is backed up by international best practices. In Western European countries where air emission taxes exist (Sweden, Denmark, Norway, Italy), they are limited to SO$_2$ and/or NO$_x$ (OECD, 2012a). Moreover, most SO$_2$ taxes are actually levied on the sulphur content of the fuel used, further reducing the administrative costs of the system. The same is true for effluent taxes in OECD countries – the tax base consists of only a handful of major pollutants. For example, only three substances, nitrogen, phosphorus and organic substances, are the base of the Danish sewage tax, compared to the situation in many EECCA countries where taxes are defined for dozens of water pollutants. The difference is particularly remarkable considering that the administrative capacity is generally much higher in countries of Western Europe than in EECCA.
60. The number of pollutants subject to taxes should be reduced to a small number of priority air and water pollutants. The determination of pollutants that would continue to be charged should be guided by an analysis of main environmental problems in each country. In order to have an incentive impact, pollution taxes must be targeted at a few key pollutants (that represent priorities of the government’s environmental management programme) that are emitted by a relatively small number of big stationary sources and are measurable at a reasonable cost. For example, for air pollution, taxes could target a reduction of SO₂, NOₓ, particulates, and possibly some VOC emissions by the economic sectors contributing the largest share of the total emissions (and of the tax/charge revenue). The same approach could be applied for releases of pollutants into water, focusing on a small number of pollutants, such as organic matter (expressed in BOD and/or COD), suspended solids, phosphorus and nitrogen. If major contributors to the problems are numerous small sources, mobile sources or diffuse pollution (e.g. from agriculture), pollution taxes are not a good policy tool.

61. It is advisable to exclude hazardous pollutants from the tax system. Toxic substances such as heavy metals, phenols, etc. should be strictly regulated through permits based on technology considerations and regularly monitored. Any accidental releases of such pollutants are likely to cause significant damage to human health and the environment and should be addressed through enforcement actions and environmental liability provisions. Pollution taxes for hazardous pollutants play virtually no incentive role that would complement command-and-control regulation and, due to the large number of such pollutants, overburden the system.

62. It has also been recommended (OECD, 2003a) that EECCA countries replace pollution taxes/charges on industrial waste with user fees for waste management services. The permit limits for industrial waste generation in EECCA are based on actual technologies and practices, so the charges do not provide any incentive for waste minimisation. The revenues from pollution taxes/charges on waste generation are not earmarked for the development of waste management facilities, as is usually the case in OECD countries where such charges are used. This, in combination with a weak command-and-control regulation for hazardous waste management, results in inappropriate disposal practices (including on-site storage). While developing a comprehensive industrial waste regulatory framework, EECCA countries should allow providers of waste collection, transport, storage, treatment, and disposal services to charge enterprises directly for these services in order to recover the full costs of safe waste management.

63. The reduction of the number of taxable pollutants and liable installations would result in a lower administrative burden of controlling and enforcing pollution tax payments. This would in turn lead to improvements in the administrative efficiency of this instrument (see Chapter 4).

64. Although most EECCA countries have substantially reduced the number of pollutants subject to taxes/charges over the last ten years, further reduction may meet strong political resistance because of the perceived effect on revenues. However, as mentioned in Section 2.1, the key pollutants likely already account for close to 90% of the revenue, and this “loss” will be heftily compensated by the increased tax rates on these pollutants (as discussed below).

65. Another possible argument against the reduction of the pollution tax base is that it would undermine the already weak system of industrial self-monitoring, i.e. that enterprises would not report on pollutants other than those subject to the tax/charge. However, permit conditions regarding self-monitoring should be enforced irrespectively of the tax/charge liability. Moreover, the reporting of emissions or effluents for tax/charge assessment purposes is currently seldom based on actual monitoring and is often falsified or simply inaccurate, which is quite difficult to control under the present complex system.
**Tax rates**

66. For the few pollutants that will be covered by pollution taxes/charges after the tax/charge base is reduced, an analysis should be undertaken to determine typical tax burdens and pollution abatement costs for enterprises by sector and size. It is then necessary to estimate the degree to which the tax rates can be increased (as the number of pollutants subject to tax is drastically reduced), so as to enhance their incentive impact while maintaining the tax’s economic feasibility and political acceptability. The economic feasibility here means that polluters (particularly in the public sector) should have financial resources to reduce their emissions in response to the tax. If this condition is not met (as may be the case of municipal energy and water/wastewater utilities), some interim solutions are possible such as a planned gradual increase of pollution tax rates along with management improvements in the sector.

67. Figure 5 presents an example of such analysis performed in Russia (OECD, 2003b) to demonstrate how to design an SO\(_2\) emissions tax. Based on the inventory of sample sources of SO\(_2\) emissions in Russia and the SO\(_2\) abatement technology database, a model was used to estimate a marginal abatement cost curve, starting from the cheapest per-unit SO\(_2\) reduction options to the more expensive ones. It can be seen from the figure that the cheapest options cost less than RUR 10 per kg of SO\(_2\) reduced and allow a reduction of over 60% of the total SO\(_2\) emissions in Russia. In this case, even an SO\(_2\) tax of 4-5 RUR/kg (about EUR 100 per tonne) could stimulate considerable reductions of SO\(_2\) emissions. (For comparison, the current basic SO\(_2\) pollution charge rate is Russia is EUR 0.5 per tonne, which is even lower than the 2002 rate of EUR 1.2 per tonne due to the charge rate corrections by the Russian government in 2003 and 2005.)

![Figure 5. Marginal SO\(_2\) abatement cost curve for the Russian Federation](Source: OECD, 2003b)
68. Pollution tax/charge rates should not depend on the setting of ELVs for individual installations and be the same per unit of pollution no matter what the total load is (so-called flat rates). Flat rates would help provide a continuous incentive for pollution reduction even beyond compliance with the permitted limit as long as this is economically feasible. This would increase the overall incentive impact of the tax/charge and limit administrative discretion in applying it. The flat rate would also take away any incentives to adjust ELVs depending of the enterpises’ tax burden.

69. The pollution tax/charge rates should be universal across the country to ensure an economic level playing field. They should be increased gradually but announced early in order to soften the immediate cost effect on industry and give enterprises time to assess abatement costs versus paying the pollution taxes/charges and adjust their investment plans. Still, the high pollution tax rates will likely increase production costs and reduce competitiveness of polluting industry sectors and, in the longer term, may lead to structural changes in the direction of greening the economy (OECD, 2006b). To a certain extent, competitiveness concerns may be alleviated by providing better information on the actual competitiveness impact of policies, either through ex-post evaluation of similar reforms in the past or ex-ante modelling of the proposed changes (OECD, 2009b).

70. Although tax exemptions or reductions may decrease the effectiveness of the instrument and the revenues generated, special tax treatment for some economic actors is not uncommon also in OECD countries. Some economic sectors may be exempt from a pollution tax for a certain pollutant, if their contribution to the total volume of discharge of that pollutant is insignificant and the discharge sources are small and/or difficult to control (in those cases, pure command-and-control regulation is preferable). Uncertainty over economic effects, particularly of negative effects on the competitiveness of industrial sectors, is another reason sometimes stated to justify tax exemptions or reductions for business.

71. There are also examples of environmental tax exemptions granted to avoid any negative economic implications on private households (OECD, 2001). Such tax exemptions or reductions should be set in the law and apply equally to all economic actors, with no discretion given to the authorities, in order to avoid corruption.

72. An incentive pollution tax, if it functions effectively, will lead to pollution reduction and, therefore, to lower revenues over time. While the incentive objective can be achieved by combining the reduction of the number of pollutants taxed with an increase of tax rates for the remaining parameters, generating a stable flow of revenues for public environmental programmes should rely on product taxes (e.g. on motor fuels) that have a predictable tax base (see Section 3.2).

3.2 Making product taxes a tool for greening the economy

73. In OECD countries, the most common application of product taxes is the environmental handling fee levied on products that are difficult to dispose of, including lubricating oil, batteries and pesticides. Product taxes have also been used to discourage environmentally harmful energy sources as well as motor vehicles with poor fuel efficiency. In many cases, product taxes are coupled with financial incentives (bonuses and other subsidies) to promote the more environmentally friendly substitutes such as renewable energy sources and hybrid or electric vehicles, contributing to the overall greening of the economy. Therefore, product taxes are most suitable for addressing pollution from mobile sources, diffuse pollution from agriculture and waste management problems.

74. However, there are limits on when product taxes can be applied. For example, when a product is highly toxic, a product or substance ban may be a preferable instrument to minimise the harmful exposure. Taxes on a number of environmentally harmful products may be feasibly substituted by deposit-refund systems (very few of which currently exist in EECCA) or extended producer responsibility schemes (as has been done in Belarus, see Section 2.2).
75. Ideally, the product tax rates should reflect the environmental costs associated with each step of the product’s life cycle and be high enough to discourage consumption of the product. It is, however, difficult to predict the tax rate that will result in the desired effect on the consumption pattern. In practice, the rates are not necessarily designed to influence purchasing habits but to raise revenue for respective recycling, reuse or broader environmental programmes, or simply to generate general budget revenue within the limits of political acceptability of the resulting higher product price.

76. The costs of administering product taxes are low because the tax is added to the product price and collected using the already existing fiscal mechanism. In general, it is far more efficient to operate environmental taxes that can be based on information from market transactions than taxes that require separate measurement of pollution at a large number of sources. This is why EECCA countries should consider replacing a range of pollution taxes with taxes on environmentally harmful products.

77. Most OECD countries practise some form of differentiation of the tax rates for motor fuels based on environmental criteria, such as their content of lead (used in all OECD countries where leaded petrol is not yet banned completely), benzene, and sulphur. Taxes on motor vehicles (widely used in OECD countries) can also be differentiated depending on their estimated CO2 emissions per kilometre driven. Such product taxes with differentiated rates provide incentives to consume environmentally-friendlier transport fuels and to purchase “greener” vehicles (product tax differentiation may or may not be revenue neutral). However, the analysis of environmental impacts of engine combustion of a litre of petrol versus a litre of diesel demonstrates that diesel should be taxed at a higher rate than petrol, contrary to the common practice9 (OECD, 2001).

78. While additional studies are necessary to recommend a methodology for calculating environmental product tax rates in EECCA countries, it is clear that because of the rather stable tax base, these taxes can provide a predictable flow of revenue. For example, taxes on environmentally harmful products in Moldova accounted for 86% of the revenue of the National Environmental Fund in 2011.10 Taxes on fuel and motor vehicles account on average for more than 90% of the total environmentally related tax revenue in OECD countries (OECD, 2012a). The introduction or increase of environmentally-related product taxes should be conducted in the context of broader green tax reforms in order not to increase the tax burden on the economy and to increase the public acceptability of the reform.

79. It is generally assumed that economic instruments of environmental policy are regressive, i.e. that poorer households are affected more than high income earners. This argument may be used against the introduction of environmental product taxes in EECCA countries. However, several studies have found that taxation of transport fuels is either neutral in terms of income distribution or slightly progressive, as wealthier households tend to use cars more (OECD, 2001; 2006b).

80. There may be other barriers to the implementation of environmental product taxes in EECCA. For example, Ukraine, which is quite interested in introducing such taxes, has run into the legal obstacle of double taxation: producers of such products are claiming that since they are also liable to pay pollution taxes (on a very long list of parameters), they should not have to pay twice for the same environmental impact. To address this argument, it is important to eliminate pollution taxes on hazardous pollutants (as discussed in Section 3.1) and avoid imposing pollution and product taxes on the same pollutants (e.g. a pollution tax on SO2 emissions and a product tax on sulphur content of fuels).

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9 While diesel motors are more fuel efficient than petrol-powered motors, one litre of diesel causes more CO2 emissions than one litre of petrol, and diesel-fuelled vehicles cause more harmful emissions of NOx and particulate matter than petrol-fuelled ones.

10 Ministry of the Environment of the Republic of Moldova, personal communication, June 2012.
3.3 Increasing the role of monetary penalties for non-compliance

81. OECD countries’ experience shows that the possibility to impose significant administrative monetary penalties on companies makes environmental enforcement more expedient and efficient (OECD, 2009a). The role of this instrument in EECCA, so far secondary to pollution taxes/charges with a non-compliance multiplier in most countries of the region (see Section 2.1), should be reinforced. Fines are applicable to a wider scope of environmental non-compliance than just the exceedance of ELVs and, if properly designed, can create a real deterrent against future violations.

82. In order to be effective in deterring non-compliance, monetary penalties (fines) for environmental violations should aim to eliminate any financial gain or benefit from non-compliance and be proportionate to the nature of the offence and the harm caused. Both the violator and the general public must be convinced that the penalty places the violator in a worse position than those who have complied in a timely fashion. Conversely, allowing a violator to benefit from non-compliance punishes those who have complied by placing them at a competitive disadvantage, thereby creating a disincentive for compliance.

Removing the economic benefit of non-compliance

83. Enterprises may obtain an economic benefit from violating the law by delaying compliance, avoiding compliance or achieving an illegal competitive advantage. In delaying compliance, the violators eventually comply, but they have the use of the money that should have been spent on compliance. The polluters then use that money for profit-making investments. In a very simple sense, the violators “gain” the interest on the amount of money that should have been invested in pollution prevention and control measures. When an offender avoids compliance, it essentially does not incur the costs that would have been necessary to come into compliance. An illegal competitive advantage can be obtained by selling products prohibited by law, starting operation prior to government approval, using natural resources in volumes exceeding the permitted limits, etc.

84. In order to ensure that a penalty removes any significant economic benefit of non-compliance, it is necessary to have simple but reliable methods to calculate its “benefit component”. The OECD guidance for environmental enforcement authorities in EECCA countries on how to determine and apply administrative fines (OECD, 2009a) recommends a model which has been used for this purpose by the US Environmental Protection Agency since 1984. In developing economic benefit assessment methods, it may be useful to consider the experience of sanctions for customs and tax violations.

85. In some violations, there are virtually no delayed or avoided costs. Neither is there any benefit from an illegal competitive advantage. These are typically paperwork types of violations (e.g. absence of a permit). While the potential consequences for such a violation could be devastating, there really is no benefit of non-compliance to the offender. In such cases, the fines should be based solely on the seriousness of the violation.

Accounting for the seriousness of the offence

86. The removal of the economic benefit of non-compliance places the violator in the same position as he would have been if compliance had been achieved on time. However, both deterrence and fundamental fairness require that the penalty include an additional amount to ensure that the violator is economically worse off than if it had obeyed the law. This additional amount usually reflects the seriousness of the violation and is sometimes referred to as the fine’s “gravity component”.

23
87. Competent authorities in each EECCA country should develop a system for quantifying the seriousness of violations of its environmental laws and regulations, within the limits of the penalty amounts authorised in the CAO. This would ensure that violations of approximately equal seriousness are treated the same way. Although assigning a monetary value to represent the seriousness of a violation is an essentially subjective process, the system must be based, whenever possible, on objective indicators and the facts of each particular violation, including the actual or possible harm (although not involving the calculation of the environmental damage) as well as the regulatory importance of the violated requirement. In addition, it is necessary to dissociate the part of a fine reflecting the seriousness of the offence from the assessment of liability for environmental damage and the calculation of pollution charges.

88. Taking adequate account of economic benefits and gravity of non-compliance would require raising the upper limits of administrative fines for different categories of offenders which are set in the CAO. The time limits for the imposition of administrative fines by competent authorities in EECCA should be extended to allow for adequate evaluation of the economic benefit and gravity components of a fine. The adoption of these measure and related regulatory methodologies would require a broad stakeholder dialogue involving, among others, the ministries of environment, justice and finance.

3.4 Remediating rather than compensating environmental damage

89. The analysis of the environmental liability systems in EECCA countries (OECD, 2012b) demonstrated that some of them have started to implement some elements of international good practices (for example, Russia and Kazakhstan are moving toward damage assessment based on actual remediation costs). However, much remains to be done to make environmental liability an effective tool for the prevention and remediation of environmental damage.

90. One major avenue for reform is to re-orient EECCA environmental liability systems toward the restoration of the environment. Contrary to the EECCA region, environmental liability in OECD countries is not a penal regime designed to punish the party responsible for the damage (or simply non-compliance) but a system that is focused on preventing and remediating the damage. For example, the European Union’s Environmental Liability Directive (2004/35/EC) establishes an administrative liability regime for damage to protected species and habitats, for contamination of land and for damage to surface waters, coastal waters, and groundwater (but not with respect to air pollution, where actual damage is impossible to assess). According to the Directive, preventive and restorative measures are mandated by a competent government authority without a prior court decision. Consequently, compensation of environmental damage is understood not as a monetary penalty payable by the responsible party to the government but either as remediation measures undertaken by the responsible party or as the reimbursement by the responsible party of clean-up costs borne by the government.

91. The assessment of environmental damage in EECCA countries should be predominantly based on the estimate of the needs and costs of restoring the affected natural resources or environmental services. This recommendation stems directly from the pre-eminence of the goal of environmental remediation. Clean-up requirements can be determined by competent authorities with a high degree of clarity and predictability. EECCA countries should develop regulatory procedures for the scoping of remediation measures and strict control over their implementation. The statutory (formula-based) approach to damage assessment and monetary compensation should be used only if it is impossible to undertake remedial actions (e.g. killing of fish or other species). The administrative and judicial powers for ordering and enforcing environmental damage remediation should also be clarified.
4. IMPROVED ADMINISTRATION OF MONETARY INSTRUMENTS

92. Improving the administration of monetary instruments is necessary to enhance their credibility and, ultimately, their environmental effectiveness. Three issues are important in this context:

- Which competent authorities should be responsible for determining the size of relevant payments and what discretion they should have in adjusting them to individual circumstances;11
- Where the revenues should be channelled and whether these revenues should be earmarked; and
- What measures should be used to enforce payments by regulated entities.

4.1 Discretion of competent authorities

93. Pollution taxes/charges in EECCA are determined by environmental enforcement authorities based on self-reporting of pollution releases by liable legal entities. They are generally calculated according to the rates and coefficients approved at the national level. However, in several EECCA countries (e.g. in Belarus and Moldova) environmental authorities have the right to reduce the due payment in exchange for the regulated entity’s commitment to spend an equivalent amount of money on an approved environmental improvement programme (the system of so-called “offsets”).

94. It is important that discretionary powers of environmental authorities implementing the taxes/charges be limited. Any exemptions and reductions that may be used should be transparent to all and applied in an identical and foreseeable manner by all regional or local environmental agencies in the country. In addition, financial incentives to induce enterprises to undertake environmental improvements should be limited to those companies that demonstrate good faith by paying their pollution taxes/charges, and only to those projects that are explicitly defined as priorities by the government. Establishing flat rates of pollution taxes/charges (see Section 3.1) would take away the possibility for environmental authorities to increase the revenue by imposing more stringent ELVs in environmental permits.

95. Environmental enforcement authorities in EECCA exercise significantly more discretion in assessing administrative fines for environmental violations within the boundaries defined in the CAO but without a transparent procedure (see Section 2.3).

96. The consistent application of fines is important because otherwise the fines may be seen as arbitrary by the regulated entities. However, a fair system for calculating penalties must have enough flexibility to make adjustments to reflect legitimate differences between similar violations. Although quantifying the benefit and gravity components of a fine in accordance with a defined methodology (see Section 3.3) contributes significantly to the equitable treatment of violators, it does not account for many possibly relevant differences between enforcement cases, including:

11 Of the monetary instruments considered in this paper, the issue of discretion is only relevant to the implementation of pollution taxes/charges and administrative fines. Product taxes are levied in connection with other fiscal mechanisms.
• Degree of wilfulness and/or negligence of the offender;
• History of non-compliance;
• Ability to pay;
• Degree of cooperation/non-cooperation with the enforcement agency; and
• Other unique factors specific to the violator or the case.

97. Flexibility based on these factors is appropriate to the extent the violator clearly demonstrates that it is entitled to mitigation of the size of the fine. Such adjustments of administrative fines for environmental offences should not exceed half of the fine’s gravity component (which, unlike the economic benefit component, is the “pure” penalty). At the same time, options may be available for partial replacement of monetary payments of fines with alternative environmentally beneficial expenditures.

98. In order to ensure nationwide consistency and transparency of enforcement decisions, among others, with respect to the imposition of administrative fines, EECCA countries need to establish national-level enforcement policies that would allow adequate, albeit limited, flexibility for environmental enforcement authorities to account for unique circumstances of each enforcement case. The policy should require the enforcement authority to explain and justify its decisions, particularly when deviating from the provisions of the policy, in an enforcement case-specific case. There is some experience of such enforcement policies in EECCA countries, e.g. the Environmental Inspector Handbook published in 1999 by the State Environmental Inspectorate of Ukraine (OECD, 2004b).

4.2 Revenue collection and earmarking

99. In EECCA countries that have pollution taxes (set in the Tax Code), their revenues go to the state budget. In most EECCA countries that have pollution charges outside the framework of the Tax Code, the revenues are channelled to extra-budgetary environmental funds (national and/or local) used to support different environmental projects. The exceptions are Russia and Armenia, where pollution charge revenues are accrued in the budget (in Russia, they are distributed between federal, regional and local budgets), as well as Uzbekistan, where the pollution charge revenues are split between the state budget and environmental funds. Historically, environmental enforcement authorities (inspectorates) in EECCA were responsible for pollution charge revenue collection. They are still in charge where the revenues go to environmental funds, but in the countries where they go to the budget (although in some countries they are earmarked within the budget), their collection has been transferred to tax authorities, thereby improving the administrative efficiency of the pollution tax.

100. Environmental product tax revenues are collected by customs agencies with respect to imported products and by tax authorities for domestically produced ones. These revenues go to the state budget in Armenia and to the national environmental fund in Moldova.

101. Administrative fines are collected either by the environmental inspectorate itself (as, for example, in Armenia and Moldova) or by an executive body of the Ministry of Justice (as in Georgia). The revenues in most EECCA countries (e.g. Russia, Armenia, Kyrgyzstan) go to the general budget (which is a good international practice), while a few others (e.g. Moldova and Uzbekistan) channel them to environmental funds. Revenues from environmental damage compensation payments are collected and allocated in a similar way, usually without any direct link to remediation expenditures (see Section 2.4).
102. With all these monetary instruments regarded by EECCA governments exclusively as revenue raising tools, there are often fiscal plans for revenue collection. At the same time, there is constant tension between environment and finance ministries with respect to earmarking of environment-related revenues. Environment ministries in the countries that do not have environmental funds argue that earmarking would ensure that all environment-related revenues are spent for environmental purposes, while finance ministries plead for budget consolidation, especially in the times of financial crisis. Many OECD countries have limited earmarking arrangements, for example, to use revenues from taxes on environmentally harmful products to finance reuse and recycling schemes. However, earmarking raises a number of efficiency concerns which make it generally not advisable (Box 2).

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<th>Box 2. Earmarking: Main advantages and disadvantages</th>
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<tr>
<td>Earmarking refers to the practice of assigning revenue from specific taxes or groups of taxes/to finance specific government services. Environmental authorities have often advocated earmarking of revenue from environmentally-related taxes for financing environmental projects either through general budgets or through public environmental funds, controlled by ministries of environment.</td>
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<td>It is widely acknowledged that earmarking limits flexibility and thus, potentially, the efficient allocation of resources to the most socially-needed uses. Also, accumulation of earmarked schemes can lead to budget fragmentation which in some cases may become difficult to manage. However, under certain conditions, earmarking is perceived as a price worth paying for having predictable financing for priority environmental measures that would otherwise have not been implemented. Also, earmarking exhibits a strong revenue-benefit link which helps increase acceptability of new taxes, thus generating additional revenue for government spending.</td>
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<tr>
<td>The advantages and disadvantages of earmarking call for a case-by-case decision with regard to proposed individual earmarked schemes. Some of the major pros and cons of earmarking are listed below.</td>
</tr>
<tr>
<td><strong>Advantages:</strong></td>
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<tr>
<td>• Increases acceptability of new taxes through a stronger revenue-benefit link;</td>
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<tr>
<td>• Ensures transparency of revenue use;</td>
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<tr>
<td>• Can be useful for funding high-priority environmental programmes.</td>
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<tr>
<td><strong>Disadvantages:</strong></td>
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<tr>
<td>• Leads to inefficient patterns of public expenditure;</td>
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<tr>
<td>• May undermine comprehensive public budget management;</td>
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<td>• Introduces rigidity which impede adaptation to changing priorities;</td>
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<tr>
<td>• Can lead to over-investment and unnecessary spending;</td>
</tr>
<tr>
<td>• Tends to continue beyond the timeframe necessary to achieve the programme’s stated objectives (vested interests of fund managers and beneficiaries).</td>
</tr>
</tbody>
</table>

*Source: OECD, 2006a*
4.3 Payment enforcement

103. By transferring pollution tax revenue collection to the tax authorities, several EECCA countries have significantly improved their collection rates. The EECCA tax authorities usually ensure collection rates exceeding 90%, while the environmental inspectorates have fewer tools to enforce payments and generally deliver lower collection rates (e.g. 80% in Moldova and 70% in Tajikistan). The collection rates of administrative environmental fines are even lower in EECCA, generally between 60% and 80% (OECD, 2009a). The principal reason for this is that environmental inspectors are reluctant to seek court injunctions after the expiration of the statutory payment deadline and often accept to defer payment liabilities into the future.

104. In order for any monetary instrument to be effective, regulated entities should know that when a payment is imposed, it will be enforced. Most EECCA countries have a number of enforcement tools in their legal arsenal for the collection of debt. They generally represent the same assortment of tools as found in OECD countries. The weakness of payment enforcement in EECCA countries is in the lack of application of these legal tools to proper cases. The main reasons are: (1) lack of political will at a higher government level to take tough measures against economically and socially important enterprises; and (2) unfamiliarity, among environmental regulators in particular, both with the means of debt collection (so-called creditors’ remedies) and with how they are administered in the justice system.

105. Depending on the country’s legal and institutional framework, the payment enforcement options may include:

- Enforcement by fiscal authorities which may attach the defaulter’s cash assets to the due payment through bank orders and/or bank account freeze;

- Enforcement of the payment as a civil debt through a court which may attach not only the offender’s cash assets but also property; or

- Administrative measures such as permit suspension until the due payment is made.

106. Every payment enforcement option should involve the imposition of a daily interest on the full amount until it is paid completely. The interest rate should be sufficient to recapture any gain obtained by the defaulter in delaying the payment.
5. CONCLUSIONS

107. The analysis of the design and implementation of monetary instruments for pollution prevention and control in EECCA demonstrates that none of the four categories of instruments in question can be currently considered environmentally effective. The fundamental reason for this is the confusion of the policy functions of these instruments and the predominance of fiscal considerations in their application.

- Pollution taxes/charges generally do not perform a pollution reduction incentive function but serve in several EECCA countries as a surrogate non-compliance penalty (for example, an enterprise can have fines waved if it has paid charges for pollution exceedances) and even as a proxy methodology for the assessment of environmental damage compensation;
- Product taxes are not designed to stimulate improved production and consumption patterns and are not linked to any efforts to recycle or safely dispose of environmentally harmful products;
- Administrative fines for environmental offences apply to legal entities only in five out of twelve EECCA countries, and even there they do not provide deterrence against violations because they are systematically inferior to the economic benefit enjoyed by violators as a result of their non-compliance; and
- Environmental damage compensation is by and large not connected to remediation measures and serves another source of environmentally-related revenue for the general budget.

108. Eliminating these policy distortions is the most urgent intervention to improve the system of monetary instruments. The following measures concerning each of the considered instruments would restore their appropriate functions and increase their environmental effectiveness.

- **Pollution taxes/charges** should be used to stimulate the reduction of key air or water pollutants that are discharged primarily by large stationary point sources and can be monitored at reasonable costs (they are ineffective when major contributors to the problems are small, diffuse or mobile sources). The selection of a few effective taxable parameters should be based on the determination of priority environmental problems. Those parameters are likely to be the non-hazardous pollutants that already generate most revenue from this instrument.

  Tax/charge rates should be much higher than they currently are in EECCA countries to have a significant incentive impact. Pollution taxes should not play the role of a monetary penalty for exceeding the permitted emission limit value or operating without a permit – that is the function of fines and other enforcement mechanisms. They should have a flat rate per unit of pollution and this rate should be the same across the country.

  The collection of pollution tax revenue by tax authorities rather than environmental agencies is a key condition for ensuring their administrative efficiency. Concerns about competitiveness and the distributional consequences of reform may be addressed through gradual increase of the tax rates as well as partial and/or temporary recycling of the revenue to the regulated community and the most affected segments of the population.
• **Product taxes and their differentiation based on environmental factors**, if properly designed, can provide a powerful incentive for both reducing pollution (e.g. motor fuel taxes can reduce the consumption of fossil fuels) and introducing greener products (e.g. tax differentiation for vehicles, detergents, batteries, etc. can stimulate the market for cleaner alternatives). Product taxes are administratively efficient, and some of them (e.g. taxes on fuel and vehicles) can also be a major source of environment-related revenues. The product tax revenue could alleviate a budget deficit, help finance targeted environmental programmes (such as recycling initiatives), or provide room for discretionary reductions in other taxes to reduce distortions in labour or capital markets. A possible role of deposit-refund and extended producer responsibility schemes for certain product categories should also be considered.

• **Administrative fines** for legal entities (juridical persons) can be an effective enforcement tool, provided that their size at least equals the economic benefit the operator gains as a result of non-compliance and accounts for the seriousness of the offence. While in the short term such fines would likely bring substantial budget revenue, the deterrence effect would sharply reduce this revenue in the longer term. It is also necessary to dissociate the part of a fine reflecting the gravity of the violation from the assessment of liability for environmental damage and the calculation of pollution charges. National environmental enforcement authorities should also develop enforcement policies that would allow adequate, though limited, discretion for local competent authorities to account for the specifics of each enforcement case while ensuring nationwide consistency and transparency of enforcement decisions.

• **Liability for environmental damage** should be re-oriented from being a penal regime designed to punish the party responsible for the damage toward a system focused on remediating the damage done. Compensation of environmental damage should be understood not as a monetary penalty payable to the government (or having any link with fines or pollution charges) but either as remediation measures undertaken by the responsible party or as the reimbursement by the responsible party of clean-up costs borne by the government. Environmental damage-related payments should not generate any revenue for the government.

109. The implementation of the measures described above requires government cohesion in their support. Elevating the reforms of monetary instruments to the high government level as part of the green tax reform and green growth more generally may help create the critical mass of political support for their implementation. The political and public acceptance of these reforms should be based on a common understanding by all stakeholders of the problems with the current system of environmental monetary instruments and the actions that should be taken to address these problems. Such consensus could be achieved through broad formal consultations in inter-ministerial committees or working parties that would prepare and oversee the reforms as part of the overall greening of the economy.

110. Such consultation bodies should include representatives of different ministries (economy, finance, justice, environment, energy, industry, agriculture), relevant economic sectors, environmental NGOs, as well as technical experts. Technical experts would have to conduct in-depth analysis in support of the reforms, including the assessment of costs and benefits of the proposed policy measures. Based on this technical analysis, the stakeholders would agree on the key elements of the reforms (see Chapter 3), their sequencing and timing. When the reforms are agreed and adopted, the stakeholder consultation body may also have a role to play in monitoring and assessing their implementation.

111. Effective communication is a key success factor: coordinated efforts to explain wider policy objectives behind the reforms will be necessary to persuade different institutional actors, the regulated community and the broad public of their necessity and benefits. Training, business and public forums and the media could be some of the means to channel such communication.
112. These reforms will undoubtedly take time and will likely undergo several attempts and iterations before they are successful. One major challenge is the currently insufficient coordination and collaboration at the inter-ministerial and intra-ministerial levels. Another key challenge is the lack of administrative and analytical capacity of EECCA environmental authorities, in terms of both the number of staff and staff capabilities. Enhancing the international exchange of experience, among EECCA countries and with their OECD partners, could be an effective way of addressing it.
REFERENCES


