

## **Auditing economic instruments in environmental performance audits – NAO of Estonia’s decade of experience**

The aim of this paper is to present briefly the experience of NAO of Estonia in auditing market based environmental policy instruments (further *economic instruments*) in environmental performance audits. The focus was on the following instruments: environmental resource use and pollution charges (taxes<sup>1</sup>), environmental service fees, emission trading schemes. The questions asked were:

- In which audits were the economic instruments audited?
- What kind of conclusions were made in relation to economic instruments?
- What audit methods have been used?
- What has been the impact of auditing economic instruments?

### **Background**

There is a special law (Environmental Charges Act) which provides the grounds for determining the natural resource charges (wood cutting, mineral resource extraction, water abstraction, fishing, hunting charges) and pollution charges (emission of pollutants into ambient air, water, soil, waste disposal), and specific purposes for using state revenue obtained from environmental use in Estonia. In addition, there are special acts which regulate excise duty on electricity, fuel, packaging, etc, which are considered to be environmental taxes as well.

Revenues derived from environmental taxes constitute 2.8 % of Estonia’s GDP (2012). Almost 90% were collected through energy taxes (excise duty on fuels and electricity) and the rest mostly through taxes on pollution and resources.<sup>2</sup> All taxes in Estonia are set by the government; no municipal taxes have been imposed in environmental area. Most environmental taxes are accrued in state budget; small share of the taxes is directed to local authorities’ budget and the budget of Environmental Investment Centre, which channels it to the environmental projects.

Environmental audit team in NAO of Estonia’s performance audit department consisting of 5–7 people conducts 2–4 environmental audits per year. The scope of these audits often covers specific environmental problems or (industrial) sectors and is not usually limited by institutions or projects/programmes.

### ***In which audits were the economic instruments audited?***

NAO of Estonia analysed altogether 29 performance audits which were conducted in the period of 2005–2016 and mainly focused on environmental issues. In this decade-long period the audits have covered a wide range of environmental areas like state activities managing natural resources (e. g. peat, oil shale, limestone, dolomite, sand, gravel, water) and pollution (to air and water), waste management, nature protection, environmental monitoring, etc.<sup>3</sup>

More than half (17) of those audits incorporated auditing of economic instrument, some of them covered several instruments in one report. By the extent of focusing on the economic instrument in the audit reports, these audits can be divided as follows:

1. Audit’s main focus (incl. main question) is on the instrument and its impact. Audit conclusions and recommendations are dedicated to improving the whole system of implementing the instrument(s) (2 audits: *Impact of pollution charges on reducing environmental pollution (2009)*; *State's efforts of reducing greenhouse gas emissions (2009)*).

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<sup>1</sup> Estonian legislation uses the term of „charges“, though by international definitions these are rather taxes.

<sup>2</sup> Eunomia, Aarhus University (2014). *Study on Environmental Fiscal Reform Potential in 12 EU Member States* (Final report to DG Environment of the European Commission).

<sup>3</sup> List of audits: <http://www.riigikontroll.ee/tabid/206/Area/15/language/en-US/Default.aspx>

2. Audit pays significant attention to the instrument – one of the audit report’s sub-questions/sub-chapter is dedicated to instrument’s design, enforcement and/or impact; conclusions and recommendations are made in relation to the instrument (10 audits; e. g. *Impact of European Fisheries Fund subsidies to aquaculture (2016)*; *Actions of the state in directing the use of oil shale (2014)*; *Effectiveness of collection and recovery of packaging waste (2010)*; *National arrangement of mining mineral resources used in construction (2009)*; *Exploitation of peat resources (2005)*).
3. There is information about the instrument in the report, but no conclusions or recommendations are made in relation to it (5 audits; e. g. *Processing of hazardous and radioactive waste (2015)*; *Supervision over use of pesticides and mineral fertilisers (2010)*).

The reasons for not auditing economic instruments in the remaining 12 audits were either that the audit scope did not presume auditing economic instruments (e. g. auditing environmental monitoring or nature conservation activities) or the instruments did not play a significant role in the audited area.

### **Auditing environmental taxes**

Almost all audits which focused on managing natural resources (extraction and use of peat, construction materials (sand, gravel, limestone), oil shale, water) have asked whether the resource taxes are imposed and paid properly and what the impact of the instrument in achieving the (environmental) objectives is. In these audits the instrument (resource, pollution tax) has been seen as one of the tools from the government’s instrument-box among other ones like (strategic) planning, regulations, environmental impact assessment, permits, support/aid schemes, supervision, etc.

Most common conclusions related to environmental taxes have been:

- Impact on the environment, but also socio-economic aspects (incl. impact to the competitiveness of enterprises) is not assessed before imposing the tax.
- Justification of tax rates (incl. tax exceptions) is weak, e. g. tax rates on pollutants are not in correspondence with their hazardousness, or pollution and resource taxes do not cover the externalities (all the costs for the society).
- Indirect calculation methods for pollution or resource use are not adequate and fair.
- Pollution and resource taxes are too low to cause behavioural changes, e. g. investments into new technologies.
- Environmental taxes induce companies to reduce environmental pollution if the aim of reduction is also supported by the legislation and higher or increased rates of taxes.
- Environmental taxes are paid based on data provided by consumers/polluters. Governmental institutions do not verify properly the accuracy of this data. Therefore there is a risk that the resource use and the pollution load are bigger than reported and accordingly, less tax is paid. There are several examples where NAO has indicated the mistakes in data and also has calculated the amount of money not paid to the state budget.

NAO of Estonia found the case where hazardous waste was not recycled properly and should have been deposited safely on landfill. Approximately 110 000 Euros of landfill tax was unpaid in this single case.  
*Audit “Processing of hazardous and radioactive waste” (2015)*

### **Auditing environmental service fees**

There are several audits that have analysed the pricing of environmental services (waste and water management). Two main conclusions in these audits have been:

- Fees do not cover all the costs (incl. environmental externalities) and the sustainability of the service is not guaranteed, which may result in damage to the environment, depreciation of investments (assets) and pressure to the authorities' budget.
- Environmental service fees are too low and do not have an impact on changing human behaviour to consume or pollute less.

Therefore the recommendations made to the relevant authorities (Ministry of the Environment, Competition Authority, local authorities) have been stressing the need to guarantee the "right" (higher) price and sustainability of the services rather than criticizing the fee being too high for citizens. Nevertheless, the social (distributional) dimension has also been considered.

NAO of Estonia found that if the water service fee would include all the costs (depreciation costs, maximum profit permitted, environmental costs) then it may have negative impact on the subsistence of low-income households.

*Audit "Sustainability of drinking water and waste water systems developed with state support and impact on achievement of environmental goals" (2013)*

### **Auditing emission trading**

The European Union's Emissions Trading Scheme (EU ETS) is the world's largest cap-and-trade system for greenhouse gas (GHG) emissions in combating climate change. It has also been a popular topic for SAIs to audit, particularly when it first came into force in 2005. Therefore also NAO of Estonia conducted an audit encompassing the ETS system in 2009. Comparing the audit to other SAIs' audits<sup>4</sup>, it can be concluded that the outcomes of auditing ETS in Member States in the end of 2000s were very similar:

- While the emissions trading system was successfully established, it is unlikely that the implementation of the system has actually caused a reduction in GHG emissions, and therefore contributed to the aim of reaching Kyoto targets. In Estonia the audit conducted found that in 2007 GHG emission levels were actually 17% higher than in 1999. Furthermore, the audit concluded that the state does not know how effective the measures for reduction of GHG emission had been.
- The price of allowances is insufficient to stimulate major investment in low-carbon technologies and reduce emissions. This is furthered by the oversupply of allowances. In Estonia the audit found that companies received allowances exceeding the actual emissions and did not use the money they received from selling their oversupply for environmental investments in reducing GHG emissions.
- More emphasis has been put on the interests and competitiveness of the companies involved in the system than reaching the environmental targets. The NAO of Estonia in their audit found that also in the case of Estonia a bottom-up approach for applying for allowances from the EU was used. That means that rather than opting for reduction of emission, the state took into account how much allowed the installations themselves asked for.
- The allocation of emission allowances has not been transparent. Monitoring, supervision and verification systems could also be improved. NAO of Estonia's audit pointed out that there was no adequate overview of GHG emissions and that the Estonia's GHG emissions might be higher than declared. Furthermore, it is not checked whether companies have given the correct information about their emissions.

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<sup>4</sup> We had a look on following audit reports: NAO of United Kingdom „European Union Emissions Trading Scheme“ (2009); Austrian Court of Audit „Emissions trading system“ (2008); Netherlands Court of Audit „European CO<sub>2</sub> emission trading system“ (2007); The European Court of Auditors (ECA) „The integrity and implementation of the EU ETS“ (2015); NAO of Estonia „State's efforts of reducing greenhouse gas emissions“ (2009).

- Other national policy instruments are not always in line with the ETS system and their continuing relevance has not been analysed after the introduction of the system. In Estonia the audit found that there was no proper action plan for reducing emissions due to insufficient coordination between different ministries involved. There was also the issue that the Kyoto targets had already been reached when they were set. That led to a situation where the state never really started attending to the climate policy.

Not surprisingly the four audits conducted by SAIs of EU Member States reached quite similar conclusions while the ECA audit somewhat differed. This is partly due to the slightly different scopes of the audits but also partly due to the difference in the time the audits were conducted. The ECA audit, published in 2015, already saw some major improvements to the original framework covering the EU ETS. Nevertheless, the audit found that there were still issues with the management of the system by both the European Commission and EU Member States.

### ***What audit methods have been used?***

There have been no unique methods used to audit economic instruments in audits. Therefore usual approaches to collect and analyse data can be used. Examples are:

- Analyzing the strategic documents and background documents of legislation to understand whether the cost-benefit analysis/ impact assessment (incl. externalities) has been conducted before imposing or assessing and reshaping the instrument.
- Data analysis: compare collected tax revenues with costs or investments needed; compare tax revenues with tax administration costs to assess effectiveness of the system; find data inconsistencies (e. g. compare extracted amounts with sales/export numbers).
- Questionnaires for enterprises and citizens to identify whether the tax has motivated innovation, technological improvements or behavioural changes in order to pay less taxes and as a result to use resources efficiently and/or pollute less.
- Involving experts outside the SAI, or using the work of research institutions, e. g. to get proof of the impact of the instruments.
- Analyse the experience of other countries/regions to understand the pros and cons of different instruments and whether the local circumstances are suitable for using the instruments.
- Interviews with responsible ministries and institutions to understand what the rationale imposing or not imposing the instrument has been; and interviews with enterprises, citizen representatives to clarify how the tax payers perceive it.

NAO of Estonia noticed that, unlike for most purposes using water, the water abstraction tax is not required for fish farming purposes (though they use significant amount of surface and ground water). The Ministry of the Environment explained that it has historical reasons, but there have also been difficulties taxing fairly fish farms which use different technologies and water sources.

*Audit "Impact of European Fisheries Fund subsidies to aquaculture" (2016)*

### ***Impact of audits***

There are several examples where the recommendations of NAO have been implemented, although it is not always certain whether audit conclusions were the direct cause for the change. Some examples are:

- After the recommendation to improve supervision over the activities of packaging enterprises concerning the provision of data on packaging generation and recycling, the Environmental Inspectorate and Tax and Customs Board strengthened their control. In the next years the accrual of packaging excise duty raised by 20 to 40 times.

- Ministry of the Environment is developing a method for evaluating environmental externalities of resource use and pollution in major industrial sectors by the end of 2017. The results of this analysis will be used to revise the environmental taxes act and other regulations.
- Based on NAOs recommendations, the Government is considering working out the principles of national income (*royalty*) on (mineral) resources to get a fair share from using non-renewable resources to the national budget.
- The methods which NAO used to audit the accuracy of open mining activities of construction materials (sand, gravel, limestone) were taken over by the supervision authorities and the control over mining entities improved significantly.
- The mineral resource extraction charge for peat was raised after NAO's audit conclusions, which stated that the revenues from the charge doesn't even cover the administrative costs of managing peat resources and the grounds for imposing the charge should be revised.
- Ministry of the Environment in cooperation with Competition Agency and Estonian Association of Water Works have founded a working group on regulating public water supply and sewerage service, the objective of which is to ensure a sustainable water supply and sewerage service.
- The Ministry of the Environment improved the GHG emission verification process by requiring that only persons accredited by the state would be able to carry out verifications.
- There are several examples where supervising institutions have initiated infringement procedures based on NAOs findings.

In conclusion, more than half of environmental performance audits conducted in the period of 2005–2016 by NAO of Estonia have in some extent covered economic instruments. That means that NAO has recognized them as important tools in achieving environmental policy objectives. NAOs main concerns in relation to economic instruments have been that imposing these instruments should be well justified (considering impacts to the environment, economy, competitiveness, social sphere), control over the use of resources and pollution and taxes paid should be improved, and it should be ensured that the instruments have a impact in achieving environmental goals.

The way forward and possible developments in auditing economic instruments by NAO of Estonia may include: paying more attention to energy and transport taxes; auditing tax shift of economic functions from labour and capital (called "goods") to pollution and consumption, which lead to environmental pressure (called "bads"); to pay more attention to subsidies/taxes/tax exemptions which may cause harm to the environment; to evaluate possible tax base erosion and budgetary implication, etc. NAO will definitely follow up the government's activities in assessing externalities of resource use and pollution which may influence the revision of environmental taxes legislation.

*Prepared by Viire Viss and Kristiina Visnapuu, NAO of Estonia.*